



SNAP-FAN

.COM

Installation Instruction Manual



*Solar Powered
Ventilation*

Proudly Manufactured in Humboldt County, CA.

\$7

PRODUCTS and purchase options

SNAP-FAN currently has 5 brush style fans available.

TECHNICAL SPECIFICATIONS

The charts below show the RPM at various voltages and static pressures. All of our motors accept varying voltages from 1VDC - 40 VDC **DO NOT EXCEED 40 VOLTS DC. Higher voltage/amperage on fan motor will decrease brush life. We recommend running motors on our solar driver at 18VDC. 24 VOLT 28" Fan can run at up to 30 VDC.** Below you will see the specific amperage draw for each motor at varying voltages and static pressures.

12" SNAP-FAN



	STATIC PRESSURE (IN H ₂ O)	AIRFLOW (CFM)	RPM	AMPS	WATTS	CFM/WATT
24VDC	0.0	1030	1349	1.59	37	27.9
	0.05	930	1334	1.67	39	23.9
	0.10	810	1323	1.70	40	20.3
18VDC	0.0	830	1091	1.05	18	46.2
	0.05	680	1057	1.11	19	35.7
	0.10	360	1070	1.09	19	18.9
12VDC	0.0	580	774	.58	7	84.3
	0.05	250	762	.61	7	34.8
	0.08	140	732	.68	8	17.8

16" SNAP-FAN



	STATIC PRESSURE (IN H ₂ O)	AIRFLOW (CFM)	RPM	AMPS	WATTS	CFM/WATT
24VDC	0.0	1720	1504	2.60	63	27.2
	0.05	1500	1447	2.72	65	23
	0.10	1310	1436	2.83	68	19.2
18VDC	0.0	1380	1211	1.73	31	44.5
	0.05	1110	1162	1.85	33	33.7
	0.10	890	1166	1.91	34	26.0
12VDC	0.0	980	876	0.98	12	84.7
	0.05	630	844	1.06	13	50.3
	0.08	260	841	1.15	14	19.0

20" SNAP-FAN



	STATIC PRESSURE (IN H ₂ O)	AIRFLOW (CFM)	RPM	AMPS	WATTS	CFM/WATT
24VDC	0.0	2800	1445	4.13	101	27.7
	0.05	2500	1415	4.33	105	24.0
	0.10	2200	1391	4.45	108	20.5
18VDC	0.0	2200	1151	2.67	48	45.4
	0.05	1900	1121	2.86	51	36.3
	0.10	1500	1107	2.9	52	28.6
12VDC	0.0	1600	843	1.47	18	87.4
	0.05	1100	814	1.62	20	55.8
	0.10	500	823	1.55	19	28.8

24" SNAP-FAN



	STATIC PRESSURE (IN H ₂ O)	AIRFLOW (CFM)	RPM	AMPS	WATTS	CFM/WATT
24VDC	0.0	3500	1358	5.07	122	29.0
	0.05	3100	1343	5.19	124	24.9
	0.10	2600	1335	5.22	125	20.9
18VDC	0.0	2800	1073	3.32	60	46.3
	0.05	2200	1057	3.44	62	34.8
	0.10	1700	1055	3.40	61	27.2
12VDC	0.0	1900	741	1.82	22	84.3
	0.05	1100	736	1.85	22	48.4
	0.08	300	744	1.75	21	12.1

28" SNAP-FAN



12 VOLT 28" fan

	STATIC PRESSURE (IN H ₂ O)	AIRFLOW (CFM)	RPM	AMPS	WATTS	CFM/WATT
24VDC	0.0	7810	1209	23.09	555	14.1
	0.05	7370	1197	23.40	564	13.1
	0.10	6940	1190	23.70	569	12.1
18VDC	0.0	6280	980	15.70	283	22.2
	0.05	5790	971	16.10	290	19.9
	0.10	5240	968	16.25	293	17.9
12VDC	0.0	4430	704	8.19	98	45.2
	0.05	3730	697	8.68	104	35.9
	0.10	2940	698	8.50	102	28.9

24 VOLT 28" fan

	STATIC PRESSURE (IN H ₂ O)	AIRFLOW (CFM)	RPM	AMPS	WATTS	CFM/WATT
30VDC	0.0	5800	859	6.8	204	28.5
	0.05	5201	830	7.1	214	24.3
	0.10	4110	801	7.3	219	18.7
24VDC	0.0	4436	709	4.9	117.6	37.7
	0.05	3740	662	4.9	119.5	31.3
	0.10	2930	698	5	120.5	24.3
18VDC	0.0	3150	550	3.1	55.8	56.5
	0.05	2200	545	3.2	57.2	38.5
	0.10	1500	543	3.2	57.8	26.3
12VDC	0.0	2250	377	1.7	20.4	110
	0.05	590	373	1.8	21.6	27

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Product Support & Contact Information

The SNAP-FANs are high efficiency solar direct ventilation fans designed to be used in ventilation fan 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

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

Safety Information

Caution: The blades of the Snap-Fan spin at high rates of speed therefore extra precaution must be used when choosing a location to install your fan. With each installation site decision check to make sure the spinning fan blades are out of reach of humans and animals. OSHA requires finger guards (Intake and Exhaust Guards) for fans located less than eight (8) feet from the ground. For circumstances requiring fan installation less than 8 feet from the ground finger guards are available for purchase.



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

Connect only to Low voltage less than 35 VDC power supply. If more than 18 VDC in applies VOID WARRANTY.

Follow all applicable electricity safety precautions and local codes.

Placement and Care Guidelines

We are confident you will be happy with SNAP-FAN's performance and durability. This fan will provide you with many years of service with little maintenance, provided a few simple precautions are adhered to:

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.

Static Pressure (in H₂O)

Static pressure refers to how much vacuum is created in an environment by removing the air by way of an exhaust fan. If the correct amount of 'free air' is available, the lower the static pressure will be, resulting in more cubic feet per minute (CFM) per watt. See technical specification on page 15.

The Elements

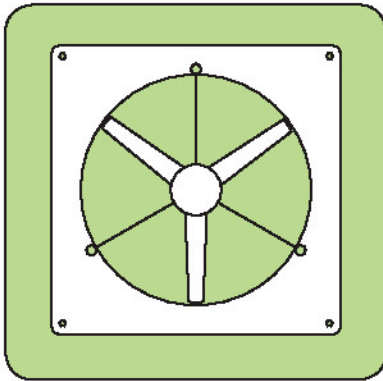
Shelter your SNAP-FAN from inclement weather and natural hazards such as, but not limited to; wind, water, rain, hail, dust, ice, snow and nesting birds. If you do not plan on using your SNAP-FAN during wet, frozen winter months please remove SNAP-FAN and store in a dry location until ready for use as long periods of moisture shortens the life span of the motor. SNAP-FAN must not be placed within 500 feet from saltwater environments as corrosion will prematurely wear out even the best of electronic equipment.

Manufacturer's Warranty

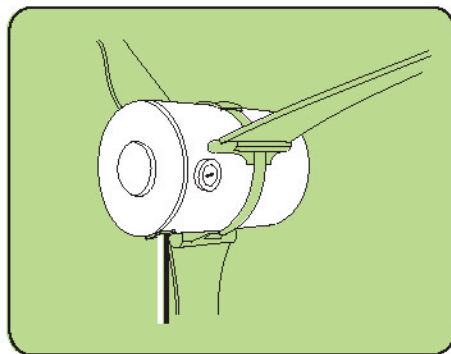
Snap-Fan warranties that all Snap-Fans are free from defect of workmanship and/or material for a period of two (2) years from the date of purchase.

CAUTION:

SNAP-FAN



SNAP-FAN MOTOR



Only qualified personnel should install or perform maintenance work on the SNAP-Fan and SNAP-Fan Motor.



Shield from wet weather conditions.



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



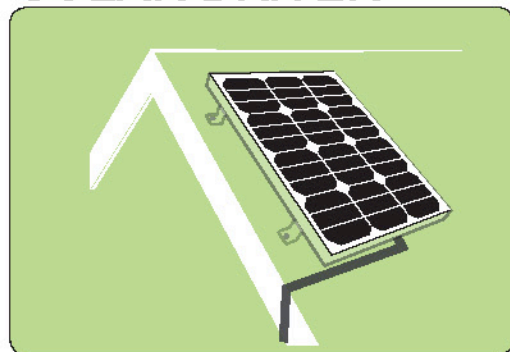
We recommend running motors on our solar driver at 18VDC as higher voltage/amperage on fan motors will decrease brush life.



Be aware of dangerously high DC voltages when connecting or disconnecting the SNAP-Fan from the Solar Driver.

*We recommend covering the Solar Driver with a blanket before connecting or disconnecting SNAP-Fan from the Solar Driver.

SOLAR DRIVER



Only qualified personnel should install or perform maintenance work on the solar driver.



Refer to installation and operation manuals before installing, servicing or operating the solar driver.



FRAGILE: Glass surface to be handled with care. Non-repairable if broken.



Do not damage or scratch the rear surface of the solar driver. Non-repairable if scratched.



Do not handle or install solar driver when wet.

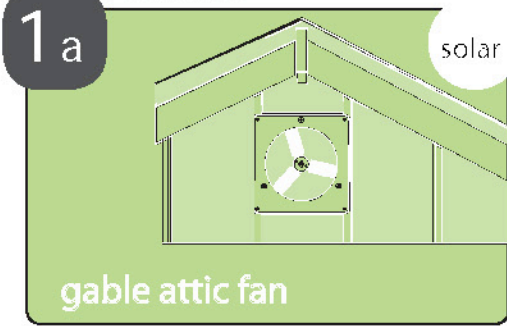


The solar driver produces electricity when exposed to light.

DO NOT DISCONNECT UNDER LOAD. Follow all applicable electricity safety precautions.

INSTALLING SNAP-FAN

Location



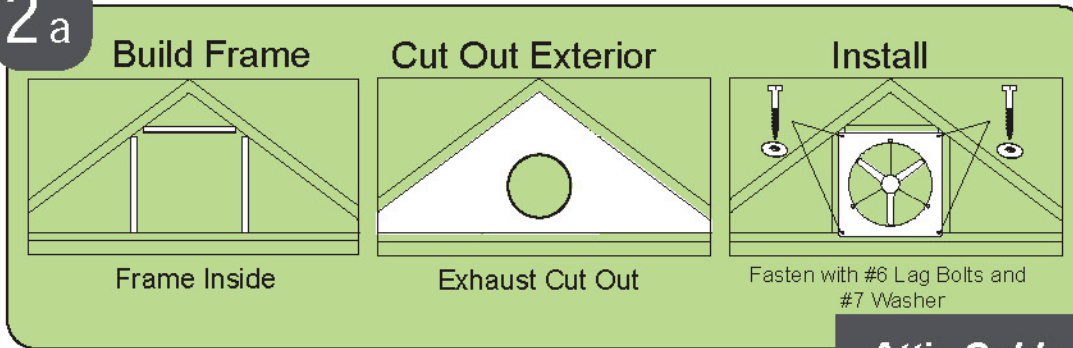
Exhausting hot air from the highest point possible is recommended.



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

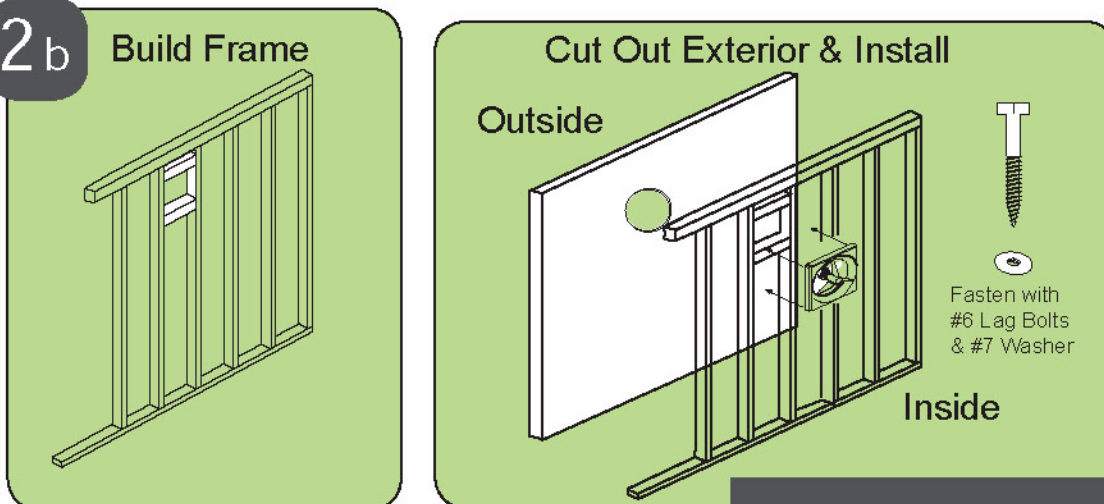
Choose a location to install your SNAP-fan. (Application not limited to examples above)

2 a



Attic Gable

2 b



Greenhouse Wall

If framing does not already exist in the original structure, it will need to be constructed. It is recommend that all structures be modified or constructed to code.

MATERIALS NEEDED FOR ASSEMBLY:

Materials Included:

1. Z-Brackets to Mount Solar Driver: 4
2. Bolts for Z-Brackets: 4
3. Nuts for Z-Brackets: 4
- 4 & 7. Washers: 12
5. Wood Screws to Mount Solar Driver: 4
6. Lag Bolts to Mount Fan: 4
8. Breaker Box
9. Wires with MC 4 Couplers: 3

Tools Required:

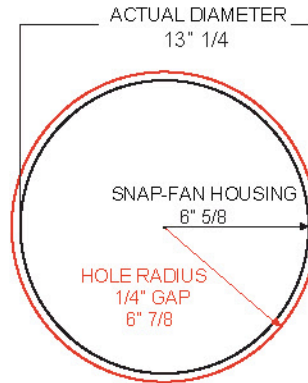
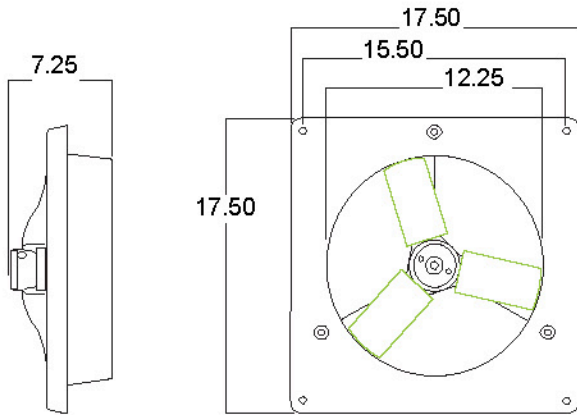
1. Screwdriver - Phillips #2
2. Screwdriver - Flat head
3. Open End Wrench - 7/16"

*SNAP-FAN WIRING KITS are available which will include wiring and installation hardware.

FAN MOUNTING HOLE DIAMETER

Use this guide to determine the size of the cut out hole necessary to mount your snap-fan.

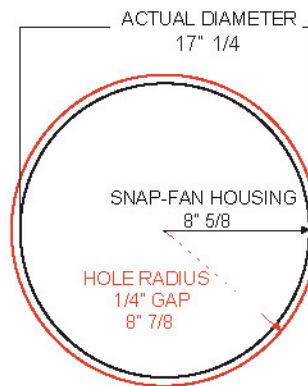
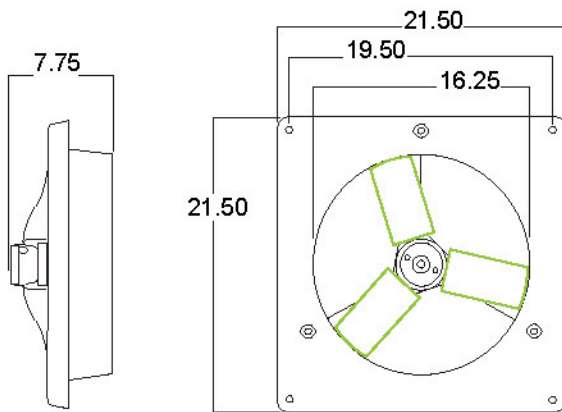
12" SNAP-FAN



- Radius represents a hole 1/4" larger than the circumference of your SNAP-Fan's venturi housing.

Make hole radius 6" 7/8

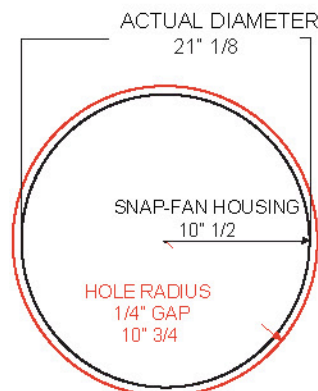
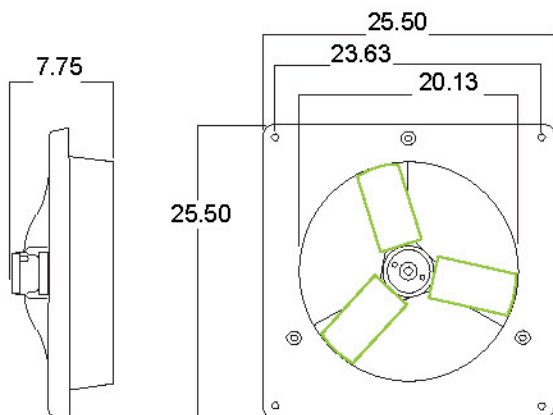
16" SNAP-FAN



- Radius represents a hole 1/4" larger than the circumference of your SNAP-Fan's venturi housing.

Make hole radius 8" 7/8

20" SNAP-FAN



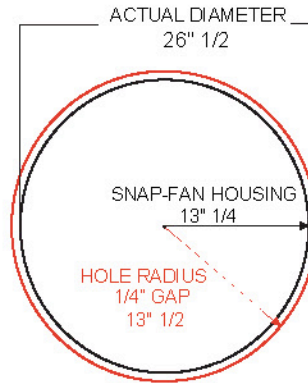
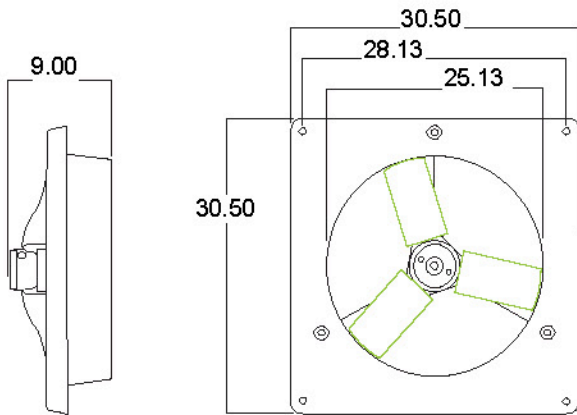
- Radius represents a hole 1/4" larger than the circumference of your SNAP-Fan's venturi housing.

Make hole radius 10" 3/4

FAN MOUNTING HOLE DIAMETER

Use this guide to determine the size of the cut out hole necessary to mount your snap-fan.

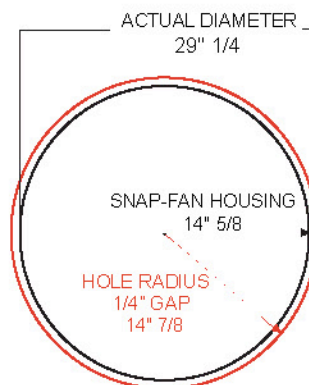
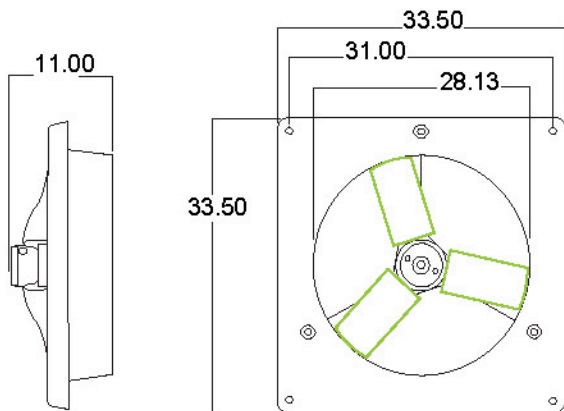
24" SNAP-FAN



— - Radius represents a hole 1/4" larger than the circumference of your SNAP-Fan's venturi housing.

Make hole radius
13" 1/2

28" SNAP-FAN



— - Radius represents a hole 1/4" larger than the circumference of your SNAP-Fan's venturi housing.

