

### GM 1192

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#### Function

The mixing group GM 1192 is a regulation group which combines a number of components in a single device able to maintain a pre-set temperature in the radiant panels circuit of mixed heating systems. The temperature in the panels is kept constant by a regulating valve which mixes hot water coming from the boiler with the low temperature one circulating in the panels. The GM 1192 can be connected directly to Luxor manifolds for radiant panels by means of a G 1" male fitting with soft seal. This makes the GM 1192 particularly convenient, since it can be kept in stock as a modular component.

Moreover, the GM 1192 makes mixed heating systems extremely flexible, since the regulation group can be adjusted to meet the future requirements of the secondary circuit. It is therefore possible to expand the radiant panels system simply by adding outlets, without temperature or pressure issues downstream of the group.

The GM 1192 can be set both to increase the heating capacity and to balance pressure drops.

Finally, thanks to its great regulation capacity, the GM 1192 allows to make the secondary circuit independent from the primary in case of replacement of important parts of the system, for example when a new boiler with a different operating principle is installed. By means of the bypass circuit, the circulation pump can keep on operating at design conditions.

This type of system can supply a max thermal power of 20 kW with a temperature of the primary circuit of  $\geq 70^{\circ}\text{C}$ .



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#### Technical data

|  |  |
|--|--|
| Max. working pressure:                             | 6 bar                                  |
| Max. differential pressure:                        | 1 bar                                  |
| Regulation range on the bypass:                    | 0.2 ÷ 0.7 bar                          |
| Max. temperature on primary circuit:               | 80 °C                                  |
| Max. working temperature on secondary circuit:     | 70 °C                                  |
| Temperature adjustment range on secondary circuit: | 20 ÷ 65 °C                             |
| Thermometer range:                                 | 0 ÷ 80 °C                              |
| Connections on primary circuit (to boiler):        | G 1" female                            |
| Connections to secondary manifold:                 | G 1" male                              |
| Adjustment range of therm. head:                   | 20 ÷ 65 °C                             |
| Length of capillary:                               | 2 m                                    |
| Working fluids:                                    | water in compliance with UNI 8065:2019 |

## **Materials**

### **Mixing group**

|               |                                 |
|---------------|---------------------------------|
| Body:         | CW 617 N – DW UNI-EN 12165:2016 |
| Obturator:    | CW 614 N – DW UNI-EN 12164:2016 |
| Gaskets:      | Peroxide cured EPDM             |
| Steel parts:  | Stainless steel                 |
| Cap:          | RAL9016 white ABS               |
| Copper parts: | Nickel-plated annealed copper   |

### **Accessories**

|               |  |
|---------------|--|
| Brass parts:  | CW 617 N – DW UNI-EN 12165:2016; CW 614 N – DW UNI-EN 12164:2016 |
| Steel parts:  | Stainless steel  |
| Gaskets:      | Peroxide cured EPDM  |
| Safety valve: | Acetal   |

### **Thermostatic head**

|         |                   |
|---------|-------------------|
| Head:   | RAL9016 white ABS |
| Sensor: | Liquid            |

### **Thermometer**

|                       |                              |
|-----------------------|------------------------------|
| Case and stem:        | Galvanised steel             |
| Cover:                | Transparent plastic material |
| Thermometric element: | Bimetallic spiral spring     |

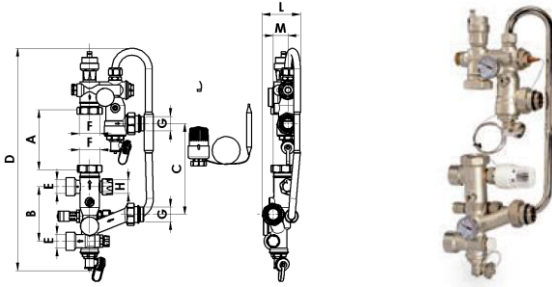
### **Surface treatment**

Nickel-plating

## Dimensional Drawings

### GM 1192

Fixed point regulation group for floor heating systems, with pump connection and thermostatic head.

