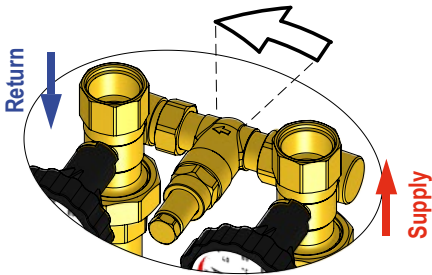


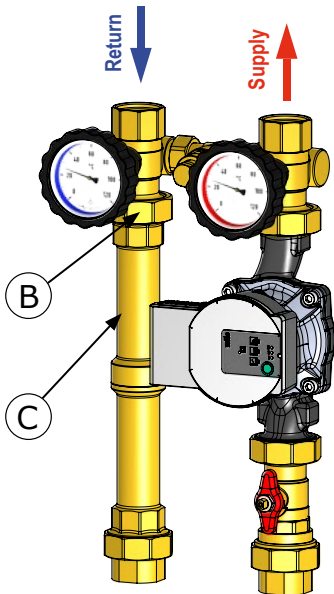
### DIFFERENTIAL BY-PASS VALVE

The by-pass valve is used in the systems that can work with considerable flow variations, for instance the systems that make extensive use of thermostatic radiator valves or motorized valves. The by-pass allows a flow recirculation proportional to the number of valves that are closing, by limiting the maximum value of the differential pressure made by the circulating pump. Pump units equipped with by-pass allow a more accurate adjustment even with self-adjusting circulating pump.

### SETTING UP



Particular of the by-pass valve



(1) Check valve position when it is supplied.



(2) Installation of the check valve inside the ball valve.



#### Mounting of the Check Valve

Before starting the system it is always necessary to mount the check valve supplied, see picture (1), into the ball valve of the return way (thermometer with blue ring). To carry out the operation, loosen the nut (B) completely so as to separate the ball valve from the connecting pipe (C) and remove the washer. Then put the check valve into the flange of the ball valve, oriented as shown in the picture (2). Do the opposite operations to mount again the pump unit.



**Caution:** once the check valve is positioned in the valve, it is no longer possible to remove it.

**Note:** the example shows a right supply pump unit, the installation operations of the check valve are the same even for the left supply pump units.

### By-pass setting

To set the by-pass take the curve here at side as reference.

**Illustration 1.** The reference for the adjustment scale is the plane of the nut (A).

**Illustration 2.** Example of setting the by-pass: pressure setting at 0.2 bar.

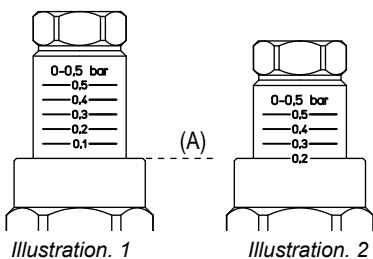
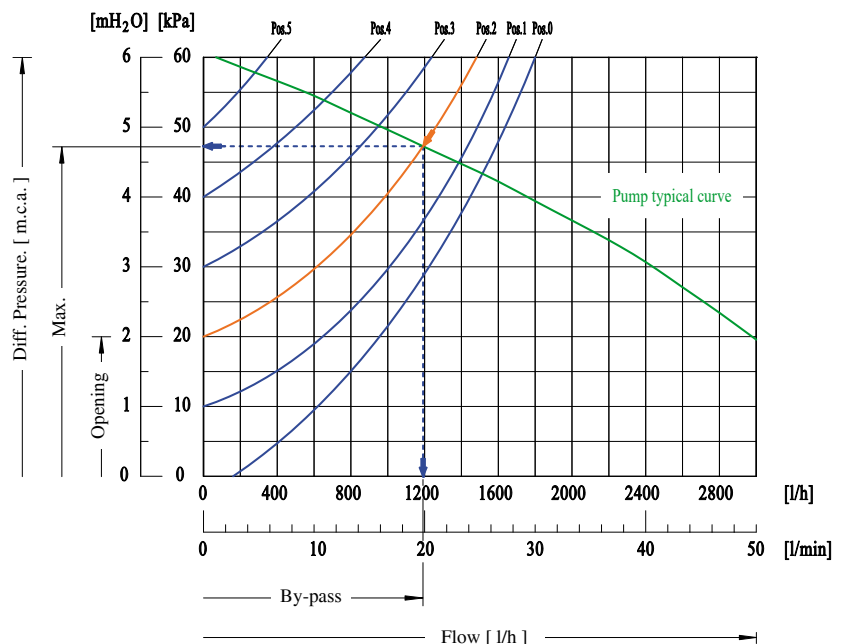


Illustration. 1

Illustration. 2



The curve shows a situation in which all the control valves of the system are closed. The by-pass (in the example 2) limits the pressure at 47.5 kPa. The flow indicated is the one that flows through the by-pass.

# BALANCING BY-PASS VALVE - M3 PUMP UNITS - DN25 SERIES

## INVERSION OF THE PUMP UNIT

To invert the supply way from the right side (the most requested version) to the left side please do the following operations:

### 1) By-pass inversion

Unscrew fully the nuts (A) by means of a special key.

Turn upside down the By-pass valve paying attention to the sense of the arrow in relief on the body. (see illustration).

Check the correct positioning of the washers and close the nuts (A).

### 2) Thermometers inversion

Take the thermometers away from their respective handles doing a soft pressure into the holes on the back, using a proper tool. See picture (1).

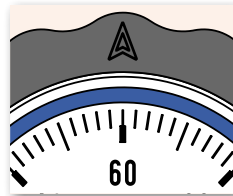
Put again the thermometers into the handles (the Red ring thermometer on the ball valve of the supply way; the Blue ring thermometer on the ball valve of the return way) and orientate them in such a way that the temperature notch of 60°C on the dial is lined up to the arrow in relief on the frontal edge of the handle. The thermometer scale will be straight when the ball valve will be in the open position, See picture (2).



(1) Take the thermometers away from their respective handles using a proper tool.



(2) Put again the thermometers into the respective handles.



(3) Check valve position when it is supplied.



(4) Check valve installation inside the ball valve.

### 3) Mounting of the Check Valve

Before starting the system it is always necessary to fit the non return valve supplied, see picture (3), into the ball valve of the return way (thermometer with blue ring). To carry out the operation, loosen the nut (B) completely so as to separate the ball valve from the connecting pipe (C) and remove the washer. Then put the check valve into the flange of the ball valve, oriented as shown in the picture (4). Do the opposite operations to mount again the pump unit.



**Caution:** once the check valve is positioned in the valve, it is no longer possible to remove it.

### 4) Inversion of the remaining components of the pump unit

Proceed with the inversion of the remaining components, following the instructions of the related pump unit.

**Note:** The example shows the steps for the inversion from a right-supply to a left-supply pump unit. The sequence of operations is also valid for the inversion from a left-supply to a right-supply pump unit.