Make hole radius
14" 7/8

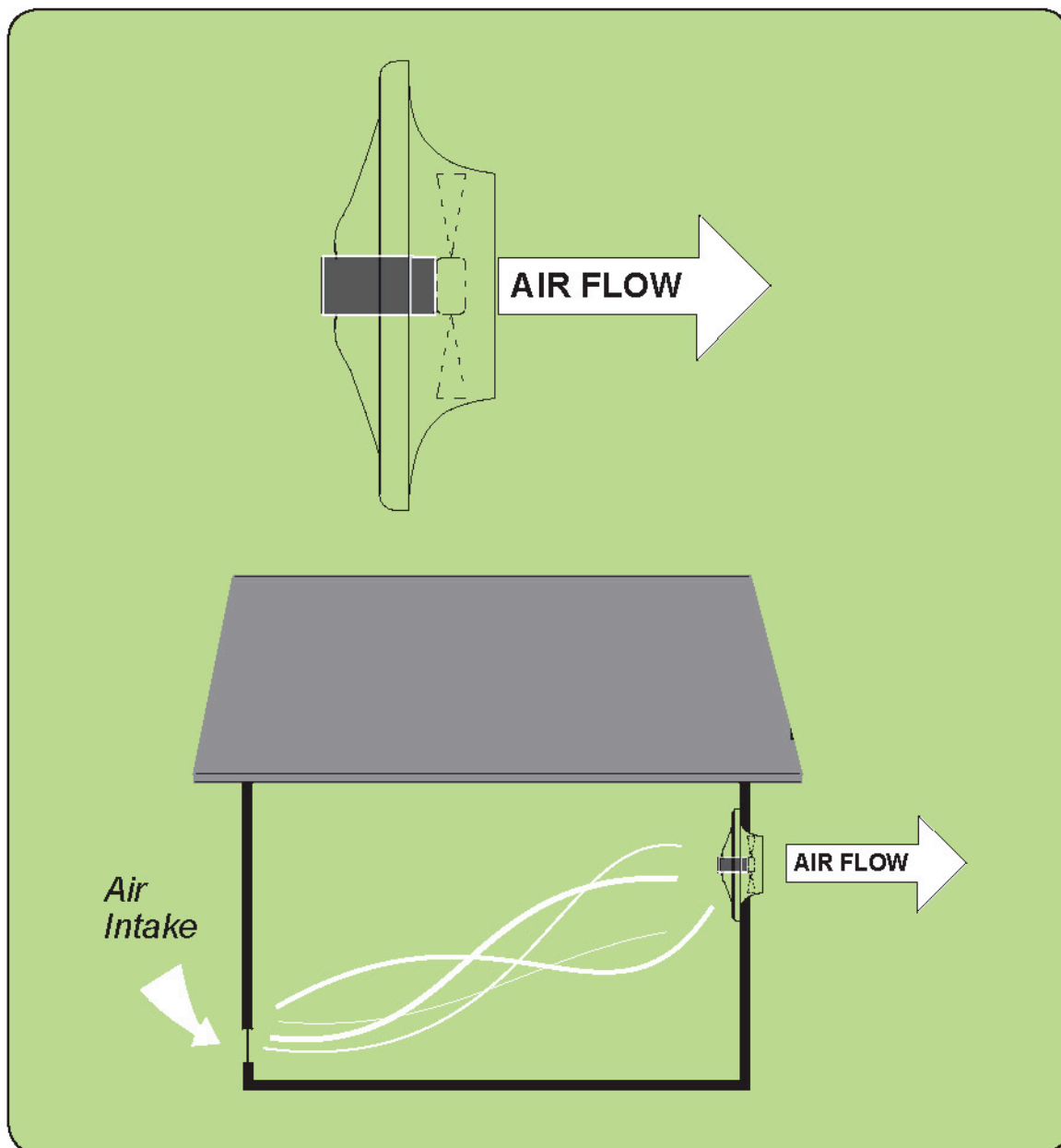
Once the frame for the fan is in place, cut a hole in the exterior surface so that air may be exhausted from the structure. See pages 12-13 for hole cut out dimensions. You are now ready to install the fan. Four lag bolts are included in your SNAP-Fan kit to fasten the fan to the frame. (Item #6 on page 5).

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



Only qualified personnel should construct any new frame work necessary to house the Snap-Fan.

Resulting Air Flow



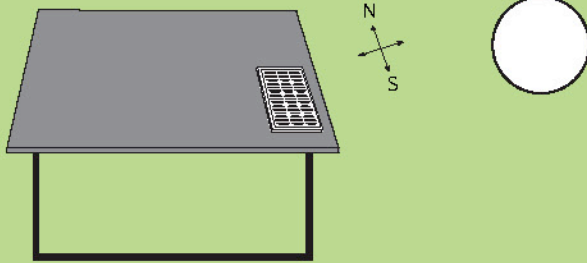
You are now ready to install the solar driver.

INSTALLING SOLAR DRIVER:

Components only included in a SNAP-FAN WIRING KIT (see page 16)

Location

1

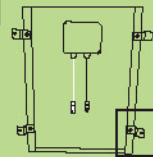


SOUTHERN EXPOSURE, IN DIRECT SUNLIGHT, IS IDEAL

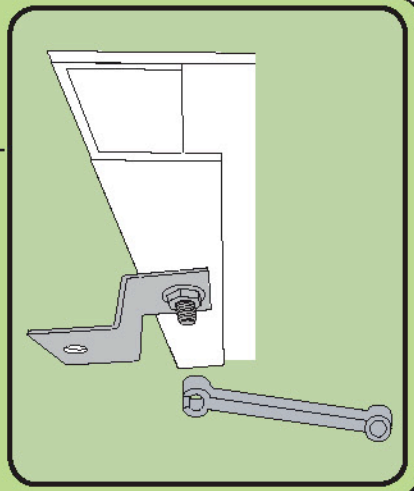
Begin by choosing a location for which to install your solar driver.

Connect Z-Brackets to Solar Driver Racking

2

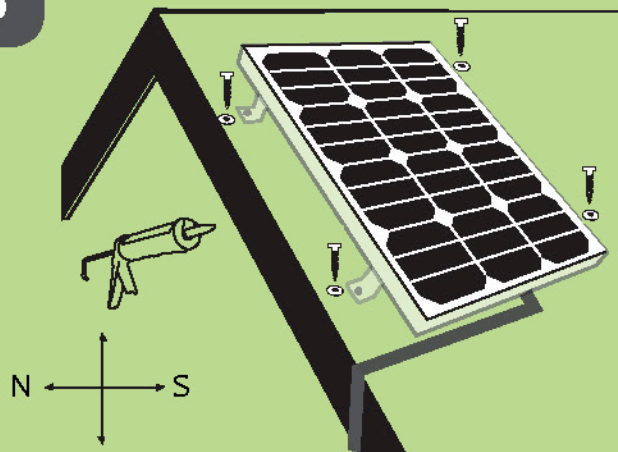


In your SNAP-Fan kit, you will find:
4 Z-bracket
4 bolts
4 washers
4 nuts
You will need:
7/16" wrench



Fasten all four z-brackets to solar driver rack with nuts and bolts.

3



Find rafters and predrill holes in roof for #5 screws. Caulk over holes. Set Z brackets above calk, and fasten solar driver to roof with screws. Run the electrical cable across the roof to the SNAP-Fan.

4



Quick Connects

The Quick Connect is located at the end of the wire connected to the Junction Box on the solar driver and on the back of the SNAP-Fan.

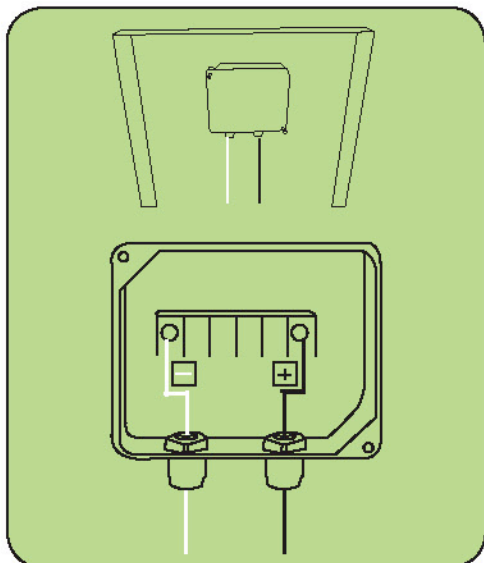
WIRING INSTRUCTIONS:

Consult the National Electric code and use a wire sizing chart to determine conductor size and over current protection requirements.

Wires available for purchase in custom order
SNAP-FAN WIRING KITS (see page 16)

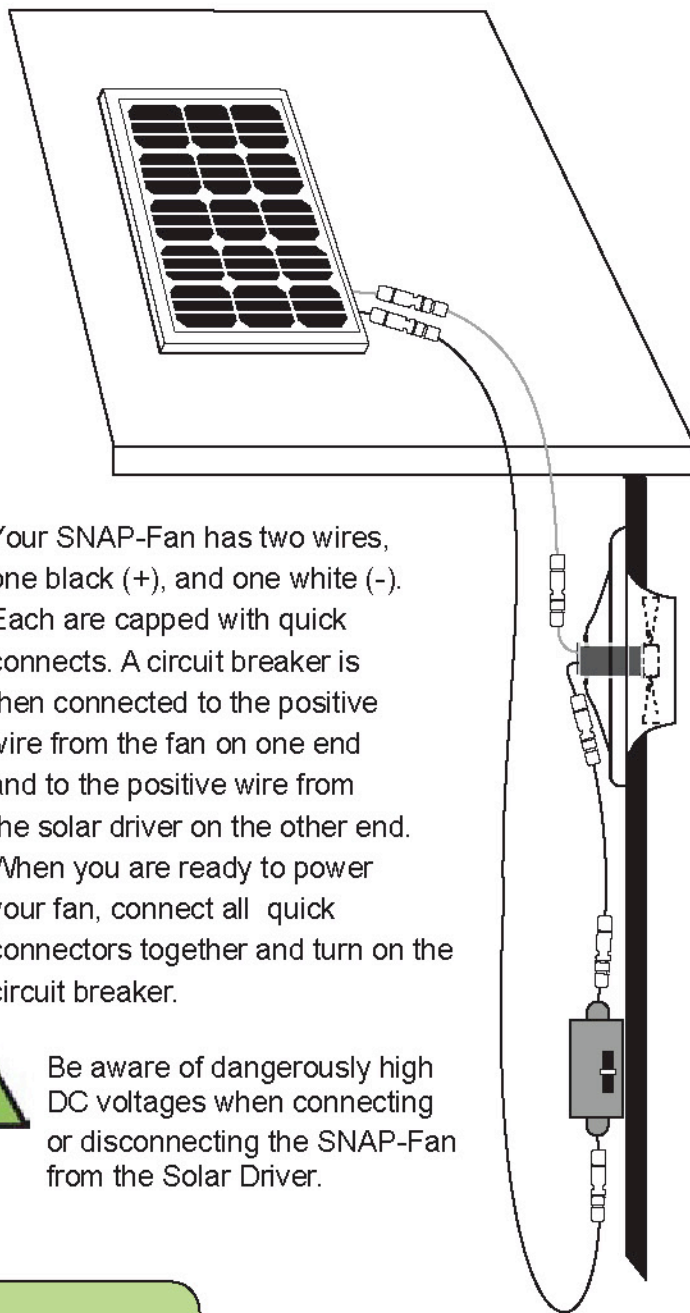


Junction Box



The Junction Box is located on the back of the solar driver. One black (+) and one white (-) cable will be attached to the junction box are capped with quick connects.

Wiring Diagram

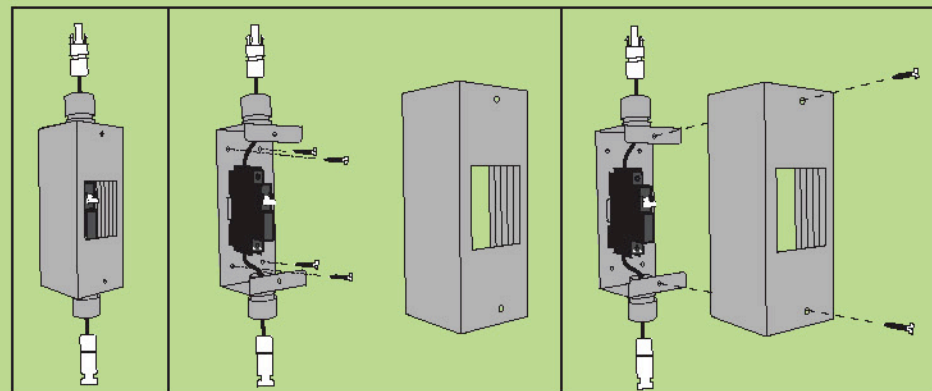


Your SNAP-Fan has two wires, one black (+), and one white (-). Each are capped with quick connects. A circuit breaker is then connected to the positive wire from the fan on one end and to the positive wire from the solar driver on the other end. When you are ready to power your fan, connect all quick connectors together and turn on the circuit breaker.



Be aware of dangerously high DC voltages when connecting or disconnecting the SNAP-Fan from the Solar Driver.

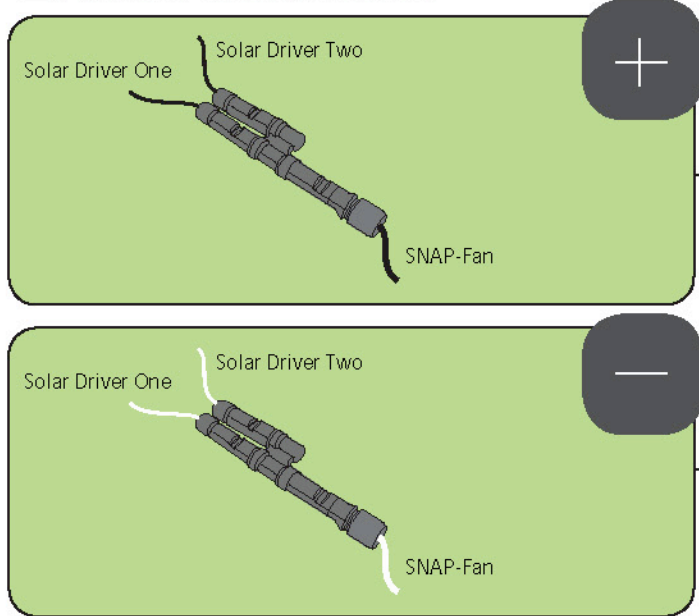
Installing Breaker Box



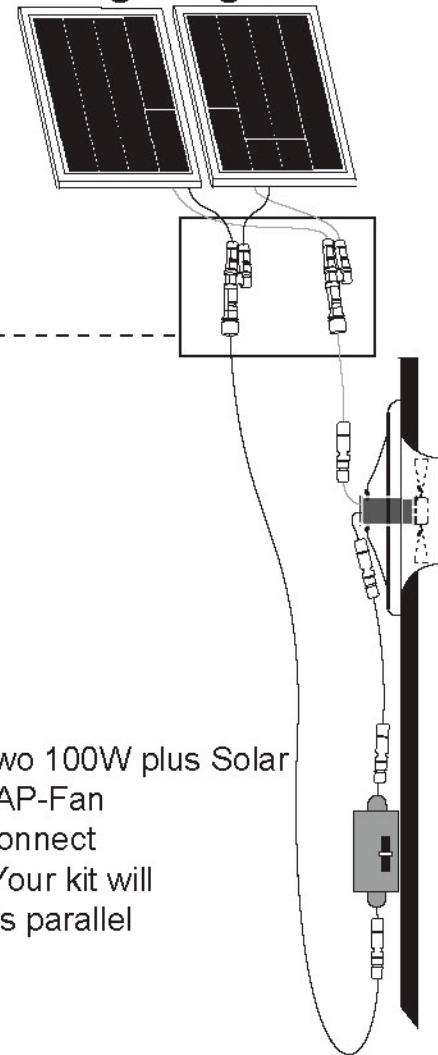
The breaker box included in the SNAP-Fan wiring kit accommodates up to four MNEPV or MNEAC Din rail breakers. Fasten breaker box to a stud at a height that it is easily accessible. Remove cover plate and use four fasteners (not included) to attach to secure mounting surface. Once attached, replace cover. If additional fan circuits are needed, this is possible by adding circuit breakers and branch connectors.

WIRING INSTRUCTIONS: 12 VOLT 28" SNAP-FAN

Branch Connector

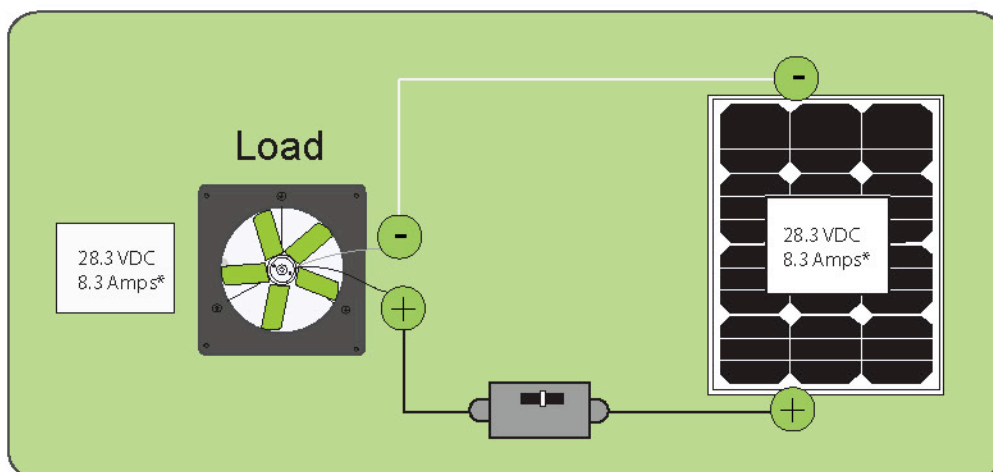


Wiring Diagram



The 12 VOLT 28" SNAP-Fan is designed to be powered by two 100W plus Solar Drivers. The most efficient way to provide power to your SNAP-Fan is to connect these two Solar Drivers in parallel. In order to connect these Drivers in parallel see page 15 for wiring instructions. Your kit will include two branch connector in order for you to complete this parallel connection.

WIRING INSTRUCTIONS: 24 VOLT 28" SNAP-FAN



24 VOLT 28" SNAP-FAN can be coupled directly to a 24 VOLT 200W plus power solar panel- REC recommended

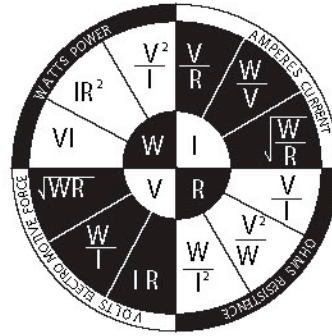
**Approximate values: solar panels out put voltage and amperages vary by manufacturer. Fans will run on a wide variety of input voltages.*

WIRING IN SERIES

Series:

Series wiring connections are made at the positive (+) end of the module to the negative (-) end of another module.

Wiring in series increases the voltage [+], but the amperage [=] stays the same.

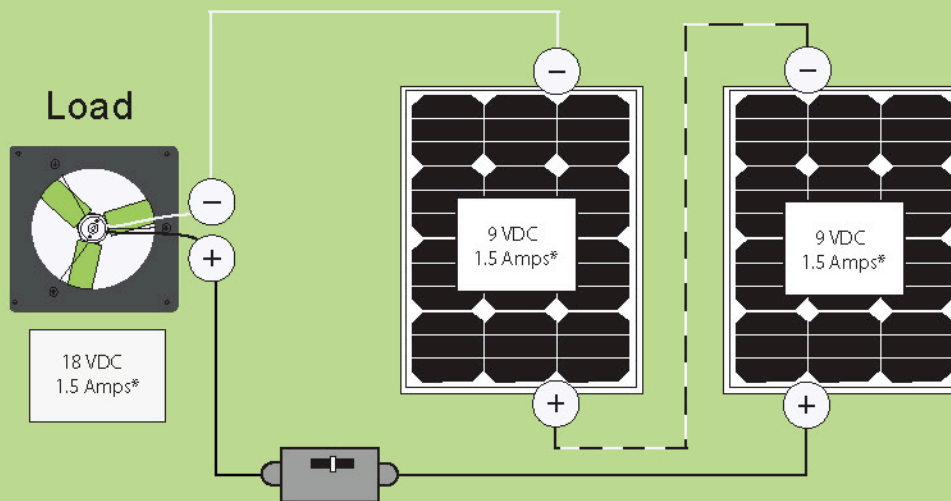


OHM'S LAW

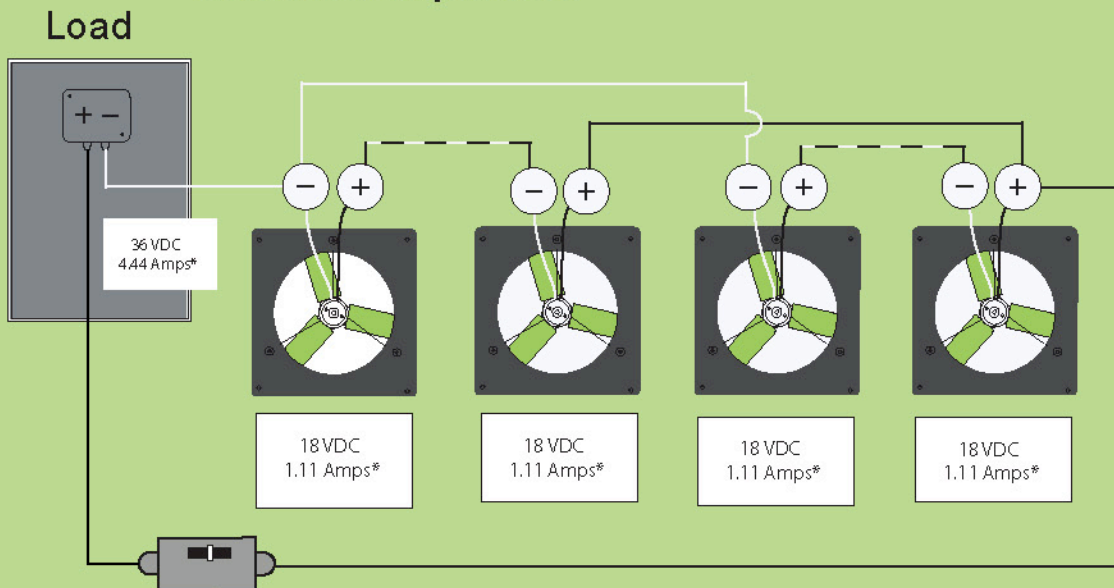
The law that for any circuit the electric current is directly proportional to the voltage and is inversely proportional to the resistance.

