OPERATING INSTRUCTIONS FOR IVL-1 VENTILATION PLANT

1. BYPASS USE

1. Check that the special filter (2) is turned to the by-pass position and locked into place using the locking lever (1).
2. Check that the by-pass air pipe (11) is connected to the pressure valve’s (9) and the safety blower’s intake pipe (4) using flexible connectors (10) and hose clamps.
3. Turn the air flow meter’s (13) adjustment lever (12) to the “BY-PASS” position.
4. Start the safety blower (6) from the motor start-up switch (15).
5. Open the pressure valve (9) by turning the hand wheel (8) counter-clockwise.
   - Adjust the air flow to the meter’s (13) range of 170 dm³/s (600 m³/h) using the hand wheel (8).
6. If electricity distribution is interrupted, operate manually.
   - Rotate the safety blower manually using the hand crank (14) so that the air flow meter’s (13) indicator is in the range of 135 dm³/s (500 m³/h).
2. SEALING

1. In sealing use, air will not be taken in or discharged.
2. Close the pressure valve (9) by turning the hand wheel (8) clockwise.

3. CHANGING FROM SEALING TO FILTERING

1. Remove the flexible connectors (10) from the by-pass air pipe (11).
2. Remove the special filter's lower protective cover.
3. Release the special filter’s lock using the locking lever (1). If necessary, open the by-pass air pipe's fastening as shown in the image.
4. Using the lower flexible connector (10) and a hose clamp, connect the special filter (2) tightly to the safety blower’s intake pipe (4) and lock the special filter (2) using the locking lever (1).
5. Turn the adjusting lever (12) of the air flow meter to the “FILTERING” position.
6. Slowly operate the blower manually using the hand crank (14) during the next two steps.
   - Remove the special filter's upper protective cover.
   - Using the upper flexible connector (10) and a hose clamp, connect the special filter tightly to the pressure valve (9).
7. Remove the hand crank (14) and place it in its holder (3).
8. Lock the special filter (2) into position.
9. Start the safety blower (6) from the motor start-up switch (15).
10. Adjust 40 dm³/s (150 m³/h) as the special filter’s (2) air flow by slowly opening the pressure valve (9) using the hand crank (8) counter-clockwise.
11. If electricity distribution is interrupted, operate manually.
   - Open the pressure valve (9) by turning the hand wheel (8) so that the air flow meter’s indicator shows 40 dm³/s (150 m³/h).
4. CHANGING FROM FILTERING TO SEALING

1. Stop the safety blower (6) from the motor start-up switch (15) or terminate manual operation.
2. Close the pressure valve (9) to fully closed by turning the hand wheel (8) clockwise.

5. CHANGING FROM FILTERING TO BY-PASS USE

1. Stop the safety blower (6) from the motor start-up switch (15) or terminate manual operation.
2. Slowly operate the blower manually using the hand crank (14) during the next two steps.
   - Detach the special filter’s upper flexible connector (10) from the special filter (2).
   - Seal the special filter (2) tightly using the upper protective cover and a hose clamp.
3. Remove the lower flexible connector from the special filter (2). Seal tightly the special filter using the lower protective cover and a hose clamp.
4. Unlock the lock (1) of the special filter and turn the filter (2) to the by-pass position.
5. Attach the by-pass air pipe (11) to the pressure valve (9) and the safety blower’s intake pipe (4) using flexible connectors (10) and hose clamps.
   Then lock the special filter (2) using the locking lever (1).
6. Carry out the procedures stated in Section “BY-PASS use”.

If electricity distribution is interrupted in the safety blower (6), use the back-up lamp (7) for lighting. The lamp contains an extension cord with which the lamp can be used in other parts of the air raid shelter.
6. RETURNING THE EQUIPMENT TO THE STORAGE POSITION WHEN THE SHELTER IS NOT USED

1. Check that the special filter’s (2) protective covers are sealed using hose clamps.
2. Check that the by-pass air pipe (11) is connected to the pressure valve’s (9) and safety blower’s intake pipe (4) using flexible connectors (10).
3. Check that the pressure valve (9) is closed from the hand wheel (8).
4. Check that the hand crank (14) is placed in its holder (3).
5. Check that the special filter (2) is locked into place using the locking lever (2).