

METROLOGICAL RANGE



Specially designed for pipe testing.

Integrated Oil / water interface.

Integrated water sampling device.

5400 EP

PRESSURE STANDARD

FOR PIPE TESTING

Several ranges up to 800 bar.

Measurement uncertainty down to 20 ppm of reading.

INTRODUCTION

The DH-Budenberg 5400 series pressure standards are oil operated pressure balance used to test gauges, sensors and transmitters.

The 5400EP model is oil/water operating pressure balance. An oil/water separator is fitted in the balance and allows the operator to use it either with oil or with water. The pressure measurement **P** is calculated from the conversion of the pressure applied on the section **A** on one side of the piston to the force that can be measured from the weight **F** of the masses on the other side of the piston. The total weight of the masses must equilibrate exactly the pressure in the circuit.

$$P = F / A$$

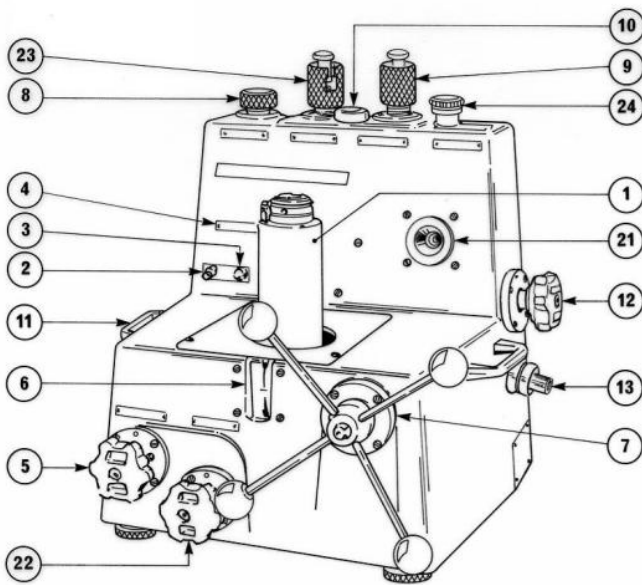
GENERAL CHARACTERISTICS

The 5400 EP pressure standard has been specially designed to perform the pipes testing.

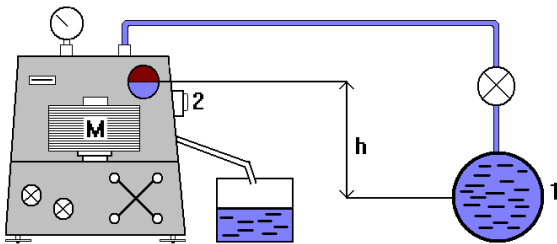
In a single housing is enclosed all the necessary elements for the measurement of an hydraulic (oil or water) pressure up to 800 bar. An integrated oil /water interface allows the measurement of a water pressure.

The piston cylinder is always lubricated with oil. Several available piston cylinder sizes allow covering several ranges.

A water sampling device allows withdrawing of water from the circuit for the calculation of any air present in the pipe.



- 1 Measuring post
- 2 Motor ON/OFF switch.
- 3 Motor indicator light.
- 4 Level reference sticker.
- 5 Reservoir isolation valve.
- 6 Piston position indicator.
- 7 Variable volume.
- 8 Oil reservoir cap.
- 9 Water connecting head.
- 10 Bubble level.
- 11 Carrying handle.
- 12 Water sampling isolation valve.
- 13 Water sampling connection.
- 21 Visible level oil / water interface.
- 22 Oil / water interface isolation valve.
- 23 Oil connecting head.
- 24 Visible level cap.



Δp measurement for the control of included air.

- The pipe is under pressure. Remove water from the circuit by opening valve 2.
- The pressure will drop. Remove some masses (ΔM) from the piston until it go back to floating position.
- The pressure drop value is given by the formula :

$$\Delta P = KL \times \Delta M$$

METROLOGICAL DATA

Range : From 1 to 800 bar either in oil or water (depending of the piston-cylinder KN).

Mass set : From 10 kg up to 40 kg with 2 kg main mass or up to 80 kg with 5 kg main mass.
Resolution 10 mg

Available piston cylinder KN : 5 bar/kg (0.5 Mpa/kg), 10 bar/kg (1 Mpa/kg), 20 bar/kg (2 Mpa/kg), 50 bar/kg (5 Mpa/kg) and 100, 200, 250, 300 or 500 psi/kg.

Total uncertainty: Down to 20 ppm of reading.