PREASSEMBLED AND PRECABLED GROUP WITH FIXED POINT REGULATION - R557R-2

R557R-2

Description

R557R-2 group is used for the regulation of the fixed point heating for mixed systems; it is preassembled with distribution manifolds for low temperature; the high temperature manifolds have to be ordered separately. Electronically controlled high-efficiency pump in compliance with Directive 2009/125/EC ErP, precabled with K373 safety thermostat. The temperature control is thermostatic with R462L head. The equipment is completed by the charge and discharge cocks, the air vents and the flow and return thermometers. An important feature of the R557R-2 group is the compactness: 110 mm thickness and 605 mm height.

Versions and product code

Product codes	Cabinet width [mm]	Zone number for low temperature manifold
R557RY024	850	4
R557RY025		5
R557RY026	1000	6
R557RY027		7
R557RY028		8
R557RY029	1200	9
R557RY030		10
R557RY031		11
R557RY032		12

Technical data

- Temperature range: 5÷110 °C
- Max. working pressure: 10 bar
- Connections: 1"
- Electronically controlled high-efficiency pump in compliance with Directive 2009/125/EC ErP
- Thickness cabinet: 110 mm
- Height cabinet: 605 mm

Accessories

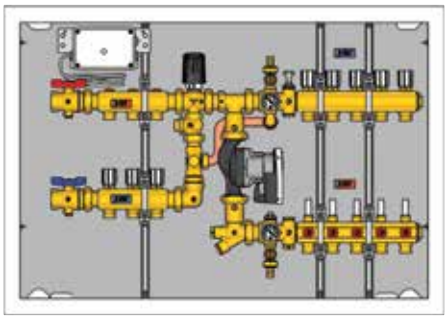
- **R553AY002**: flow and return high temperature kit 1" for n. 2 zones (brackets included)
- **R553AY003**: flow and return high temperature kit 1" for n. 3 zones (brackets included)
- **GE550Y100**: flow and return thermal energy metering kit 1" with filter, zone valve and spacer pipe meter. To be ordered separately: energy counter GE552, K270 motor for the zone valve.

Spare parts

- **R557Y061**: frame + door for R557RY075
- **R557Y062**: frame + door for R557RY076
- **R588RY010**: single bracket for 1" manifold

