



Inline Fans for a
Healthier Environment



RV Series Installation Instructions

Spruce Environmental Technologies, Inc.

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www.spruce.com



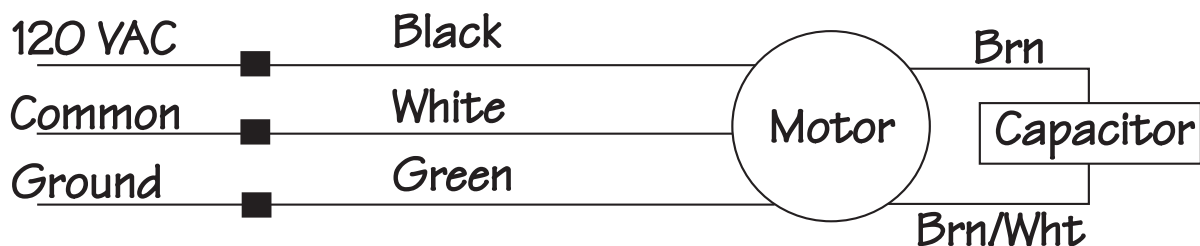
RV Series Commercial/Residential Ventilation Fan Installation Instructions

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. Return unit to the factory for service.
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. All wiring must be in accordance with local and national electrical codes.
7. **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.

RV Series Fan Wiring Diagram





INSTALLATION INSTRUCTIONS - IN009 Rev K

RV100	P/N 23012-1, P/N 28040
RV125	P/N 23014-1, P/N 28042
RV150	P/N 23013-1, P/N 28041
RV200	P/N 23016-1, P/N 28049

1.0 Mounting

The RV Series fan may be mounted at an angle without affecting performance, although the vertical mounting position shown in Fig. 1 is **highly recommended**. If the vertical mounting position is not possible, care should be taken to avoid creating a low spot in the fan/duct system where condensation might accumulate in the fan housing as shown in Fig. 2. In situations where horizontal mounting is desired and condensation is likely to occur (bathroom ventilation in cold climates) this problem might be avoided by mounting the fan 30 degrees beyond horizontal as shown in Fig. 3.

Fig. 1

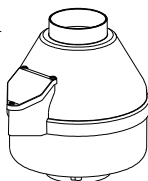


Fig. 2

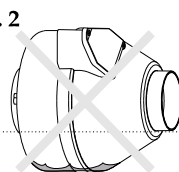
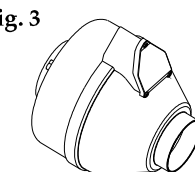


Fig. 3



2.0 Ducting

Any type of ducting is acceptable; however, flexible nonmetallic ducting is recommended for easy installation and quieter operation. Insulated flexible ducting is **highly recommended** in cold climates to prevent the warm bathroom air from forming condensation in the ducting where it is exposed to colder attic air. The outlet of the fan should always be ducted to the outside. Avoid venting the outlet of the fan directly into an attic area. The excess moisture from the bathroom can cause damage to the building structure and any items stored in the attic. Multiple venting points may be connected together using a "T" or "Y" fitting. Straight, smooth runs of ducting will present the least resistance and maximize system performance.

For quietest performance, the fan should be mounted farther away from the inlet duct, near the outside vent. A minimum distance of 10 feet is recommended between the fan or T/Y of a multi-intake system and intake grille(s).

3.0 Backdraft Dampers

Backdraft dampers allow airflow in only one direction, preventing cold/hot drafts from entering the vented area and minimizing possible condensation and icing within the system while the fan is not operating. Backdraft dampers are **highly recommended** at each intake grille for bathroom ventilation in all cold climate installations.

4.0 Electrical Wiring

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. A Ground Fault Interrupter (GFI) circuit is not required in most installations, check your local codes. Ensure that all exterior electrical boxes 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.

5.0 Applications

Suitable for general ventilation, bathroom venting, fresh air supply, duct boosting, building pressurization, etc. **Not suitable for dryer duct venting or kitchen range hood venting.**

6.0 Installation

Step 1: Install (3) rubber grommets into Mounting Bracket (P/N 25007-1, included) to provide vibration isolation. Attach the fan to the mounting bracket with (3) #10 self-tapping screws, provided. Avoid over tightening screws.

Step 2: Select location for fan mounting. A location 2/3 along the ducting, a minimum of 10 feet away from the inlet vent to the fan or the Y/T of a multi-intake system will provide the quietest operation. Fan should be mounted vertically to prevent moisture from accumulating in the fan housing. Attach bracket to mounting structure with the 1 1/4" screws provided.

