



SINGLE-PIPE AND TWIN-PIPE VALVES



GIACOMINI
WATER E-MOTION

Technical documentation

0185EN

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Twin-pipe valves with thermostatic option

Use

Giacomini's series of "twin-pipe" valves is used in heating systems as a valid alternative to the traditional connections made with a valve and a lockshield valve which, whether superimposed or alongside each other, require large chases in the walls. With these valves on the other hand, the coupling with the heating elements is made with just one connection. This means a better aesthetic result and less costly interventions - factors that are often important in the case of renovation projects in particular. The wide series of accessories facilitates every type of solution as they can be used on the various heating element models available on the market.

Technical data

- Temperature range: $5 \div 110^{\circ}\text{C}$ ($5 \div 90^{\circ}\text{C}$ with plastic probe)
- Max. working pressure: 10 bar
- Max. differential pressure: 1,4 bar


Main features

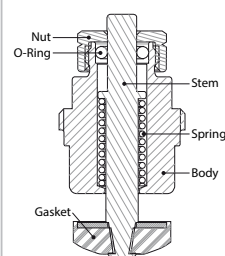
The Giacomini series of "twin-pipe" valves offers solutions with wall- or floor-mounting derived connections, with straight or perpendicular entry from below, with right or left connection, for plates or radiators.

They come in a manual version with micrometric handwheel, and can easily be transformed into the thermostatic version by applying any thermostatic head of the Giacomini series.

Their micrometric lockshield valve ensures the balancing of the circuit until the full closure of the flow to the heating element, for both traditional twin-pipe distribution and collector distribution (horizontal or coplanar).



With thermostatic head installed on the valve body, to avoid excessive loads on the seal gasket of the thermostatic bonnet (with the resulting risk of jamming and locking) during the summer, it is recommended to place the handwheel of the thermostatic head in the fully open position, marked by the symbol .



In case of malfunction of the valve it is possible to replace the O-ring, by unscrewing the nut using an hexagonal wrench 11 mm

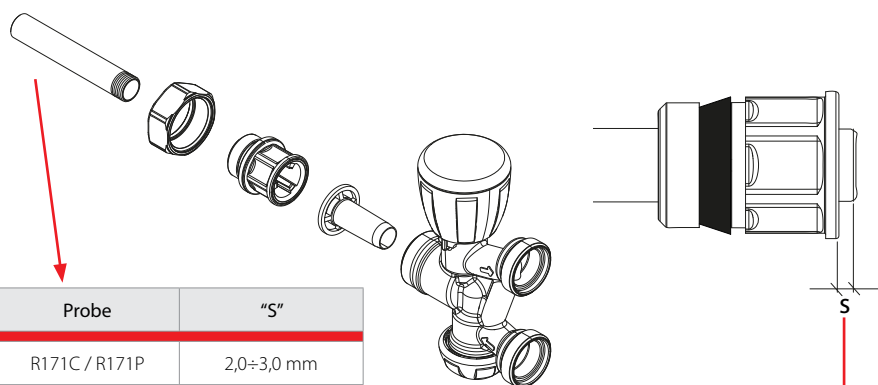


If the problem persists is also possible to replace the complete bonnet using the appropriate key R400.

Connection to the radiator

The connection to the heating element is made with a self-sealing tail piece which will allow you to quickly produce practical installations with long-lasting reliability.

The Giacomini self-sealing tail piece is, in fact, fitted with an elastomer part so it can be assembled on the heating element without the addition of hemp, paste or other sealing materials. To tighten the tail piece, just apply a torque no greater than 25 Nm, lubricating the elastomer element if necessary with silicone-based products.



R171C = copper R171F = threaded copper R171P = plastic

To obtain a good yield from the heating element, you are advised to apply probes with a length equal to roughly 2/3 of the heating element itself.

Connection to the system



When connecting the valve to the supply pipes, it is important to respect the correct flow direction indicated by the arrows on the body. In this way, the stopper is struck by the fluid current in the opening direction, guaranteeing optimum operation in both manual and thermostatic version.

