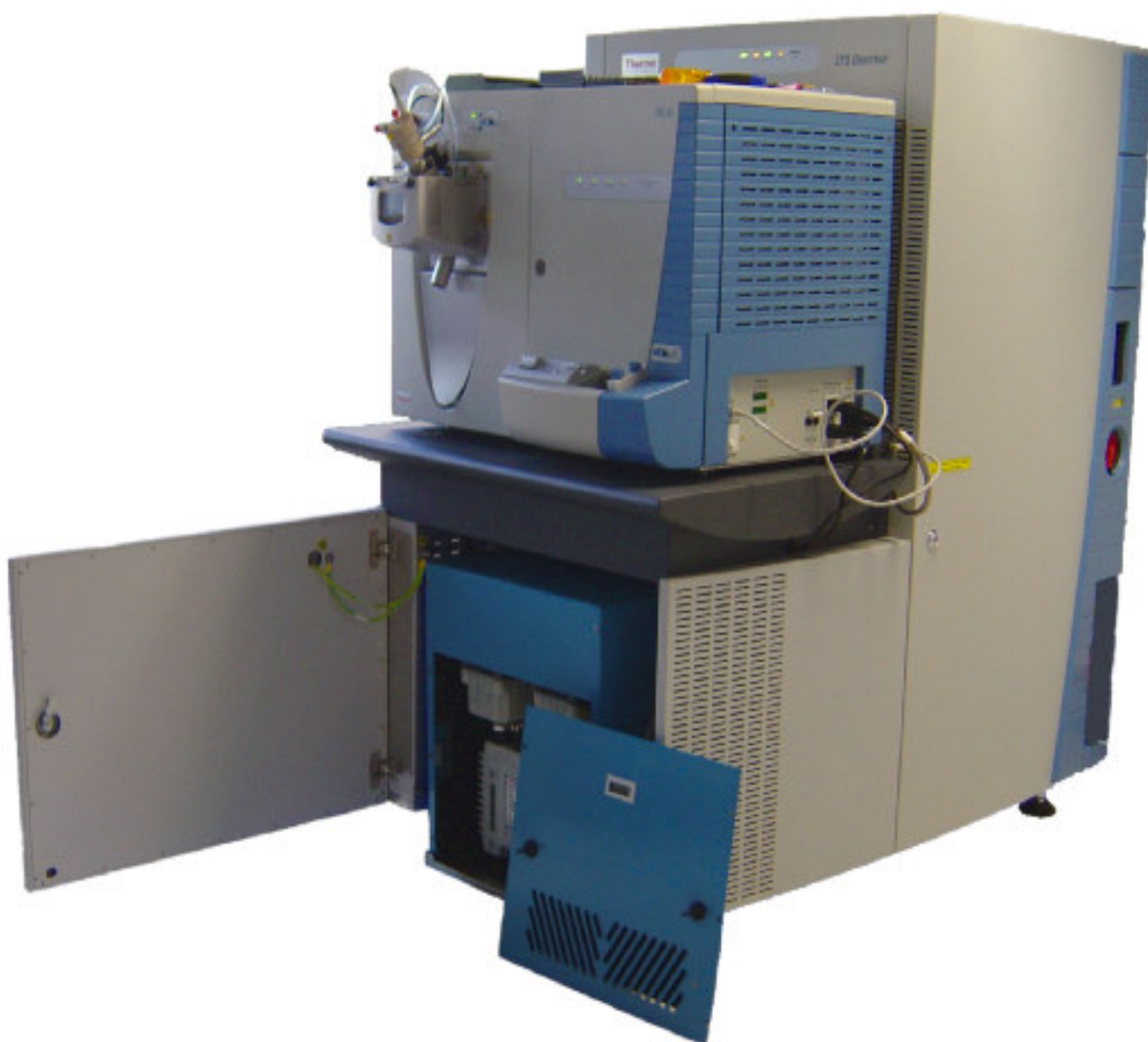


Installation and Users Manual

January 2009

Orbibox

Noise reduction box for vacuum pumps in the Thermo Scientific Orbitrap



Content

Operating conditions	1
Technical data	1
Scope of supply	2
Installation	2
Maintenance	4

Operating conditions and conventional usage

- The box is exclusively designed as a noise reduction device for vacuum pumps in the Thermo Scientific Orbitrap.
- The box must be installed on an even, horizontally surface.
- The incoming and exhausted airflow must be able to stream unhindered. The front air intake and the rear air discharge openings must be distant from other objects at least 15 cm.
- The fans must be able to turn free and may not be blocked.
- The box may be used only in clean and dry areas.
- The heat emission of the installed pump may not exceed 2 kW
- The box may not be operated above 30 °C / 86 °F ambient temperature.
- The inner temperature of the box may not exceed 50 °C / 122 °F
- If condensation water is formed after unpacking the box, a acclimatisation period of 2 hours must be adhered prior to installation.
- The box must be kept away from easily inflammable and combustible liquids / compounds.
- If a liquid should penetrate the electrical part of the box it is to be set immediately out of operation and must be checked by a specialist.
- The valid accident guarding regulations must be considered.
- A repair of the box may be accomplished only by a specialist.

