



## **TJERNLUND PRODUCTS, INC.**

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# **RADON VENTILATION FAN MODEL RX2**



## **INSTALLATION INSTRUCTIONS**

**OWNER'S INSTRUCTIONS, DO NOT DESTROY**

**THIS DEVICE MUST BE INSTALLED BY A  
QUALIFIED PERSON.**

**READ INSTRUCTIONS CAREFULLY PRIOR TO  
INSTALLATION AND OPERATION.**

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Tjernlund Products welcomes your comments and questions. Call us at (651) 426-2993, (800) 255-4208, Fax (651) 426-9547, email us at [fanmail@tjfans.com](mailto:fanmail@tjfans.com) or write to: Customer Service, Tjernlund Products, Inc., 1601 Ninth Street, White Bear Lake, MN 55110-6794.

## DESCRIPTION

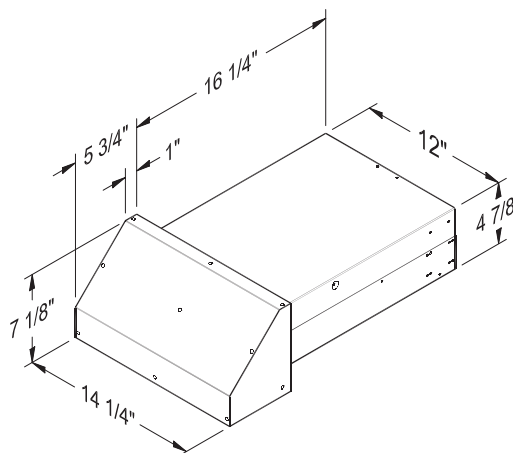
Diluting radon concentrations with outdoor air is an effective and affordable way to decrease radon levels in homes. The RX2 Radon Ventilation Fan includes 2 reversible fans that can be set to exhaust radon, supply fresh air, or positioned with one fan in each direction for a balanced air exchange. At 220 CFM, the RX2 ventilates a 20'x40'x8' basement twice per hour and uses only 36 watts. It needs only a 5" x 12" opening through the rim joist or outside wall and comes with 6' power cords and an exhaust hood. Run it continuously or with a plug-in timer. It also helps reduce basement humidity.

## SPECIFICATIONS

### MODEL RX2

	1 FAN	2 FANS
Voltage	120	120
Watts	20	40
Amps	0.3	0.6
CFM	110	220

Rough-in Wall Opening Dimensions: 12 1/4" x 5 1/4"



## GENERAL INFORMATION

Each RX2 is electrically factory line tested before shipment. After opening carton, Inspect thoroughly for hidden damage.

## INSTALLATION RESTRICTIONS

**WARNING:** Improper installation, adjustment, alterations, service or maintenance can cause injury or property damage. Refer to this manual. For assistance or additional information consult a qualified installer, service agency or the equipment supplier.

**WARNING:** Sufficient air is needed for proper combustion and exhausting of gases through the flue (chimney) of fuel burning equipment to prevent backdrafting. Follow the heating equipment manufacturer's guideline and safety standards such as those published by the National Fire Protection Association (NFPA), and the American Society for Heating, Refrigeration and Air Conditioning Engineers (ASHRAE), and the local code authorities.

**WARNING:** Do not exhaust air from mechanical room unless makeup air is also supplied or equipment in mechanical room is sealed combustion. Carbon monoxide poisoning may result. Use the DT2-6 6" duct take-off kit so exhaust can be removed from outside the mechanical room if necessary.

Observe proper location of hood as described on page 3. The RX2 must only be installed with the hood on an exterior wall.

Do not discharge intake air onto water pipes or other equipment which may be affected by temperature extremes.

## CAUTIONS

**WARNING:** Failure to install, maintain and/or operate the RX2 in accordance with manufacturer's instructions may result in conditions that can produce bodily injury and property damage.

Disconnect power supply to fans and/or control when reversing fan direction or servicing the RX2. Failure to do so may result in personal injury and/or equipment damage.

