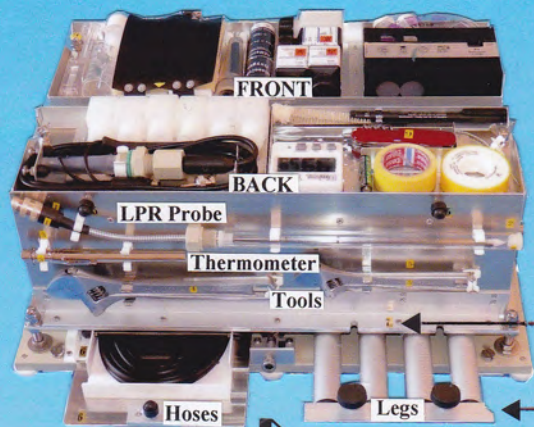


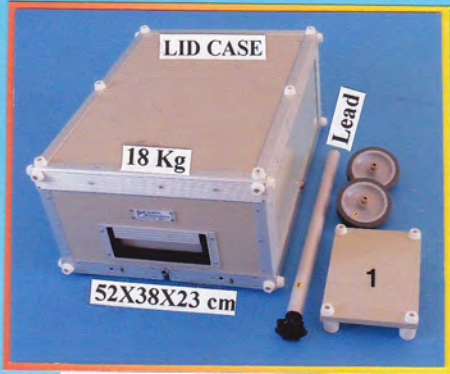
# Portable Diagnosis Laboratory

A field laboratory mounted in a lid case equipped with conventional and reliable methods to measure on-line corrosion, water quality and to perform all on-site water analyses required to calculate scaling tendencies



'to take lid off'

L I F T

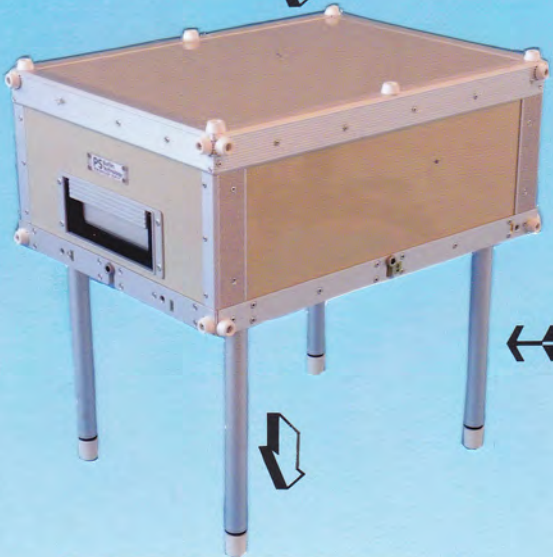


1 - Tablet to install lid with wheels on

A double numeration labelling shows how to pack and to display

See details LID CASE PAGE 42

After mounting wheels and lead  
WHEEL BARROW CASE



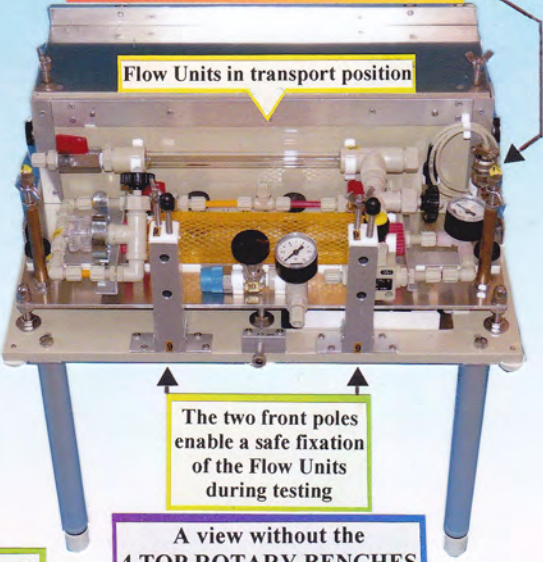
The 4 legs make a table out of it - They are adjustable to an uneven ground



Lead and wheels are very seldom in use, to be able to take them off is an advantage'