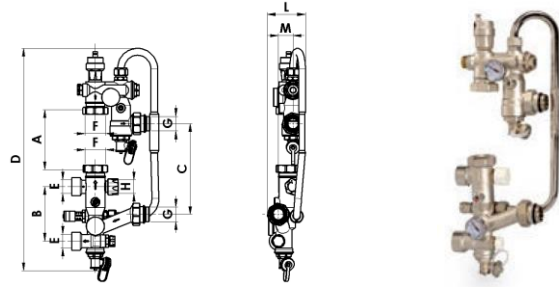


| Code     | Size      | A   | B   | C   | D   | E   |
|----------|-----------|-----|-----|-----|-----|-----|
| 72000050 | G1"x130mm | 130 | 120 | 200 | 495 | G1" |
| 72000055 | G1"x180mm | 180 | 120 | 250 | 495 | G1" |

| Code     | Size      | F      | G   | H       | L  | M  |
|----------|-----------|--------|-----|---------|----|----|
| 72000050 | G1"x130mm | G1"1/2 | G1" | M30x1.5 | 85 | 32 |
| 72000055 | G1"x180mm | G1"1/2 | G1" | M30x1.5 | 85 | 32 |

### GM 1193

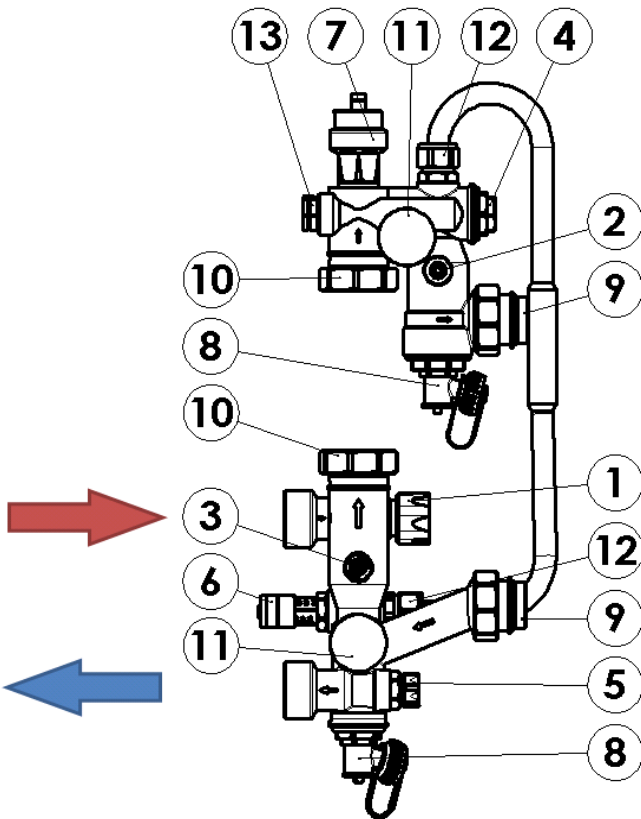
Fixed point regulation group for floor heating systems with pump connection.



| Code     | Size      | A   | B   | C   | D   | E   |
|----------|-----------|-----|-----|-----|-----|-----|
| 72000052 | G1"x130mm | 130 | 120 | 200 | 495 | G1" |
| 72000057 | G1"x180mm | 180 | 120 | 250 | 495 | G1" |

| Code     | Size      | F      | G   | H       | L  | M  |
|----------|-----------|--------|-----|---------|----|----|
| 72000052 | G1"x130mm | G1"1/2 | G1" | M30x1.5 | 85 | 32 |
| 72000057 | G1"x180mm | G1"1/2 | G1" | M30x1.5 | 85 | 32 |

## Construction



1. Thermostatic regulating valve (boiler delivery) controlled by thermostatic head with remote probe, 0-10V electrothermal head or 3-point or 0-10V electric motor