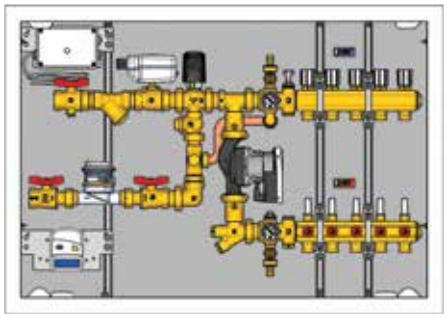
Possibility of installations

WITH HIGH TEMPERATURE MANIFOLDS



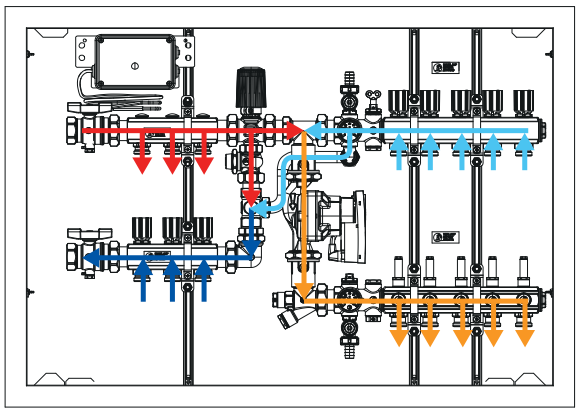
Example: R557RY025 + R553AY003

WITH THERMAL ENERGY METERING



Example: R557RY025 + GE550Y100 + K270Y001 + GE552Y160

Flow diagram



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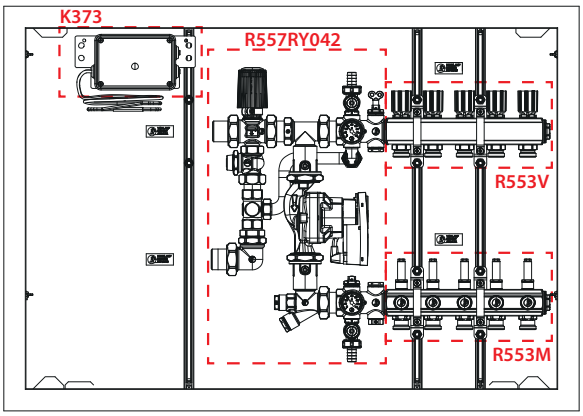
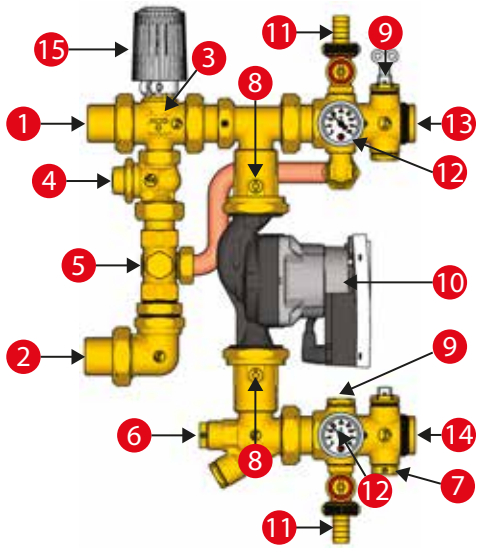
Components



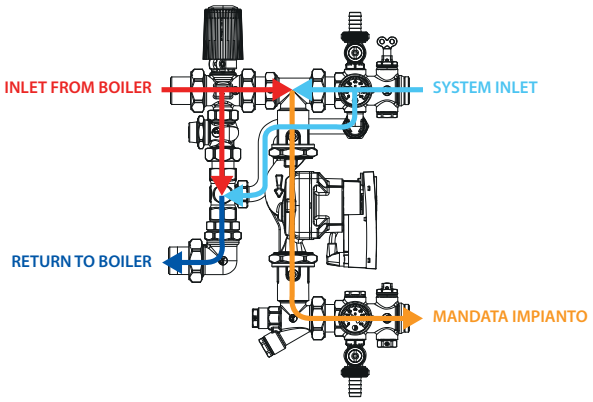
LEGENDA			
R557RY042	Fixed point thermostatic mixing group	R553V	Return manifold
K373	Safety thermostat	R553M	Delivery manifold

R557RY042- Components



LEGEND			
1	Inlet from boiler	9	Manual air vents
2	Return to boiler	10	Circulator
3	3-way thermostatic valve	11	Charge and discharge cocks
4	Primary lockshield valve	12	Housing of the immersion thermometers
5	Secondary lockshield valve	13	System return
6	Thermostatic sensor housing	14	System delivery
7	Safety thermostat housing	15	R462L thermostatic head
8	Circulator shut-off valve		

R557RY042- Flow diagram



Operation

R557RY042 group makes the regulation of the temperature for radiant panels. The flow to the panel system occurs through the R553M lower manifold, the return through the R553V upper manifold. The safety thermostat K373 is precabled to the circulator of the R557RY042 to protect the radiant panel system from over-temperatures. R557RY042 group works as follows:
The thermovector fluid from the boiler comes in from connection **(1)**; the return to the boiler occurs from connection **(2)**; the regulation of the flow water temperature occurs through the three way valve **(3)**, where the R462L thermostatic head is mounted. The head has a sensor **(6)** immersed into the housing **(7)** of the flow piping. A part of the return fluid from the panel system equal to inlet capacity from valve **(3)**, goes towards the lockshield valve **(5)**, and then to the primary return circuit **(2)**; the rest is drawn in from the circulator **(10)** and reintroduced into circulation, mixed with the high temperature fluid part coming from the valve **(3)**.
The lockshield valve **(4)** serves for the balancing of the primary circuit. The air vents **(9)**, the charge and discharge cocks **(11)**, the circulator shut-off valves **(8)** complete the equipment.
The air vents **(9)**, the charge and discharge cocks **(11)**, the circulator shut-off valves **(8)** complete the equipment.

