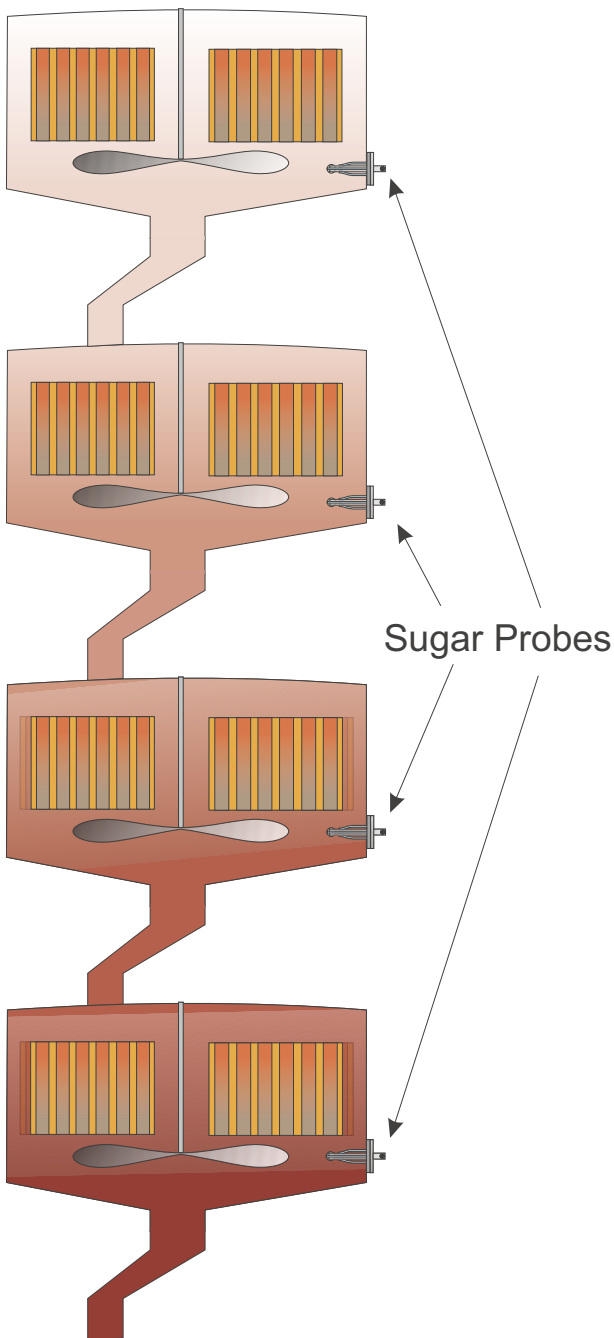


Concentration Measurement of Sugar for Continuous Vacuum Pans

1) Continuous Cooking Pans



In the continuous cooking process, the cooking pans are permanently filled with thick juice. A typical arrangement is shown (BMA-Braunschweig in Germany), where four or five pans are stacked vertically and connected as shown in the illustration. A part of the crystallization process occurs in each pan, starting with thick juice introduced into the highest chamber and finishing at the lowest chamber where magma is drained.