ITEM#146 - ADAPTOR FOR ELECTROCHEMICAL INSTRUMENTS

Flow Units in transport position

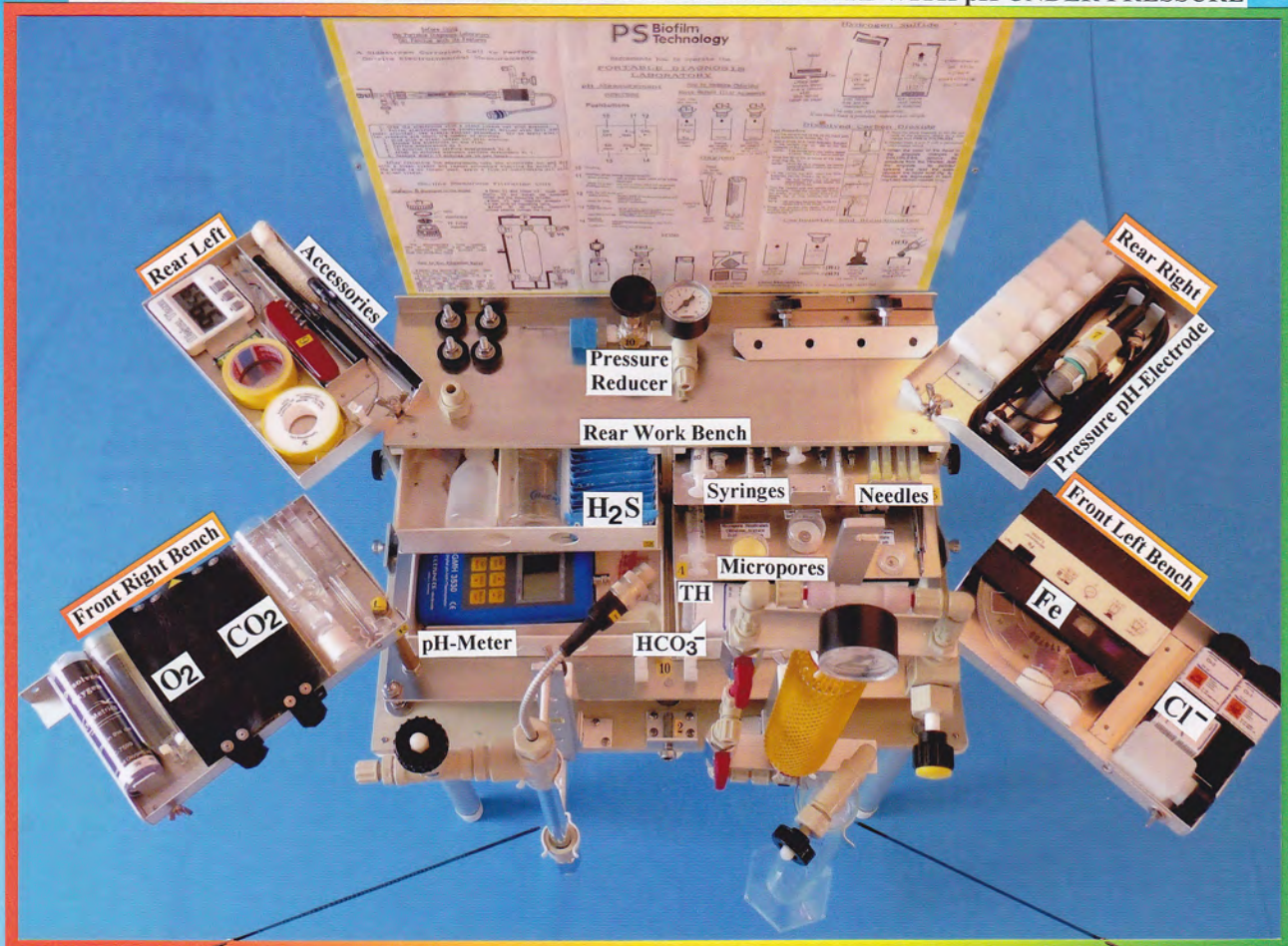


A view without the 4 TOP ROTARY BENCHES

When recommending a chemical treatment for water systems or performing field trials and general surveys, it is required to be able to make rapid diagnosis. In new systems, the operator has to predict and determine corrosiveness, water quality and scale tendencies. During regular operation, permanent information concerning such detrimental phenomena is required. Those measurements have to be performed on-line and on-site in the most remote locations, outdoors and often in a very short period of time. The Portable Diagnosis Laboratory is presented in a lid case which weighs 18 Kg, its dimensions are 52X38X23 cm, thus it can be taken into an aircraft cabin. The miniaturized instrumentation performs:

- Electrochemical corrosion measurements with an on-line Corrosion Flow Unit.
- Water quality by measuring suspended solids and filtration rates with an on-line micropore Membrane Filtration Unit with reservoir.
- On-site water analyses.

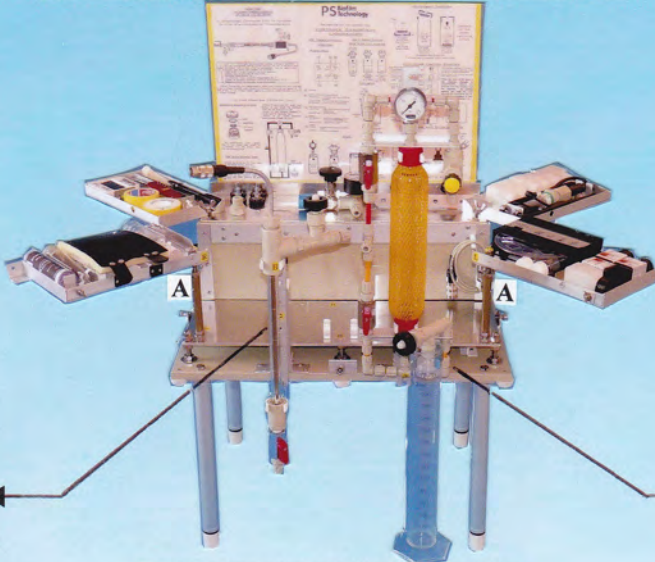
ITEM#103 – PORTABLE DIAGNOSIS LABORATORY COMPLETE WITH pH UNDER PRESSURE



'for display only, left front rotary bench is fixed at the right side'

**LP CORROSION FLOW UNIT WITH LPR PROBE**  
 'Depending upon application this unit is delivered as LP or HP version'

**MICROPORE MEMBRANE FILTRATION UNIT**

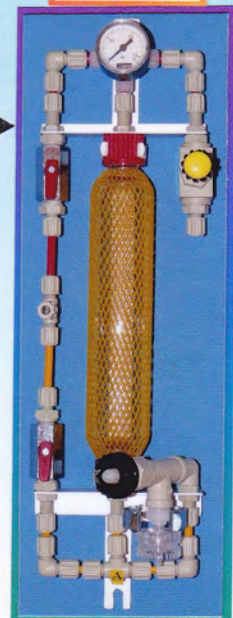


PAGE 34  
**ITEM#152**



**STANDARD TEST CAPACITY OF THE PORTABLE DIAGNOSIS LABORATORY**

- pH and temperature: No limitation
- Chlorides: 50 tests
- Alkalinity: 200 tests
- Carbonates: 50 tests
- Dissolved or total iron: 500 tests
- Hydrogen sulfide: 100 tests
- Oxygen: 30 tests
- Dissolved carbon dioxide: 30 tests
- Corrosion measurements: No limitation
- Micropore filtration: 100 tests



### BACK-UP CASE

In both versions ITEM#102 and #103, the Portable Diagnosis Laboratory is delivered with a Back-up Case containing all extra reagents, spares and accessories.



### pH PRESSURE FLOW UNIT

In the version ITEM#103, The pH Pressure Flow Unit is packed in the back-up case. Basically, it consists of a PP block with pressure gauge on which the pH probe fits in the top as indicated herewith. The outlet is equipped with a flow adjusting valve. The pressure is regulated with the pressure reducer.