Component details

Inside R557R-2 group, all components are preassembled:
- a flow manifold R553M equipped with flow meter (0.5-5 l/min) and the regulation lockshield valve with mechanical memory
- a return manifold R553V with micrometric valves with thermostatic option.

The flow manifold is constituted by a drawn brass bar with an internal balancing lockshield valve with mechanical memory for each connection. This allows the detection and the maintenance of the calibration position into the single circuits, in case of total shut-off. The mechanical memory is made of an appropriate ring that, regulated by R558 key, allows limiting the maximum opening of the lockshield valve to the value chosen at the balancing stage. In order to make the results obtained by the regulation immediately visible, also a flow meter with graduation scale (0,5-5 l/min (30-300 l/h) is provided.
The return manifold is equipped with micrometric shut-off valves with thermostatic option, that allow the manual opening or the closing of the circuits. The automatic control of the temperature into the single rooms is possible, by installing normally closed electrical actuators (R473 / R473M series) or normally open ones (R478 / R478M). It is recommended installing electrical actuators with stroke end micro-switch (R473M and R478M), in order to pilot the circulator starting and switch off. The mounting of the actuators occurs by releasing the micrometric handwheel on the manifolds, and freeing the valve connection.

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Installation

It is opportune to install the R557R-2 group in a place that permits an easy inspection. Before proceeding with the laying of the cabinet, the frontal cover and the respective support frame shall be removed. They will have to be reinstalled at the end of the wall finishing operations (tiling or painting). The connections arranged for the joint of the radiant panel circuits, are characterised by Giacomini base 18 connections. According to the pipe material, adapters of appropriate size are used for the connection of the supply pipes of the radiators and radiant panel circuits.

R178 - Copper tube adaptors

R179 - Synthetic pipe adaptors

R179AM - Synthetic and multilayer pipe adaptors

Electrical supply

For the electrical supply of R557R-2 group, it is sufficient connecting the cable that comes out from the K373 safety thermostat (to which the circulator is connected) to the network 230 V, 50 Hz. The internal electrical part is precabled with the exception of electrical actuators to be ordered separately, that have to be installed only at the end of the operations of charge and balancing of the hydraulic system.

Filling up and pressure test of the panel system

As for all manifolds dedicated to radiant panel systems, before the laying of the concrete to cover the pipes, you have to proceed with the filling up and the consequent pressure test of the system (as expected by the UNI EN 1264-4, Par. 4.1.3.).

Fill up the first circuit by opening the corresponding lockshield valves (on the flow manifold) and valve (on the return manifold). When you are sure that no more water mixed with air, comes out from pipe used as discharge, proceed with the circuit closing by acting on the corresponding valve and lockshield valve, and to the opening of the next circuit: this operation must be carried out systematically up to the circuit exhaustion. At this point proceed with the opening of the ball valve positioned at the upper end of the circulator, in order to allow the filling up of the manifolds and the complete air escape from them through the air vents. At the end all flows and returns can be opened, and the system can be pressure tested at the values foreseen by the standard UNI EN 1264-4, par. 4.1.3 ("…minimum 4 bar, maximum 6 bar") by operating for example with a hand pump. After installation and vent of the circuits, the lockshield valve can be brought back to the initial conditions. By doing so, you will have the certainty that no air bubble could remain into the circuits.

The balancing of the low temperature circuits must be carried out only at the system starting, by respecting scrupulously the directions reported in the project documentation.

A. Close the ball valves **(8)**, positioned upstream and downstream of the circulator.

B. Close the secondary lockshiedld valve **(5)** with an appropriate 8 mm Allen key, so as to isolate the secondary circuit from the primary one.

C. In order to proceed with the system filling up, verify that the mechanical memories of all lockshield valves positioned on the **R553M** flow manifold, are completely opened by using the appropriate **R558** key.

D. Close all lockshield valves on the **R553M** flow manifold of the secondary, by using the appropriate **R558** Allen key (5 mm hexagon).

E. Close manually all valves on the **R553V** return manifold, by using the suitable handwheels.

F. Connect a common rubber tube to the discharge cock **(11)** positioned on the intermediate fitting of the **R553V** return manifold to allow the charge.

