

# MODULAR SAMPLING TOOL TYPE PNS89 - FOR LIQUIDS



## AREAS OF APPLICATION

The modular sampling tool (liquid) can be used to take liquid samples in caverns/wells at different depths (mostly liquid hydrocarbons or brine).

## FUNCTIONAL PRINCIPLE

Each sampling module can be driven individually. Mechanically the tool consists of the sampling bottles, the valve motors to open and close the individual sampling bottle valves, the carrier sections for the bottles, in which the bottles will be fixed and an electronic section with temperature sensor and CCL. At the bottom end there is a conductivity sensor.

## SURVEY PROCEDURE

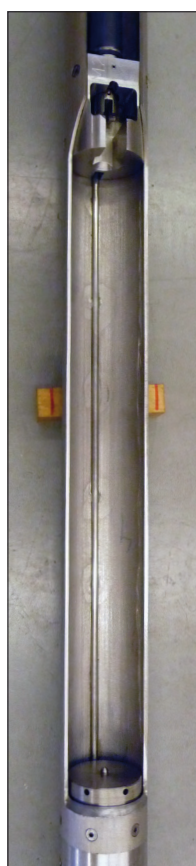
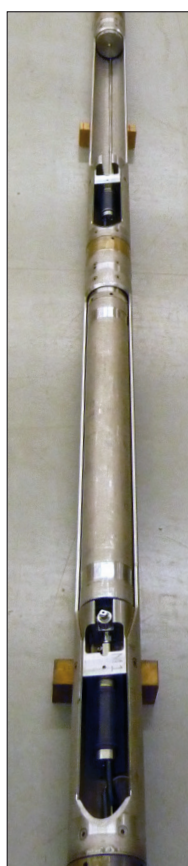
During the RIH the temperature and CCL can be recorded. Therefore it is possible to determine the end of the inner pipe as depth reference.

After the depth correction at the depth reference point the samples can be taken at the desired individual depths. The valve of the corresponding individual sampling bottle will be opened at the depth, the evacuated sampling bottle will be filled and the valve will be closed afterwards. Then the next depth can be entered. After POOH all sampling bottles will be removed from the carrier and the content will be filled from the sampling bottles into other containers/bottles for transport to the laboratory.

## TECHNICAL SPECIFICATIONS

<b>Diameter:</b>	89 mm (OD)
<b>Length (with five modules):</b>	7.165 m
<b>Length of one module:</b>	1110 mm
<b>Sampling volume for gas:</b>	2000 ml per bottle
<b>Weight:</b>	89 kg
<b>Temperature (PT1000):</b>	Resolution: 0.01 K Accuracy: +/- 0.2 K

CCL

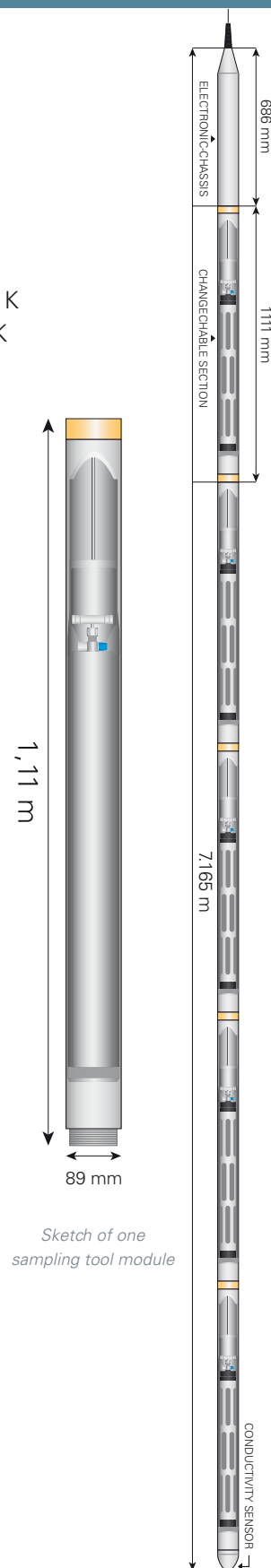


Images of the modular sampling tool:

Left: Modular setup

Center: Container section for changeable sampling bottle

Right: Sampling bottle with a volume of 2.0 litres.



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State: April 2018