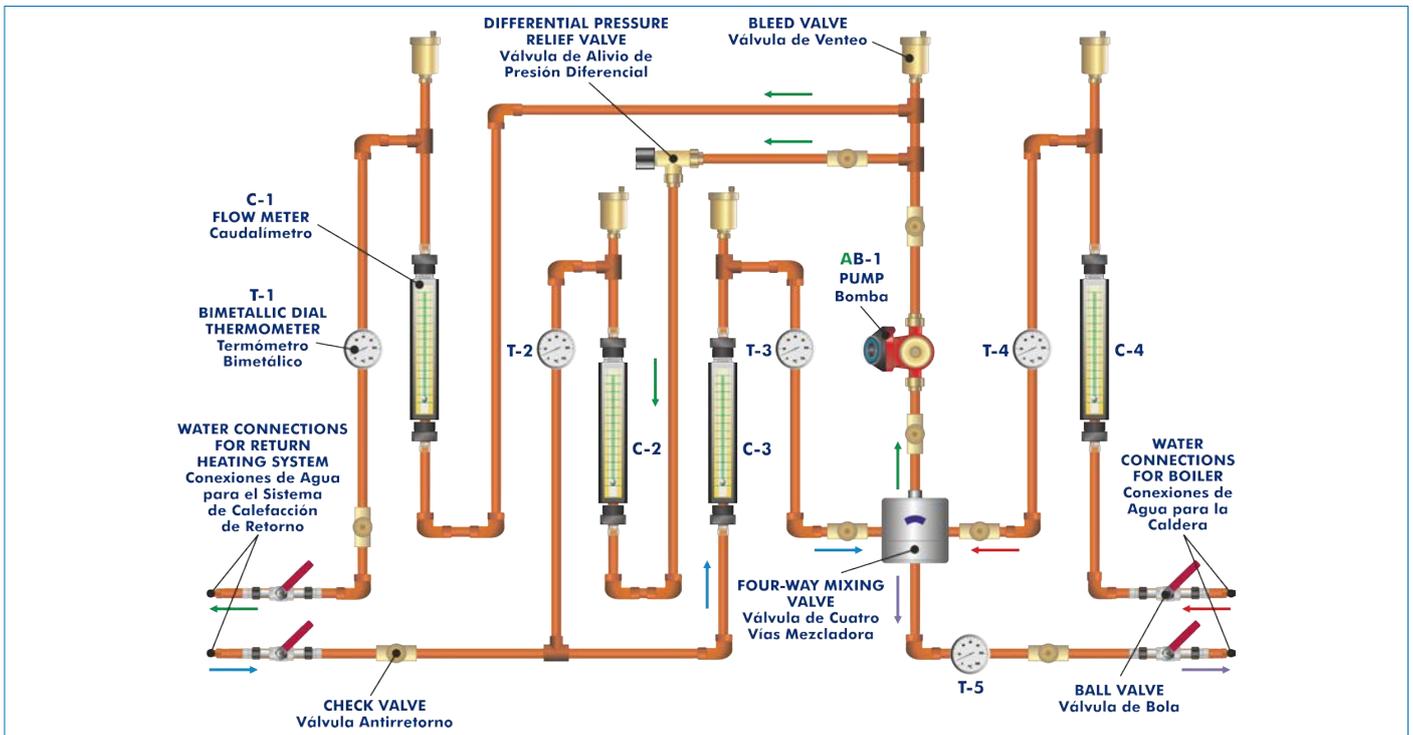




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 Products
 Products range
 Units
 9.- Thermodynamics & Thermotechnics

PROCESS DIAGRAM AND UNIT ELEMENTS ALLOCATION



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

INTRODUCTION

Mixing valves are designed for mixing two fluids of different temperatures in such a ratio that the desired outgoing temperature is reached. They are either three-way or four-way ones.

Four-way mixing valve is used for the regulation of liquid flow. It is equipped with four places for connecting of pipes and used mainly within central heating installations in order to determine heating water temperature and hot current water temperature as well as to increase the temperature of water which returns to the boiler.

The four-way valve reduces exploitation costs and combines two functions:

It mixes hot water from the boiler with cooler water which returns from the heating system. The function ensures fluent regulation of heating water temperature with regard to the needs of the heating system. It allows for the obtainment of a higher temperature within the boiler with regard to the water within the heaters, thanks to which the room temperature may be decreased without decreasing the temperature upon the boiler.

It protects the boiler against low temperature corrosion and hence significantly extends its life cycle. Moreover, it minimizes the difference between the temperature of output water and the input water to the boiler, therefore allowing to avoid a dew point and upkeep of the temperature, within the boiler, which is optimal for the longest possible life cycle of the boiler.

The Four-Way Mixing Valve Training Unit "TEV4V" allows to train on hot water heating systems and plumbing.

GENERAL DESCRIPTION

The Four-Way Mixing Valve Training Unit "TEV4V" allows to demonstrate the function of a four-way mixing valve in a hot water heating system. The four-way mixing valve in the heating system regulates the circulation and feed flow temperatures of the water flowing in the heating system and the boiler return flow temperature.

The unit includes a four-way mixing valve, a boiler water circuit, a return heating system water circuit, a circulating pump, several thermometers and flowmeters.

The boiler water line (hot water) and the return heating system water line (cold water) includes several dial thermometers and flowmeters to visualize the water temperature and flow in the inlets and outlets of the four-way mixing valve.

A pump circulates the mixture water of the heating system circuit. The differential pressure across the system is limited using a differential pressure relief valve.

Several bleed valves (air vents) remove the air from water and are situated in different points of the circuits. Several valves allow control the boiler water flow and the return heating system water flow.

SPECIFICATIONS

Anodized aluminum frame and panel made of painted steel. It includes wheels for its mobility.

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

The unit includes:

Four-way mixing valve with actuator motor:

Setting angle: 90°.

Opening time: 120 s.

A circulating pump:

Power consumption: 70 W.

Max. flow rate: 60 l./min.

Max. head: 5 m.

Four flowmeters:

Three flowmeters situated in the boiler water circuit (hot water), the return heating system water circuit (cold water) and a four-way mixing valve outlet (heating system circuit), range: 2.5-28 l./min.

One flowmeter situated in the outlet of the differential pressure relief valve, range: 0.6-6.5 l./min.

Five bimetallic dial thermometers, range: 0-100°C.

Five bleed valves (air vents) to remove the air from the water.

Two water connections with quick-release couplings for boiler water (hot water), size: DN15.

Two water connections with quick-release couplings for return heating system water (cold water), size: DN15.

Four ball valves allow control the boiler water flow and the return heating system water flow.

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

EXERCISES AND PRACTICAL POSSIBILITIES

- 1.- Study of the function and operation of a four-way mixing valve.
- 2.- Study of the function and operation of a differential pressure relief valve.
- 3.- Study of the effect of mixing ratio on feed and circulating flow temperature.
- 4.- Study of the effect of mixer setting on the flow rate.

REQUIRED SERVICES

- Electrical supply: single-phase, 220V/50Hz or 110V/60Hz.
- Hot water supply, flow: 30 l./min.
- Cold water supply.
- Drainage.

DIMENSIONS AND WEIGHTS

- Dimensions: 1900 x 550 x 1700 mm. approx.
(74.80 x 21.65 x 66.93 inches approx.)
- Weight: 100 Kg. approx.
(220 pounds approx.).

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



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