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| Title: | PM Works on Biobank Coolers | | | ID: |
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| | | - | <i>CMA</i> | |

PM Work on Biobank Coolers

Q : I kindly ask you to provide us with the latest instructions, schedules and lists of action and materials needed for cooling units maintenance.

First of all, regarding 1k5, 3k5, 4k5 and 7k5.

A: All Maintenance on cooling units can only be performed of personnel trained by Liconic. This may also be a local company. Therefore most likely the first two services should be done with one of our experts on site for training purpose.

Due to this there will be no schemes provided as this increases the risk of untrained personnel manipulating the units, resulting in harm and damage to the cooling units.

Basically you can limit resp. the most important point are

- Make sure that log-files are permanently generated
- Leak-Detection is performed - if required by regulations
- Analysis of log-files by L-AG

For now following information Liconic provides:

Yearly maintenance is recommended, including changing of oil and replacing filter / dryer.

Leak detecting and checking health of system.

It will be required to have following equipment on site for the task:

- Vacuum Pump (including Vacuum Pump Oil)
- Vacuum Gauge
- Manifold
- Soldering Equipment (ideally, Acetylene / Oxygen)
- Refrigerant Scale
- R404a
- R508b
- Compressor Oil