Make certain the power source is adequate for the RX2 requirements. Do not add the RX2 to a circuit where the total electrical load is unknown.

## RECOMMENDED PATTERNS OF OPERATION

The RX2 most effectively reduces radon levels when operating continuously. Use the RX2 to exhaust, intake fresh air, or create a balanced air exchange based on the application needs and local weather conditions.

**NOTE:** Without a sufficient path for outdoor air to enter the building and equalize the building pressure orienting the fans so that both are exhausting from the interior of the building may create a more negative building pressure and not reduce radon levels effectively. Therefore, a balanced air exchange is generally recommended unless other circumstances lead to lower radon exposure in a particular application. The RX2 can be operated with a plug-in wall timer available at most hardware stores or home centers if intermittent operation based on air changes per hour is desired.

## OPERATION BASED ON AIR CHANGES PER HOUR

This method of operation can be used to supplement or provide for guaranteed air change rates. Table 1 shows the constant Cubic Feet Per Minute (CFM) of air necessary to produce the desired Air Change Per Hour rate (ACH), assuming natural infiltration of outside air at a rate of .10 ACH. Square footage is determined by calculating the finished living space of the house. Garages and crawl space should not be included. The constant CFM figures shown assume that the living space has standard 8 foot ceilings.

TABLE 1  
DESIRED AIR CHANGES PER HOUR (ACH)

		0.15	0.20	0.25	0.30	0.35
SQUARE FOOTAGE OF LIVING SPACE	1000	7	13	20	27	33
	1500	10	20	30	40	50
	2000	13	27	40	53	67
	2500	17	33	50	67	83
	3000	20	40	60	80	100

1. Determine square footage of house living space on left hand column.
2. Pick desired air change rate from top row.
3. Locate intersection of these points to determine constant CFM that should be obtained to meet desired ACH.

The RX2 will provide 220 CFM with both fans and 110 CFM with one fan operating. Where the CFM delivery of the RX2 exceeds that listed in Table 1, a standard plug-in timer can be set so the RX2 is cycled to obtain the desired ACH or Tjernlund's optional SCP speed control may be used to adjust the performance of the fans.

### EXAMPLE

3000 square feet of living space  
.25 ACH desired ventilation rate equals 60 CFM  
RX2 capacity of 110 CFM (with one fan running)

In this example the plug-in timer may be set so that the RX2 operates for one half hour straight each hour or two fifteen minute periods each hour.

## RECOMMENDED INSTALLATION LOCATION

The RX2 may be mounted anywhere in the house. The best place to mount it is the basement through the rim joist on top of the foundation wall.

**WARNING:** Do not exhaust air from mechanical room unless makeup air is also supplied or equipment in mechanical room is sealed combustion. Carbon monoxide poisoning may result. Use the DT2-6 6" duct take-off kit so exhaust can be removed from outside the mechanical room if necessary.

It is required that the RX2 be installed in a location where it will not be directed at the occupants. Do not discharge intake air onto water pipes or other equipment which may be affected by temperature extremes.

Do not terminate adjacent to thermostat. Outside temperatures can disrupt normal thermostat operation.

Do not terminate within three feet from a barometric draft control or intake grille of a heating appliance.

## HOOD TERMINATION CLEARANCES

Install RX2 in accordance with BOCA national Mechanical Codes M-306.1 and M-306.1.1 as follows, (See Diagram A).

