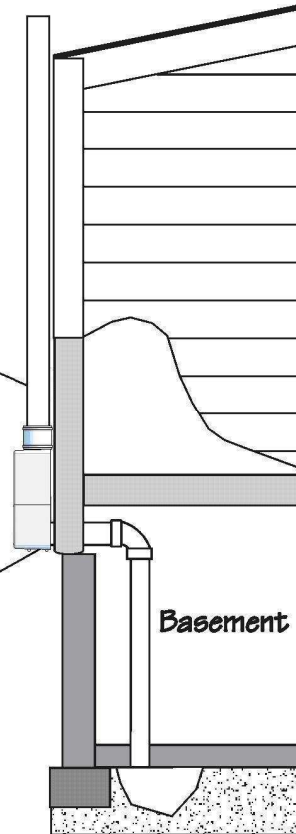
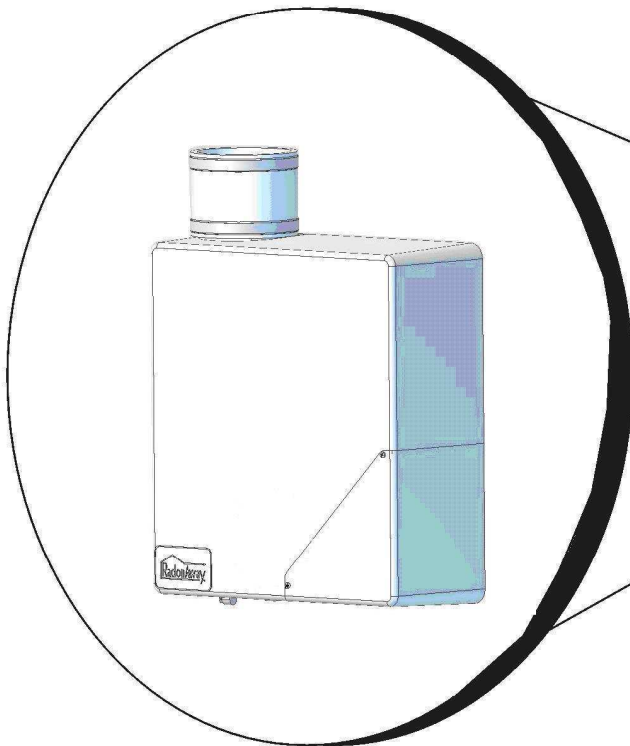


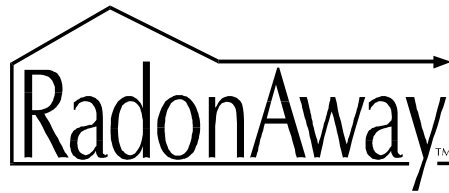
SF Series Installation Instructions

By

RadonAway™



Spruce Environmental Technologies, Inc.
Ward Hill, MA P/N IN065 Rev C



RadonAway Ward Hill, MA.

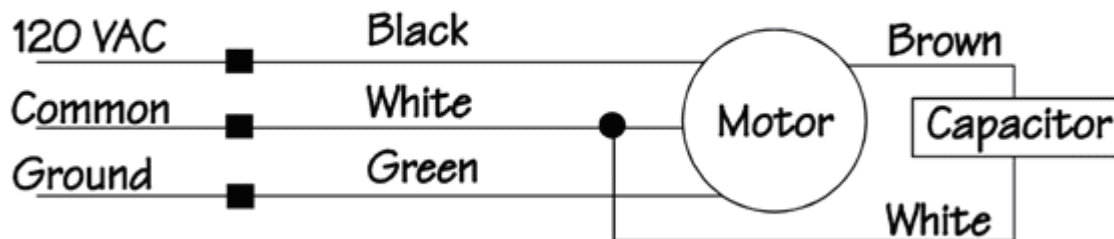
Series Fan Installation Instructions

Please Read and Save These Instructions.

**DO NOT CONNECT POWER SUPPLY UNTIL FAN IS COMPLETELY INSTALLED.
MAKE SURE ELECTRICAL SERVICE TO FAN IS LOCKED IN "OFF" POSITION.
DISCONNECT POWER BEFORE SERVICING FAN.**

1. **WARNING!** Do not use fan in hazardous environments where fan electrical system could provide ignition to combustible or flammable materials.
2. **WARNING!** Do not use fan to pump explosive or corrosive gases.
3. **WARNING!** Check voltage at the fan to insure it corresponds with nameplate.
4. **WARNING!** Normal operation of this device may affect the combustion airflow needed for safe operation of fuel burning equipment. Check for possible backdraft conditions on all combustion devices after installation.
5. **NOTICE!** There are no user serviceable parts located inside the fan unit.
Do NOT attempt to open any part of Fan other than Electrical Covers. Return unit to the factory for service.
Note: An Electrical Switch Box may be installed under the removeable bottom right corner cover.
6. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA) "National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician
7. **WARNING!** Do not leave fan unit installed on system piping without electrical power for more than 48 hours. Fan failure could result from this non-operational storage.
8. **WARNING - TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS, OBSERVE THE FOLLOWING:**
 - a) Use this unit only in the manner intended by the manufacturer. If you have questions, contact the manufacturer.
 - b) Before servicing or cleaning unit, switch power off at service panel and lock the service disconnecting means to prevent power from being switched on accidentally. When the service disconnecting means cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel."