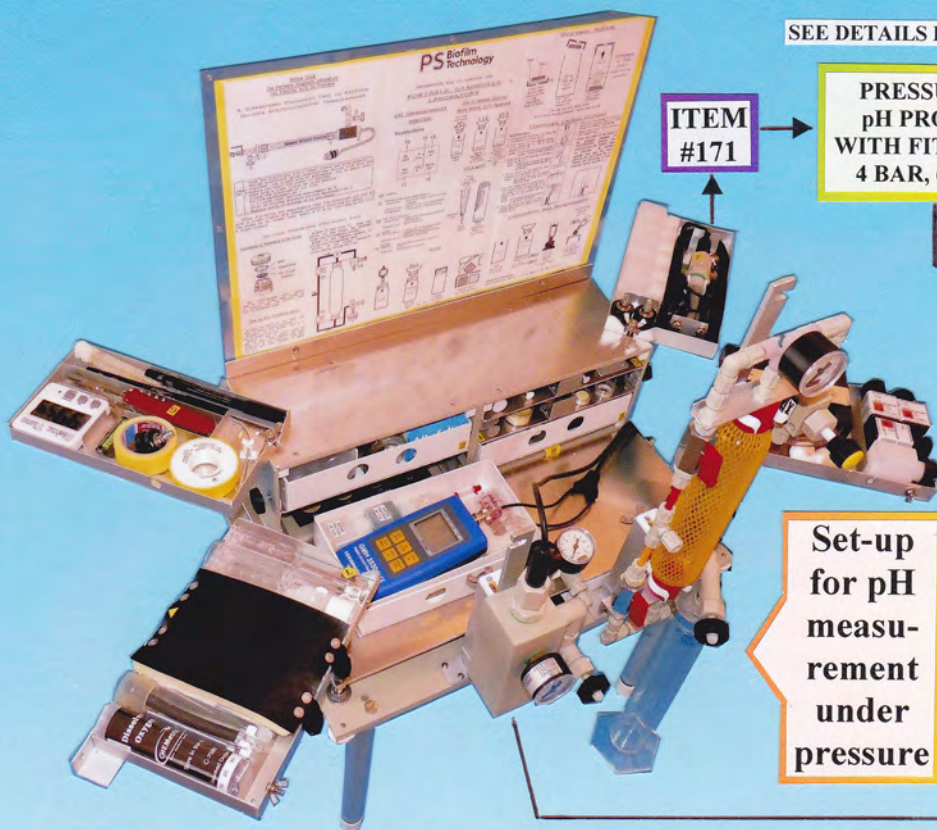
pH PRESSURE FLOW UNIT  
4 BAR  
65°C

SEE DETAILS PAGE 35

PRESSURE pH PROBE WITH FITTING  
4 BAR, 65°C

ITEM #171

ITEM#170



Set-up for pH measurement under pressure



## General Selection Considerations of an On-Site Water Analyses Package

PS Biofilm does not aim to develop new analytical methods. The goal of the Portable Diagnosis Laboratory is to offer an ergonomic instrumentation mounted in an aircraft board case.

The major considerations when selecting the analytical techniques and equipment have been miniaturization, simplicity and relevance to field conditions. Thus the instrumentation has to be small, light and easy to operate. Accuracy, reproducibility and reliability are crucial. It is not easy to find a single producer that meets all those requirements. Therefore, the Portable Diagnosis Laboratory is equipped with methods produced by several companies with large experience. Their products can be easily purchased almost all over. Should reagents and parts be locally available, please

ask the supplier of your choice.

Certain water properties change very quickly after sampling. Those variations are mainly due to temperature changes, release of gases, e.g. hydrogen sulfide, carbon dioxide or oxygen intrusion, as well as redox reactions. Few characteristics may begin to change immediately. Therefore, a series of analyses must be conducted in the field, the most relevant are: Temperature, pH, iron, hydrogen sulfide, oxygen, carbon dioxide, hardness and alkalinity.

The rest of values required to calculate the scaling tendencies may be carried out from water samples in the laboratory; i.e. sodium, calcium, magnesium, sulfates and chlorides.