G. Connect another rubber tube to cock **(11)** placed on the intermediate fitting of the **R553M** flow manifold to permit the discharge.

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Regulation

Regulation of the thermostatic three way valve

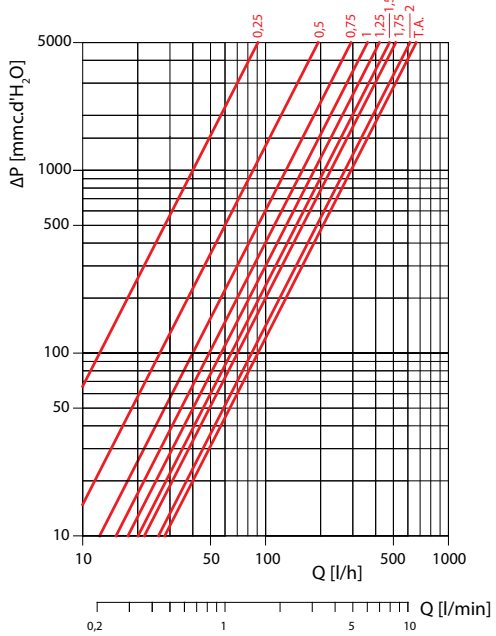
Head position	fully closed	1	2	3	4	5	fully open
T [°C]	20	25	34	45	56	67	70

Regulation of the primary lockshield valve
HALF TURN OPENING (recommended calibration)

Regulation of the secondary lockshield valve
FULLY OPEN (recommended calibration)

Manifold regulation

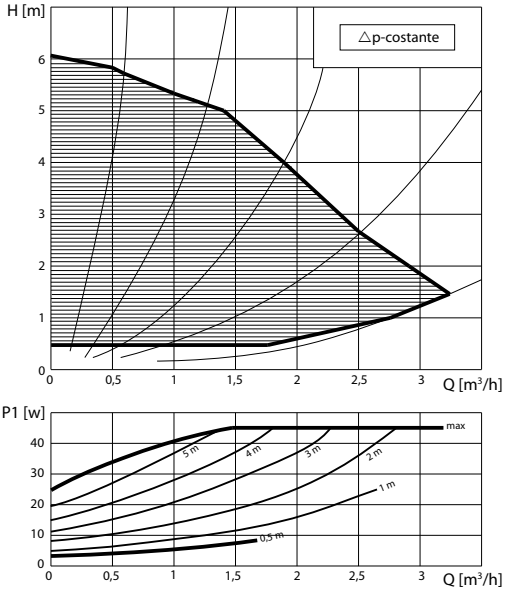

In order to effect the regulation, proceed with the complete opening of the mechanical memory, by using the screw driver part of the R558 key; by using then the hexagonal part of the same key, proceed with the opening of the lockshield valve up to the achievement of the desired capacity. Then close the mechanical memory, by using the screw driver part of the R558 key.



Turn n° lockshield	0,25	0,5	0,75	1	1,25	1,5	1,75	2	T.A.
Kv	0,12	0,26	0,40	0,49	0,57	0,64	0,71	0,84	0,89

Circulator features

Electronically controlled high-efficiency pump 25/6 (230 V)



Pump operating	
	Automatic constant pressure difference (racommended).
	Automatic variable pressure difference.
air	Automatic air vent routine (10 min duration): the pump runs alternatively with high and low speeds to help air bubbles to agglomerate and to go to air vent of the installation.

LED - errors	
green continuous	Normal running.
green flashing	Automatic air vent routine. air
green/red flashing	Abnormal situation (pump functional but stopped): 1) Undervoltage or overvoltage 2) Wrong temperature (fluid or room temperature)
red flashing	Pump stopped (permanent error: the pump need a manual reset). It can be necessary to change the pump.
NO LED	No power supply: 1) Pump is not connected to power supply: check cable connection. 2) LED is damaged: check if pump is running. 3) Electronics are damaged: change pump.

