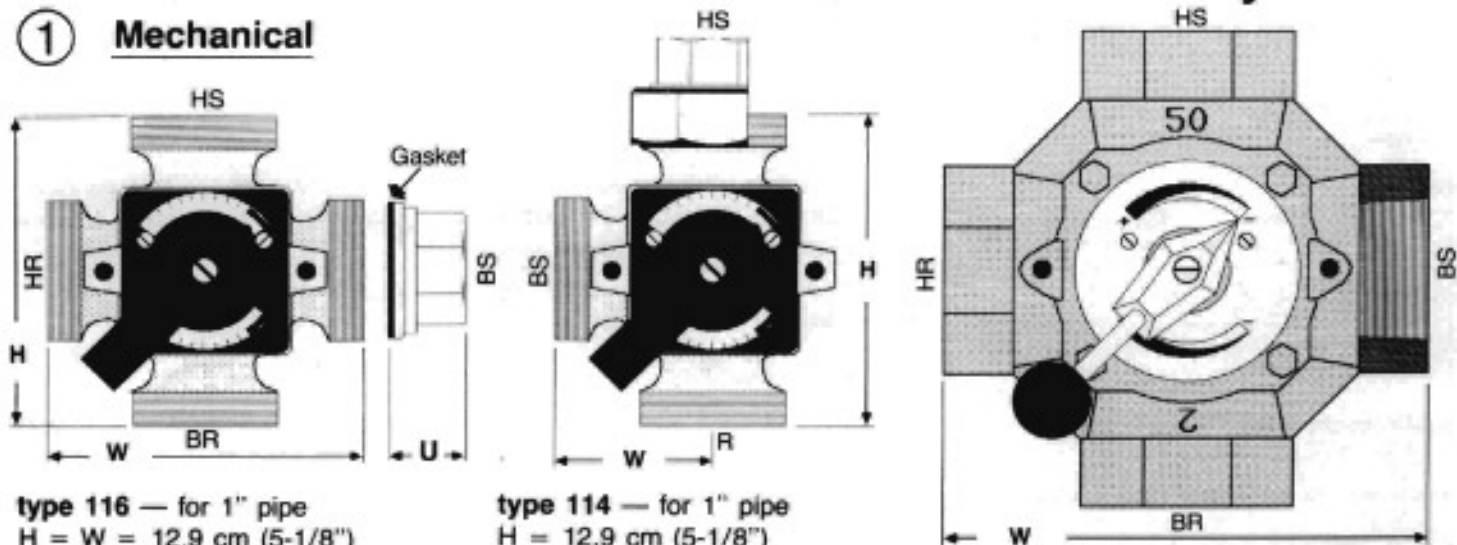


Installation of a 3-or 4-way Mixing Valve plus Motor-Electronic

① Mechanical



type 116 — for 1" pipe
H = W = 12.9 cm (5-1/8")
Union = 2.9 cm (1-1/8")

type 117 — for 1-1/4" pipe
H = W = 12.9 cm (5-1/8")
Union = 3.2 cm (1-1/4")

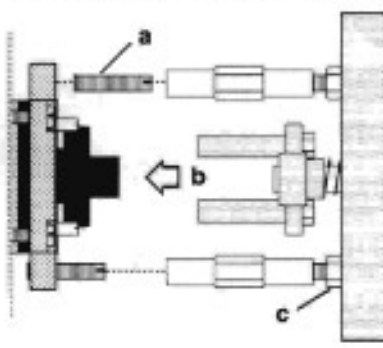
type 114 — for 1" pipe
H = 12.9 cm (5-1/8")
W = 6.5 cm (2-9/16")

type 115 — for 1-1/4" pipe
H = 13.2 cm (5-1/4")
W = 6.5 cm (2-9/16")

type 118 — for 1-1/2" pipe
H = W = 18.2 cm (7-1/4")

type 119 — for 2" pipe
H = W = 19.8 cm (7-7/8")

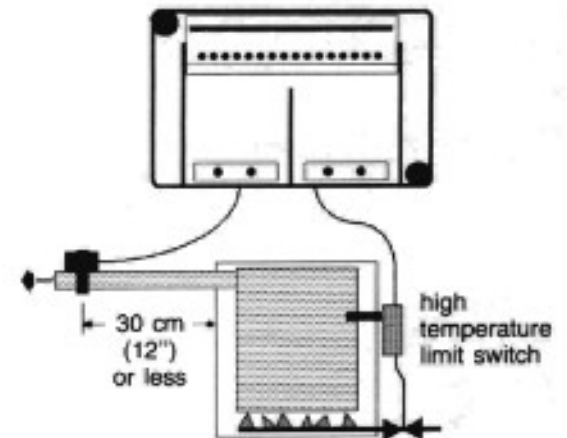
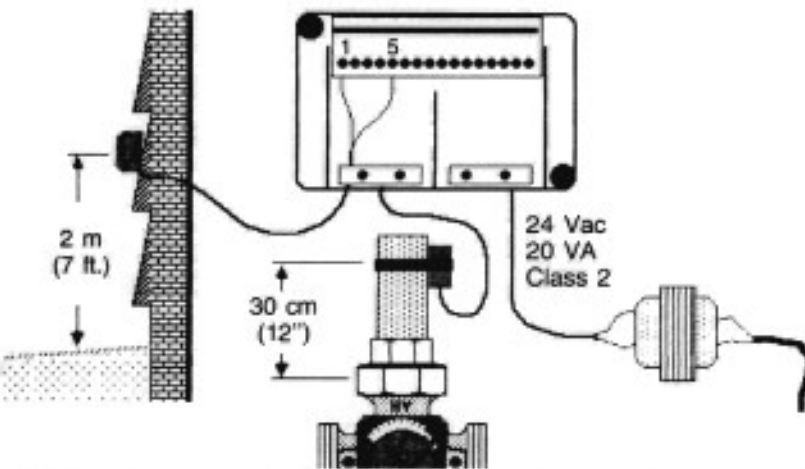
BS = Boiler supply, BR = Boiler return, HS = Heating system supply, HR = Heating system return
To mount the mixing valve in a different piping configuration, see brochures D 06 and D 07.