*Approximate values: solar panels out put voltage and amperages vary by manufacturer. Fans will run on a wide variety of input voltages.

Example for Wiring Solar Drivers in a Series:



Example for Wiring four 12" SNAP-Fans in two Series, connected in parallel:

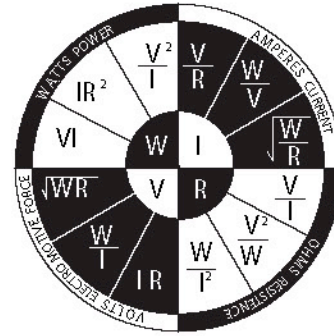


WIRING IN PARALLEL

Parallel Circuit:

Parallel wiring connections are made from the positive (+) to positive (+) terminals and negative (-) to negative (-) terminals between modules.

Wiring in parallel increases the amperage [+], but the voltage [=] stays the same.

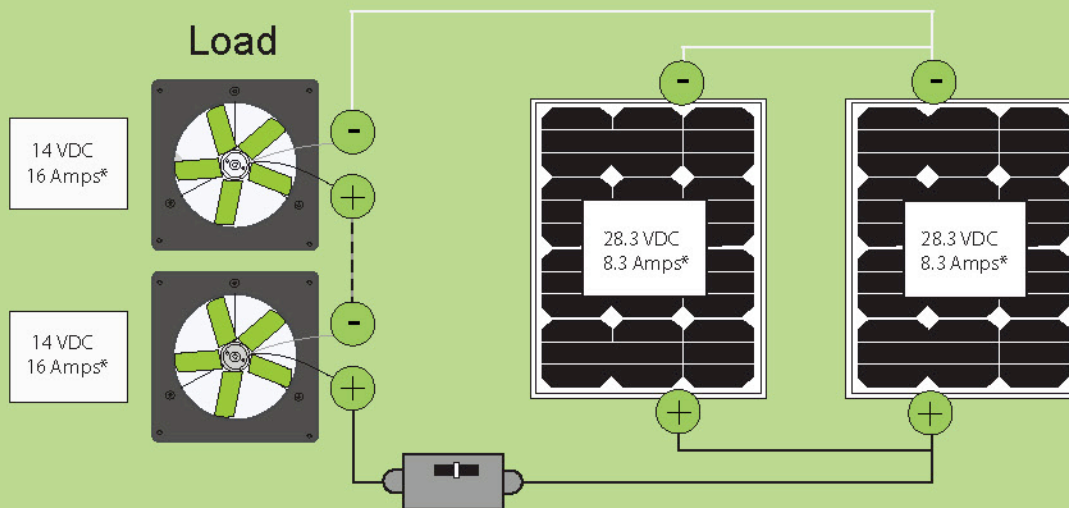


OHM'S LAW

The law that for any circuit the electric current is directly proportional to the voltage and is inversely proportional to the resistance.

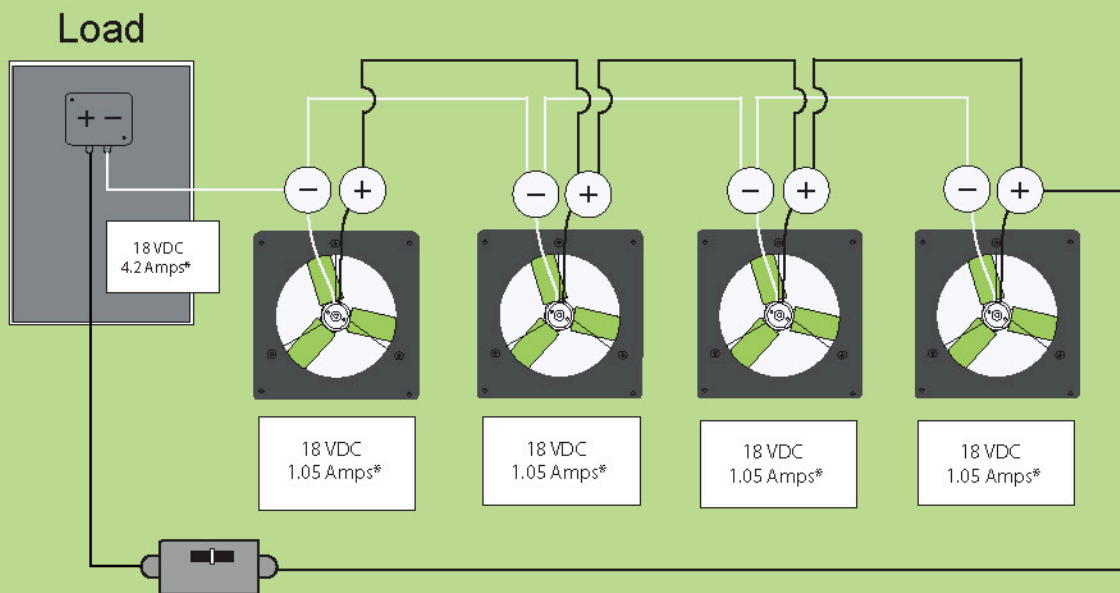
*Approximate values: solar panels output voltage and amperages vary by manufacturer. Fans will run on a wide variety of input voltages.

Example for Wiring Solar Drivers in Parallel:



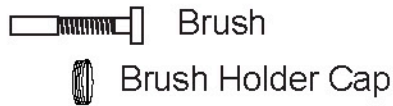
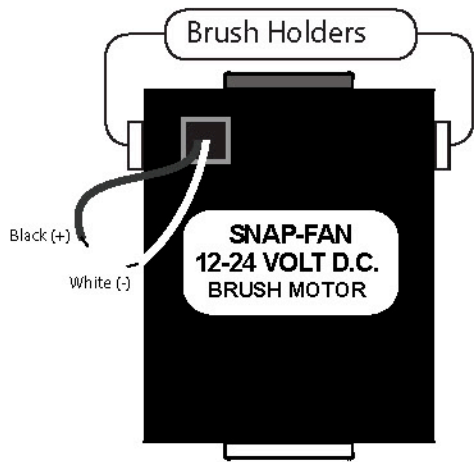
*Recommended set up for two 12 volt 28" SNAP-Fans and two REC 200W plus Solar Drivers

Example for Wiring four 12" SNAP-Fans in Parallel:



MOTOR MAINTENANCE:

SNAP-FAN DC Motor: Replacing Brushes on 12" 16" & 20"

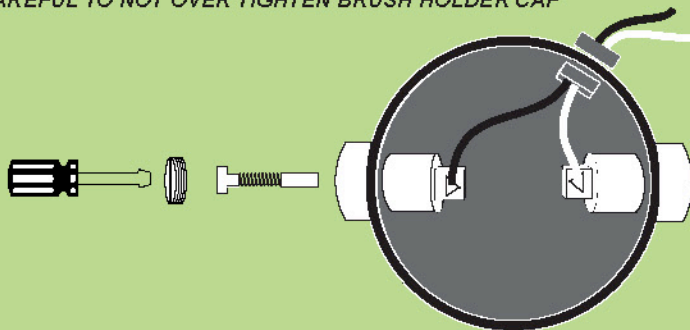


Brushes need to be replaced intermitently.

24" & 28" fans are 4 brush motors and have internal brushes that can be changed by qualified electricians.

SNAP-FAN DC Motor: Brush Install Diagram

BE CAREFUL TO NOT OVER TIGHTEN BRUSH HOLDER CAP



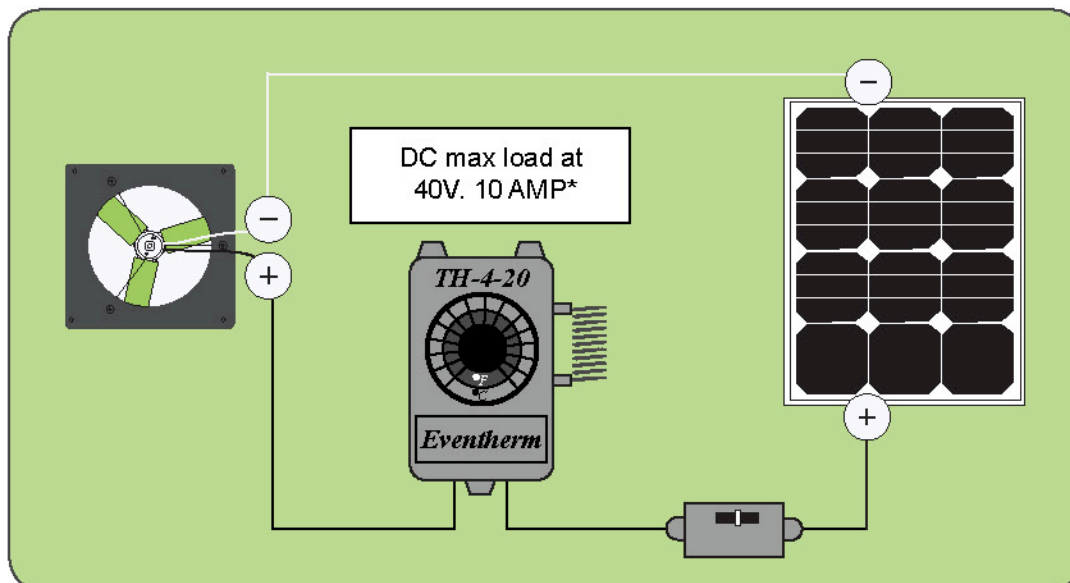
It is not necessary to disassemble motor in order to replace brushes

To replace brushes:

1. Remove cap of brush holder with a flat head screw driver
2. Insert new brushes.
3. Fasten cap back onto brush holder.

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

THERMOSTAT OPTION - AND WIRING INSTRUCTIONS

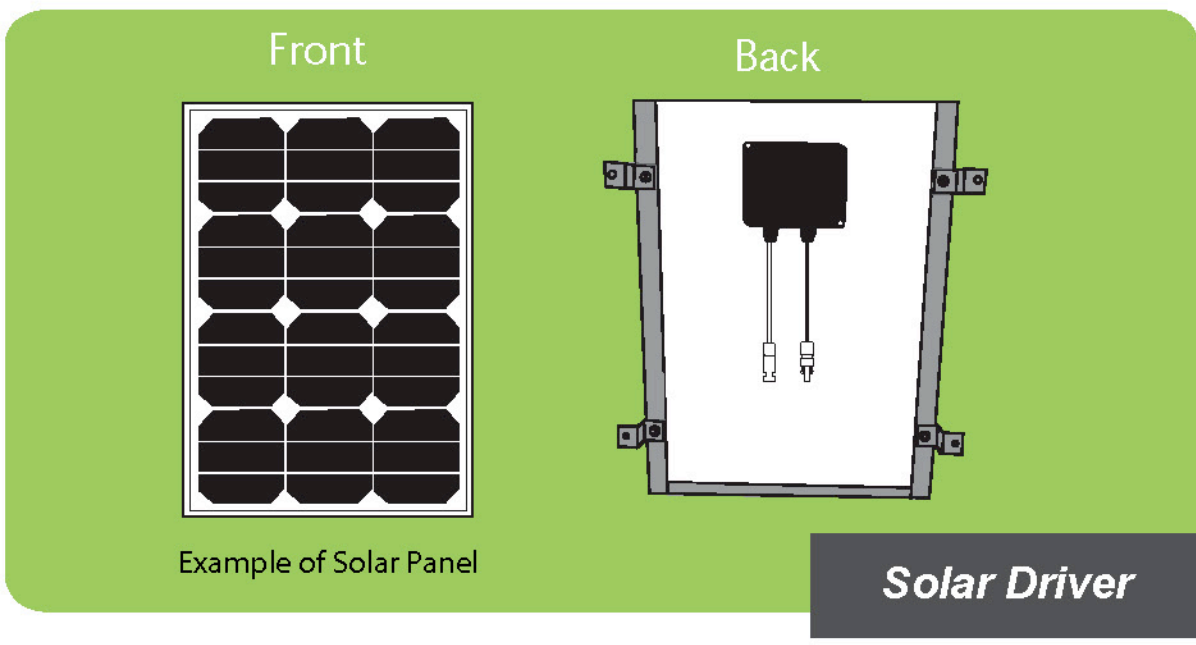
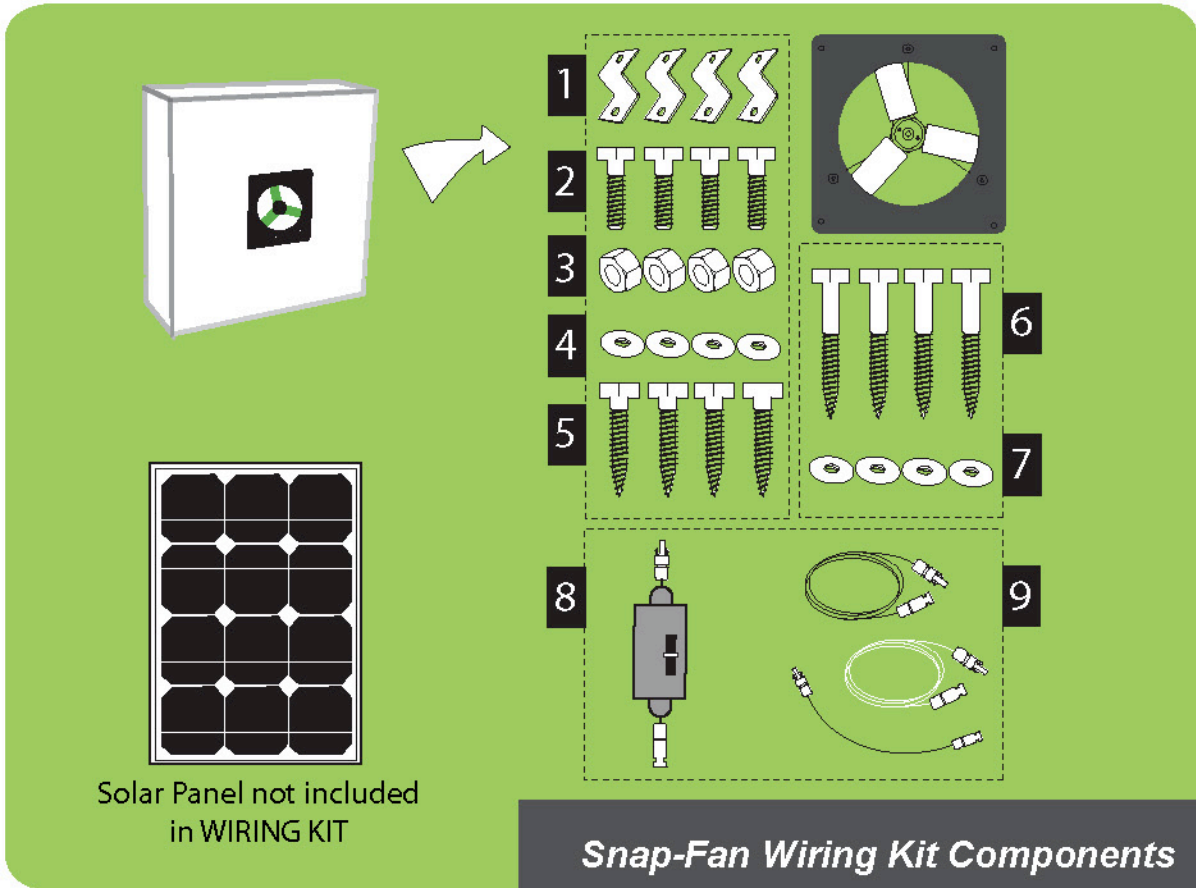


Eventherm Mechanical Thermostat Model TH-4-20 or similar with contactors rated for DC Voltage

*if you need more than 10 AMPS use the Thermostat to drive a Higher Amperage DC relay

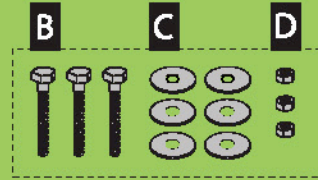
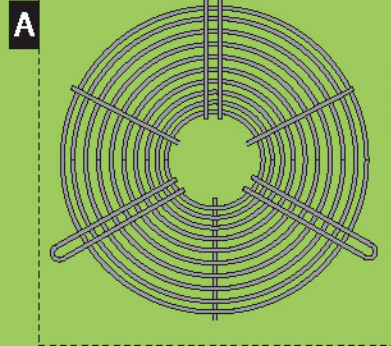
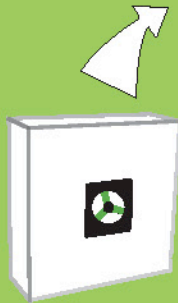
SNAP-FAN WIRING KIT

Only qualified personnel should install or perform maintenance work on the exhaust fan, solar driver and guards. We recommend that these appliances be installed in accordance with local building and electrical code requirements.



SNAP-FAN INTAKE GUARD INSTALLATION

SNAP-FAN Intake Guard Kit Components

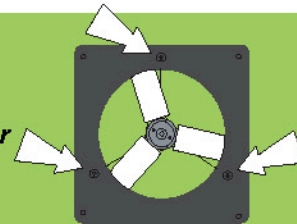


- A** Intake Guard
- B** Bolts x3 12", 16", 20" FANS M6-1.0x55mm
24" & 28" FANS M6-1.0x70mm
- C** Washers x6 1/4 x FEND
- D** Lock Nuts x3 M6-1.0 NYLOCK

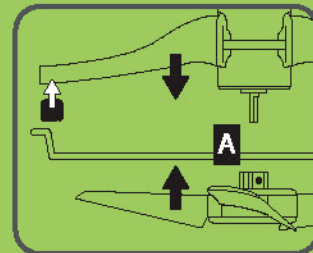
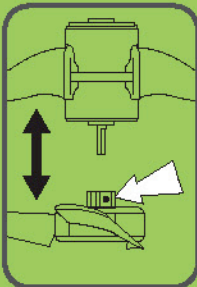
TOOLS:
10mm wrench/driver (x2)
3mm allen wrench

Intake Guard Installation

- 1** Separate FAN and arms from FRAME by removing nuts and bolts (x3). These will not be reused. Keep track of black rubber shims and their placement (12", 16", 20" fans). Pull FAN out of FRAME.

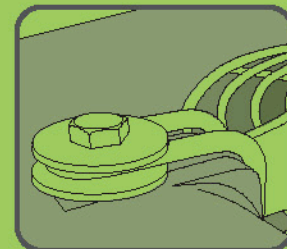


- 2** Remove BLADE from MOTOR shaft after loosening 3mm allen set screw. Place large hole of INTAKE GUARD **A** around MOTOR shaft with the tab-loops (x3) on motor side. Reinstall BLADE on MOTOR shaft (so that the INTAKE GUARD is in between the blade and motor), 3mm set screw must align with flat on MOTOR shaft. Push BLADE onto motor shaft until end of motor shaft is flush with the front surface of blade hub. Tighten 3mm allen set screw to recommended 60 inch/lb.



