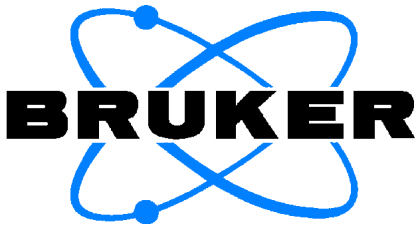

BSMS

Emergency Lift Module
Technical Manual

Version 001

BRUKER

This manual was written by
Michael Schenkel

Fällanden, Switzerland

P/N: Z31670
DWG-Nr: Z4D9071

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BSMS Emergency Lift Module

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Basic Functionality 1.1

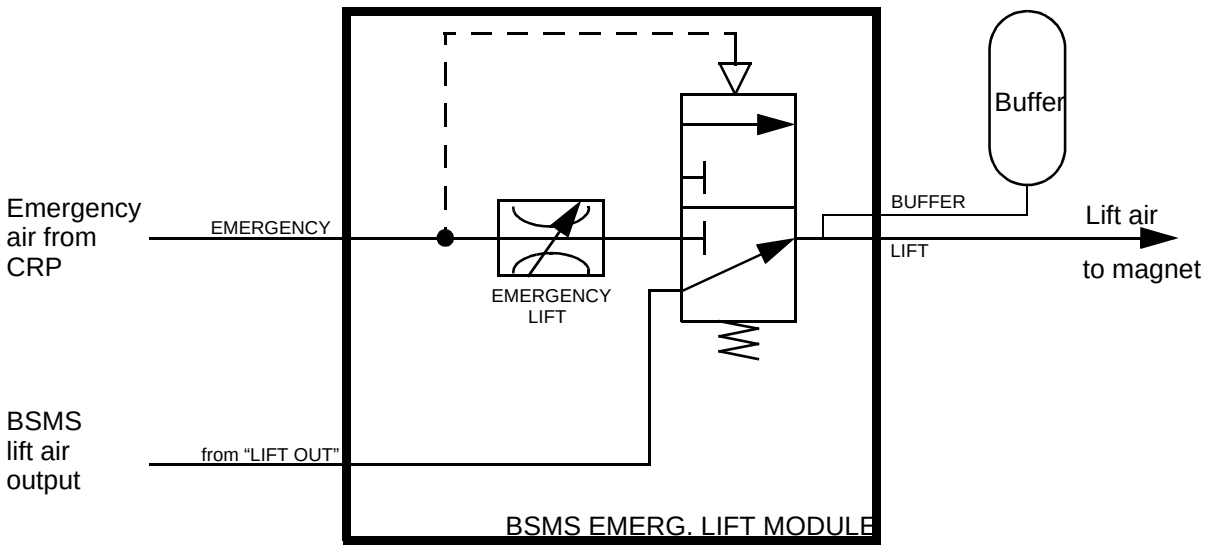
BSMS Emergency Lift Module, Z101052

This module is part of the CRP Sample Protection System. Please refer to the CRP documentation.

The BSMS Emergency Lift Module is connected between the BSMS lift output and the lift air tube running to the magnet. It allows for inserting emergency lift air (comming from the CRP Sample Protection System) into the BSMS Lift System.

! ***This module is not needed if your BSMS/2 is equipped with a PNK3S (Z003828). In this case, please refer to PNK documentation (Z31635, DWG Z4D8661)***

Figure 1.1. Block Diagram



During normal operation, the lift air from the BSMS is passed through to the lift air outlet and the buffer. The pneumatic switchover valve is held in this position by a spring.

In case of an emergency sample eject, the CRP delivers lift air to the inlet marked "EMERGENCY". This air is throttled by the EMERGENCY LIFT valve, allowing the switchover valve operating pressure to build up and finally switch over.

Now the emergency lift air is passed through to the lift air outlet and the buffer. The normal lift air is held off and the sample protected from jumping out of the magnet because of double lift air.

That same throttle valve is used to adjust the emergency lift airflow to a value that comfortably suspends the sample in its up position without catapulting it out of the magnet.

The buffer smoothes the instantaneous switchover and eventual switchback and sample landing.

! ***WARNING:***
The standard buffer must be present and working. A missing or plugged buffer can result in sample and/or probehead damage due to the instantaneous switching of the emergency lift.

In contrast, the normal lift is slowly ramped up and down and a missing buffer would only be remarked in case of a power failure during a “lift up” period.

Installation Hints *1.2*

1. Remove the buffer connection tube at the BSMS. Close the outlet with the plug comming with the BSMS Emergency Lift Module. Connect the tube to the Emergency Lift Module.
2. Remove the lift air tube at the BSMS and connect it to the Emergency Lift Module at the outlet marked >LIFT<.
3. Connect the BSMS lift out and the Emergency Lift Module with a new, short piece of plastic tube. (>from “LIFT OUT“< inlet)
4. Connect the CRP and the Emergency Lift Module with a new, long piece of plastic tube. (>EMERGENCY< inlet)
5. close the >EMERGENCY LIFT< valve (turn clockwise)
6. access the Cryo Controller (CRCO) with UniTool and switch on emergency lift
7. adjust the valve until the sample floats in the upper position
8. check adjustment by switching on and off with UniTool

The sample must not land too hard or jump too far out of the magnet. If you cannot find a satisfactory valve position, check the following:

- Is the buffer connected and not plugged?
- Are shim system and probehead mounted ok (air leakage)?
- Is the sample temperature stub unconnected and exhausting lift air?
- Is the Cryo Platform air supply pressure below specification?
- Is the emergency lift hose running from CRP to console bent or squeezed?
- Does the Cryo Platform deliver lift air? Use a short piece of tube to open the self closing plug at the Cryo Platform.
- Remove all tubing and connect an air supply to EMERGENCY lift in. The air supply must switch over the pneumatic valve and exhaust at LIFT OUT.
  Try to change the airflow with the manual valve.