- Install the threaded nipples into the mixing valve.
- Position the Motor-Electronic on the mixing valve, fitting the forked arm over the mixing valve's handle. (The gap between the forks may need to be increased.) Thread the mounting bolts onto the nipples and tighten.
- Align the center of the Motor-Electronic's shaft with the center of the mixing valve's shaft. Tighten the adjustment nuts.

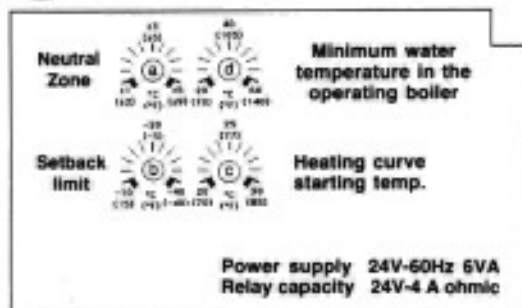
② Low voltage wiring for the Mixing Valve Control

Additional wiring for the Mixing Valve & Boiler Control



All wires have no positive or negative; either wire can be connected to either terminal.
The outdoor temperature sensor should be on the same side of the building as the main rooms are.

③ Dials on the back of the electronic control



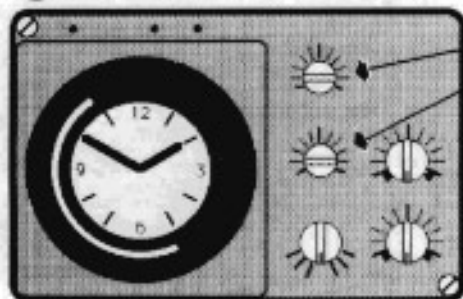
a. **Neutral zone** — Adjusts how accurately the control regulates the water temperature. Typical settings: HRF (radiant floor) = $\pm 0.5^{\circ}\text{C}$ (1°F), convectors = $\pm 1^{\circ}\text{C}$ (2°F), fan coil = $\pm 2^{\circ}\text{C}$ (4°F).

b. **Setback limit** — Below this outdoor temperature there is no night setback. Generally the setback limit should be a few degrees warmer than the design outdoor temperature.

c. **Heating curve starting temp.** — Compensates for the inefficiency of some heat distribution systems. Typical settings: HRF (radiant floor) = 20°C (68°F), convectors = 23°C (75°F), fan coil = 27°C (80°F).

d. **Minimum water temperature in the operating boiler** — (only on Mixing Valve & Boiler control) So that operation of the boiler conforms to the manufacturer's specifications.

④ Dials on the front of the electronic control



Heating curve(s) — Correct adjustment of the heating curve dial(s) is very important.

$$\text{Heating curve} = \frac{\text{design supply temp.} - \text{room temp.}}{\text{room temp.} - \text{design outdoor temp.}}$$

- Example:
- Design outdoor temperature -30°C (-22°F)
 - Design room temperature 20°C (68°F)
 - Design supply water temp. 50°C (122°F)

$$\text{Heating curve} = \frac{50^{\circ}\text{C} - 20^{\circ}\text{C}}{20^{\circ}\text{C} - (-30^{\circ}\text{C})} = \frac{122^{\circ}\text{F} - 68^{\circ}\text{F}}{68^{\circ}\text{F} - (-22^{\circ}\text{F})} = 0.6$$

Set the correct time — Turn the large hand of the timer clockwise until the correct time on the ring is pointed to by the switch in the upper left corner.

Program the timer — The beginning of a temperature setback period is set by a blue lug. A red lug ends the setback period.

Knobs ☀ and 🌙 — These adjust the normal and setback temperatures respectively. Set both at ||.

Function switch — Set to ⌚.

⑤ Test procedure

Set function switch to 'O' — Is the open light on and the actuating motor opening the mixing valve?

Set function switch to 'C' — Is the close light on and the actuating motor closing the mixing valve?

Set function switch to ⌚ — Regular programmed operation

For more installation and testing instructions see brochure D 03.

Hang U 02 (instructions for use) on the wall.

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