RadonAway SF Series Fan Wiring Diagram





1.0 SYSTEM DESIGN CONSIDERATIONS

1.1 INTRODUCTION

The RadonAway SF Series Radon Fans are intended for use by trained, professional Radon mitigators. The purpose of this instruction is to provide additional guidance for the most effective use of a RadonAway Fan. This instruction should be considered as a supplement to EPA standard practices, state and local building codes and state regulations. In the event of a conflict, those codes, practices and regulations take precedence over this instruction.

1.2 ENVIRONMENTALS

The SF Series Fans are designed to perform year-round in all but the harshest climates without additional concern for temperature or weather. For installations in an area of severe cold weather, please contact RadonAway for assistance. When not in operation, the fan should be stored in an area where the temperature is never less than 32 degrees F. or more than 100 degrees F.

1.3 ACOUSTICS

The SF Series Fan, when installed properly, operates with little or no noticeable noise to the building occupants. The velocity of the outgoing air should be considered in the overall system design. In some cases the "rushing" sound of the outlet air may be disturbing. In these instances, the use of a RadonAway Exhaust Muffler is recommended.

1.4 GROUND WATER

In the event that a temporary high water table results in water at or above slab level, water may be drawn into the riser pipes thus blocking air flow to the SF Series Fan. The lack of cooling air may result in the fan cycling on and off as the internal temperature rises above the thermal cutoff and falls upon shutoff. Should this condition arise, it is recommended that the fan be turned off until the water recedes allowing for return to normal operation.

1.5 SLAB COVERAGE

The SF Series Fan can provide coverage up to 2000+ sq. ft. per slab penetration. This will primarily depend on the sub-slab material in any particular installation. In general, the tighter the material, the smaller the area covered per penetration. Appropriate selection of the a Fan best suited for the sub-slab material can improve the slab coverage. The SF180 is best suited for general purpose use. Additional suction points can be added as required. It is recommended that a small pit (5 to 10 gallons in size) be created below the slab at each suction hole.

1.6 CONDENSATION & DRAINAGE

Condensation is formed in the piping of a mitigation system when the air in the piping is chilled below its dew point. This can occur at points where the system piping goes through unheated space such as an attic, garage or outside. The SF Fan has an integral means for water to drain back to the slab hole to remove the condensation. The SF Series Fan **MUST** be mounted vertically plumb and level, with the outlet pointing up for proper drainage through the fan. Avoid mounting the fan in any orientation that will allow water to accumulate inside the fan housing. The SF Series Fans are **NOT** suitable for underground burial.

For SF Series Fan piping, the following table provides the minimum recommended pipe diameter and inlet pitch under several system conditions.

Pipe Dia.	Minimum Rise per Ft of Run*		
	@25 CFM	@50 CFM	@100 CFM
4"	1/8	1/4	3/8
3"	1/4	3/8	1 1/2



*Typical SF160 Series Fan operational flow rate is 30 - 90 CFM on 3" and 4" pipe.
(For more precision, determine flow rate by measuring Static Pressure, in WC, and correlate pressure to flow in the performance chart in the addendum.)

On an outdoor installation a condensate bypass is not required. The SF Fan contains an integral internal bypass suitable for use in cold climate installations which require long lengths of outlet ducting or where the outlet ducting is likely to produce large amounts of condensation because of high soil moisture or outlet duct material. Schedule 20 piping and other thin-walled plastic ducting and Aluminum downspout will normally produce much more condensation than Schedule 40 piping which is preferred.

1.7 "SYSTEM ON" INDICATOR

A properly designed system should incorporate a "System On" Indicator for affirmation of system operation. A manometer, such as a U-Tube, or a vacuum alarm is recommended for this purpose.

1.8 ELECTRICAL WIRING

The SF Series Fans operate on standard 120V 60 Hz. AC. All wiring must be performed in accordance with the National Fire Protection Association's (NFPA) National Electrical Code, Standard #70"-current edition for all commercial and industrial work, and state and local building codes. All wiring must be performed by a qualified and licensed electrician. Ensure that all exterior electrical boxes and other components are outdoor rated and properly sealed to prevent water penetration into the box. A means, such as a weep hole, is recommended to drain the box. Note that the exterior electrical box may be mounted under the removable bottom right corner cover. If located under the corner cover the electrical box should be positioned relative to the inlet pipe using the template provided.

