

# Rainbow 36 V User's Manual

Ventilation & Air Filtration System for a Residential Safe Room



Approved by the **Civil Defense Command**  
and the **Standards Institution** of Israel

In accordance with Israel **Standard 4570**

NBC-Filtration & Ventilation Systems





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## Dear Customer,

Installing the **Rainbow 36 V** Ventilation and Air Filtration System in your home can save the lives of you and your loved ones.

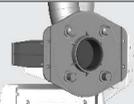
For your security, we recommend carefully reading this manual, as well as watching the training film on the company's website. Keep this manual in an appropriate place, so that it will be available in the event of an emergency.

It is also recommended to practice operating the system from time to time, **but without removing the filter's sealing caps and without attaching the filter!**

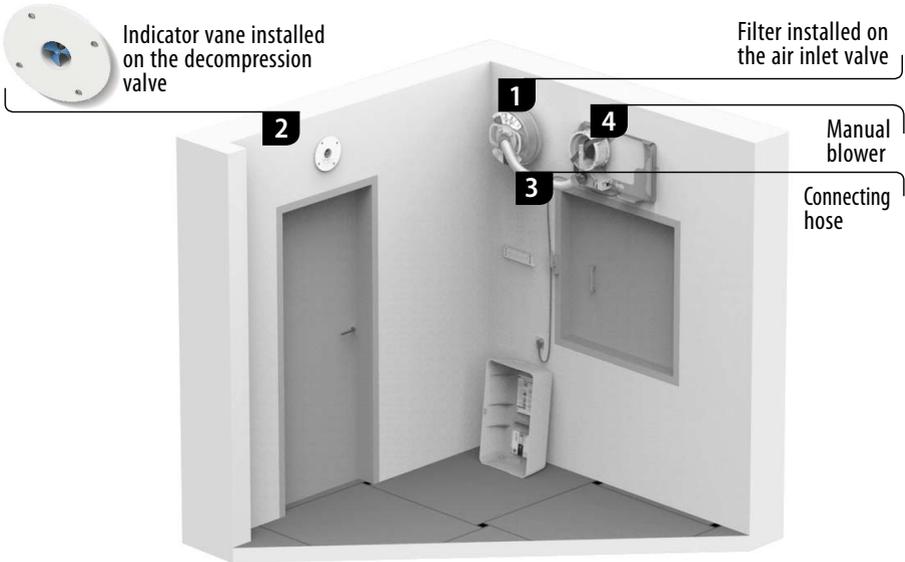
## **Safety Instructions**

1. Use the system only in accordance with the instructions in this manual.
2. Do not use the system for any purpose other than for ventilation and filtration of a residential safety room, and protection from biological and chemical warfare substances while staying in the safety room.
3. Only connect the system to the standard voltage outlet of a residential home (230 VAC). Other types of power supplies are liable to cause damage to the system and will compromise proper functioning.
4. Protect the system from extreme weather conditions and moisture.
5. Store the system out of the reach of children. Do not allow a child under the age of 10 to operate the system.
6. Any repairs, including disassembly for repairs, should be performed by professional technicians that are approved by Beth-El Industries, and according to the details in the warranty.
7. By recommendation of the Civil Defense Command, arrange a periodic service visit once every two years in order to ensure the suitability of the safety room and the proper functioning of the system.

## System Parts List

<p>System cover</p>	
<p>NBC filter (Installed on the air inlet valve) <b>1</b></p>	
<p>Air inlet valve</p>	
<p>Connecting hose <b>3</b></p>	
<p>Electric blower</p>	
<p>Manual blower <b>4</b></p>	
<p>Indicator vane (Installed on the overpressure blast valve) <b>2</b></p>	
<p>Bracket for the manual blower (Present in systems where the height of the inlet valve is above 1.6 meters)</p>	

**The following illustration displays the parts of the system and their location in a residential safety room:**



**System’s Principle of Operation:**

When the system is operating according to the instructions, air is introduced to the room via the air inlet valve and the NBC filter (1). The filtered air is circulated through the room and creates an overpressure, thus preventing the entry of polluted air through crevices or concealed openings.

When the room is in a state of overpressure, the indicator vane (2) spins around. In this state, it is possible to remain in the room without the personal NBC masks (on condition that the room is not contaminated by NBC before operating the system).