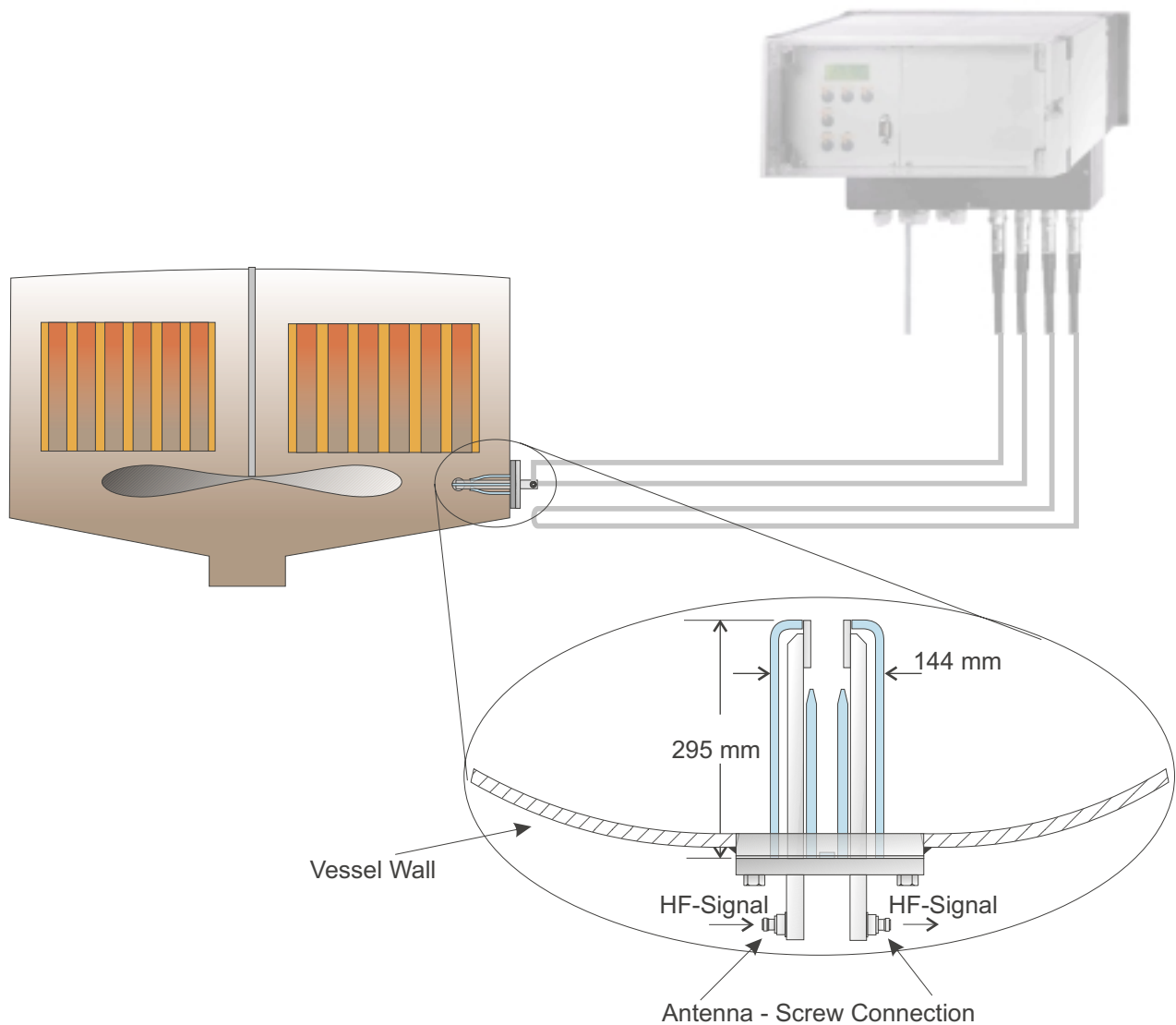
The sugar concentration in each pan must be controlled precisely.

Berthold Technologies has developed a **microwave** sugar probe, which provides the needed measurement accuracy. Together with the model LB 450 evaluation unit, the sugar probe offers high accuracy over the entire measurement range.

Concentration Measurement of Sugar for Continuous Vacuum Pans

2) Installation of the Microwave Sugar Probe

The sugar probe is installed simply by flange mounting to the wall of the vessel. The minimum entry hole diameter in the wall required for mounting the microwave probe to the vessel is 144 mm. The probe is supplied with flange sizes DN 100 or DN 150.