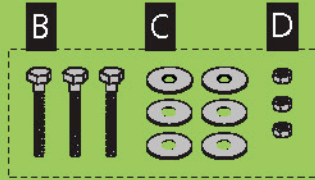
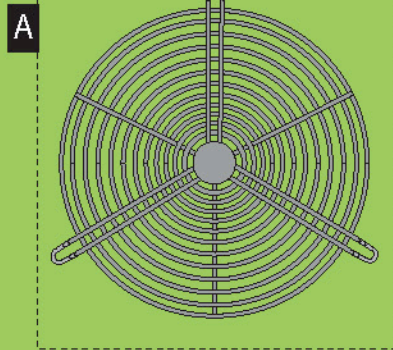
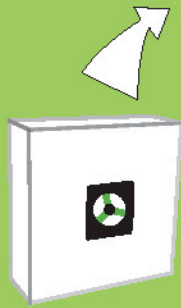
- 3** Set FAN with INTAKE GUARD in FRAME (12", 16", and 20" FANS use rubber bushings between aluminum FAN arms and FRAME, make sure these are in place.) INTAKE GUARD tap-loops should envelope aluminum FAN arms, and will sit on top of FRAME bolt holes.

- 4** Place one washer **C** on bolt **B**, place another washer between INTAKE GUARD and FRAME. Insert bolt through INTAKE GUARD then FRAME, washers should sandwich the INTAKE GUARD. Thread lock nut **D** on to bolt on the underside of FRAME. Finger tighten lock nut onto bolt, align nut into captive recess in frame and push lock nut into recess. Holding the lock nut in the recess tighten the 10mm bolt to recommended 60 inch/lb. Repeat for remaining two bolts.



SNAP-FAN EXHAUST GUARD INSTALLATION

SNAP-FAN Exhaust Guard Kit Components



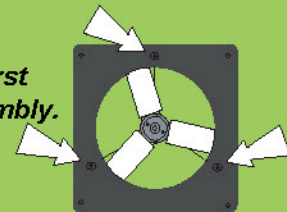
- A** Exhaust Guard
- B** Bolts x3 12", 16", 20" FANS M6-1.0x55mm
24" & 28" FANS M6-1.0x70mm
- C** Washers x6 1/4 x 1 FEND
- D** Lock Nuts x3 M6-1.0 NYLOCK

TOOLS:
10mm wrench/driver (x2)

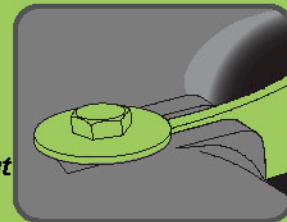
Exhaust Guard Installation

1 If installing exhaust guard on a fan already fitted with an intake guard or on a fan that will include an intake guard: first install intake guard (see intake guard installation guide). Skip to step 4.

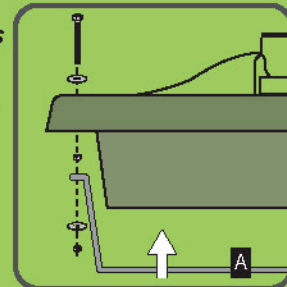
2 If installing an exhaust guard on a fan without an intake guard: first remove nuts and washers (x3) and push bolts (x3) out of fan assembly. Keep track of nuts (x3) they will be reused. Leave FAN arms and MOTOR resting in the FRAME.



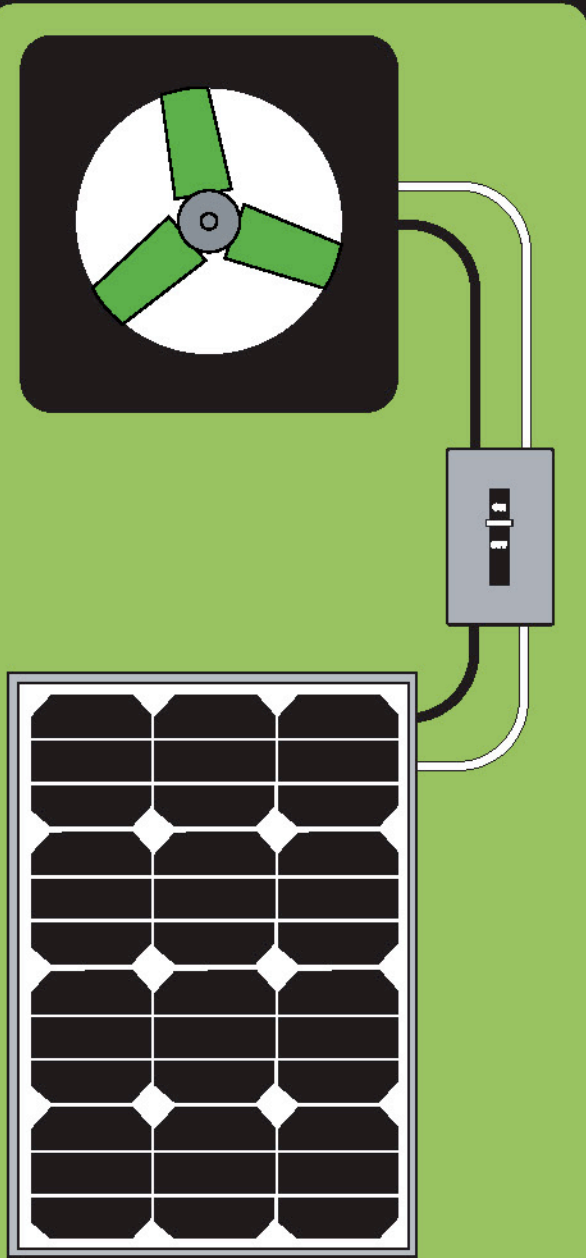
3 Place one washer **C** on to one bolt **B**, Insert bolt in the opposite direction of the original bolt so that washer secures FAN ARM in the FRAME. Thread one lock nut **D** on to bolt on the underside of FRAME. Finger tighten lock nut onto bolt, align nut into captive recess in frame and push lock nut into recess. Holding the lock nut in the recess tighten the 10mm bolt to recommended 60 inch/lb. Repeat for remaining two bolts.



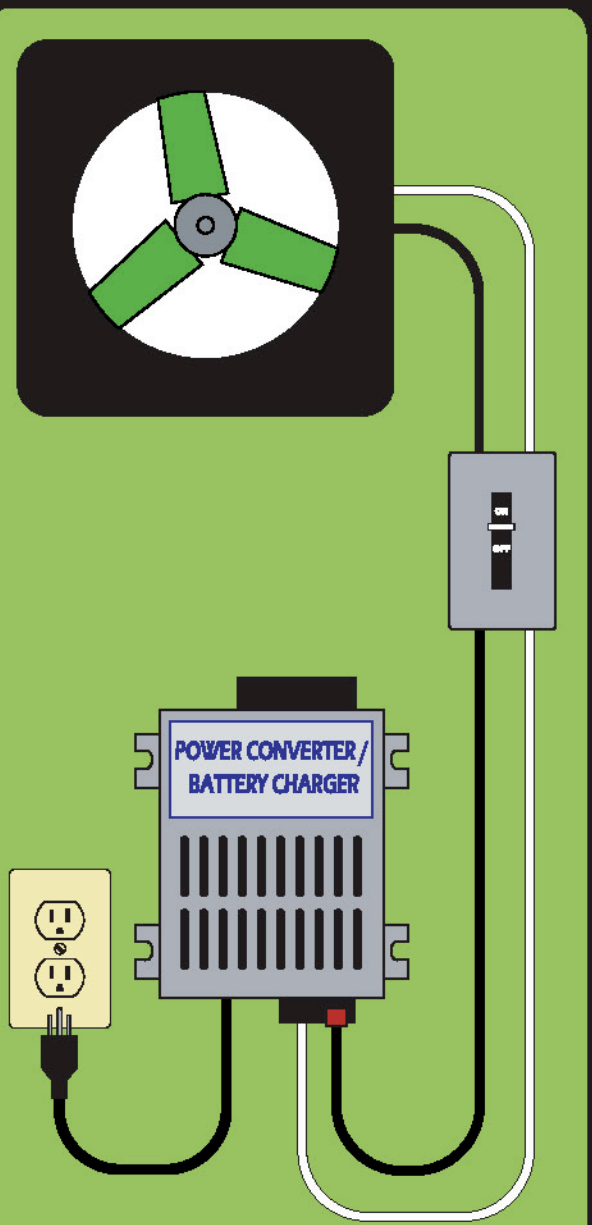
4 Place EXHAUST GUARD **A** onto bottom of FRAME so that eyelets anchor on the protruding bolt threads. Install one washer **C** and one nut **D** so that the washer retains the EXHAUST GUARD to the frame. Tighten nut to recommended 60 inch/lb. Repeat for the remaining two bolts.



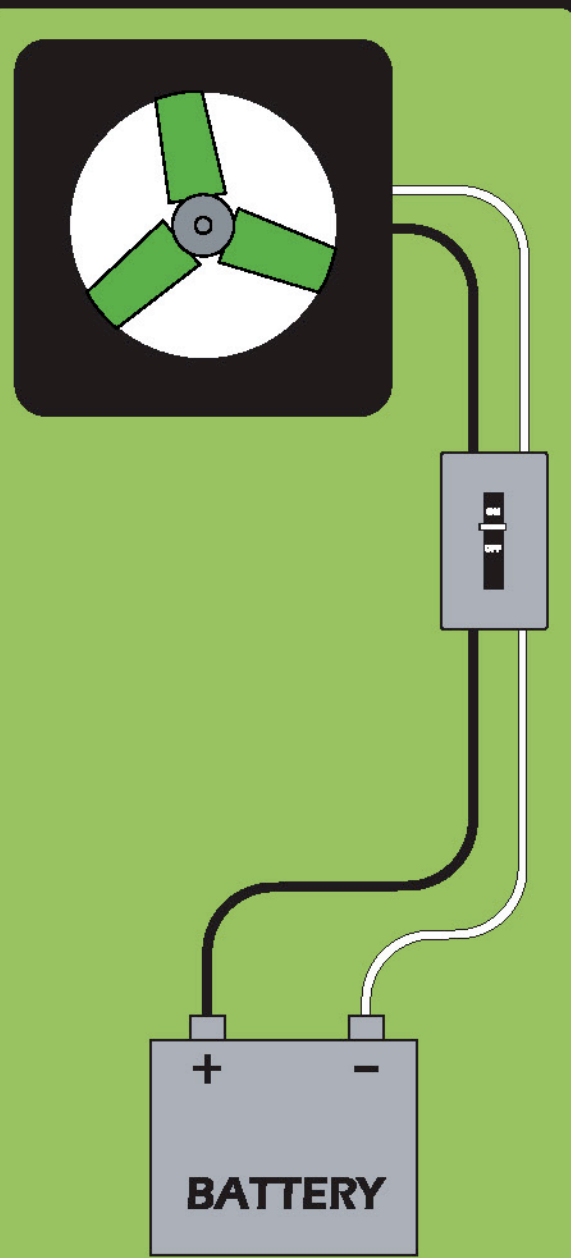
SOLAR DIRECT



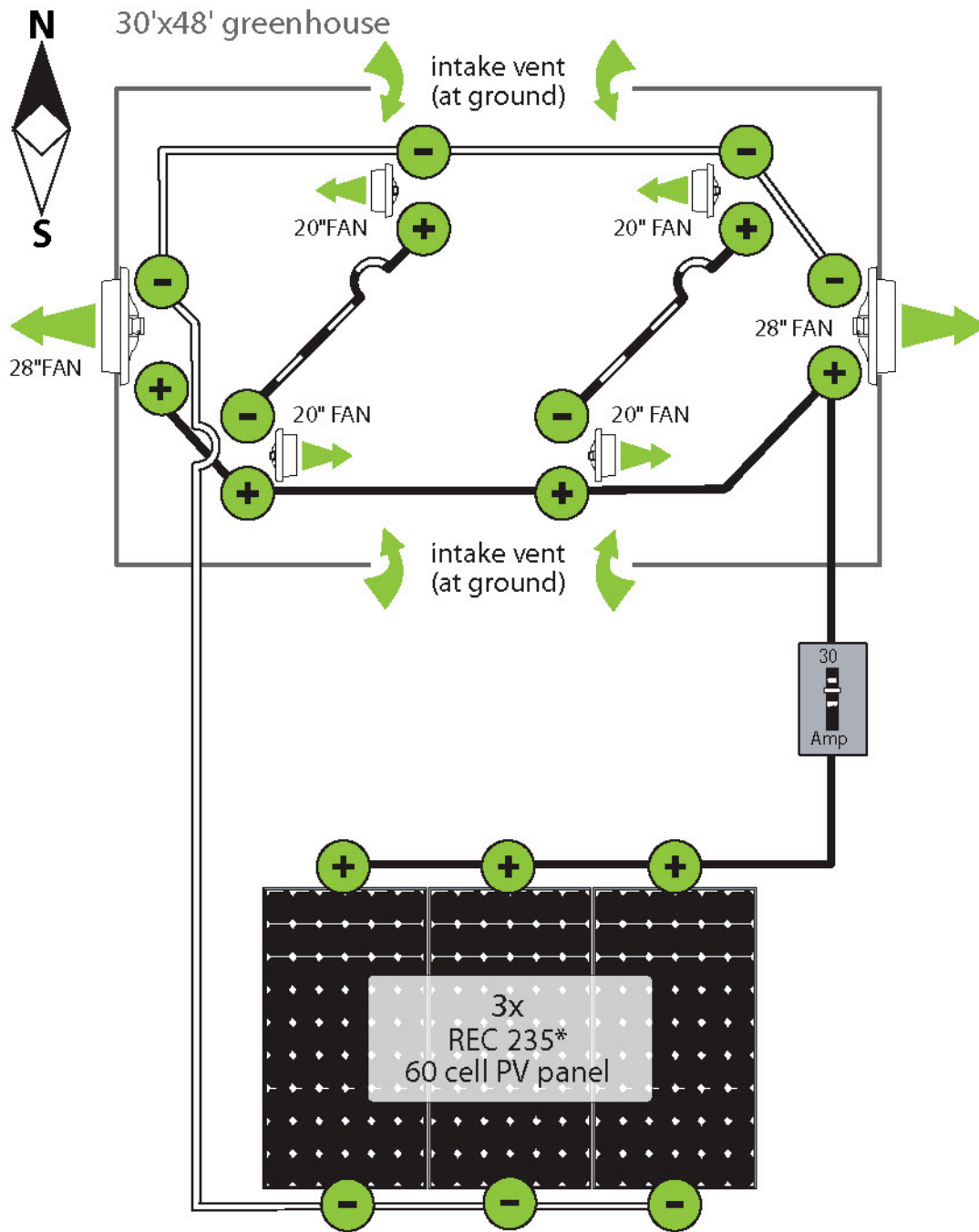
POWER CONVERTER



BATTERY



SOLAR POWERED GREENHOUSE: approximate values



AIR FLOW:

1 minute air exchange for 10,800 ft
 2 minute air exchange for 21,600 ft

2 x 28" fans = 10,800 CFM exhaust
 4 x 20" fans = 9,000 CFM circulation

FAN LOAD:

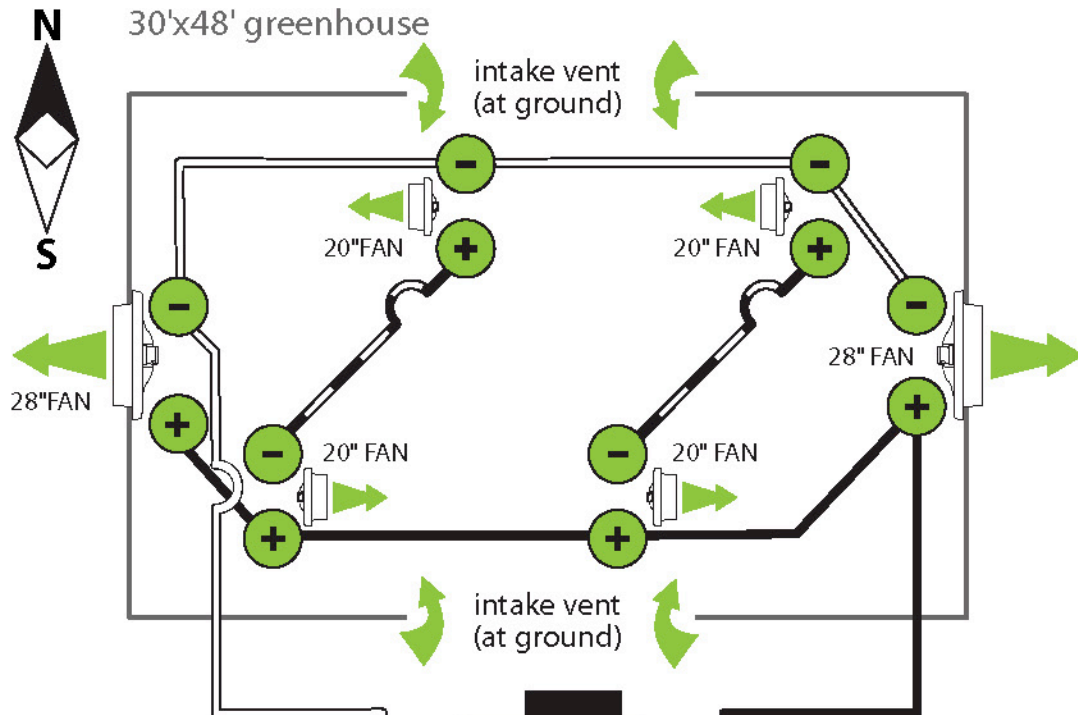
2 (28" fans) x 200 = 400W
 4 (20" fans) x 50 = 200W
600W total FAN LOAD

SOLAR:

3 x REC 235W PV panel = 705W
 wired in parallel

**OR SIMILAR: Approximate values, solar panel out-put voltage and amperages vary by manufacturer. Fans will run on a wide variety of input voltages.*

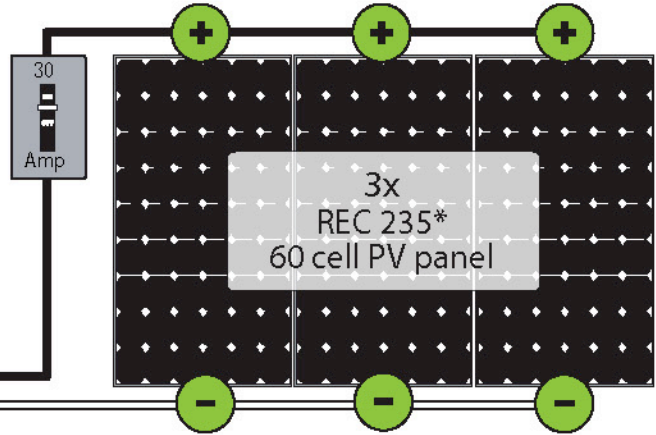
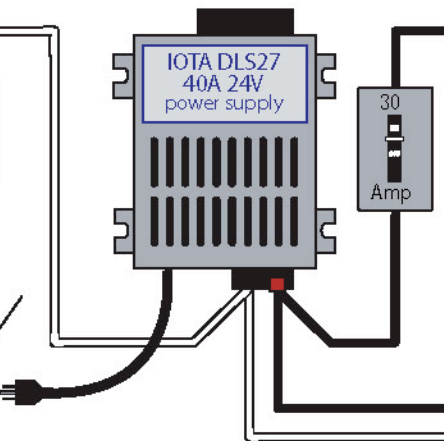
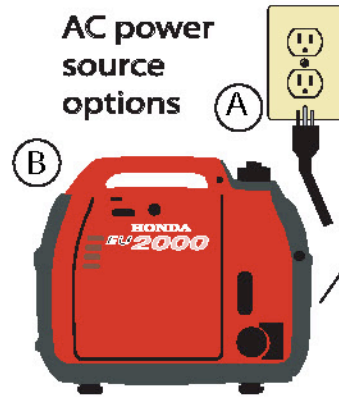
SOLAR POWERED GREENHOUSE WITH GENERATOR BACKUP: approximate values



AIR FLOW:
 1 minute air exchange for 10,800 ft
 2 minute air exchange for 21,600 ft

 2 x 28" fans = 10,800 CFM exhaust
 4 x 20" fans = 9,000 CFM circulation

FAN LOAD:
 2 (28" fans) x 200 = 400W
 4 (20" fans) x 50 = 200W
600W total FAN LOAD