2. Pump shut-off valve

3. Ball valve for pump interception and balancing of the secondary circuit

4. Probe seat

5. Secondary circuit shut-off valve and safety valve (boiler return)

6. Bypass valve

7. Automatic air vent valve

8. Water fill/drain tap

9. 3-piece union fittings with soft sealing

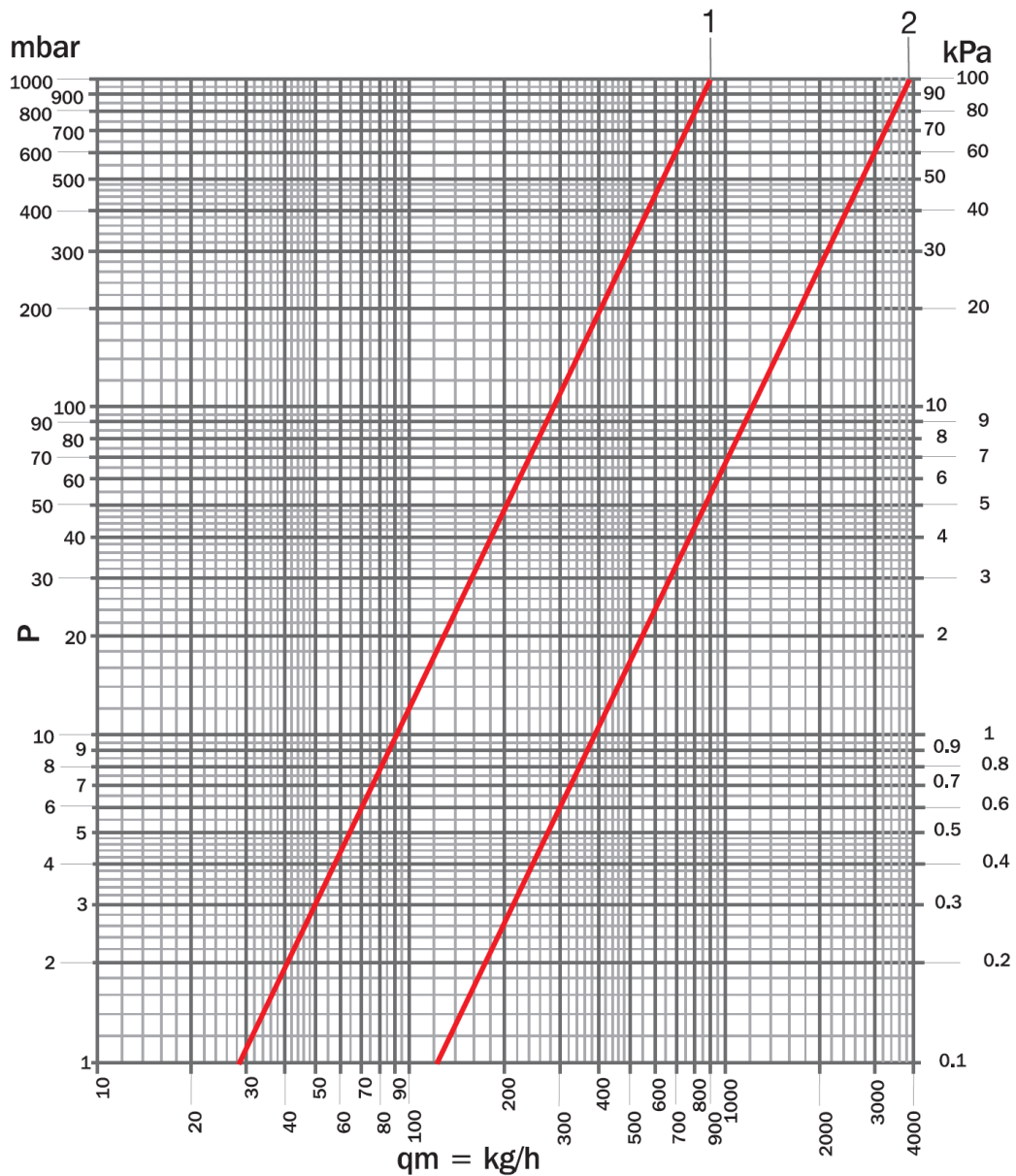
10. Fitting for circulation pump connection

