



FUNCTION DESCRIPTION



Blow-down unit



Functional description of blow-down unit for Lavair-equipment



General

You have to use the manual blow-down unit to avoid a prohibited concentration of solid matters in the installation. A part of the circulating coagulated water will be replaced by fresh water. This will decrease the concentration of solid matters. If there is no electrical desalination plant installed you have to use the manual blow-down unit.

For default setting we suggest following blow-down rates:

Use of public water:

- 2x amount of water which evaporates each hour.

Use of conditioned e.g. deionized water:

- 0,5x amount of water which evaporates each hour.

The final choice of the blow-down rate depends on the conditions on site. The blow-down rate must be customized according to the water or rather air quality. The final set up should be made after the commissioning. Therefore you have to check the installation frequently. If the humidifier or air washer remains clean with the default setting for a period of time you can decrease the blow-down rate step by step. If the installation becomes soiled after a short period of time, you have to increase the rate.

We recommend the compliance of the VDI 3803 regulation (see also Lavair's maintenance and service manual chapter 3).



Even if the manual blow-down unit is in operation, you still have to control and clean the whole installation regularly!

Depending on the configuration, our humidifiers and air washers are equipped with different kinds of manual blow-down units:

1. **Basic blow-down unit (Picture 1):**

The basic unit is used for small scales. It consists of a manometer with ball valve (Pos. 1), the blow-down line, as well as the tube end (Pos. 2).

Adjust the default setting as follows (see Picture 1):

- Completely close blow-down ball valve (Pos. 1) and take note of the nozzle pressure the manometer indicates (e.g. 2,8 bar).
- Open the blow-down ball valve (Pos. 1) so that the nozzle pressure will decrease approx. 0,1 bar-0,2 bar.

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- Manometer indicates 2,6 bar or rather 2,7 bar now.

You also can take out the pipe end (Pos. 2) from the discharge-and overflow set to specify the flow rate.



(Picture 1)

2. **Blow-down unit with recirculating line (Picture 2):**

Our middle and huge units are additionally equipped with a recirculating line. The water which will not be discharged is returned to the tank and fluidizes the water inside. Thereby disposals on the tank bottom get minimized.

Adjust the default setting as follows (see Picture 2):

- Completely close blow-down ball valve (Pos. 1) and recirculating ball valve (Pos. 2).
- Take note of the nozzle pressure the manometer indicates (e.g. 2,8 bar).
- Open the blow-down ball valve (Pos. 1) so that the nozzle pressure will decrease approx. 0,1 bar-0,2 bar.
- Manometer indicates 2,6 bar or rather 2,7 bar now.

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- Open the recirculating ball valve (Pos. 2) so that the nozzle pressure will decrease approx. 0,3 bar.
- Manometer indicates e.g. 2,3 bar now.

You also can take out the pipe end (Pos. 3) from the discharge-and overflow set to specify the flow rate.



(Picture 2)

3. Blow-down unit for double nozzle system with recirculating line (Picture 3):

Units with double pumps or double nozzle systems are usually equipped with two manometers.

Adjust the default setting as follows (see Picture 3):

- Completely close both ball valves of the manometers (Pos. 1) and recirculating ball valve (Pos. 2).
- Take note of the nozzle pressure the manometer indicates (e.g. 2,8 bar).

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- Open the blow-down ball valve (Pos. 3) so that the nozzle pressure will decrease approx. 0,1 bar-0,2 bar.
- Manometer indicates 2,6 bar or rather 2,7 bar now.
- Open the recirculating ball valve (Pos. 2) so that the nozzle pressure will decrease approx. 0,3 bar.
- Manometer indicates e.g. 2,3 bar now.

You also can take out the pipe end (Pos. 4) from the discharge-and overflow set to specify the flow rate.



(Picture 3)



If the blow-down rate has to be modified differing to the default setting, ensure that there is still enough nozzle pressure available!