

HAVCD summary:

- 1 MPa pressure ✓
- Upgradeable maximum pressure ✓
- Alternative volume change ranges / resolutions available ✓
- Fully supported by GDSLAB ✓

High Accuracy Volume Change Device (HAVCD)

What is it?

The High Accuracy Volume Change Device (HAVCD) provides a simple, high resolution, high accuracy alternative to traditional volume change devices. The device is used to measure volume change along a pressure line. The most common application for the use of the HAVCD is during unsaturated testing where accurate measurement of both small and large pore volume change is critical.

How does it work?

The basic principle of the HAVCD is to record the change in the height of the water column inside a vertically orientated tube connected to the drainage line. The pressure head in the tube is measured using a low range, high-accuracy differential pressure transducer.

The water volume change is equal to the change in the water level multiplied by the cross section of the tube. The accuracy and resolution of the water volume indicator depends on the cross-section area of the tube connecting to the drainage line.

Three tubes with inner cross-sectional areas of 28sq mm, 63sq mm and 196sq mm are installed as standard in the apparatus (see Fig. 1). Through a series of valves, the user can choose one or two of the three tubes according to the expected water volume change.

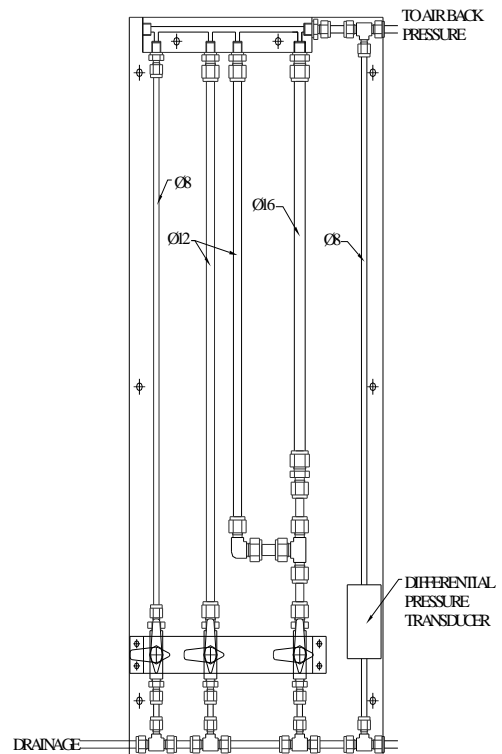


Fig. 1 Schematic of the GDS High Accuracy Volume Change Device (HAVCD)

Why buy the GDS High Accuracy Volume Change Device (HAVCD)?

- Developed in conjunction with Zhejiang University, China
- Simple to use, low cost design
- Very high resolution in addition to large overall volume change capability
- Flexible specification
- Available in two versions: standard = plastic connectors, high accuracy = stainless steel connectors

Technical specification

Overall dimensions: H = 800mm, L = 375mm, W = 75mm

Theoretical resolution (a function of tube size): 8mm = 0.43cu mm, 12mm = 0.97cu mm, 12+16 = 2.996cu mm. Alternative tube sizes available on request

Total nominal volume change = 150000cu mm = 150cu cm (150cc)

Differential pressure transducer accuracy: standard = 0.25% FSO
high accuracy = 0.1% FSO

Due to continued development, specifications may change without notice.