The slight overpressure that is created in the room is not harmful to humans or pets.



## **Instructions for Operating the System**

### **Important!**

The system should only be operated in an actual emergency situation and in accordance with the instructions of Civil Defense Command.

### **Attention!**

Before operating the system, make sure that all doors and windows are closed and sealed properly. Be sure that the openings of the plumbing, air conditioning, water, and sewage--in the event that they are available in the residential safety room--are sealed adequately.

### **Step 1**

#### **Remove the system cover**

Grasp the two handles on the sides of the cover, and pull it towards yourself.

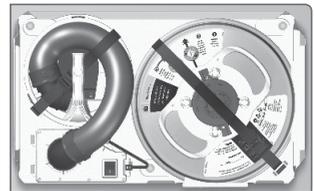
Pay attention to the "Brief Operating Instructions at Times of Emergency" on the inner wall of the system cover.



### **Step 2**

#### **Remove the filter from the system**

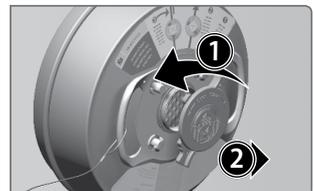
Hold the filter with one hand, and release the strap with the other hand.



### **Step 3**

#### **Open the seal on the filter and remove the sealing caps on both sides.**

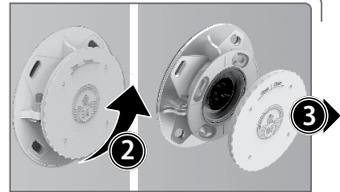
**Note:** To remove the sealing caps, rotate the cap counterclockwise (1), and pull it outwards (2).



**Step 4**

**Remove the cover of the air inlet valve**

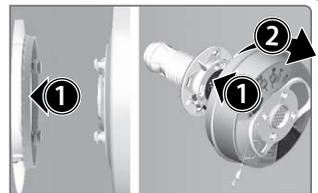
To remove the cover, push the safety button downward (if there is one) **(1)**, and rotate the cover counterclockwise **(2)**.



**Step 5**

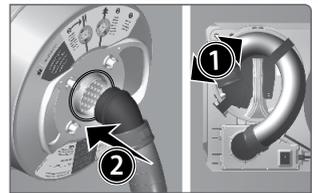
**Attach the filter to the air inlet valve**

Hold the filter by the handles and, with the blue arrow pointing upward, insert the pins into the holes on the flange that is on the wall **(1)**. Turn it clockwise until the green arrow is pointing vertically and the filter can't be turned any more **(2)**.



**Step 6**

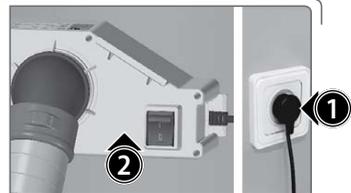
**Release the strap of the connecting hose (1)** and attach the loose end to the filter on the wall **(2)**.



**Step 7**

**Make sure that the inlet cable is attached to the electric blower and attach the other end to the wall outlet (1). Press the operating switch on the blower (2).**

(Wait a few seconds for the blower to start working.)



**Step 8**

**Attention!** The indicator vane on the air outlet valve will start to spin after a few seconds--this indicates that the room is in the required state of overpressure. In the event that the indicator vane doesn't rotate, this is a warning that the room is not properly sealed.



## Operation by means of the manual blower

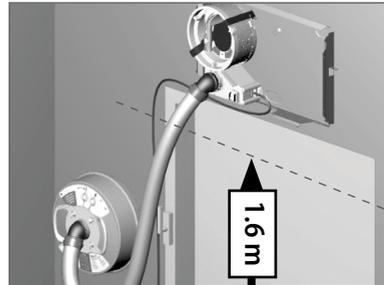
In the event of a power outage or other problems with the electric blower, the system can be operated by means of the manual blower.

The manual blower can be attached in two possible positions:

### First Position

**Attaching the manual blower directly to the filter:**

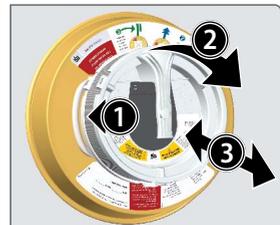
In a residential safety room, in which there is an air inlet valve located at a **height below 1.6 meters:**



Remove the manual blower from the system. Match the blower to the pins on the filter (1). Attach it by means of slightly rotating it counterclockwise, and then rotate it clockwise until it can't be turned any more (2).