POWER SUPPLY:
 IOTA DLS27-40A-24V
 power supply/battery charger = 960W

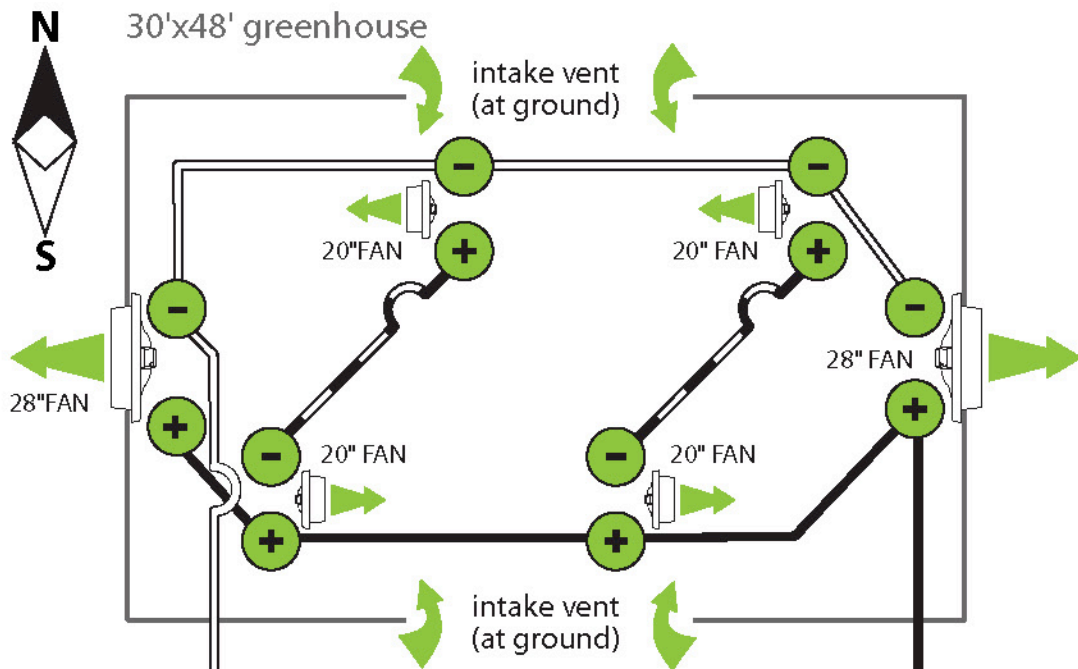
 600W total FAN LOAD = 2/3 draw on unit

SOLAR:
 3 x REC 235W PV panel = 705W
 wired in parallel

GENERATOR:
 2000W minimum

**OR SIMILAR: Approximate values, solar panel out-put voltage and amperages vary by manufacturer. Fans will run on a wide variety of input voltages.*

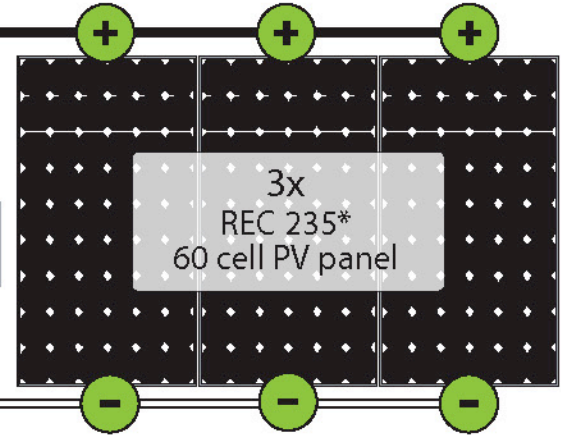
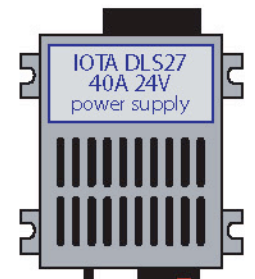
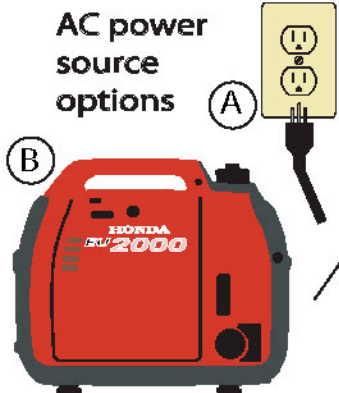
SOLAR POWERED GREENHOUSE WITH BATTERY AND GENERATOR BACKUP: approximate values



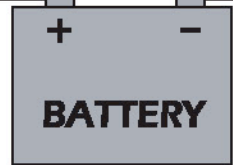
AIR FLOW:
 1 minute air exchange for 10,800 ft
 2 minute air exchange for 21,600 ft

2 x 28" fans = 10,800 CFM exhaust
 4 x 20" fans = 9,000 CFM circulation

FAN LOAD:
 2 (28" fans) x 200W = 400W
 4 (20" fans) x 50W = 200W
600W total FAN LOAD



**OR SIMILAR:
 solar panel
 out-put voltage
 and amperages
 vary by
 manufacturer.
 Fans will run
 on a wide
 variety of input
 voltages.*



POWER SUPPLY:
 IOTA DLS27-40A-24V
 power supply/battery charger = 960W

600W total FAN LOAD = 2/3 draw on unit

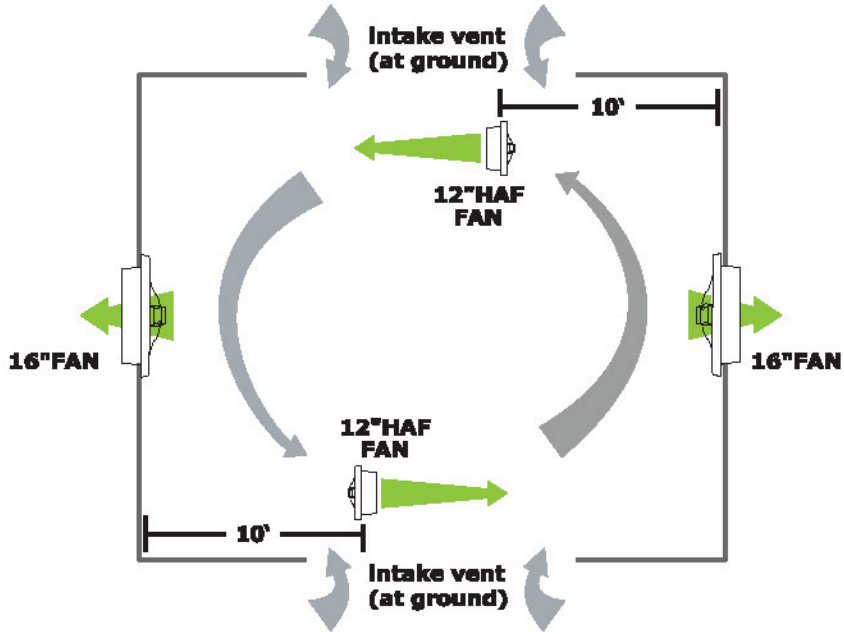
SOLAR:
 3 x REC 235W PV panel = 705W
 wired in parallel

GENERATOR: 2000W minimum
 Consult a solar electrician for battery and charger sizing

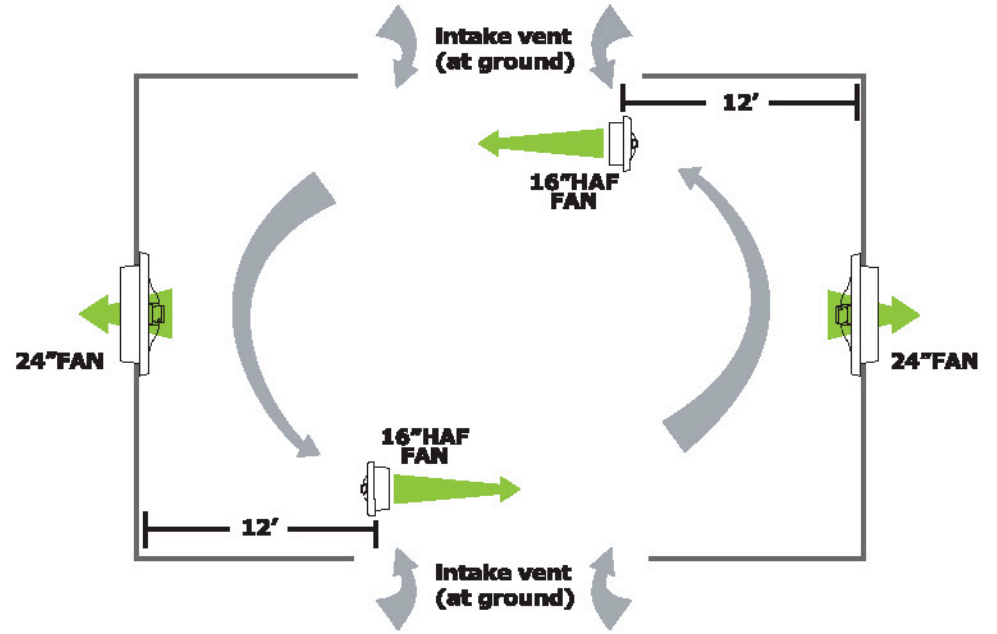
BATTERY:
 24V

GREENHOUSE LAYOUT EXAMPLES

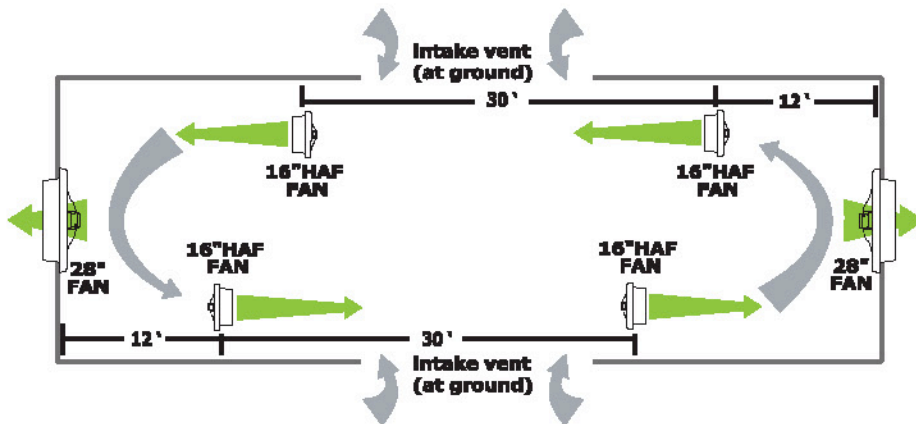
24'x20' Greenhouse



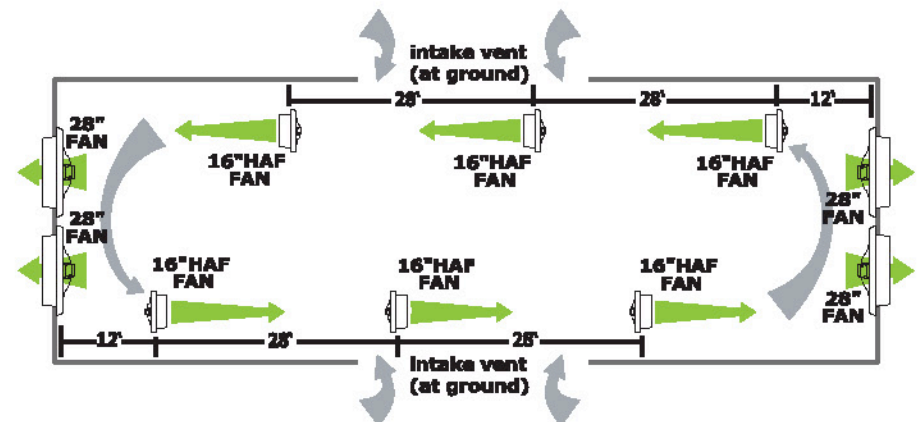
36'x24' Greenhouse



60'x20' Greenhouse

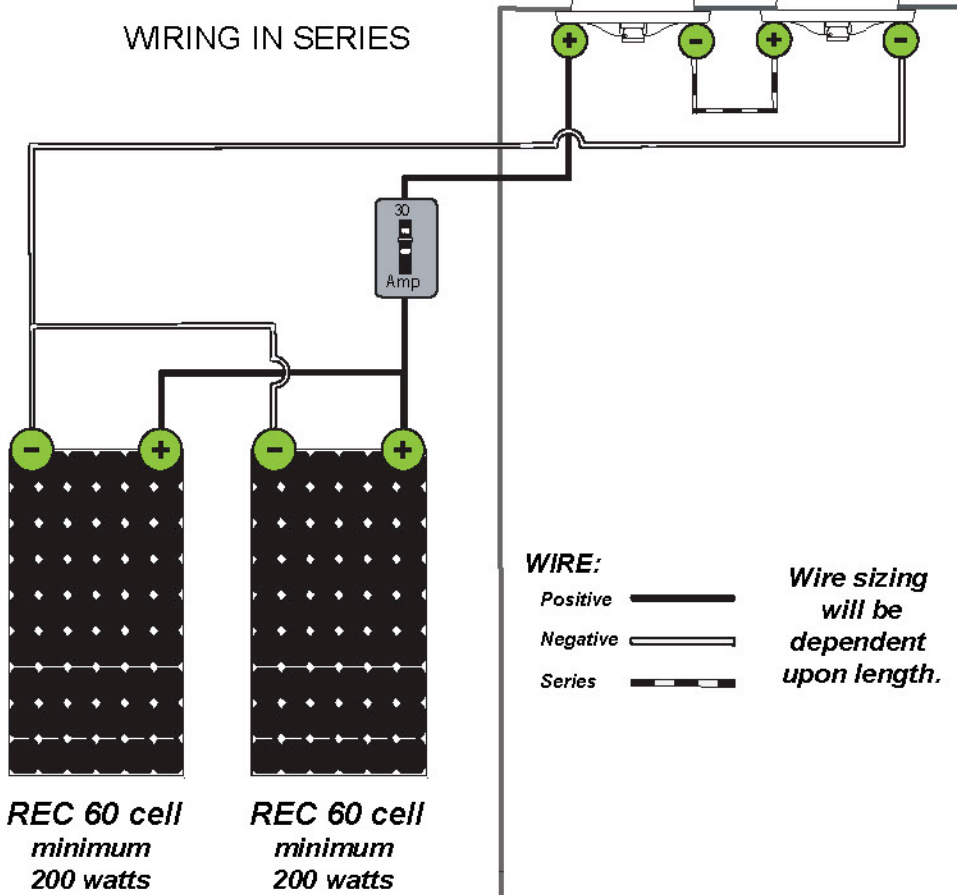


96'x30' Greenhouse



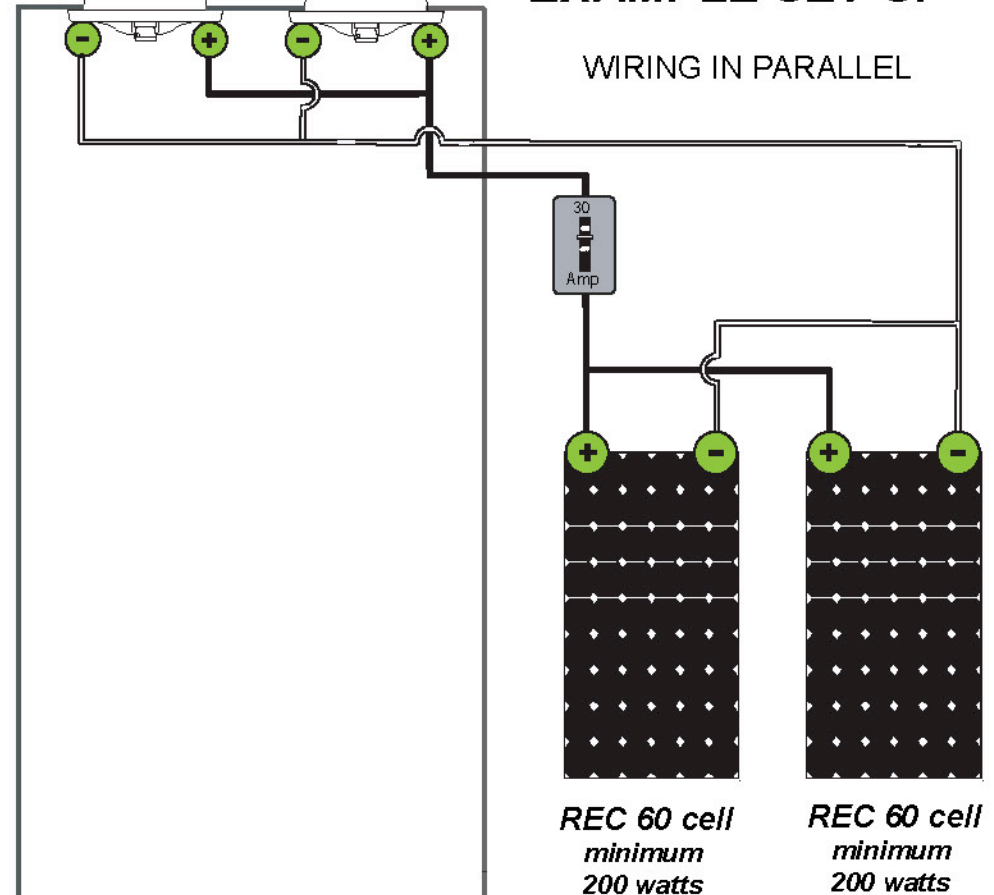
TWO 12 VOLT 28" FAN EXAMPLE SET UP

WIRING IN SERIES



TWO 24 VOLT 28" FAN EXAMPLE SET UP

WIRING IN PARALLEL

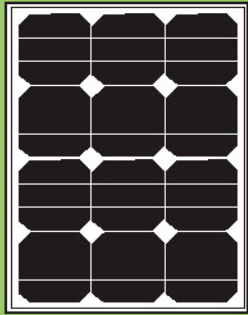
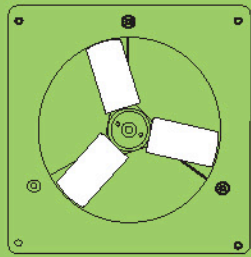
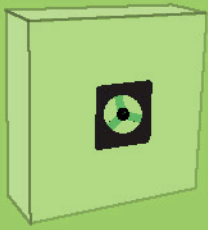


Solar Panels must be oriented due SOUTH in full sun.

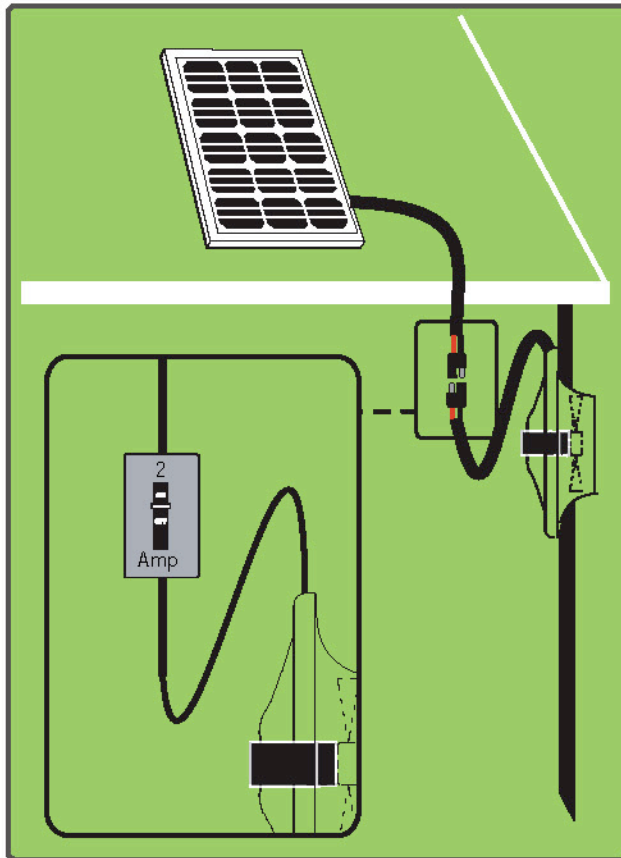
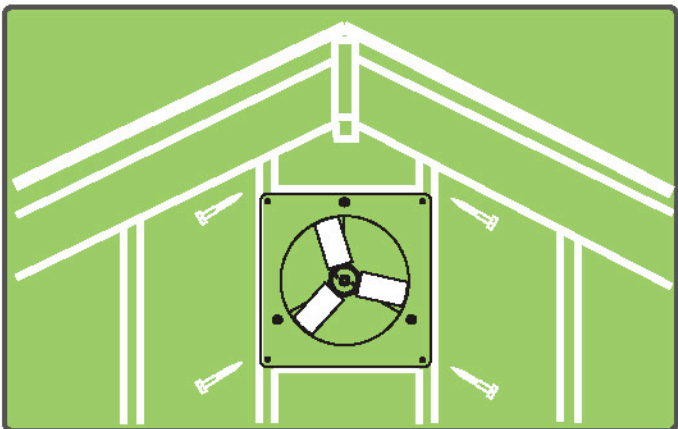
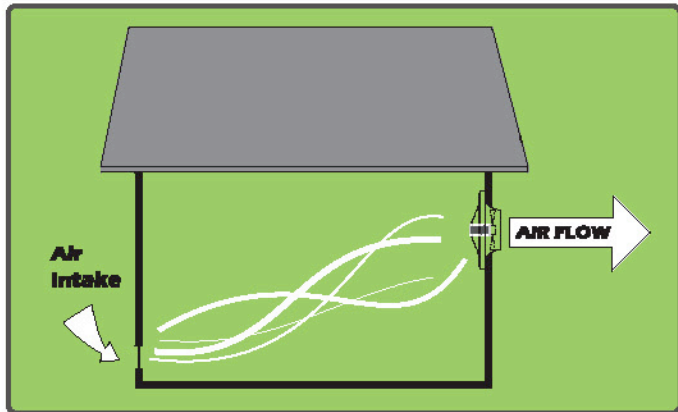
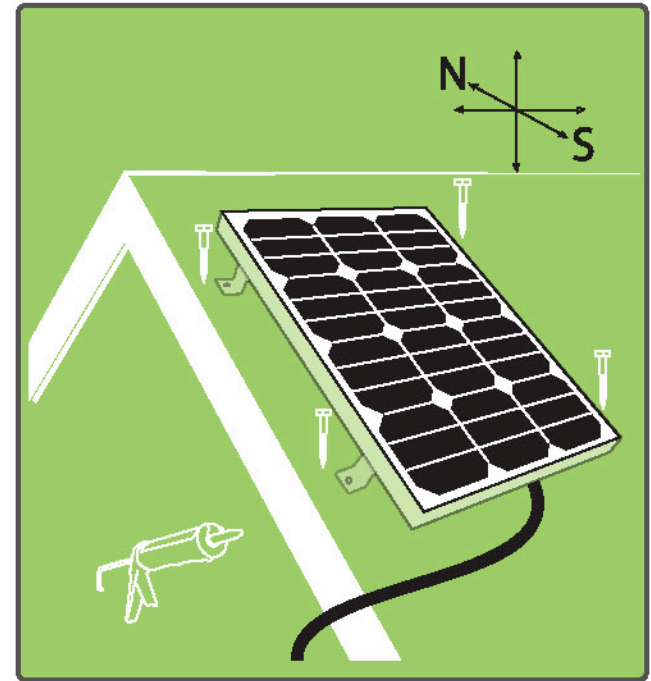
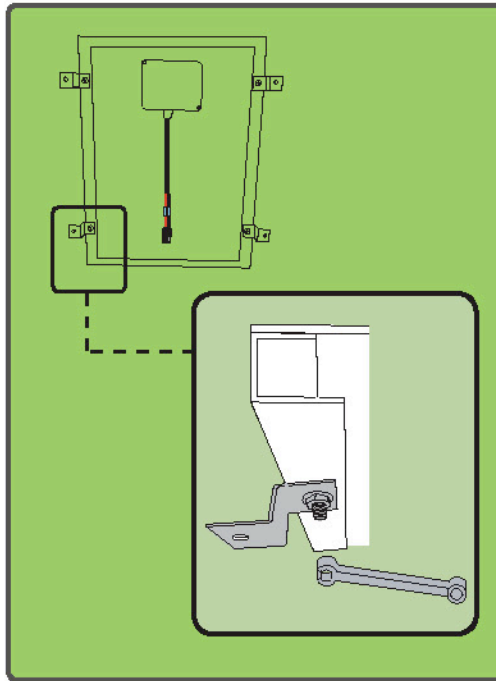
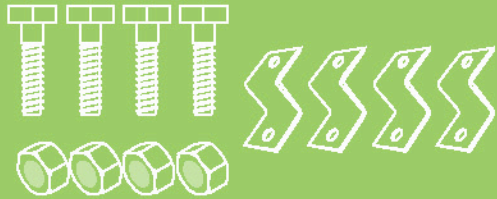
This is only an example of an installation set up.