11. Thermometers

12. Union fittings

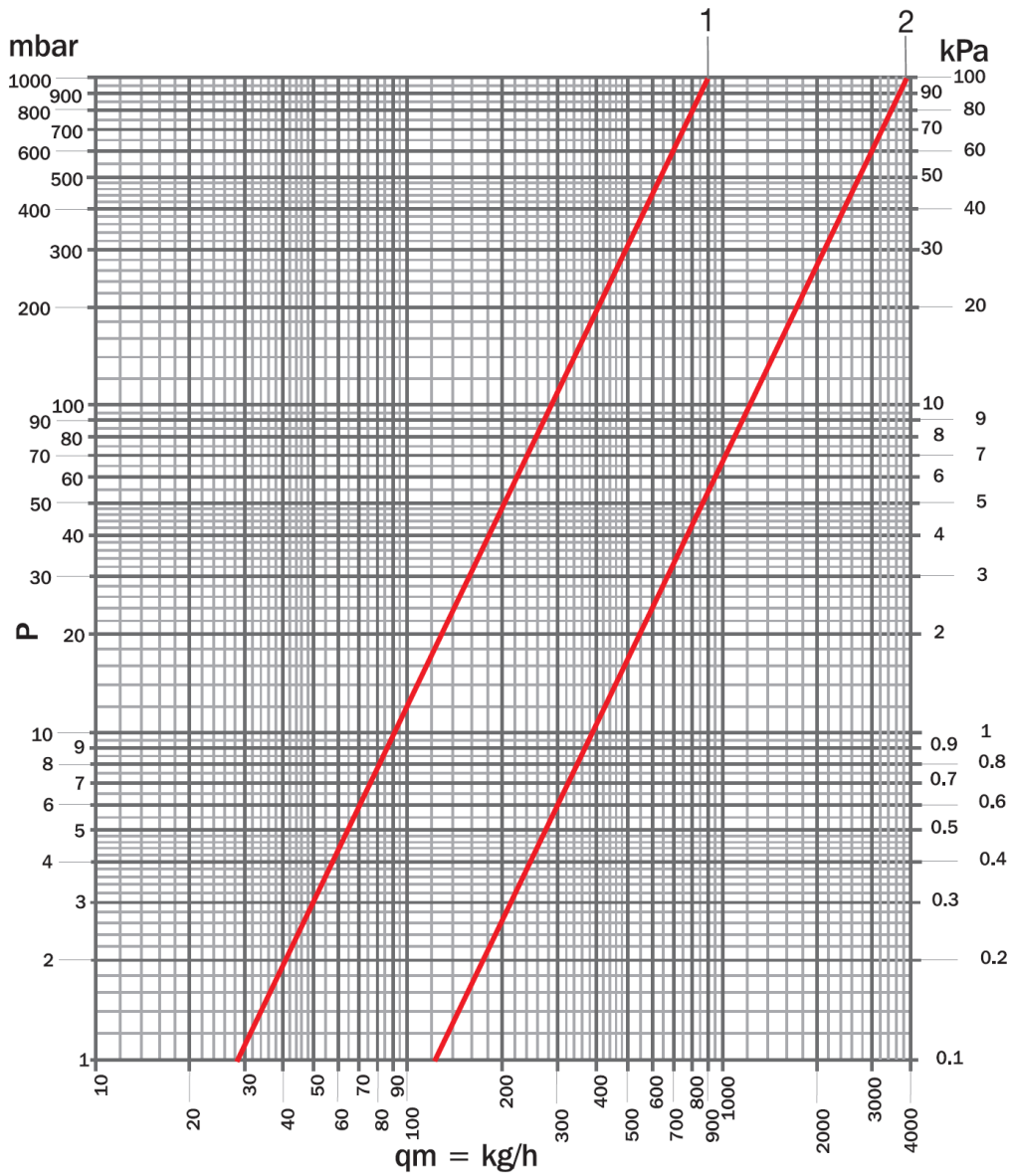
13. Safety thermostat seat

# Flow Rate Diagram



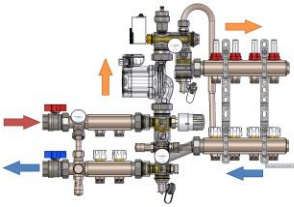
| Curve | Adjustment            | Kv   |
|-------|-----------------------|------|
| 1     | $\Delta T=2\text{ K}$ | 0.9  |
| 2     | QM MAX                | 3.88 |

## Flow Rate Diagram



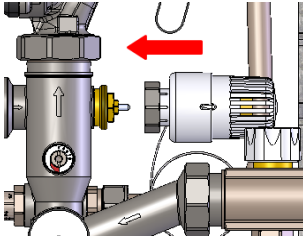
| Curve | Adjustment | Kv   |
|-------|------------|------|
| 1     | 1/2        | 0.09 |
| 2     | 1          | 0.27 |
| 3     | 1+1/2      | 0.76 |
| 4     | 2          | 0.98 |
| 5     | 2+1/2      | 1.20 |
| 6     | 3          | 1.46 |
| 7     | 3+1/2      | 1.70 |
| 8     | 4          | 1.93 |
| 9     | 4+1/2      | 2.19 |
| 10    | 5          | 2.47 |
| 11    | 5+1/2      | 2.75 |
| 12    | All open   | 3.01 |

## Working Instructions



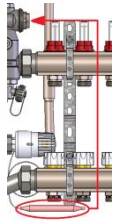
The circulation of water through the secondary circuit radiant panels is activated by the pump featured in the GM 1192, while the thermostatic head mounted on the adjustment valve keeps the temperature of the water to be sent to the radiant panels constant by acting on the quantity of hot water which is integrated into the secondary circuit.