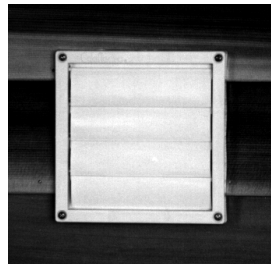
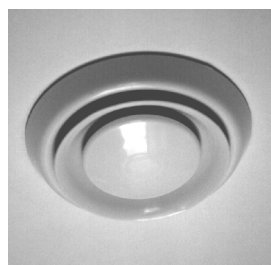
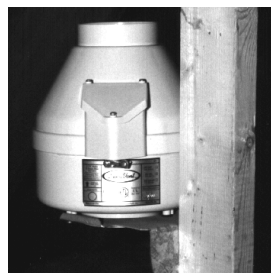
Step 3: Connect ductwork between fan inlet and area to be vented through inlet grille. Flexible, nonmetallic ducting is recommended for quietest operation and easiest installation. Insulated flexible ducting is **highly recommended** for bathroom ventilation in all cold climate installations.

Step 4: Connect inlet grille(s). An optional backdraft damper may be installed in the inlet grille to prevent cold air from backing into the inlet and also prevent condensation from forming inside the ductwork. Backdraft dampers are **highly recommended** at each intake grille for bathroom ventilation in all cold climate installations.

Step 5: Connect outlet of fan to outside vent. The outside vent may go through the roof, sidewall or soffit as desired. Flexible, nonmetallic ducting is recommended for quietest operation and easiest installation. Insulated flexible ducting is **highly recommended** for bathroom ventilation in all cold climate installations.

Step 6: Make electrical connection to fan. Observe the proper wiring connections (see Section 4.0):

RV Series Wire	AC Connection
Black	AC Hot
White	AC Common
Green	Ground



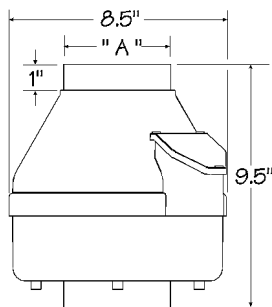
RV SERIES PRODUCT SPECIFICATIONS

The following chart shows fan performance for the RV Series Commercial/Residential Fan:

	Typical CFM Vs Static Suction " WC								Max Static Pressure
	0"	.2"	.5"	.75"	1.0"	1.5"	2.0"	2.5"	
RV100	113	100	71	50	18	-	-	-	1.06"WC
RV125	116	110	98	88	72	44	4	-	2.08"WC
RV150	150	140	119	100	76	26	-	-	1.77"WC
RV200	185	170	144	123	87	1	-	-	1.51"WC

Power Consumption @ 120 VAC , 60Hz (1.4 Amp Maximum)		
RV100	35 - 44	watts
RV125	48 - 68	watts
RV150	48 - 65	watts
RV200	49 - 65	watts

Size:



Fan Model	"A" Dim	Duct Size
RV100	3.9"	4"
RV125	3.9"	4"
RV150	3.9"	4"
RV200	5.9"	6"

Weight: 6 lbs.

Mounting: Mounting bracket included.

Recommended ducting: 4", 5" or 6" Flexible Ducting.

Storage temperature range: 32 - 100 degrees F.

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

Maximum inlet air temperature: 90 degrees F continuous.

Class B Insulation

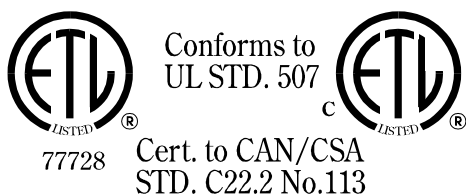
Continuous Duty

3000 RPM

Thermally protected

Rated for Indoor or Outdoor use

Rated for Residential and Commercial use



Typical RV Series Fan Installation

1 RV Series Fans

RV100 – 100 CFM Fan, P/N 28040
RV125 – 125 CFM Fan, P/N 28042
RV150 – 150 CFM Fan, P/N 28041
RV200 – 200 CFM Fan, P/N 28049

