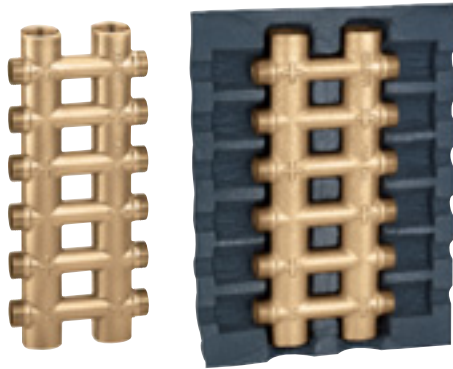


Dual manifolds and differential by-pass valve

356 - 357 series



Function

Dual manifolds are typically used for the distribution of the heat-carrying medium in heating and air conditioning systems. They are available with both double and single side connections and can be used to connect fittings for copper, plastic or multi-layer piping.

They are also offered for air-conditioning systems in a version complete with hot pre-formed shell insulation, sized to limit thermal losses and above all to prevent condensation on the surface.

The differential by-pass valve **keeps the manifold flow and return circuits pressure balanced when the flow rate varies**. This variation in flow rate can take place following the closure of room temperature regulating valves on the heat emitters like for example, thermostatic or thermo-electric valves.

Reference documentation

Tech. broch. 01091 Inspection box 362 series

Product range

MANIFOLDS: LINEA 3

356 series	Double side connections	sizes 3/4" and 1"
356...IS series	Double side connections with pre-formed insulation	size 1"
357 series	Single side connections	size 3/4"

DIFFERENTIAL BY-PASS VALVE:

Code 356050	size 3/4"
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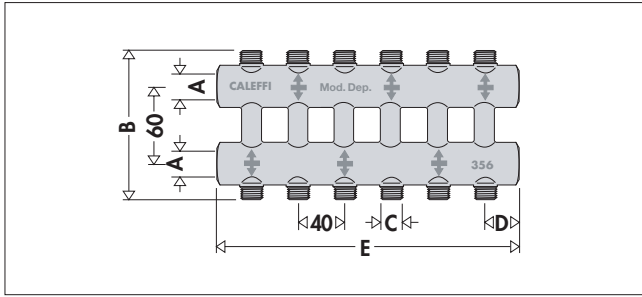
Technical specifications of manifold

Material:	brass EN 1982 CB 753S
Medium:	water, glycol solutions
Max. percentage of glycol:	30%
Max. working pressure:	10 bar
Temperature range:	-10–110°C
Main connections:	3/4" and 1" F, version without insulation 1" F, version with insulation
Outlet connections:	23 p. 1,5 M - Ø 18 mm
Main connections centre distance:	60 mm
Outlet centre distance:	40 mm
Average inside diameter:	3/4": Ø 20 mm 1": Ø 26 mm

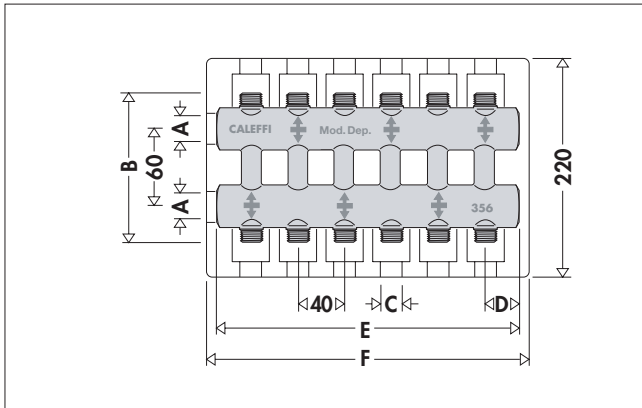
Technical specifications of insulation

Material:	expanded PE-X with closed cells
Thickness:	20 mm
Density: - internal portion:	30 kg/m ³
- external portion:	50 kg/m ³
Thermal conductivity (DIN 52612): - at 0°C:	0,038 W/(m·K)
- at 40°C:	0,045 W/(m·K)
Coefficient of resistance to the diffusion of water vapour (DIN 52615):	>1.300
Temperature range:	0–100°C
Reaction to fire (DIN 4102):	Class B2