The water returning to the primary circuit flows through the lockshield valve upon which it is possible to act in order to balance pressure drops. It is advisable to install a security thermostat on the pump inlet valve in order to avoid damages caused by a sudden temperature rise. The intervention of the thermostat must block the functioning of the pump.

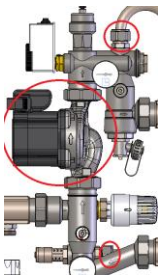


How to install the fixed point thermostatic head:

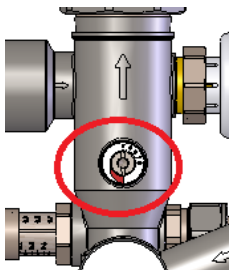
- The GM 1192 system is supplied with a plastic cap protecting the control stem of the adjustment valve. Remove the protection cap.
- To ease the installation, set the thermostatic head to the maximum value and screw it onto the valve.
- Set the head to the desired temperature.



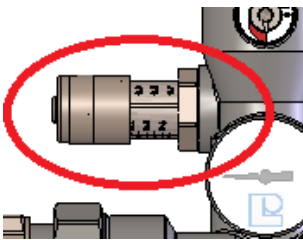
- Place the bulb of the head into the fastening device.



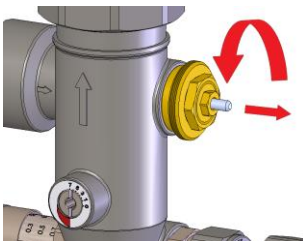
- Loosen the union fittings marked with "12" in the picture to ease the installation of the pump.
- Assemble the pump taking care to place it in the correct direction, which is upwards.
- After the installation, tighten back the fittings "12"



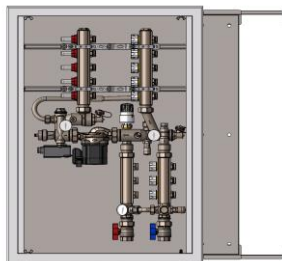
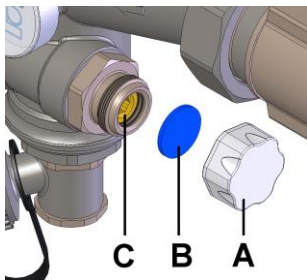
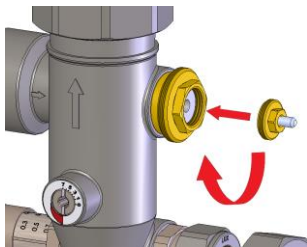
- The balancing ball valve "3" is adjusted by aligning the reference mark on the control stem with the scale by means of a 4 mm hex wrench.



- The bypass valve "6" is simply adjusted by turning the knob until the desired value.



- To substitute the whole tightening device of the thermostatic screw while the group is operating, proceed as follows:
  - Remove the protection cap, manual knob, thermostatic head or thermoelectric head;
  - Hold the screw body with a 19 mm wrench and unscrew the tightening device by means of a 9 mm wrench;



- Replace the tightening device with the spare accessory and screw it by means of a 9 mm wrench;
- Screw the protection cap, manual knob, thermostatic head or thermoelectric head back.

- To adjust the flow rate:
  - Unscrew the ABS plug "A" where the gasket "B" is placed;
  - Without forcing, use a 5 mm Allen key to close the obturator "C";
  - Open the obturator for a number of turns as indicated on the flow rate diagram;
  - Screw back the ABS plug "A".
- **WARNING:** Once the system has been leak tested, please relieve the pressure. A differential pressure over 1 bar between the inlet and the outlet of the valve may cause the sealing O-ring to be expelled.
- Before starting the system it is important to check that:
  - All union fittings marked with "12" are perfectly tightened;
  - The check valve marked with "5" is completely open. To adjust the valve, unscrew the brass plug and act on the obturator by means of a 5 mm hex wrench.
- The value shown by the thermostatic head is indicative, the temperature of the water entering the radiant panels circuit can be read on the thermometer of the upper group.
- To avoid excessive noise in the system, do not use the thermostatic valve with  $\Delta P$  values higher than 0,5 bar.
- Coupled with the pump PCE 755 art. 69011560, the GM 1192 system can be installed in a cabinet with a 90 mm internal usable depth.



Luxor S.p.A.  
 Sede amministrativa, stabilimento e uffici commerciali:  
 Administrative office, factory and commercial office:  
 Tel.: 030-9961161 – Fax: 030-9961165  
 info@luxor.it – www.luxor.it

via Madonnina, 94 – 25018 Montichiari - (BS) Italy

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