Technical Data

- Voltage feed 230V ±10% / 50/60 Hz ±10%
- Current consumption built in fans max. 250 mA
internal connected load max. 2,4 kW, fused with 2 x 10 A
- Acoustic insulation environment friendly recycling material, oil- and water resisting,
inflammability complies with FMVSS 302 and DIN 75200
- Dimensions

<u>external (WxHxD)</u>	<u>internal (WxHxD)</u>
460 x 520 x 685 mm	420 x 500 x 585 mm
- Weight approx. 25 kg

Scope of supply

1 Noise reduction box SSH-OE, consisting of:

- 1 Front with built in temperature gauge and 1.5 V AA battery
- 1 Side left
- 1 Side right
- 1 Back with built in fans
- 1 Top cover plate
- 1 Front frame
- 1 Air exhaust adapter
- 1 Oil pan for SSH-OE; stainless steel on wheels
- 2 Screw caps for the oil drains
- 3 Air exhaust hoses approx. 80 cm
- 6 Pipe clamps
- 2 power extension cords
- 1 Allen key 2,5 mm
- 1 KF40 * 500 mm flange extender with damp and gasket

Installation

If your Orbitrap is already installed and running, begin with step 1. When you install the noise reduction kit together with your Orbitrap you can skip step 1 and continue with step 2.

Step 1

You have to vent your instrument in order to install the noise reduction box. So it is a good idea to plan the installation together with a oil change or PM of the Orbitrap.

First you have to exchange the existing oil pan by the one delivered with the Orbibox. Shut down your instrument and remove the vacuum and vent hoses from the pumps to be able to roll the pumps out of the Orbitrap. Remove the oil mist filters, clamps and flanges. Now you can place the pumps separately on the new oil pan.

Step 2

Place the pumps on the oil pan with the oil sight glass facing the oil drains of the oil pan. The leading edge of the pump feet should be about 15 cm away from the front end of the oil pan.

Install the oil mist filters, clamps and flanges onto the pumps. Remove the top cover plate from the noise reduction box using the 2.5 mm Allen key and place the box over the pumps, the temperature gauge faces the oil drains of the oil pan.

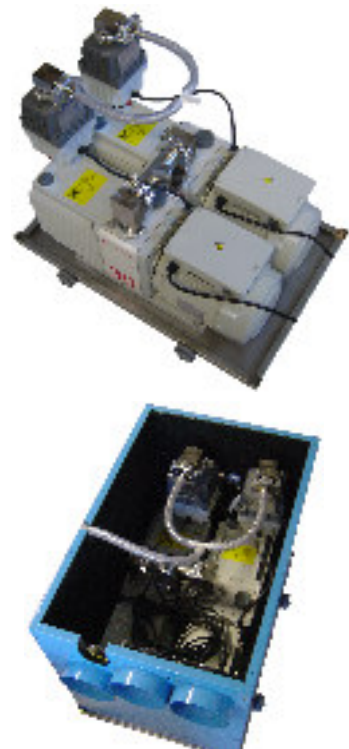
Mount the three air exhaust hoses onto the flanges on the back of the box using the pipe clamps.

Connect the vacuum and exhaust hoses to the pumps and feed them out of the box through the designated gaps, use the KF40 vacuum line extension if needed.

Connect the pump power cables to the sockets inside the box.

Connect the power extender cords to the back connectors of the box and feed them to the right out of the Orbitrap and plug them into the pump connectors of the LTQ. Make sure that both power switches at the back of the box and the pumps are switched on (on newer models there are no switches, the box is always on).

Now you can reinstall the top cover plate onto the box.



Step 3

Roll the complete assembly into the Orbitrap. On the left hand side is a bolt with ground cables. Be careful not to scratch the surface of the box with it, when you roll it in. Alternatively you can screw the Orbitrap up with the black plate feet until the bolt is above the box. You will need to support the rear feet with an underlay about 30 mm thick because the rear threaded bolts are a bit shorter than the front ones. Connect the ground cable to the box like shown in the picture to the right.



Step 4

Remove the rear cover of the Orbitrap by unscrewing the five thick plastic screws. It might be necessary to loosen the Allen screws on the left side seen from the back. Remove the bottom plate holding the two fans for the pumps and disconnect their power cables – we will not need this anymore. Pull out the Air exhaust hoses you mounted to the rear of the box before and connect them to the air exhaust adapter using the three remaining pipe clamps.

This is a bit tricky, please be patient.

Make sure, that the hoses are not kinked, that the air can flow freely.



Step 5

Mount the so prepared air exhaust adapter to the Orbitrap and reinstall the rear cover. Start up your instrument and check if airflow is coming from all three exhausts.

You have finished your installation successfully.

Periodically check the temperature gauge on the front of the box. It should read, depending on your room temperature between 30 and 40 degrees Celsius and should not exceed 50 degrees Celsius.



Maintenance

To clean the surfaces use a soft and moist tissue.

every day

Check the temperature of the box.

If a fan fails, it must be replaced immediately.

If the temperature display fails, please check the battery of the module and replace as necessary.

every month

Check the air intakes and fans for any kind of dirt. Clean as necessary.

After 4 years of operation

We only use high quality fans with ball bearings. Even these lose efficiency with time. To guarantee reliability, the fans should be exchanged after 4 years of continuous operation. After this time, the fans have lost typically 15% of their original engine speed.

An exchange back with new fans can be ordered from Sonation to minimize the down time of your system.