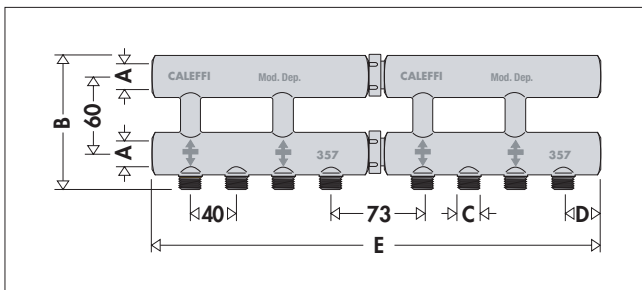
Dimensions



Code	A	No. out.	B	C	D	E	Weight (kg)
356502	3/4"	2+2	116	23 p.1,5	30	100	0,84
356504	3/4"	4+4	116	23 p.1,5	30	180	1,55
356506	3/4"	6+6	116	23 p.1,5	30	260	2,20
356508	3/4"	8+8	116	23 p.1,5	30	340	3,00
356510	3/4"	10+10	116	23 p.1,5	30	420	3,70
356604	1"	4+4	122	23 p.1,5	32	184	1,75
356606	1"	6+6	122	23 p.1,5	32	264	2,54
356608	1"	8+8	122	23 p.1,5	32	344	3,44
356610	1"	10+10	122	23 p.1,5	32	424	4,38
356612	1"	12+12	122	23 p.1,5	32	538	5,30



Code	A	No. out.	B	C	D	E	Weight (kg)
356604 IS	1"	4+4	122	23 p.1,5	32	184	2,05
356606 IS	1"	6+6	122	23 p.1,5	32	264	2,84
356608 IS	1"	8+8	122	23 p.1,5	32	344	3,74
356610 IS	1"	10+10	122	23 p.1,5	32	424	4,68



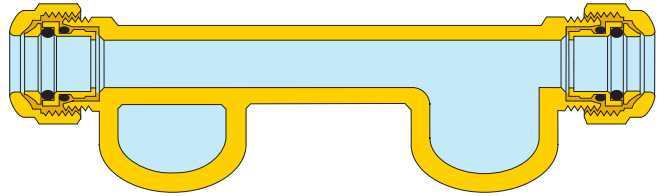
Code	A	No. out.	B	C	D	E	Weight (kg)
357502	3/4"	2+2	105	23 p.1,5	30	180	1,30
357503	3/4"	3+3	105	23 p.1,5	30	260	1,95
357504	3/4"	4+4	105	23 p.1,5	30	373	2,80
357505	3/4"	5+5	105	23 p.1,5	30	453	3,45
357506	3/4"	6+6	105	23 p.1,5	30	533	4,06

Construction details

Monoblock casting

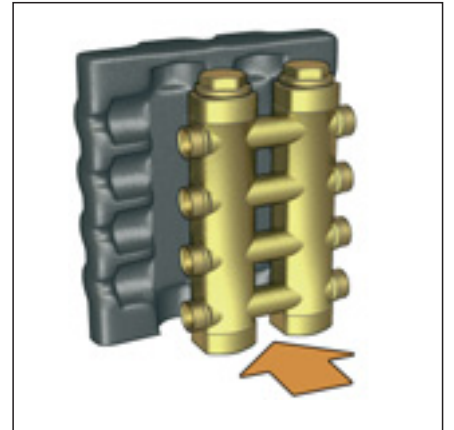
These manifolds are made with a monoblock casting, without any connections made between the internal tubes. This eliminates a possible cause of leakage due to coupling with metals with different coefficients of expansion.

The connections of the side outlets are obtained tangentially to the main tubes to make fitting the unions easier.

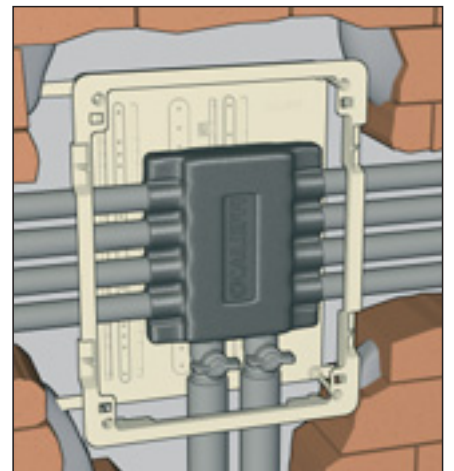


Pre-formed insulation

The manifold 356 series is also offered for the specific use of air-conditioning systems, with hot pre-formed shell insulation.



This insulation has been specially designed to help coupling with the manifold and the operations of installation in the boxes.