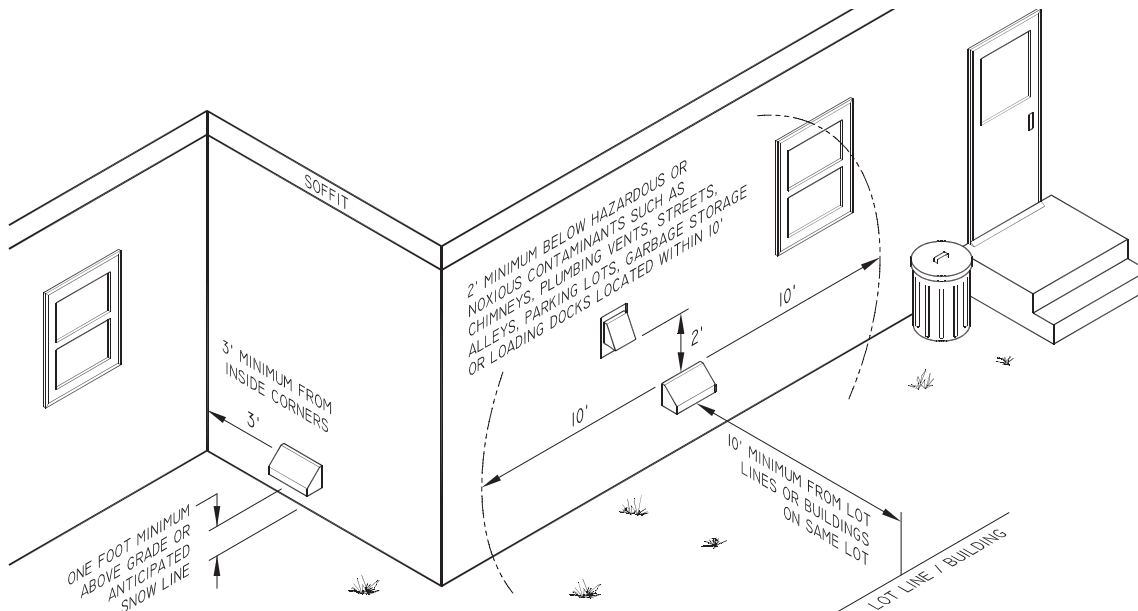
**M-306.1 LOCATION:** Outside air exhaust and intake openings shall be located a minimum of 10 feet (3048mm) from lot lines or buildings on the same lot. When openings front on a street or public way, the distance shall be measured to the centerline of the street or public way.

**M-306.1.1 INTAKE OPENINGS:** Outside air intake openings shall be located a minimum of 10 feet (3048mm) from any hazard or noxious contaminant such as vents, chimneys, plumbing vents, streets, alleys, parking lots and loading docks. When a source contaminant is located within 10 feet (3048mm) of an intake opening, such opening shall be located a minimum of 2 feet (610mm) below the contaminant source.

### IN ADDITION TO THESE CODES THE MANUFACTURER RECOMMENDS THAT:

- The RX2 hood should be a minimum of 1 foot above grade or anticipated snow line.
- The RX2 hood should be a minimum of 3 feet from an inside corner of the building.

DIAGRAM A



### INSTALLATION (TOOLS REQUIRED)

- Reciprocating saw
- 5/16" nut runner or socket
- Siding tools (dependent on exterior finish)
- Drill and 1/2" bit
- Phillips screwdriver
- Level

### INSTALLATION

**NOTE:** Before cutting opening through wall, confirm RX2 hood termination clearances are met as noted at the top of page 3.

1. A) Center template and tape to the rim joist between the floor joists/trusses RX2 will be mounted through, (See Diagram B).  
B) If RX2 is not installed between floor joists or trusses, attach the template to the wall it will be exiting, ensuring RX2 will be level.
2. **CAUTION:** When cutting or drilling into wall, do not damage electrical wiring and other hidden utilities. Using a 1/2" bit, drill pilot holes noted on the template from inside through rim joist, wall board, siding, etc., keeping drill bit perpendicular to the wall. 1/2" bit must be long enough to penetrate through exterior.
3. Use a level to mark (4) holes drilled in step 2 and connect the holes on building exterior, (See Diagram C). Use a saw to remove material between marks, (See Diagram D).

DIAGRAM B



CENTER TEMPLATE BETWEEN JOIST OR PLACE ON WALL THE RX2 WILL EXIT.

DIAGRAM C



DRILL (4) 1/2" CORNER HOLES THROUGH WALL FROM INTERIOR AND CONNECT HOLES ON EXTERIOR WITH A LEVEL.