Start operation by alternately drawing and pushing the blower (3).

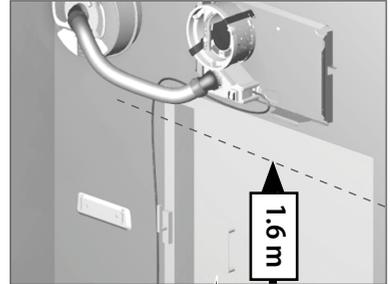
The rate of operation is 30 cycles per minute. Make sure that the indicator vane is rotating.



## Second Position

Attach the manual blower to the adapter (assembled on the wall).

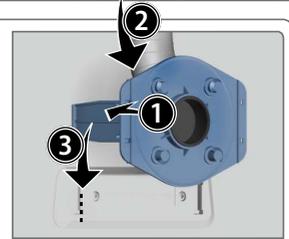
In a residential safety room in which the air inlet valve is located at a height over 1.6 meters:



### Step 1

Take out the bracket from the cabinet (the bracket is located at the bottom of the manual blower). Open the two rear tabs (1) and attach the flexible hose (2) to it.

Attach the bracket to the adapter on the wall by means of sliding the bottom of the tabs into the appropriate slots, as much as possible (3).

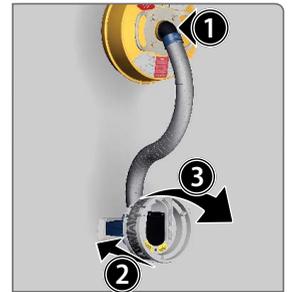


### Step 2

Be sure that the other end of the connecting hose is attached to the opening of the air outlet of the filter (1).

Attach the manual blower to the bracket by means of the connecting pins. Match the blower holes to the pins on the adapter (2).

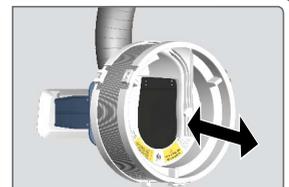
Attach it by means of slightly rotating it counterclockwise, and then turn it clockwise until it stops turning (3).



### Step 3

Start operation by alternately drawing and pushing the blower.

The rate of operation is 30 cycles per minute. Make sure that the indicator vane is rotating.



### **Maintenance of the filter after use**

- The filter has a very high adsorption capacity.
- At the time of an NBC attack and afterwards, do not detach the filter from the air inlet opening. If the filter has adsorbed NBC substances, proceed in accordance with the instructions of the Civil Defense Command.  
**At the end of the emergency situation, the company should be summoned for a service check and maintenance of the filter.**
- If there was no NBC attack, but the filter was attached to the wall nonetheless, it is possible to detach it from the valve, to close the openings with the sealing caps, and to arrange for a service check of the system.

### **Routine storage**

- Close the air inlet valve (shock valve) by means of the decorative cover.
- Do not open the filter's original seal or damage it in any way.
- In order to maintain the proper functioning of the system, perform a service check once every two years, in accordance with the instructions of Civil Defense Command.

## Troubleshooting

Possible Malfunction	Possible Solution
The blower doesn't work	<p>During operation, check the connection of the power cable to the electrical outlet and to the blower itself.</p> <p>In the event that the blower still doesn't work, try to attach it to a different electrical outlet.</p>
The flexible hose detaches and falls out of the filter and the blower	<p>Check and properly tighten the end of the hose to the appropriate opening of the filter and blower.</p>
The filter doesn't fit into its location in the inlet valve	<p>A. Make sure that you are holding the filter in the proper direction (with the blue arrow on the label of the filter pointing upward)</p> <p>B. Make sure that you match the small pins of the filter to the openings of the inlet valve. Rotate it slightly counterclockwise so that the pins will go into their proper location, and then rotate it clockwise as much as possible, until the filter locks in place.</p>
The indicator vane doesn't rotate	<p>This is an indication that the room is not properly sealed. Verify that the door and windows are closed to the point of being completely sealed, and similarly verify that there are no additional openings or leaks that are not properly closed off.</p>



Beth-El Industries



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