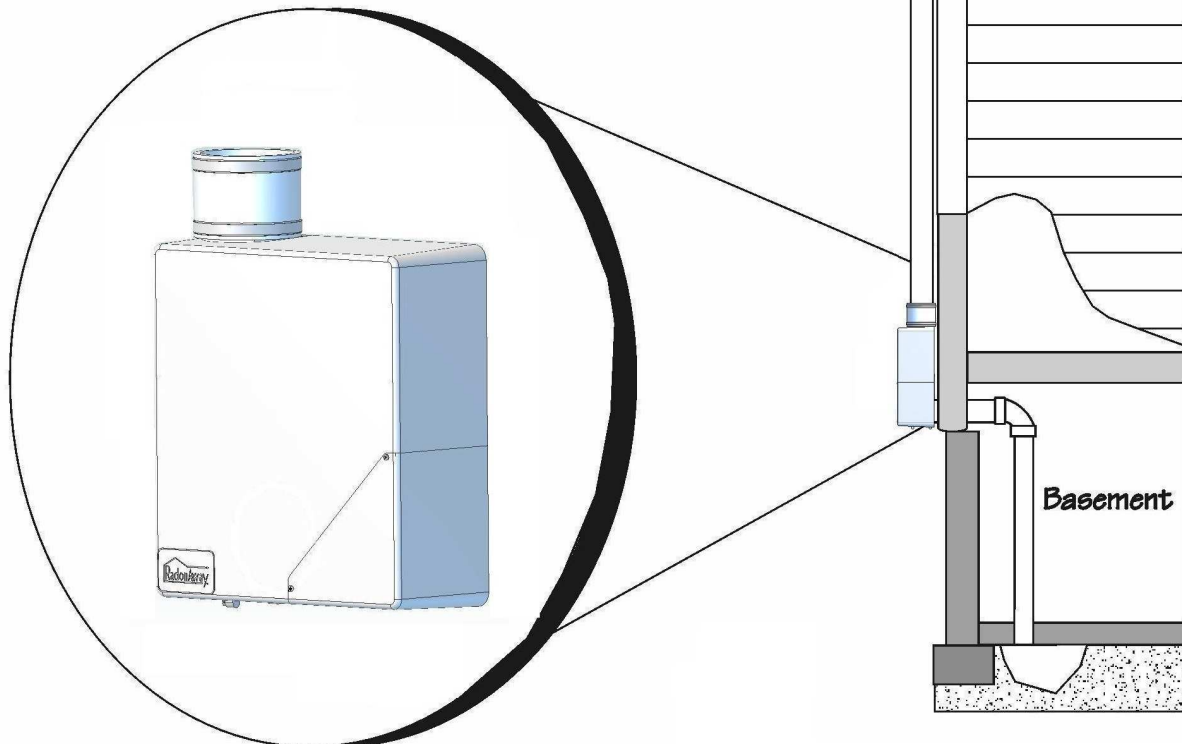
1.9 SPEED CONTROLS

The SF Series Fans are rated for use with electronic speed controls. The recommended speed control if used is Pass & Seymour Solid State Speed Control Cat. No. 94601-I.

2.0 INSTALLATION

The SF Series Fan can be mounted indoors or outdoors. (It is suggested that EPA recommendations be followed in choosing the fan location.) The SF Series Fan is intended be mounted directly on the system piping. There is no mounting bracket available for this unit. In addition to the inlet and outlet pipe mounts a single vibration mount is provided at the bottom right hand corner of the inner housing, underneath the removeable corner cover, the vibration mount may be screwed directly to the house siding.

Typical Outdoor Installation



2.1 MOUNTING

Mount the SF Series Fan vertically with outlet up. Insure the unit is plumb and level. When mounting directly on the system piping assure that the fan body does not contact any building surface to avoid vibration noise.

2.2 SYSTEM PIPING

Complete piping run, using flexible couplings as means of disconnect for servicing the unit and vibration isolation. If 3" inlet piping is used mount the eccentric adapter supplied inside the 4" flexible coupling, connected to the inlet, with the "TOP" arrow at the high point pointing towards outlet.

2.3 ELECTRICAL CONNECTION

Connect wiring with wire nuts provided, observing proper connections(See Section 1.8):

Fan Wire	Connection
Green	Ground
Black	AC Hot
White	AC Common

2.4 VENT MUFFLER (optional)

Install the muffler assembly in the selected location in the outlet ducting. Solvent weld all connections. The muffler is normally installed at the end of the vent pipe.