Mounting Bracket Included

2 Flexible Duct

Insulated Ducting is strongly recommended in colder climates

3A Roof Vent Cap

or

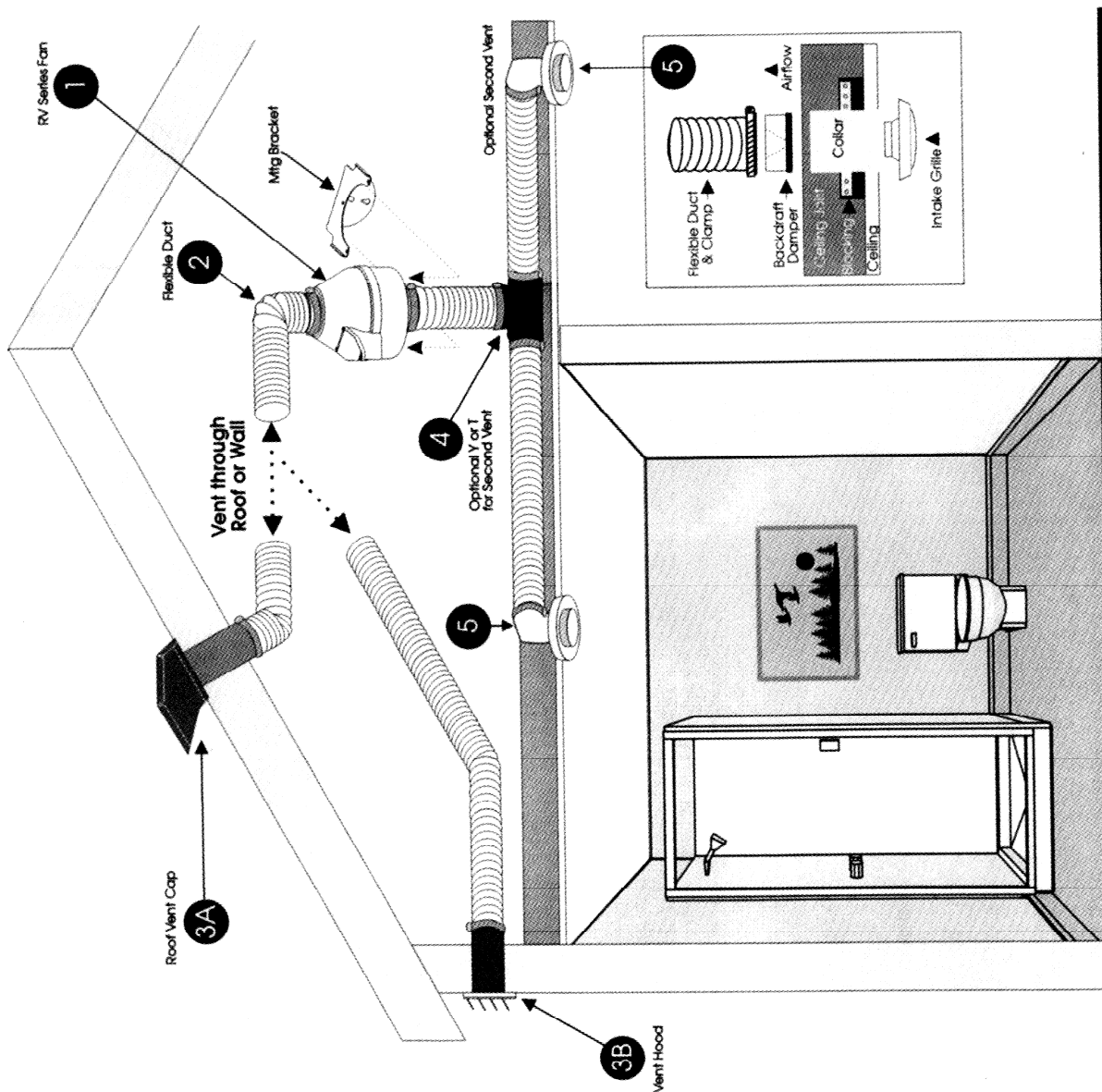
3B Vent Hood

4 Y or T for Optional Second Vent

5 Vent Details

Deluxe Metal Backdraft Damper
Duct Grille & Collar

Backdraft Dampers are strongly recommended in colder climates.



IMPORTANT INSTRUCTIONS TO INSTALLER

Inspect the RV Series Fan for shipping damage within 15 days of receipt. Notify Spruce of any damages immediately. Spruce is not responsible for damages incurred during shipping. However, for your benefit, Spruce 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 RV Series Fan in accordance with all state and local building codes and state regulations.

WARRANTY

Subject to any applicable consumer protection legislation, Spruce Environmental Technologies, Inc. ("Spruce") warrants that the RV/RB/DB/RL Series Fan (the "Fan") will be free from defects in materials and workmanship for a period of five (5) years from the date of manufacture (the "Warranty Term").

Warranty claims made during the first thirty days after installation:

Spruce will replace any Fan which fails due to defects in materials or workmanship. The Fan may be returned (at owner's cost) to either the point of purchase or the Spruce factory. The point of purchase may require proof of purchase or a bill of sale for replacement.

Warranty claims made after the first thirty days after installation through the end of the Warranty Term:

Spruce will (at its option) either recondition or replace any Fan which fails due to defects in materials or workmanship. The Fan must be returned (at owner's cost) to the Spruce factory.

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 include damage in shipment unless the damage is due to the negligence of Spruce.

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

EXCEPT AS STATED ABOVE, THE RV/RB/DB/RL 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 SPRUCE BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR RELATING TO, THE FAN OR THE PERFORMANCE THEREOF. SPRUCE'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 SPRUCE'S WARRANTY AS PROVIDED ABOVE.

For service under this Warranty, contact Spruce 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.

Spruce Environmental Technologies, Inc.
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Ward Hill, MA 01835
TEL. (978) 521-0901
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Record the following information for your records:

Serial No. _____
Purchase Date _____