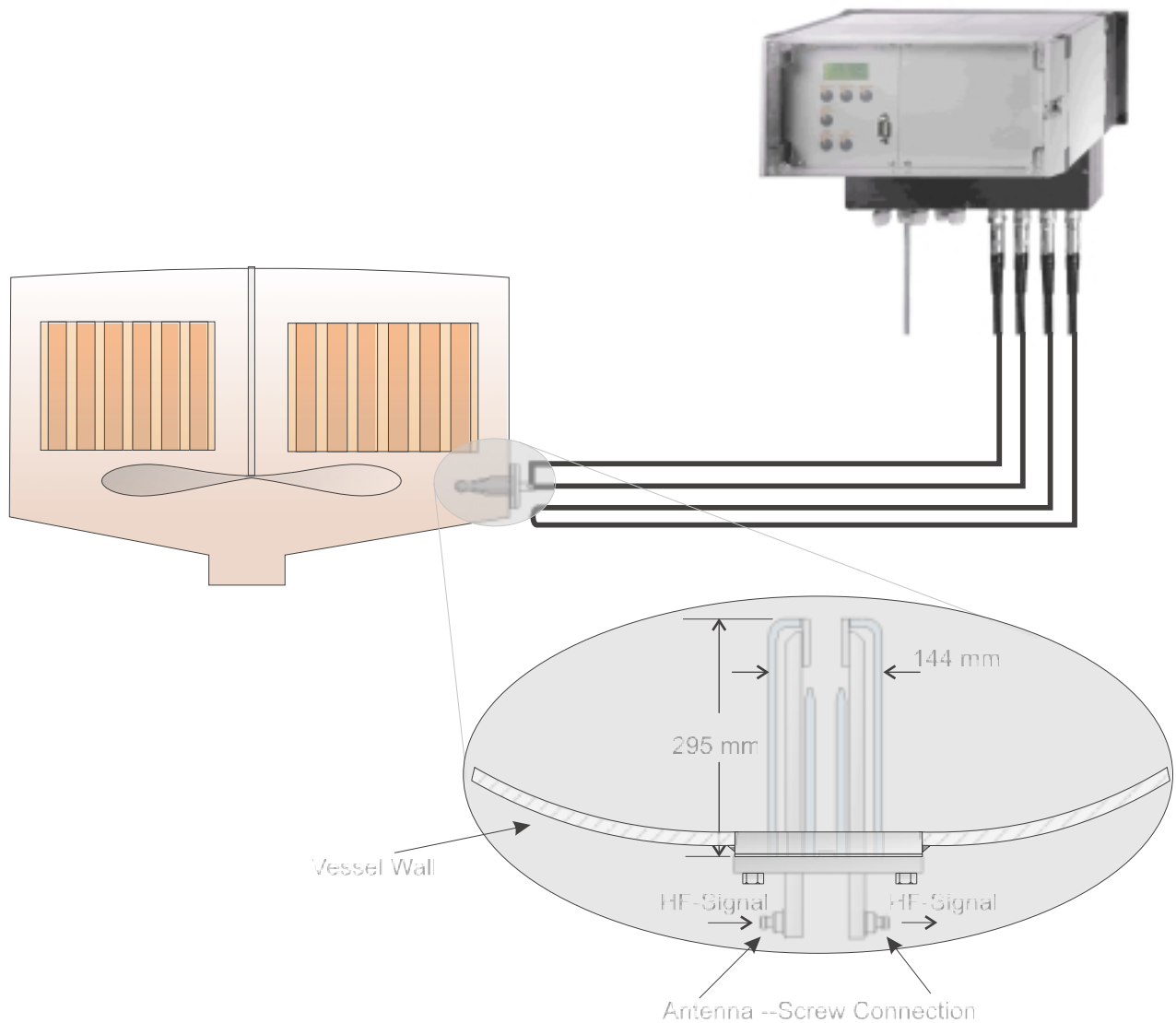


Concentration Measurement of Sugar for Continuous Vacuum Pans

3) Microwave-Evaluation Unit LB 450

The LB 450 offers:

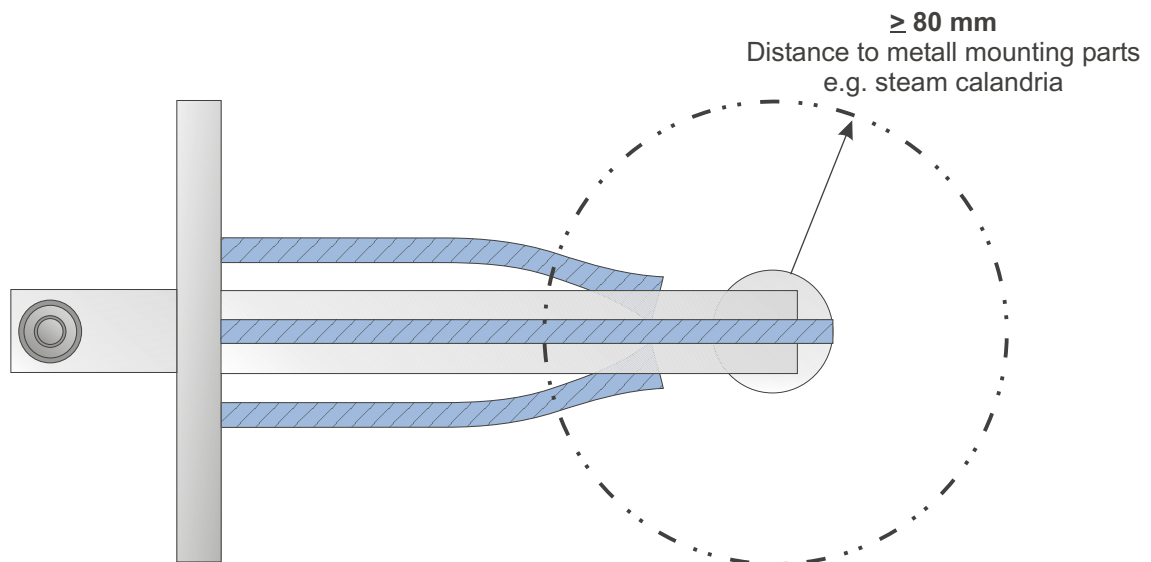
- Multifrequency measurement technique resulting in high reliability
- Simple start-up using known parameters
- Direct indication of dry matter content over the entire working range



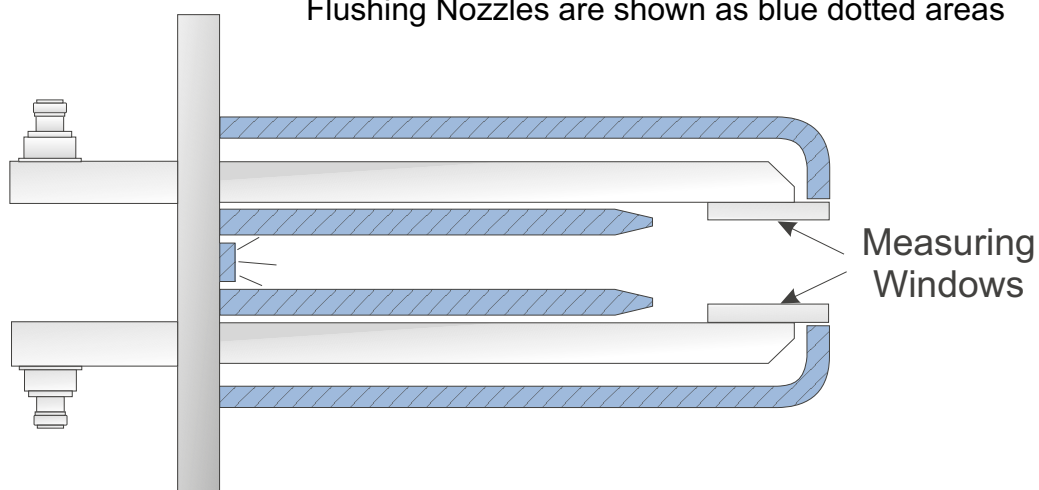
Concentration Measurement of Sugar for Continuous Vacuum Pans

4) The Microwave Sugar Probe

The probe features flat measuring windows which result in easy cleaning Flushing Nozzles which prevent encrustation. This results in very low downtimes and high measurement repeatability.



Flushing Nozzles are shown as blue dotted areas



Concentration Measurement of Sugar for Continuous Vacuum Pans

5) Flushing Connections

The flushing connections and procedures depend on the desired properties (quality) of the sugar at the end of the process. A typical arrangement is shown, consisting of 3 flushing connections and the associated control valves.

An optional installation kit is available which simplifies the connections to the probe.