Hydraulic characteristics

Coefficient of localized loss ξ inlet loss (F+R):

3,0

Coefficient of localized loss ξ outlet loss (F+R):

6,5

Differential by-pass valve



Function

In heating systems, the heat-carrying medium distribution circuits can be totally or partially shut off by closing the thermostatic or thermoelectric valves in the radiators.

After reducing the flow rate, the differential pressure in the circuit may increase up to values able to generate problems of noise, high medium speed, mechanical erosion and hydraulic unbalancing of the system itself.

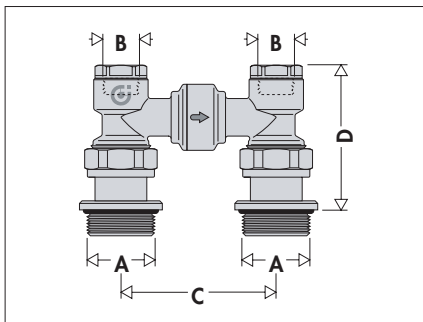
The differential by-pass kit for manifolds 356 series performs the function of keeping the flow and return pressure of the manifold circuit balanced when the flow rate varies.

This valve is fitted for quick coupling with the manifolds 356 series, reducing the overall dimensions to a minimum.

Technical specifications of by-pass valve

Materials:	- body:	brass EN 12165 CW617N
	- check valve obturator:	PA
	- spring:	stainless steel
	- seals:	EPDM
Medium:		water, glycol solutions
Max. percentage of glycol:		30%
Max. working pressure:		10 bar
Temperature range:		-10–110°C
Fixed pressure setting:		20 kPa (2000 mm w.g.)
Connections to manifold:		3/4" M (captive nut)
Head connections:		3/8" (with plug)
Centre distance:		60 mm

Dimensions

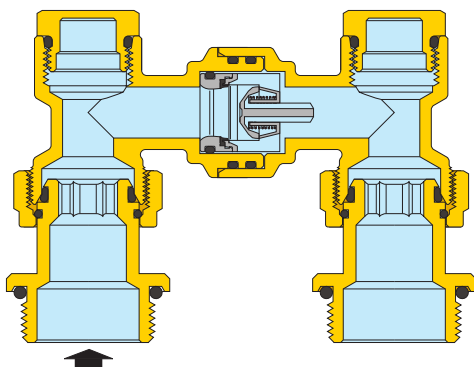


Code	356050
A	3/4"
B	3/8"
C	60
D	55
Weight (kg)	0,333

Principle of operation

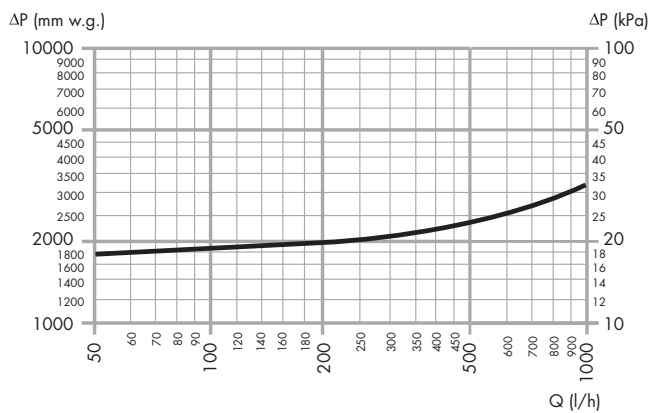
The by-pass valve contains a non-return obturator integral with a counter spring.

When the fixed calibrated pressure value is reached, the valve obturator opens gradually. The flow is in this way recirculated and, being proportional to the closure of the thermostatic or electrothermal valves, keeps the differential pressure constant in the manifold circuit.