We recommend that these applications be installed in accordance with local building and electrical code requirements.

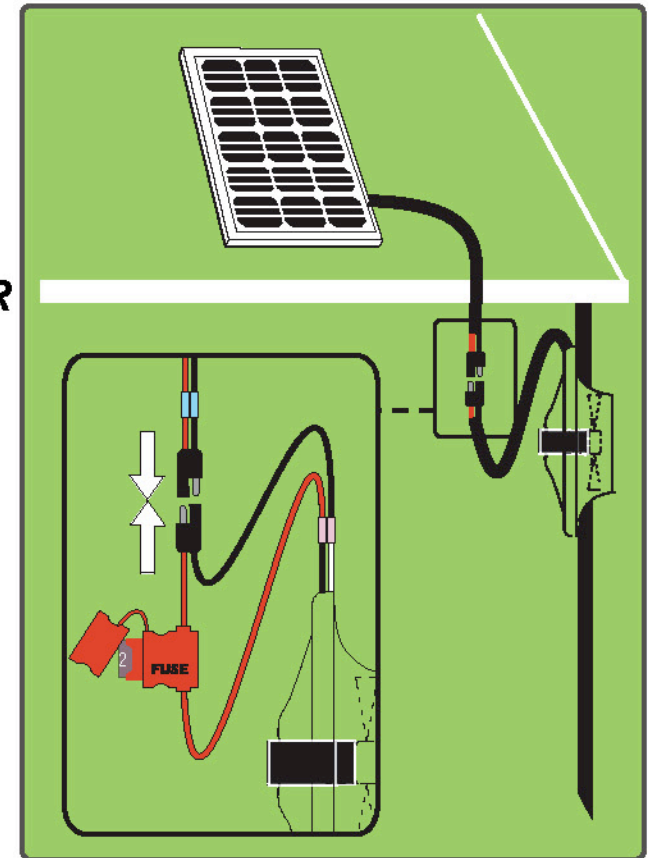
12" SNAP-FAN



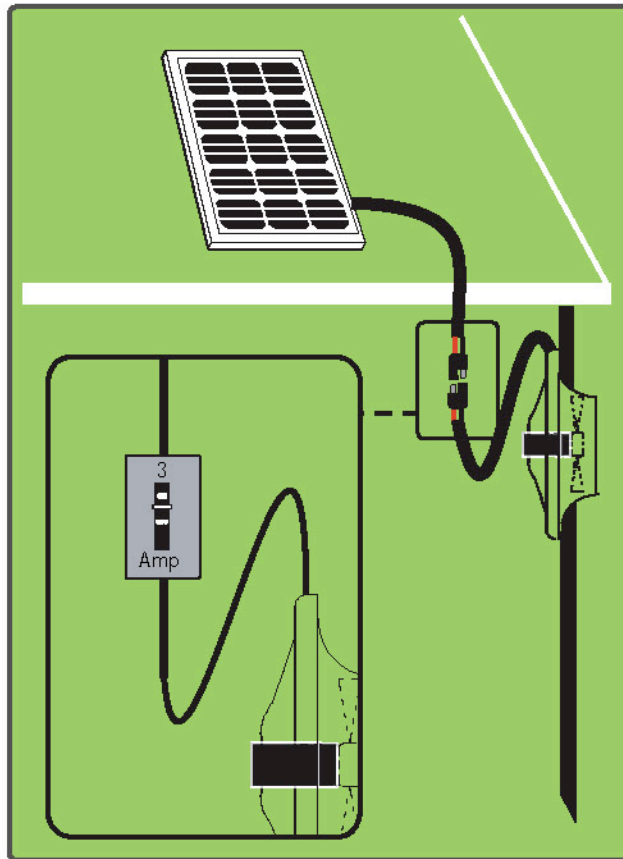
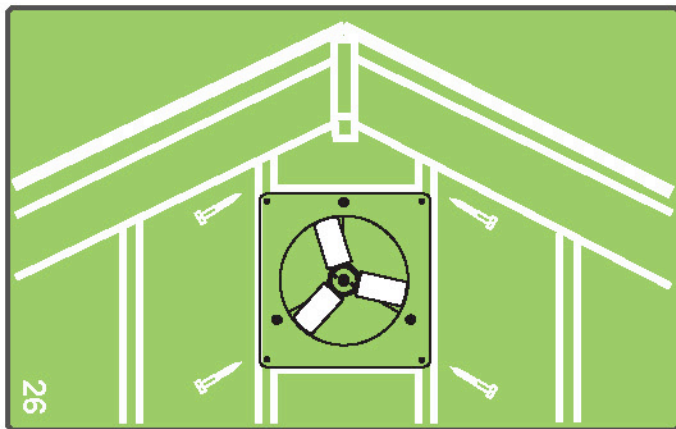
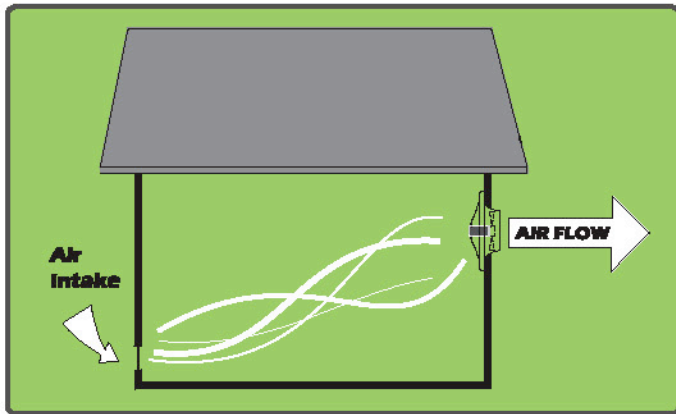
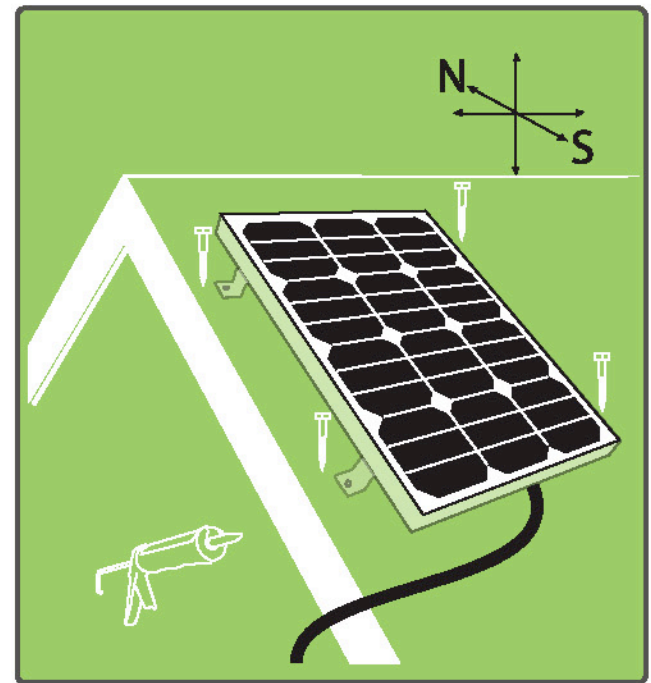
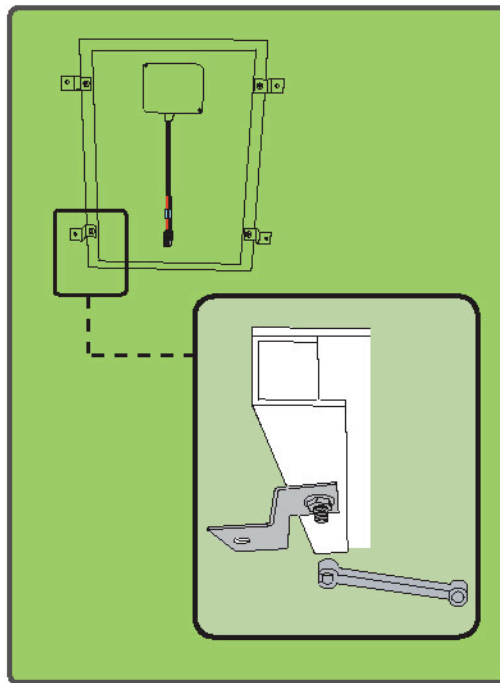
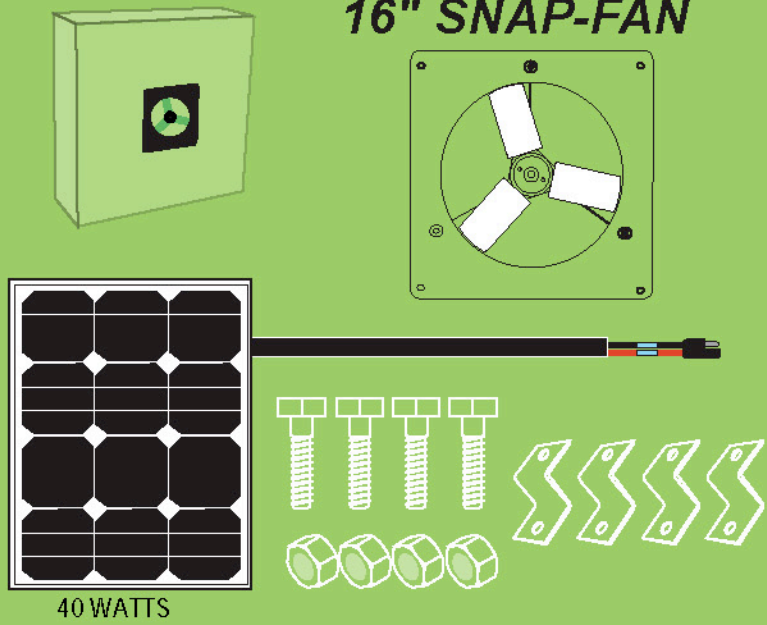
20 WATTS



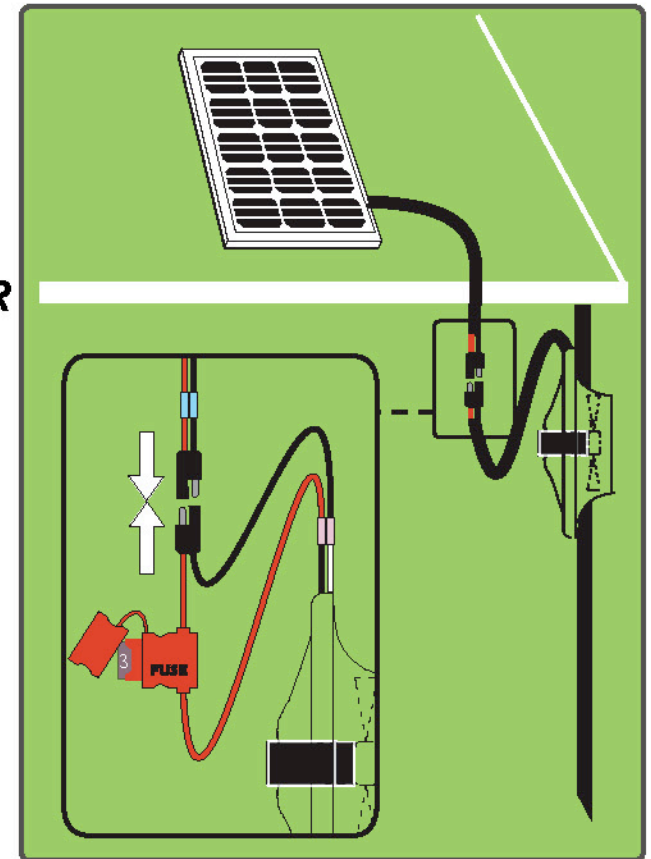
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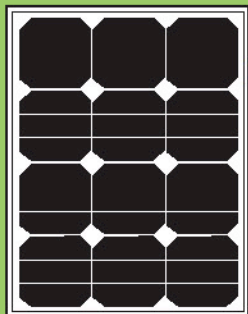
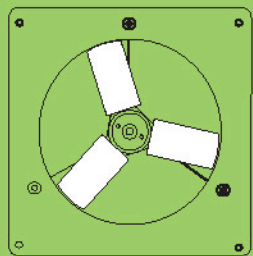
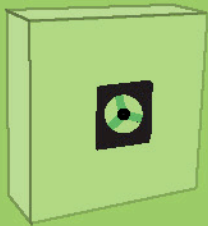
16" SNAP-FAN



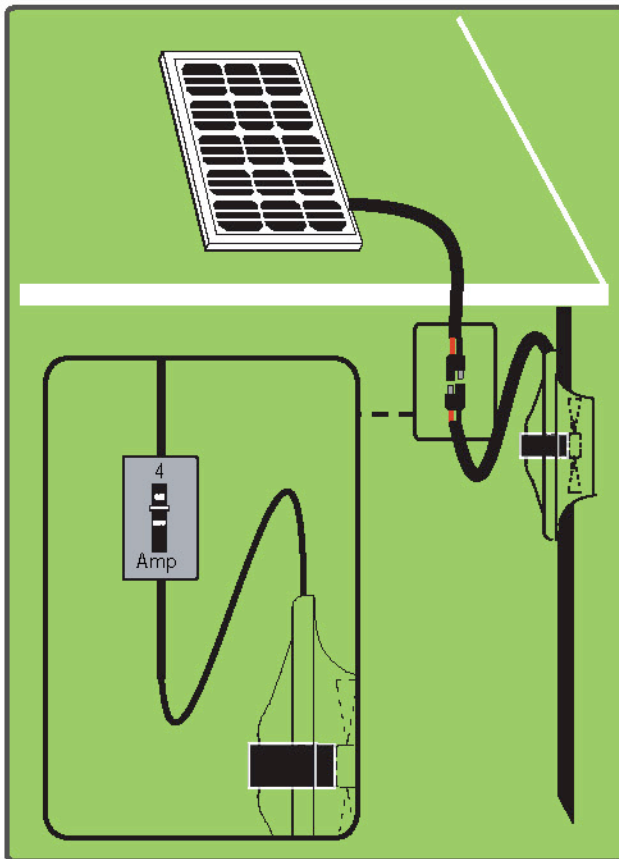
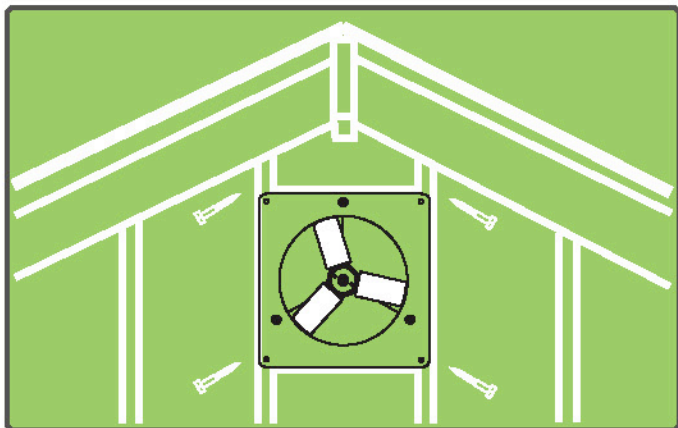
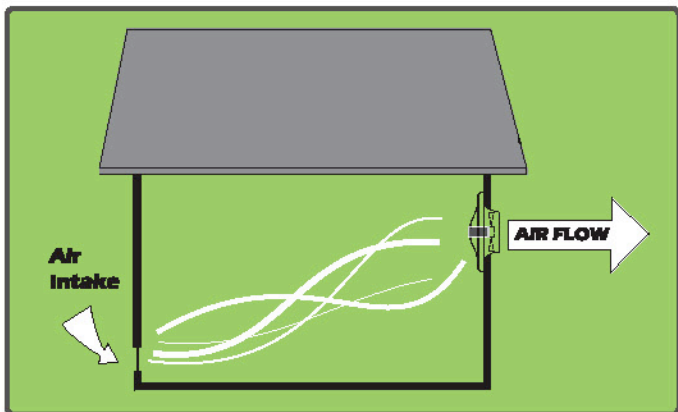
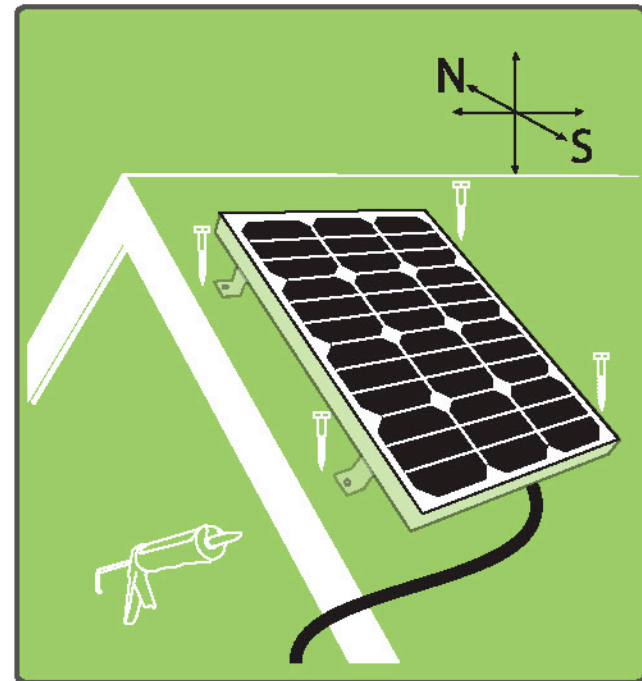
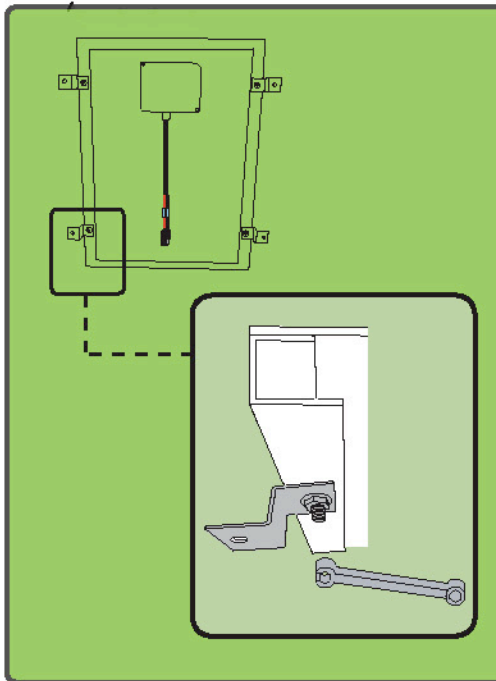
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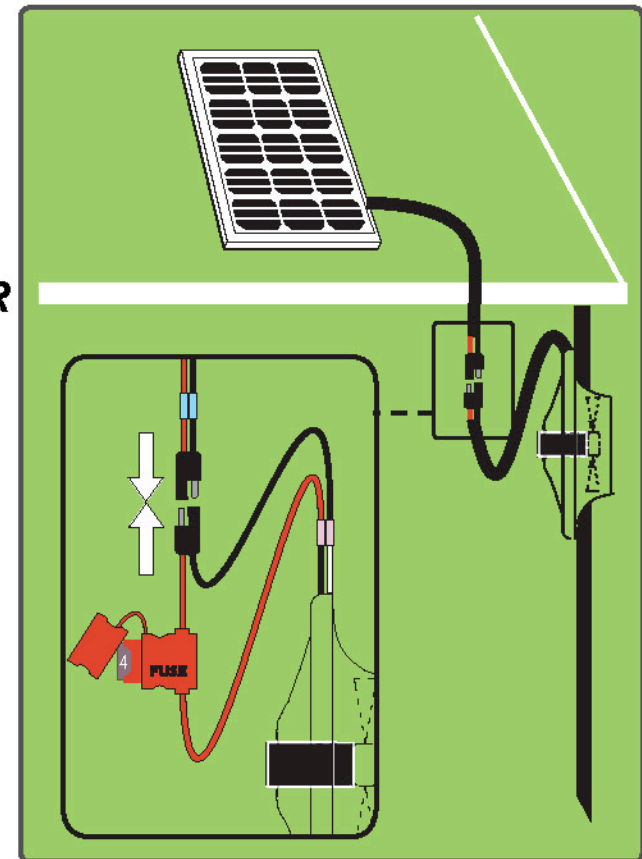
20" SNAP-FAN