DIAGRAM D



CUT OPENING ALONG MARKED LINES.

4. Remove fans if necessary and insert RX2 housing through exterior wall opening with fan openings facing down, (See Diagram G). For vinyl or other types of lap siding, level RX2 and trace outer flange on RX2 housing and trim siding back enough to install J channel or appropriate flashing, (See Diagram E).
5. Place a bead of caulk on RX2 mounting flange or building sheathing before inserting housing, (See Diagram F).
6. Remove fans if necessary and insert RX2 housing through exterior wall opening with fan openings facing down, (See Diagram G).

DIAGRAM E



LEVEL RX2 AND TRACE FLANGE. TRIM SIDING BACK SO RX2 FLANGE CAN BE MOUNTED FLUSH TO EXTERIOR SHEATHING.

DIAGRAM F



PLACE A BEAD OF CAULK ON RX2 MOUNTING FLANGE OR BUILDING SHEATHING BEFORE INSERTING HOUSING.

DIAGRAM G



INSERT RX2 HOUSING THROUGH WALL. FAN OPENINGS MUST FACE DOWN.

7. Level housing and secure to wall using (4) screws, (See Diagram H). Install J channel or appropriate flashing around RX2 mounting flange. Do not cover up mounting flange or hood may not fit in J channel, (See Diagram I).

DIAGRAM H



LEVEL HOUSING AND SECURE TO WALL USING (4) SCREWS.

DIAGRAM I



INSTALL J CHANNEL OR APPROPRIATE FLASHING AROUND RX2 MOUNTING FLANGE.

DIAGRAM J



HOOK RX2 HOOD ON HOUSING TOP FLANGE, CENTER AND BEND TAB OVER ON EACH SIDE ON BOTTOM OF HOOD.

9. Apply a bead of caulk around hood and siding, (See Diagram K).

10. Insert plastic nut into RX2 base. Assemble mounting bracket as shown, (See Diagram M). Attach assembled bracket to bottom of RX2. Mark bracket mounting location on wall with a slight upward pitch in rear of RX2 and connect to wall using provided wall anchor, (See Diagram L).

DIAGRAM K



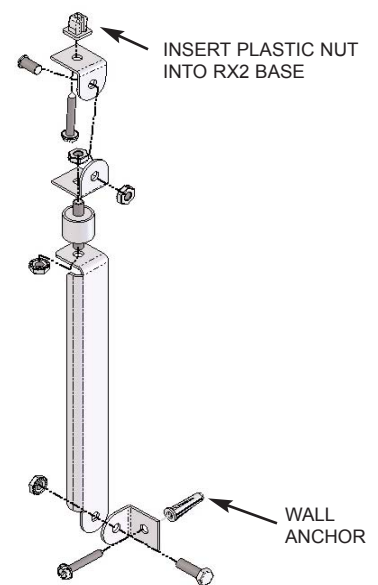
APPLY A BEAD OF CAULK AROUND HOOD AND SIDING.

DIAGRAM L



ATTACH MOUNTING BRACKET TO BOTTOM OF RX2. INSTALL BRACKET SO RX2 HAS A SLIGHT UPWARD PITCH IN REAR.

DIAGRAM M



ASSEMBLY RX2 MOUNTING BRACKET.



11. **WARNING:** Unplug fans when changing fan direction to prevent damage or injury. Insert fans in desired direction for either exhaust or intake. See arrow on bottom of fan cartridge or side of fan shroud for air flow direction. Once installed confirm the air is being exhausted or supplied depending upon application, (See Diagram N).

12. Insulate around RX2 housing with fiberglass insulation, (See Diagram O).

DIAGRAM N



**WARNING:** UNPLUG FANS WHEN CHANGING DIRECTION. SEE ARROW ON BOTTOM OF FAN CARTRIDGE OR SIDE OF FAN SHROUD FOR AIR FLOW DIRECTION.

DIAGRAM O



INSULATE AROUND RX2 HOUSING.