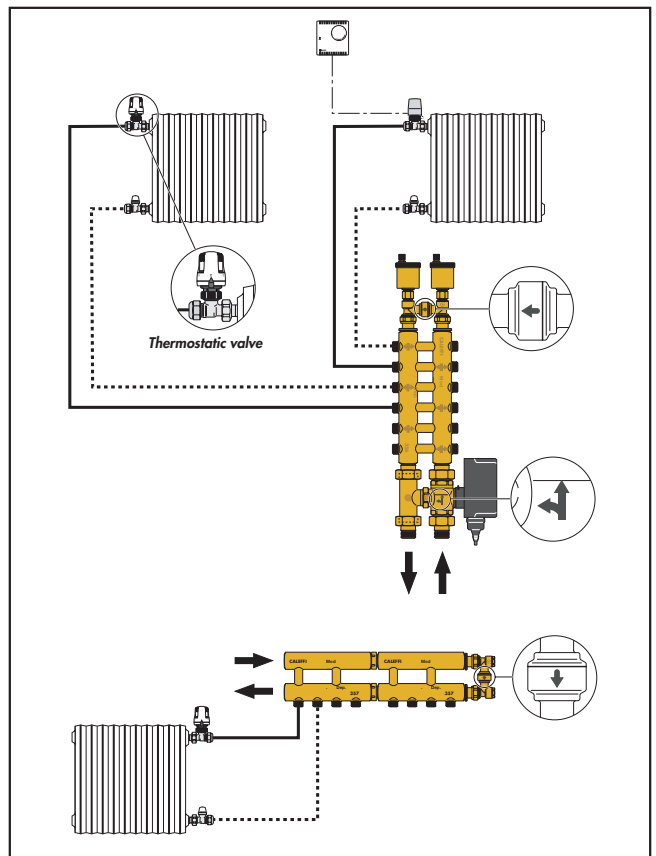


Hydraulic characteristics

By-pass pressure differential: 20 kPa (2000 mm w.g.)



Application diagram



Plastic inspection box and port



Function

The new shockproof plastic box has been specially made for using single and dual manifolds, combined with the various types of zone valves.

The ventilation openings in the cover have a special shape designed to prevent rings forming on the walls. The surface finish of the door is suitable for painting.

The housing of the dual manifold 356 series in the boxes is easy for both the insulated version and the non-insulated version, especially if done by using the shockproof plastic box 362 series.

Product Range

Code 362036	Plastic inspection box	useful dimensions 360 x 270 mm, depth 100/80 mm
Code 362056	Plastic inspection box	useful dimensions 560 x 330 mm, depth 100/80 mm
Code 362073	Plastic inspection box	useful dimensions 730 x 360 mm, depth 100/80 mm
Code 363036	Plastic inspection port	useful dimensions 360 x 270 mm
Code 363056	Plastic inspection port	useful dimensions 560 x 330 mm
Code 363073	Plastic inspection port	useful dimensions 730 x 360 mm

SPECIFICATION SUMMARIES

356 series

Cast monoblock dual distribution manifold with double side connections. Brass body. Main connections 3/4" or 1" F. Outlet connections: 23 p.1,5 M - Ø 18 mm. Main centre distance: 60 mm. Outlet centre distance: 40 mm. Medium: water and glycol solutions. Maximum percentage of glycol: 30%. Maximum working pressure: 10 bar. Temperature range: -10–110°C.

356 IS series

Cast monoblock dual distribution manifold with double side connections and hot pre-formed insulation. Brass body. Main connections: 1" F. Outlet connections: 23 p.1,5 M - Ø 18 mm. Main centre distance: 60 mm. Outlet centre distance: 40 mm. Medium: water and glycol solutions. Maximum percentage of glycol: 30%. Maximum working pressure: 10 bar. Temperature range: -10–110°C.

357 series

Cast monoblock dual distribution manifold with single side connections. Brass body. Main connections: 3/4" F. Outlet connections: 23 p.1,5 M - Ø 18 mm. Main centre distance: 60 mm. Outlet centre distance: 40 mm. Medium: water and glycol solutions. Maximum percentage of glycol: 30%. Maximum working pressure: 10 bar. Temperature range: -10–110°C.

Code 356050

Differential by-pass valve for dual distribution manifolds. Brass body. Connections to manifold 3/4" M with captive nut. Head connections: 3/8" F with plug. Seals of EPDM. Temperature range: -10–110°C. Medium: water and glycol solutions. Maximum percentage of glycol: 30%. Maximum working pressure: 10 bar. Centre distance: 60 mm. Differential pressure fixed setting: 20 kPa.

362 series

Plastic inspection box with ventilation openings.
White colour RAL 9010. Useful dimensions (h x b x d):
Code 362036 360 x 270 x 100/80 mm.
Code 362056 560 x 330 x 100/80 mm.
Code 362073 730 x 360 x 100/80 mm.

363 series

Plastic inspection port with ventilation openings.
White colour RAL 9010. Useful dimensions (h x b):
Code 363036 360 x 270 mm.
Code 363056 560 x 330 mm.
Code 363073 730 x 360 mm.

We reserve the right to change our products and their relevant technical data, contained in this publication, at any time and without prior notice.