2.5 OPERATION CHECKS

_____ **Verify** all connections are tight and **leak-free**.

_____ **Insure** the SF Series Fan and all ducting is secure and vibration-free.

_____ **Verify** system vacuum pressure with manometer. **Insure** vacuum pressure is **less than** maximum recommended operating pressure

(Based on sea-level operation, at higher altitudes reduce by about 4% per 1000 Feet.)

(Further reduce Maximum Operating Pressure by 10% for High Temperature environments)

See Product Specifications. If this is exceeded, increase the number of suction points.

_____ **Verify Radon levels by testing to EPA protocol.**

SF SERIES PRODUCT SPECIFICATIONS

The following chart shows fan performance for the SF Series Fan:

Typical CFM Vs Static Pressure "WC									
	0"	.25"	.5"	.75"	1.0"	1.25"	1.5"	1.75"	2.0"
SF180	149	137	127	117	96	80	61	40	-

Power Consumption 120 VAC, 60Hz 1.0 Amp Maximum			Maximum Recommended Operating Pressure* (Sea Level Operation)**	
SF180	53 - 71	watts	SF180	1.7" W.C.

**Reduce by 10% for High Temperature Operation*

***Reduce by 4% per 1000 feet of altitude*

	Size	Weight	Inlet/Outlet
SF180	17.5H"x16W"x6.5D"	13.1 lbs.	4.5" OD (4.0" PVC Sched 40 size compatible)

Recommended ducting: 3" or 4" SF180, , Schedule 20/40 PVC Pipe (Sch.40 preferred)

Mounting: Mount on the duct pipe.

Storage temperature range: 32 - 100 degrees F.

Normal operating temperature range: -20 - 120 degrees F.

Maximum inlet air temperature: 80 degrees F.

Continuous Duty

Class F Insulation

Thermally protected

3000 RPM

Rated for Indoor or Outdoor Use



IMPORTANT INSTRUCTIONS TO INSTALLER

Inspect the GP/XP/XR/SF Series Fan for shipping damage within 15 days of receipt. Notify **RadonAway of any damages immediately**. Radonaway is not responsible for damages incurred during shipping. However, for your benefit, Radonaway does insure shipments.

There are no user serviceable parts inside the fan. **Do not attempt to open**. Return unit to factory for service.

Install the GP/XP/XR/SF Series Fan in accordance with all EPA standard practices, and state and local building codes and state regulations.

WARRANTY

Subject to any applicable consumer protection legislation, RadonAway warrants that the GPX01/XP/XR/RP/SF Series Fan (the "Fan") will be free from defects in materials and workmanship for a period of 90 days from the date of purchase (the "Warranty Term").

RadonAway will replace any Fan which fails due to defects in materials or workmanship. The Fan must be returned (at Owner's cost) to the RadonAway factory. Any Fan returned to the factory will be discarded unless the Owner provides specific instructions along with the Fan when it is returned regardless of whether or not the Fan is actually replaced under this warranty. Proof of purchase must be supplied upon request for service under this Warranty.

This Warranty is contingent on installation of the Fan in accordance with the instructions provided. This Warranty does not apply where any repairs or alterations have been made or attempted by others, or if the unit has been abused or misused. Warranty does not cover damage in shipment unless the damage is due to the negligence of RadonAway.

5 YEAR EXTENDED WARRANTY WITH PROFESSIONAL INSTALLATION.

RadonAway will extend the Warranty Term of the fan to 5 years from date of manufacture if the Fan is installed in a professionally designed and professionally installed radon system or installed as a replacement fan in a professionally designed and professionally installed radon system. Proof of purchase and/or proof of professional installation may be required for service under this warranty. Outside the Continental United States and Canada the extended Warranty Term is limited to one (1) year from the date of manufacture.

RadonAway is not responsible for installation, removal or delivery costs associated with this Warranty.

EXCEPT AS STATED ABOVE, THE GPX01/XP/XR/RP/SF SERIES FANS ARE PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL RADONAWAY BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR RELATING TO, THE FAN OR THE PERFORMANCE THEREOF. RADONAWAY'S AGGREGATE LIABILITY HEREUNDER SHALL NOT IN ANY EVENT EXCEED THE AMOUNT OF THE PURCHASE PRICE OF SAID PRODUCT. THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT, TO THE EXTENT THE SAME DOES NOT MEET WITH RADONAWAY'S WARRANTY AS PROVIDED ABOVE.

For service under this Warranty, contact RadonAway for a Return Material Authorization (RMA) number and shipping information. No returns can be accepted without an RMA. If factory return is required, the customer assumes all shipping cost to and from factory.

RadonAway
3 Saber Way
Ward Hill, MA 01835
TEL. (978) 521-3703
FAX (978) 521-3964

Record the following information for your records:

Serial No. _____
Purchase Date _____