## MAINTENANCE

The RX2 hood screen must be inspected every 3 to 6 months. Remove any foreign material such as leaves, lint, cottonwood or other items. Remove screen to clean if necessary, (See Diagram P).

Tjernlund recommends annual radon testing.

DIAGRAM P

INSERT HOOD SCREEN IN HOOD GUIDES.



## HOW HOW TO OBTAIN SERVICE ASSISTANCE

1. If you have any questions about your RX2 or if it requires adjustment, repair or routine maintenance, we suggest that you contact your installer, contractor or service agency.
2. If you require technical information contact Tjernlund Products, Inc. at 1-800-255-4208 or email us at [fanmail@tjfans.com](mailto:fanmail@tjfans.com).

When contacting Tjernlund Products, Inc., please have the following information available:

1. Model number and date code of the RX2
2. Name and address of installer and service agency
3. Date of original installation and dates any service work was performed
4. Details of the problem

## LIMITED PARTS WARRANTY AND CLAIM PROCEDURE

Tjernlund Products, Inc. warrants the components of the RX2 for one year from date of installation. This warranty covers defects in material and workmanship. This warranty does not cover normal maintenance, transportation or installation charges for replacement parts or any other service calls or repairs. This warranty DOES NOT cover the complete RX2 if it is operative, except for the defective part.

Tjernlund Products, Inc. will issue credit or provide a free part to replace one that becomes defective during the one year warranty period. All receipts should include the date code of the RX2 to ensure that the defective component corresponds with the complete unit. This will help prevent possible credit refusal.

- 1.) Follow troubleshooting guide to determine defective component. If unable to determine faulty component, contact your Tjernlund distributor, Tjernlund Products Technical Customer Service Department at 1-800-255-4208 for troubleshooting assistance or email us at [fanmail@tjfans.com](mailto:fanmail@tjfans.com).
- 2.) After the faulty component is determined, return it to your Tjernlund distributor for replacement. Please include RX2 date code component was taken from. Credit or replacement will only be issued to a Tjernlund distributor after the defective part has been returned prepaid to Tjernlund.

## WHAT IS NOT COVERED

Product installed contrary to our installation instructions  
Product that has been altered, neglected or misused

### TJERNLUND LIMITED 1 YEAR WARRANTY

Tjernlund Products, Inc. warrants to the original purchaser of this product that the product will be free from defects due to faulty material or workmanship for a period of (1) year from the date of original purchase or delivery to the original purchaser, whichever is earlier. Remedies under this warranty are limited to repairing or replacing, at our option, any product which shall, within the above stated warranty period, be returned to Tjernlund Products, Inc. at the address listed below, postage prepaid. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, AND TJERNLUND PRODUCTS, INC. EXPRESSLY DISCLAIMS LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF THIS PRODUCT. THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES AND NO AGENT IS AUTHORIZED TO ASSUME FOR US ANY LIABILITY ADDITIONAL TO THOSE SET FORTH IN THIS LIMITED WARRANTY. IMPLIED WARRANTIES ARE LIMITED TO THE STATED DURATION OF THIS LIMITED WARRANTY. Some states do not allow limitation on how long an implied warranty lasts, so that limitation may not apply to you. In addition, some states do not allow the exclusion or limitation of incidental or consequential damages, so that above limitation or exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which may vary from state to state. Send all inquiries regarding warranty work to Tjernlund Products, Inc. 1601 9th Street, White Bear Lake, MN 55110-6794. Phone (651) 426-2993 • (800) 255-4208 • Fax (651) 426-9547 • Email fanmail@tjfans.com.

Any freight charges related to the return of the defective part  
Any labor charges related to evaluating and replacing the defective part

## PARTS AND ACCESSORIES

### REPLACEMENT PARTS

RX2 Fan Assembly	950-8350
RX2 Hood Screen	950-8352
RX2 Hood with Screen	950-8353

### ACCESSORIES

6" Duct Take-Off Kit	DT2-6
Plug-In Speed Control	SCP