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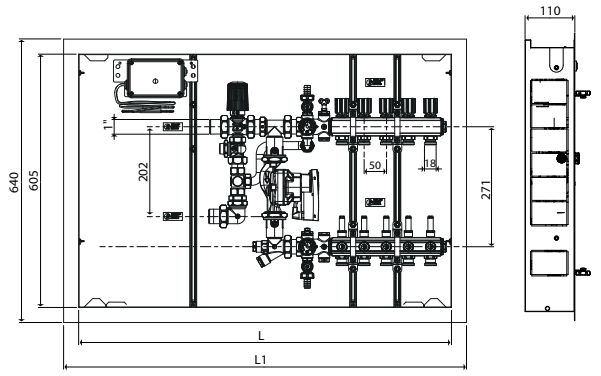
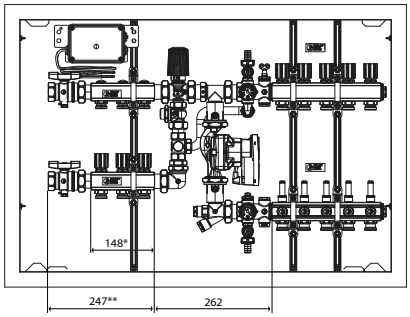
Dimensions



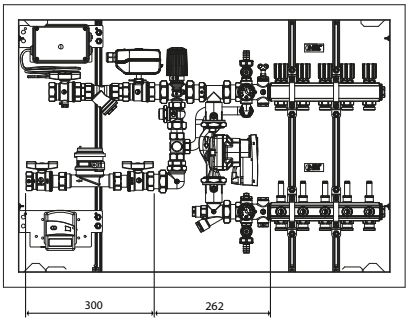
Product code	L [mm]	L1 [mm]
R557RY024	850	910
R557RY025		
R557RY026	1000	1060
R557RY027		
R557RY028		
R557RY029	1200	1260
R557RY030		
R557RY031		
R557RY032		

WITH HIGH TEMPERATURE MANIFOLDS

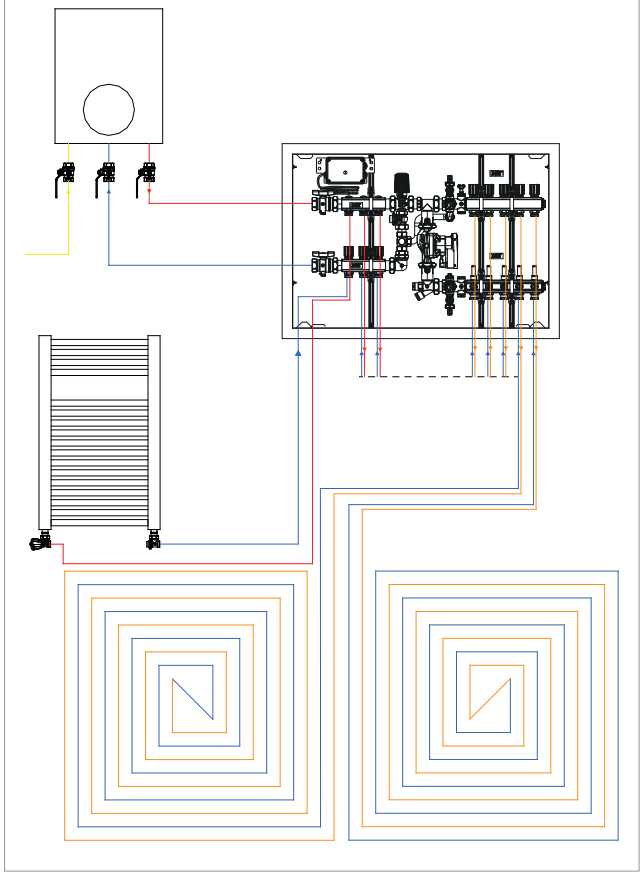


* con R553AY002 = 98 mm
** con R553AY002 = 197 mm

WITH THERMAL ENERGY METERING



Installation example



Additional information

For additional information please check the Giacomini website at the following address: www.giacomini.com

☏ +39 0322 923 372
🖷 +39 0322 923 255
✉ consulenza.prodotti@giacomini.com

Giacomini S.p.A. Via per Alzo 39, I-28017 San Maurizio d'Opaglio (NO) Italy