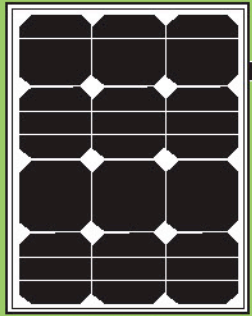
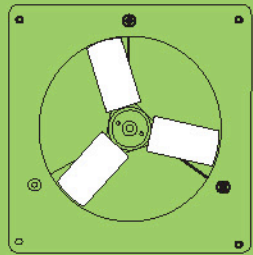
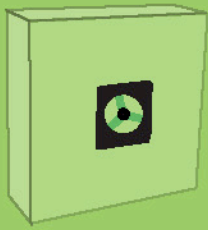
60 WATTS



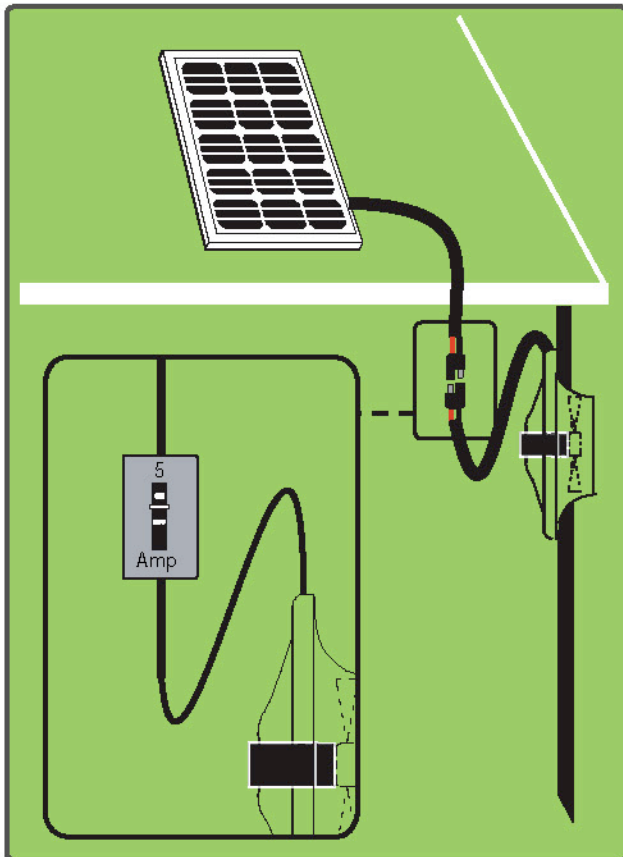
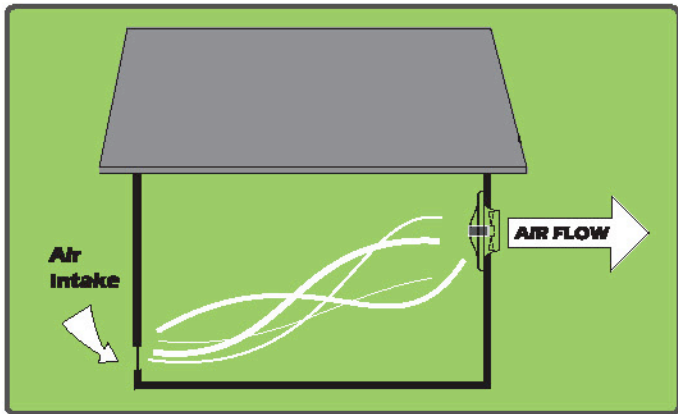
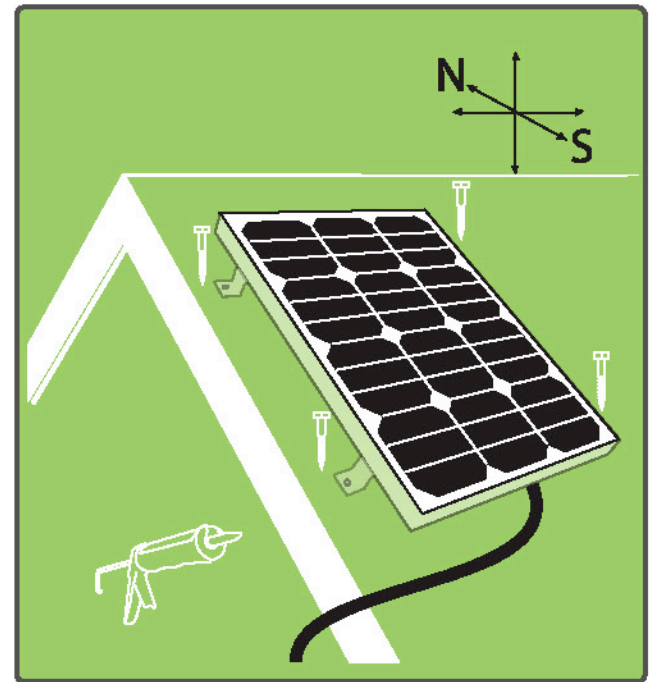
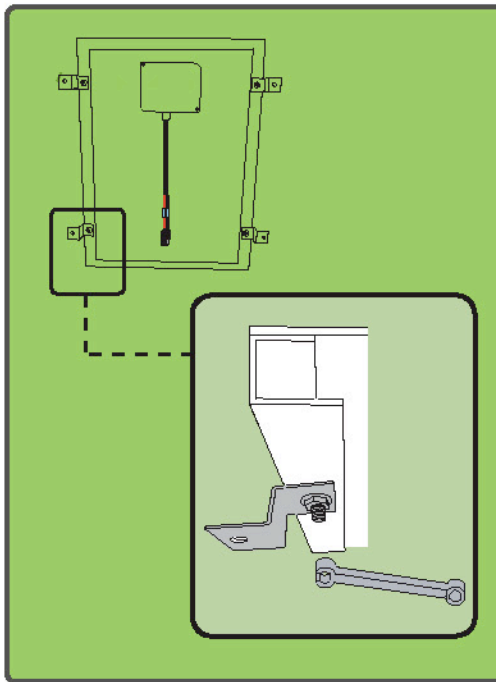
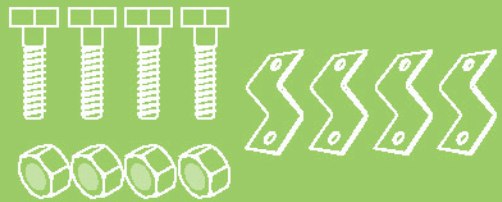
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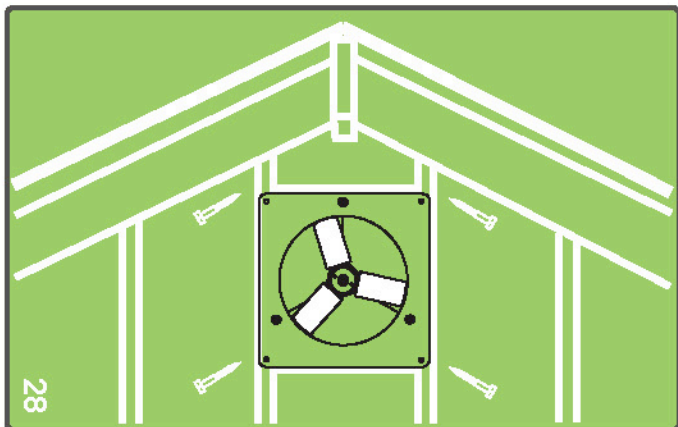
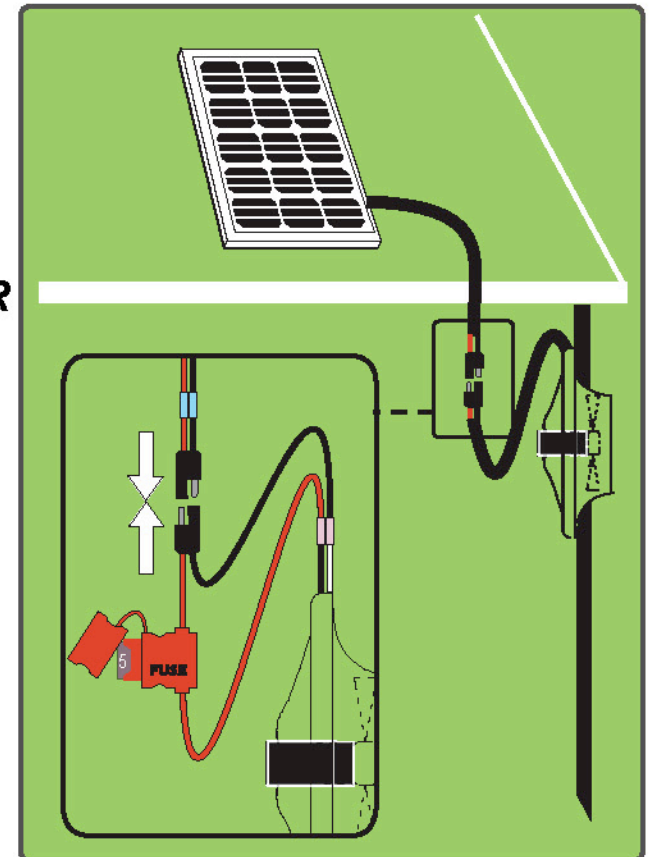
24" SNAP-FAN



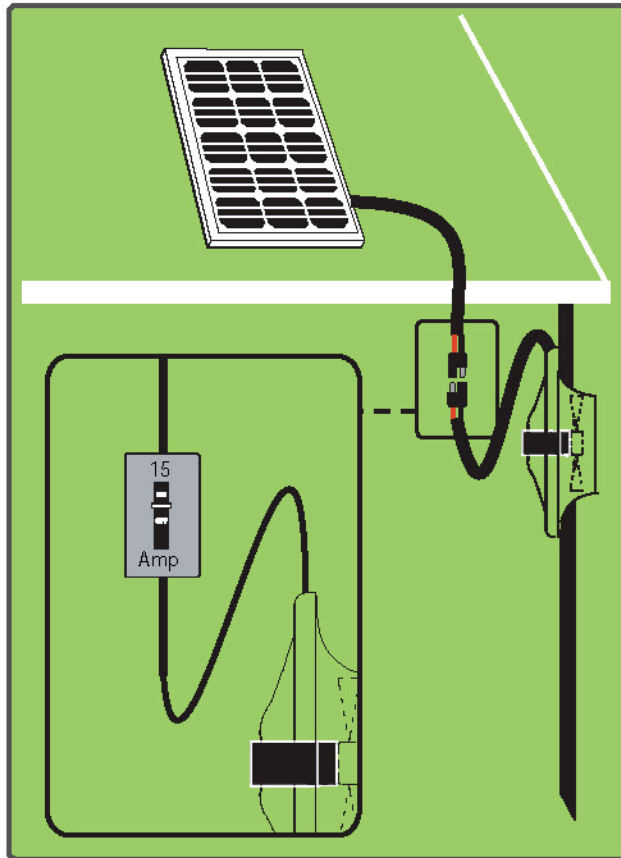
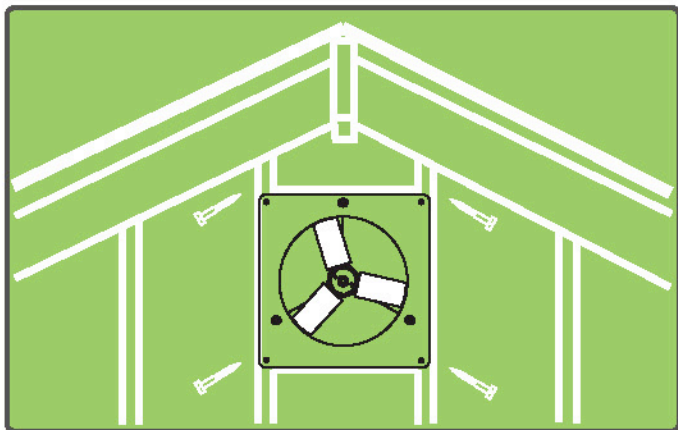
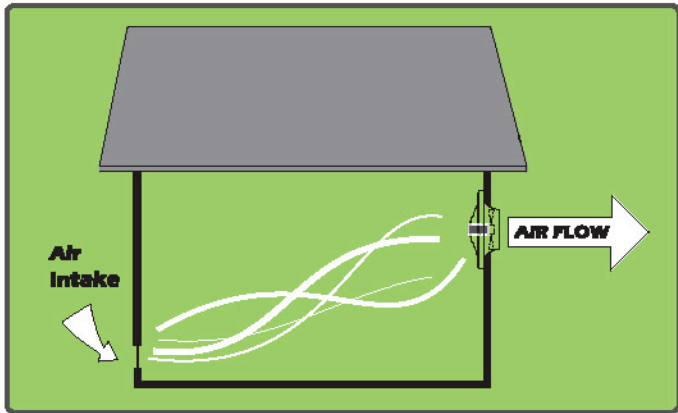
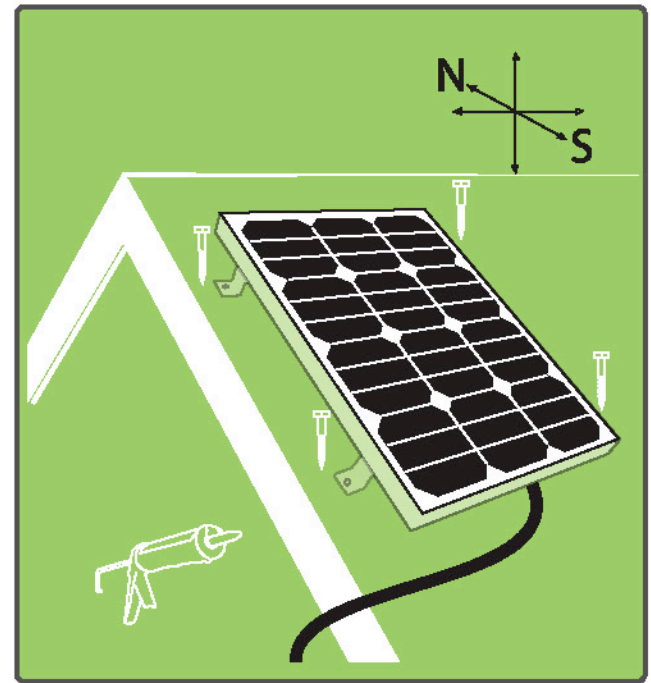
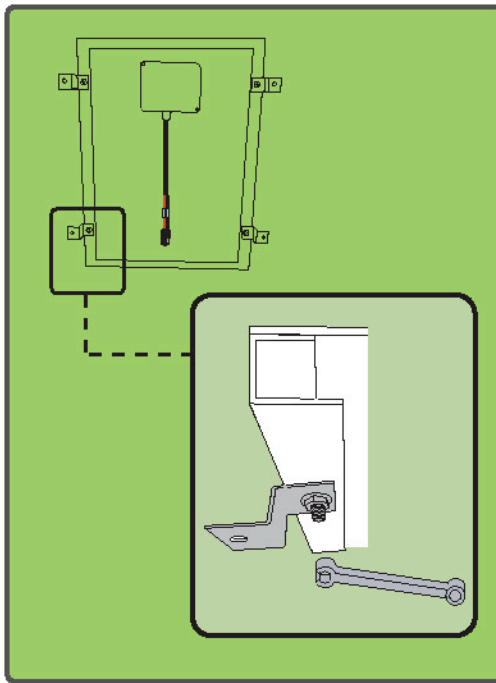
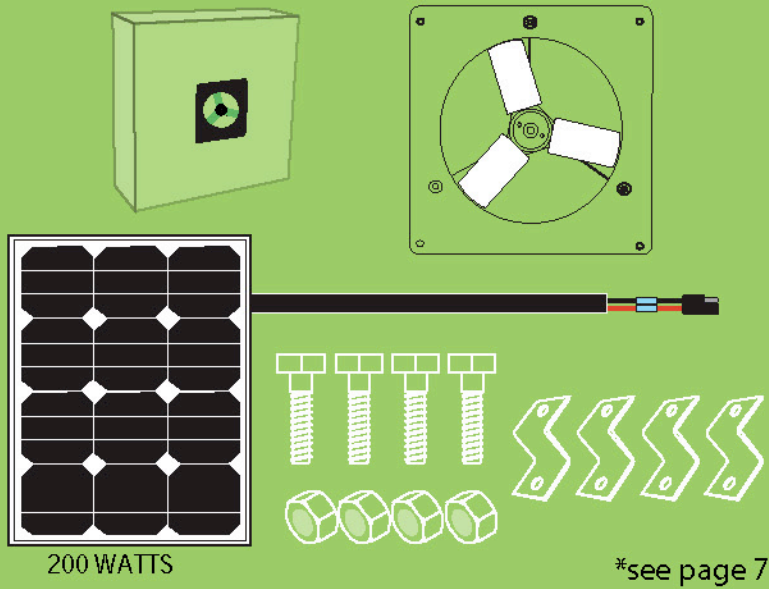
80 WATTS



