Basic internal auto-calibration of the leak detector

Purpose of the internal auto-calibration

Check that the leak detector is correctly adjusted to detect the carrier gas selected and to display a correct leak value.
To calibrate the leak detector, a calibrated leak is used as a reference: the leak detector is equipped with an internal helium calibrated leak with reservoir and temperature compensation sensor.

The internal auto-calibration could be:
- fully automatic if the operator uses the calibrated leak in the detector,
- semi-automatic if the operator uses an external calibrated leak.

When should an internal auto-calibration be performed?

■ When starting the leak detector in order to make sure that it is in proper operating condition.

■ For high sensitivity test and optimized measurement accuracy: it is advised to let the internal temperature of the leak detector stabilize for about 30 min after start-up and then start an auto-calibration.

■ If in doubt regarding the proper operation of the leak detector (capability to properly detect a helium leakage): at any time, an internal auto-calibration may be started.

■ In case of intensive and continuous use: start an internal auto-calibration at the begining of each shift (8 hours of operation).

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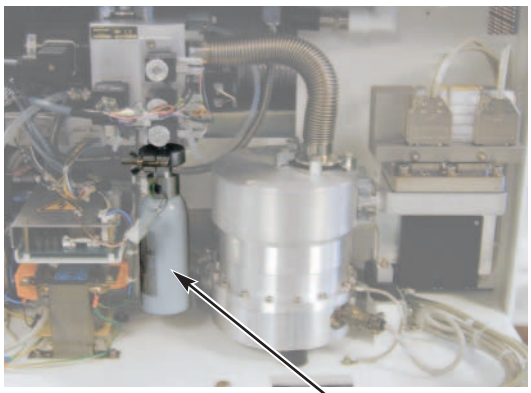
Basic internal calibration of the leak detector

Internal calibrated leak

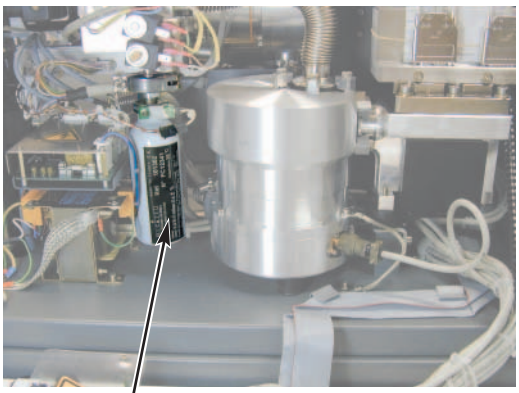
The internal calibrated leak is specifically designed to fit the present leak detector. It is composed of:

- a helium reservoir,
- a temperature sensor (used to take into account the effect of temperature on the leak rate),
- a built in membrane (to calibrate the helium leak rate),
- a special quick connection device,
- an identification label (similar to the identification label of an external calibrated leak).

It is delivered with a calibration certificate.



ASM 182 TD+



ASM 192 T2D+

Internal Helium calibrated leak

Recalibration

It is recommended to have every calibrated leak recalibrated at regular intervals to validate its value.

Accessories **A 70**

Internal auto-calibration with the internal He calibrated leak

The internal auto-calibration can be:

- fully automatic:

The default value proposed is ON: the internal auto-calibration is **automaticaly activated** during the start-up process of the leak detector. It does not require any operator action. The initial auto-calibration during the start-up sequence allows the unit to be immediately operationnal.

- on operator request:

An internal auto-calibration can be started by the operator **whenever the leak detector is not in test mode**.

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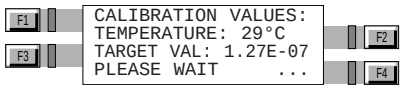
Basic internal calibration of the leak detector

Internal auto-calibration procedure

Note: Internal auto-calibration is ON (ON is the setting by default.)

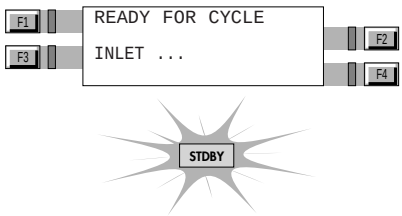
Different screens appear during the auto-calibration giving internal parameters values.
Audio messages inform the operator about internal auto-calibration process during this one.

