



## INTRODUCTION

The EDIBON Pipe Network Unit has been designed to enable different pipe network installations, measuring flow and pressure, and always using water as test fluid.

A typical case is, for instance, a water distribution network in a town. Prediction of pressure and flow and the variations of these parameters generated in the network are of great interest, because with these data, the type of pipes required for such network can be determined with more accuracy.

The objective of this unit is to simulate the problems that could originate in pipe networks, since pipes have different lengths and diameters, as it happens in the cities.

With these studies, the dimensions of the networks will be better understood, to obtain the flow and pressure required.

## GENERAL DESCRIPTION

The unit consists of a Pipe network, a lateral panel where all the elements to test are located and a hydraulics bench, which has all the elements and accessories required for the unit to work autonomously.

The valves that some of the elements have in order to form the different circuits are On-Off valves, necessary to distribute the flow along the net.

The unit has a system of anti-blockage pressure takings, located upstream and downstream of each element that is going to be tested. All of them have a quick and easy connection to the pressure measurement devices of the unit.

The hydraulics bench has a volumetric measuring system, consisting of a two-level tank. The small one is used to measure low flows and the big one, to measure higher flows. A gauge, which consists of a scale and a transparent tube is connected to a bypass on the base of tank and gives an instantaneous measurement of the water level.

A centrifugal pump located inside the hydraulics bench is used to add energy to the fluid. The flow can be regulated by a control valve located on the hydraulics bench.



**ISO 9000: Quality Management**  
(for Design, Manufacturing,  
Commercialization and After-sales service)



**European Union Certificate**  
(total safety)

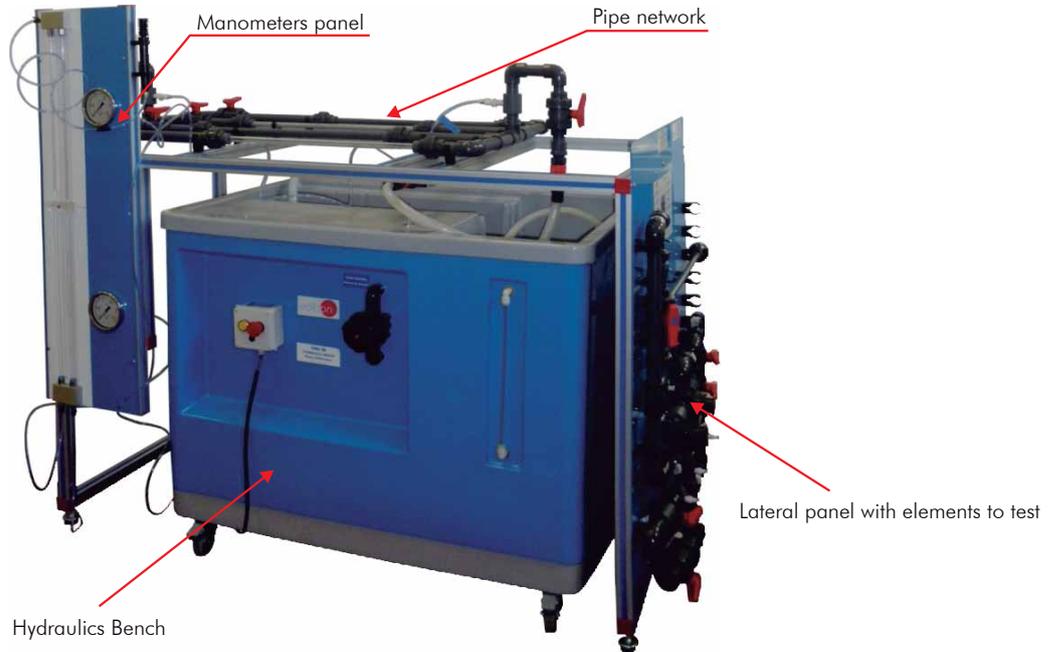


**Certificates ISO 14000 and  
ECO-Management and Audit Scheme**  
(environmental management)



**Worlddidac Quality Charter  
Certificate and  
Worlddidac Member**

## UNIT ELEMENTS ALLOCATION



## SPECIFICATIONS

Anodized aluminum structure and panels in painted steel.

Main metallic elements in stainless steel.

Diagram in the front panel with similar distribution to the elements in the real unit.

Pipes network.

Lateral panel where all test elements are located.

Test pipes:

Aluminum pipe, 16 mm outer diameter.

PVC pipe, 25 mm outer diameter.

PVC pipe, 16 mm outer diameter.

PVC pipe, 20 mm outer diameter.

Methacrylate pipe, 16 mm outer diameter.

Test connections:

Connection of 4 pipes with drain or outlet valve.

Connection of 3 pipes.

Straight connection of a pipe with outlet valve.

Pipe connection with outlet pipe in the shape of a siphon.

Connection of 2 pipes with outlet valve. (3 units).

Connection of 2 pipes with pressure taking.

Connection of 2 pipes without pressure taking.

Manometers panel:

2 Water manometers, 1000 mm H<sub>2</sub>O.

2 Bourdon type manometers, range: 0-2.5 bar.

Pressure takings in the test elements.

Valves for distributing the flow to the network.

Hydraulics Bench (FME00):

Mobile Hydraulics Bench, made in polyester reinforced with fibreglass, and mounted on wheels for its mobility.

Centrifugal pump, 0.37 KW, 30-80 l/min at 20.1-12.8 m.

Impeller made in stainless steel.

Sump tank, capacity: 165 l.

Small channel, capacity: 8 l.

Flow measurement: volumetric tank, gauged from 0 to 7 l. for low flow values and from 0 to 40 l. for high flow values.

Level tube with a scale that shows the water level in the upper tank.

Control valve for regulating the flow.

Manufactured with corrosion resistant materials ensuring a long life of the unit.

Cables and Accessories, for normal operation.

Manuals:

This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance, and Practices Manuals.

## EXERCISES AND PRACTICAL POSSIBILITIES

- 1.- Head losses in a PVC pipe.
  - 2.- Head losses in an aluminum pipe.
  - 3.- Head losses in a methacrylate pipe.
  - 4.- Study of head losses in pipes of the same material.
  - 5.- Study of head losses in function of the material.
  - 6.- Friction coefficient in a PVC pipe.
  - 7.- Friction coefficient in an aluminum pipe.
  - 8.- Friction coefficient in a methacrylate pipe.
  - 9.- Study of the friction coefficient in function of the material.
  - 10.- Study of the friction coefficient in function of the diameter.
  - 11.- Parallel network configuration for pipes of same material and different diameter.
  - 12.- Parallel network configuration for pipes of different material and same diameter.
  - 13.- Series network configuration for pipes of different material and different diameter.
  - 14.- Series network configuration for pipes of different material and same diameter.
- Other possible practices:
- 15.- Filling the manometers.

### REQUIRED SERVICES

- Electrical supply: single-phase 220V./50Hz or 110V./60Hz.
- Water supply and drainage.

### DIMENSIONS & WEIGHT

- Dimensions: 1500 x 1000 x 1700 mm. approx.  
(50.05 x 39.37 x 66.93 inches approx.)
- Weight: 200 Kg. approx.  
(441 pounds approx.).

### RECOMMENDED ACCESSORIES

- Chronometer.

### AVAILABLE VERSIONS

Offered in this catalogue:

- AMT. Pipe Network Unit, with Hydraulics Bench (FME00).

Offered in other catalogue:

- AMTC. Computer Controlled Pipe Network Unit, with Hydraulics Bench (FME00).

\*Specifications subject to change without previous notice, due to the convenience of improvements of the product.



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