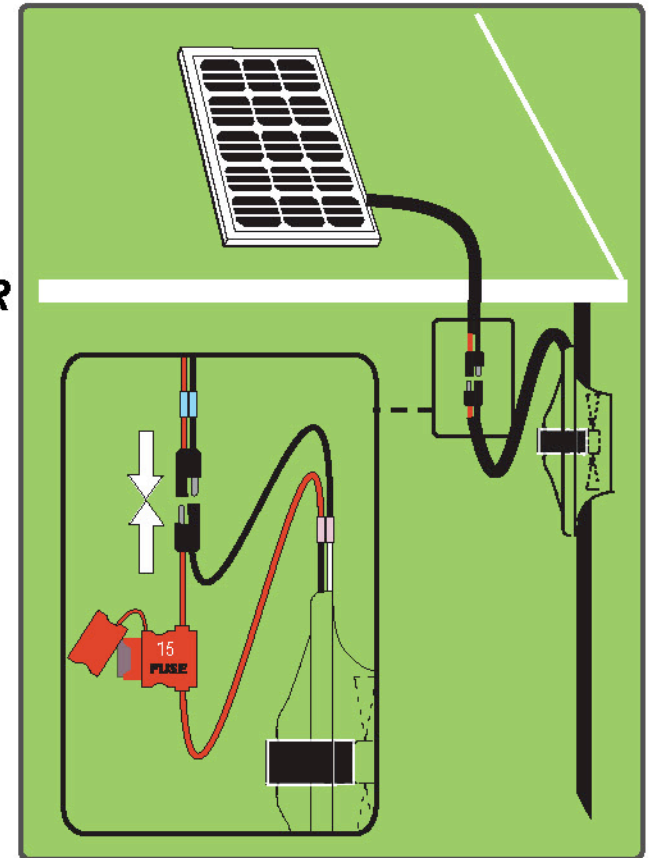
OR



29 12 OR 24 VOLT 28" SNAP-FAN



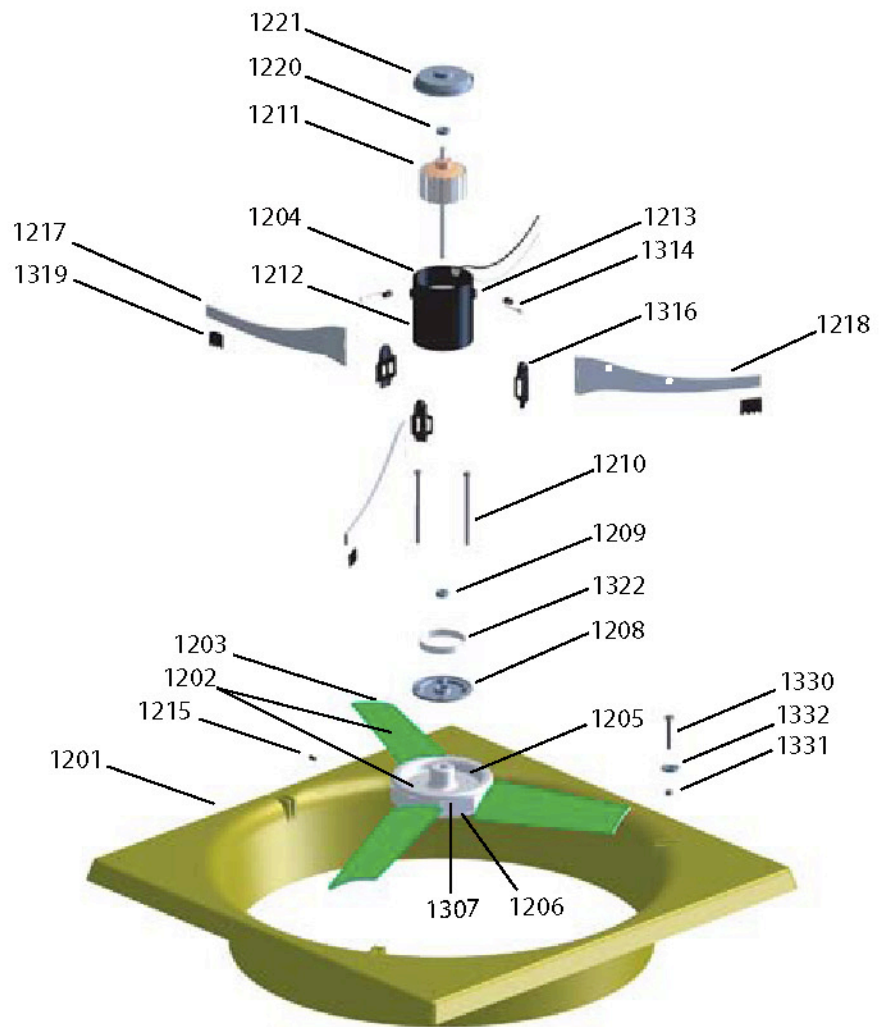
OR



SNAP-FAN

12 inch fan

Part Numbers

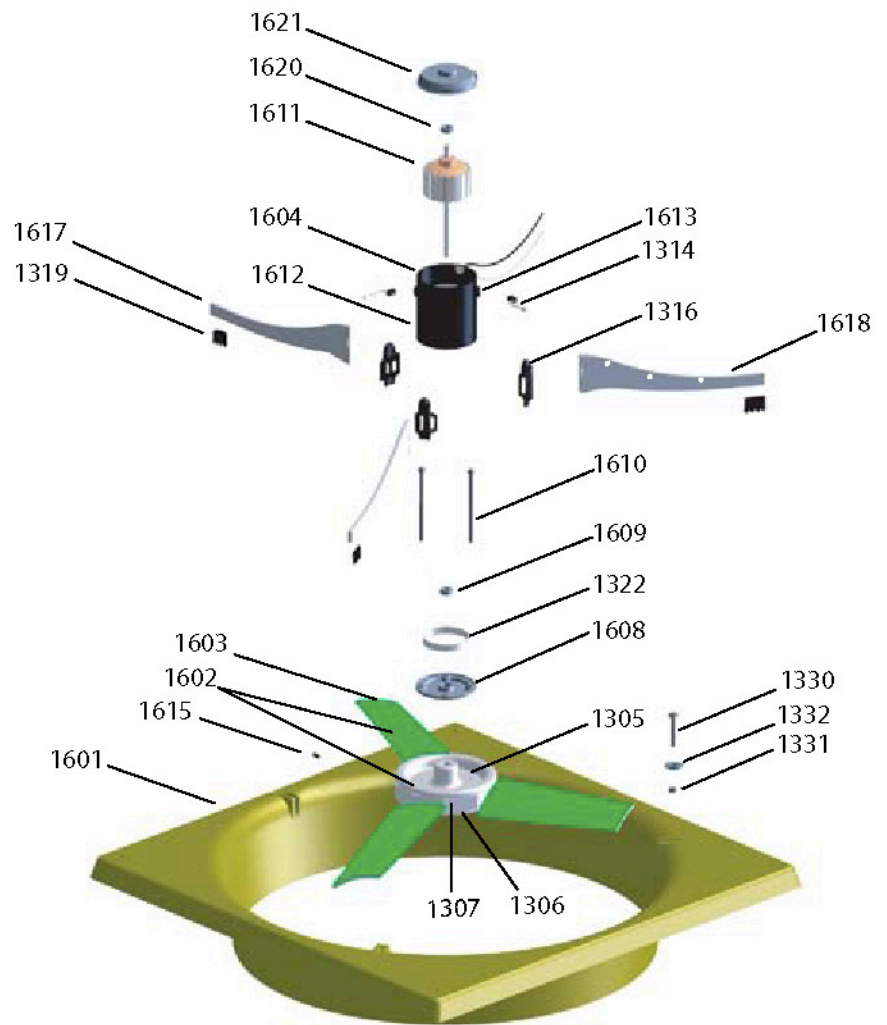


Part #	Description	Parts Shared
1201	Fan Frame	
1202	Blade with Hub Assembly	
1203	Replacement Blade (single)	
1204	Replacement 2.5" Motor	
1205	Drive Plate	
1206	Clamp Plate	
1307	Blade Spacer	12, 16, 20, 24, 28
1208	Front Motor End Cap	
1209	Front Bearing	
1210	Motor Casing Screws	
1211	Armature	
1212	Motor Barrel with Magnets	
1213	Brush Holder Cap	
1314	Brush (pair)	12, 16
1215	Set Screw	
1316	Motor Mount	12, 16, 20
1217	Stay without Holes	
1218	Stay with Holes	
1319	Shim	
1220	Back Bearing	
1221	Back Motor End Cap	
1322	Band/Clamp	12, 16, 20
1330	M6 x 1.0 x 40mm HCS Stay Bolt	12, 16, 20, 24, 28
1331	Nylock M6-P1.0 Z Nut	12, 16, 20, 24, 28
1332	Fender Washer 1/4X	12, 16, 20, 24, 28

SNAP-FAN

16 inch fan

Part Numbers

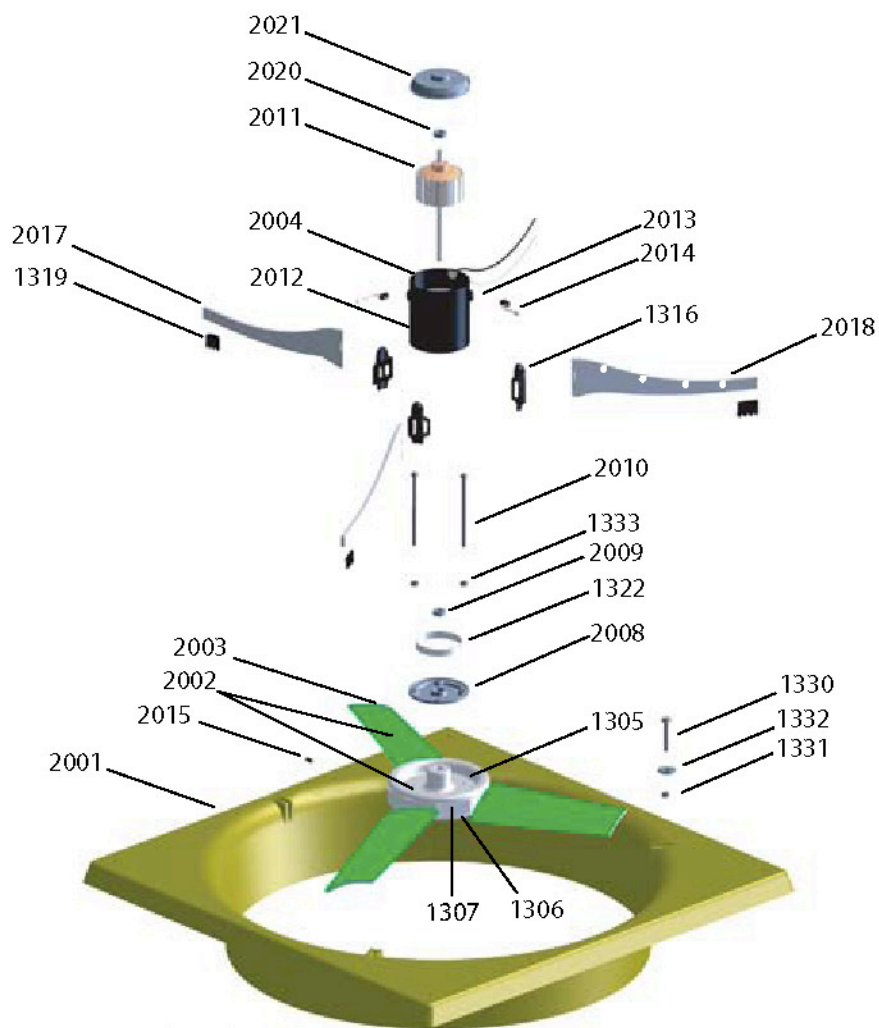


Part #	Description	Parts Shared
1601	Fan Frame	
1602	Blade with Hub Assembly	
1603	Replacement Blade (single)	
1604	Replacement 3" Motor	
1305	Drive Plate	16, 20, 24
1306	Clamp Plate	16, 20, 24
1307	Blade Spacer	12, 16, 20, 24, 28
1608	Front Motor End Cap	
1609	Front Bearing	
1610	Motor Casing Screws	
1611	Armature	
1612	Motor Barrel with Magnets	
1613	Brush Holder Cap	
1314	Brush (pair)	12, 16
1615	Set Screw	
1316	Motor Mount	12, 16, 20
1617	Stay without Holes	
1618	Stay with Holes	
1319	Shim	
1620	Back Bearing	
1621	Back Motor End Cap	
1322	Blade/Clamp	12, 16, 20
1330	M6 x 1.0 x 40mm HCS Stay Bolt	12, 16, 20, 24, 28
1331	Nylock M6-P1.0 Z Nut	12, 16, 20, 24, 28
1332	Fender Washer 1/4X	12, 16, 20, 24, 28

SNAP-FAN

20 inch fan

Part Numbers

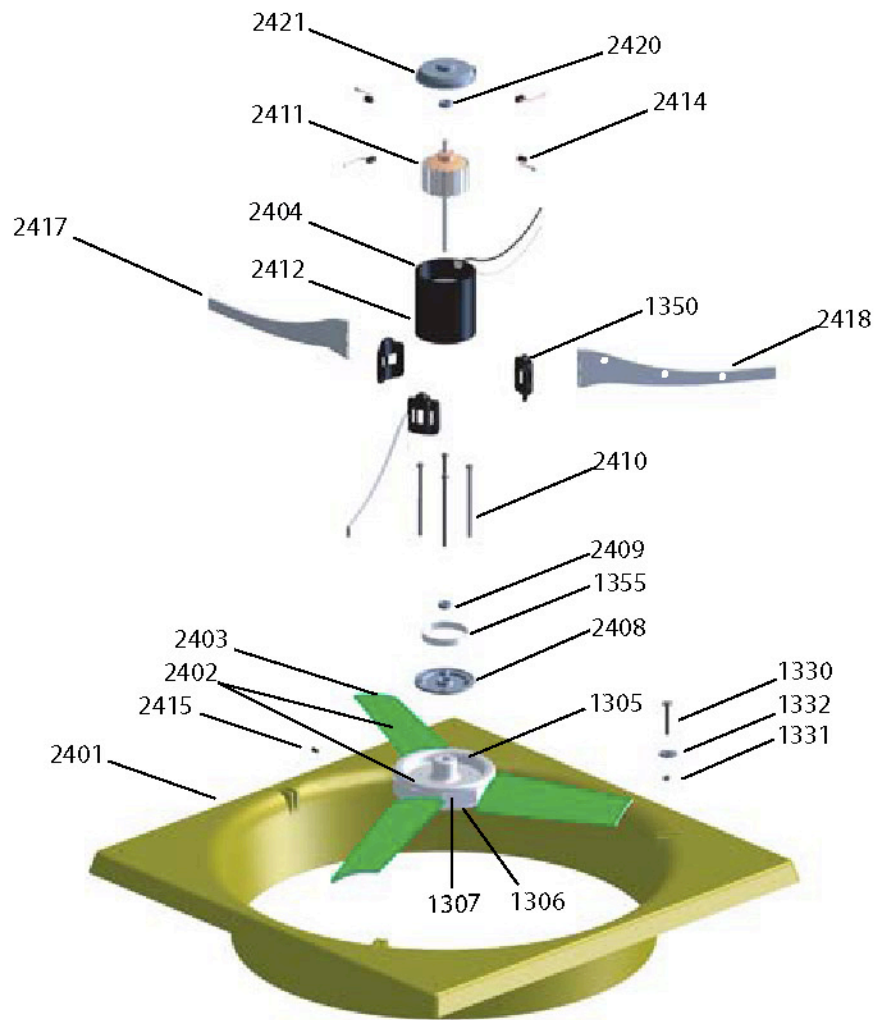


Part #	Description	Parts Shared
2001	Fan Frame	
2002	Blade with Hub Assembly	
2003	Replacement Blade (single)	
2004	Replacement 3.25" Motor	
1305	Drive Plate	16, 20, 24
1306	Clamp Plate	16, 20, 24
1307	Blade Spacer	12, 16, 20, 24, 28
2008	Front Motor End Cap	
2009	Front Bearing	
2010	Motor Casing Screws	
2011	Armature	
2012	Motor Barrel with Magnets	
2013	Brush Holder Cap	
2014	Brush (pair)	
2015	Set Screw	
1316	Motor Mount	12, 16, 20
2017	Stay without Holes	
2018	Stay with Holes	
1319	Shim	
2020	Back Bearing	
2021	Back Motor End Cap	
1322	Band/Clamp	12, 16, 20
1330	M6 x 1.0 x 40mm HCS Stay Bolt	12, 16, 20, 24, 28
1331	Nylock M6-P1.0 Z Nut	12, 16, 20, 24, 28
1332	Fender Washer 1/4X	12, 16, 20, 24, 28
1333	6mm 1.0 Nut	

SNAP-FAN

24 inch fan

Part Numbers

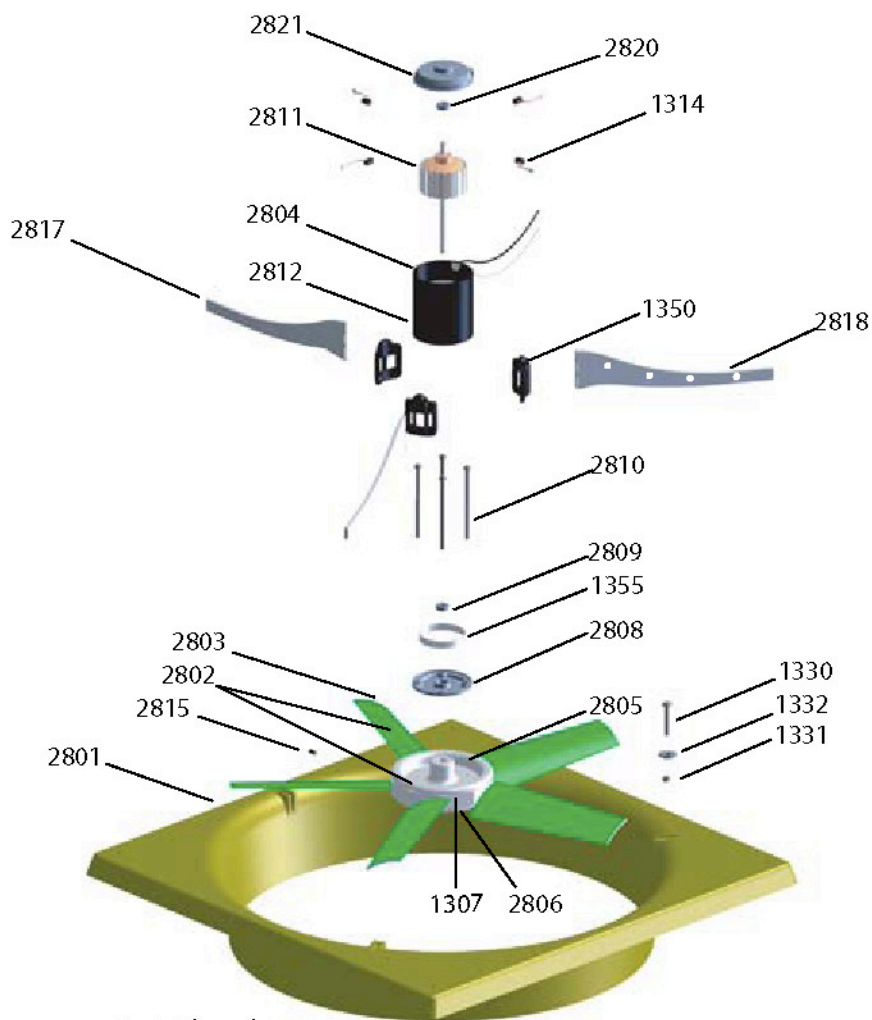


Part #	Description	Parts Shared
2401	Fan Frame	
2402	Blade with Hub Assembly	
2403	Replacement Blade (single)	
2404	Replacement 4" Motor	
1305	Drive Plate	16, 20, 24
1306	Clamp Plate	16, 20, 24
1307	Blade Spacer	12, 16, 20, 24, 28
2408	Front Motor End Cap	
2409	Front Bearing	
2410	Motor Casing Screws	
2411	Armature	
2412	Motor Barrel with Magnets	
2414	Brush (set of 4)	
2415	Set Screw	
1350	Motor Mount	24, 28
2417	Stay without Holes	
2418	Stay with Holes	
2420	Back Bearing	
2421	Back Motor End Cap	
1330	M6 x 1.0 x 40mm HCS Stay Bolt	12, 16, 20, 24, 28
1331	Nylock M6-P1.0 Z Nut	12, 16, 20, 24, 28
1332	Fender Washer 1/4X	12, 16, 20, 24, 28
1355	Band/Clamp	24, 28

SNAP-FAN

28 inch fan

Part Numbers



Part #	Description	Parts Shared
2801	Fan Frame	
2802	Blade with Hub Assembly	
2803	Replacement Blade (single)	
2804	Replacement 12 VOLT 4.5" Motor	
2824	Replacement 24 VOLT 4.5" Motor	
2805	Drive Plate	
2806	Clamp Plate	
1307	Blade Spacer	12, 16, 20, 24, 28
2808	Front Motor End Cap	
2809	Front Bearing	
2810	Motor Casing Screws	
2811	Armature 12 VOLT	
2822	Armature 24 VOLT	
2812	Motor Barrel with Magnets	
2813	Brush Holder Cap	
2814	Brush (set of 4)	
2815	Set Screw	
1350	Motor Mount	24, 28
2817	Stay without Holes	
2818	Stay with Holes	
2820	Back Bearing	
2821	Back Motor End Cap	
1330	M6 x 1.0 x 40mm HCS Stay Bolt	12, 16, 20, 24, 28
1331	Nylock M6-P1.0 Z Nut	12, 16, 20, 24, 28
1332	Fender Washer 1/4X	12, 16, 20, 24, 28
1355	Band/Clamp	24, 28

THE GREEN FAN



HIGH OUTPUT SOLAR DIRECT VENTILATION



EVOLUTION IN VENTILATION