...



...

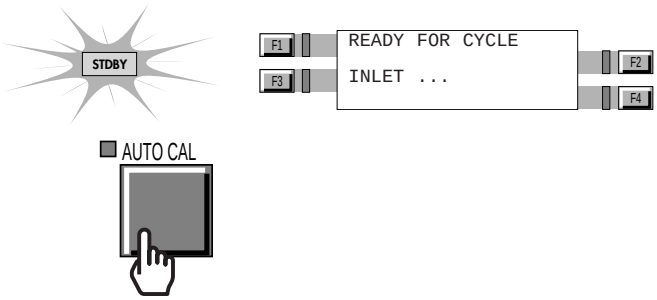
When auto-calibration is complete, the unit is ready to start a cycle.
The digital voice gives to the operator the message "Detector ready for cycle".



Note: It is possible to start a test cycle after an autocalibration failure.

On request internal auto-calibration procedure

Note: Internal auto-calibration is ON (ON is the setting by default).



Then, the procedure is the same as for the internal auto-calibration.

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Basic internal calibration of the leak detector

Internal auto-calibration with the external calibrated leak

It is semi-automatic because the operator should connect a calibrated leak to the inlet port of the detector.

At the starting of the detector:

The auto-calibration is not start even if the autocal is ON. The operator is informed that the auto-calibration requests a calibrated leak connected to the inlet port of the detector.

On operator request:

The operator can start an auto-calibration **whenever the leak detector is not in test mode**.

Note: Internal auto-calibration is ON.

PROCEDURE

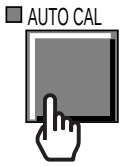
① **Gas selection** In standard the gas used is the helium 4. With the 3 masses option, the operator can use different gases: Helium 3, Helium 4 or Hydrogen.

3 masses option **C 220**

② **Calibrated leak parameter** The operator should programm all the parameters of the used calibrated leak.

Calibrated leak values **C 75**

③ **Start the auto-calibration** Start the auto-calibration.



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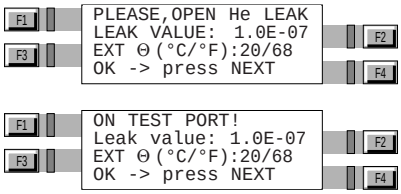
Basic internal calibration of the leak detector

4 **Calibration preparation**

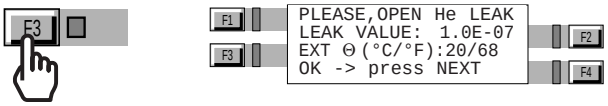
Connect the external calibrated leak.

These 2 screens appear alternately



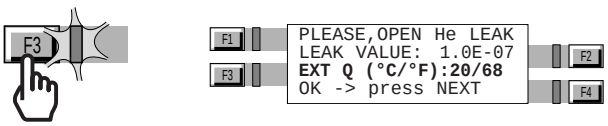
Note: If the operator press F2, all the parameter of the calibrated leak programmed display.

Open the valve of the calibrated leak (if there is one).



Set the ambiant temperature.

Adjust a value C 20



5 **Validate the auto-calibration process**

Different screens appear during the process giving internal parameters values.

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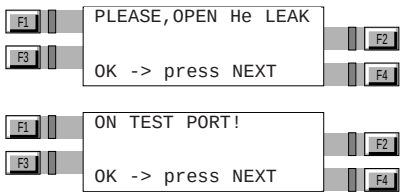
Basic internal calibration of the leak detector

⑥ **End of the process** Close the valve of the calibrated leak (if there is one).

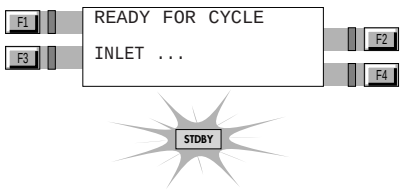
These 2 screens appear alternately



Validate the operation.

Note: If these operations are not been done in the minute which follows the appearance of these screens, the auto-calibration is automatically stopped. A message informs the operator of this stop.

When the auto-calibration is complete, the unit is ready to start a cycle.



Note: it is possible to start a test cycle after an auto-calibration failure.

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