Versions and product codes

R440N

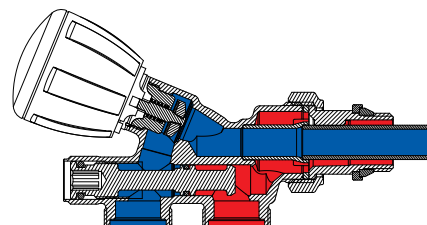
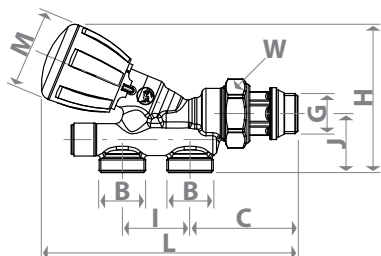


Compact micrometric valve with thermostatic option, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For twin-pipe systems. Equipped with adjustable lockshield valve.

Supplied with R171P plastic probe, Ø 12 mm, length 450 mm.

Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I [mm] | H [mm] | J [mm] | L [mm] | C [mm] | M [mm] | W [mm] |
|-----------|-----------|--------|--------|--------|--------|--------|--------|--------|
| R440NX032 | 1/2" x 16 | 35 | 77 | 31 | 133 | 56 | 42 | 32 |



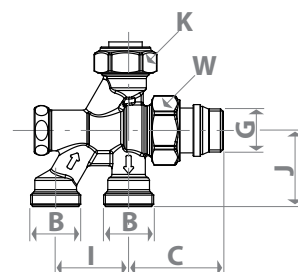
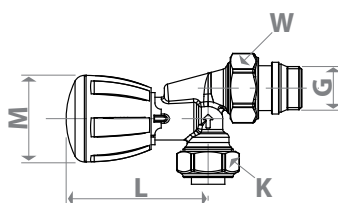
R438



Angled valve and lockshield valve group with thermostatic option and connections from the floor, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For twin-pipe systems. Equipped with adjustable lockshield valve. To be completed with R194 chrome plated connection pipe, Ø16 mm.

Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | M [mm] | W [mm] | K [mm] |
|----------|-----------|--------|--------|--------|--------|--------|--------|--------|
| R438X062 | 1/2" x 16 | 35 | 37 | 68 | 46 | 42 | 30 | 27 |
| R438X063 | 1/2" x 18 | 50 | 42 | 68 | 38 | 42 | 30 | 27 |



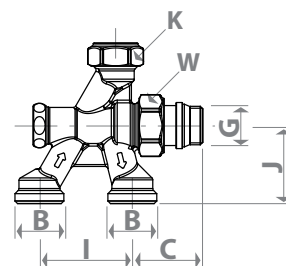
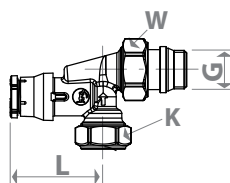
R438P



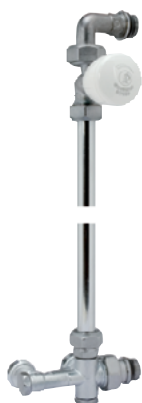
Angled micrometric valve and lockshield valve group with thermostatic option and connections from the floor, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For twin-pipe systems. Equipped with adjustable lockshield valve. To be completed with R194 chrome plated connection pipe, Ø16 mm.

Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | W [mm] | K [mm] |
|-----------|--------------|--------|--------|--------|--------|--------|--------|
| R438PX037 | 1/2" x 3/4"E | 50 | 42 | 50 | 38 | 30 | 27 |

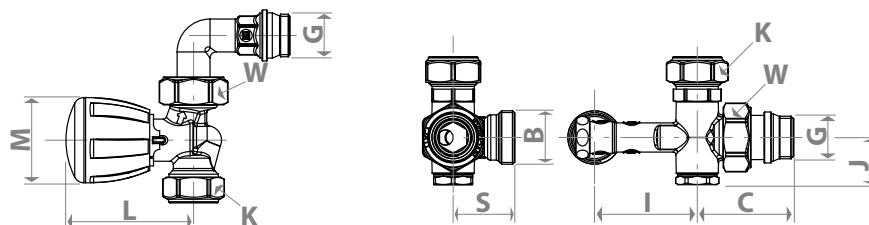


R438MTG



Straight valve and lockshield valve group with thermostatic option and connections from the wall, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For twin-pipe systems. Equipped with adjustable lockshield valve. To be completed with R194 chrome plated connection pipe, Ø16 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I | J | L | C | S | M | W | K |
|-----------|-----------|----|----|----|----|----|----|----|----|
| R438MX033 | 1/2" x 18 | 50 | 23 | 62 | 47 | 30 | 42 | 30 | 27 |

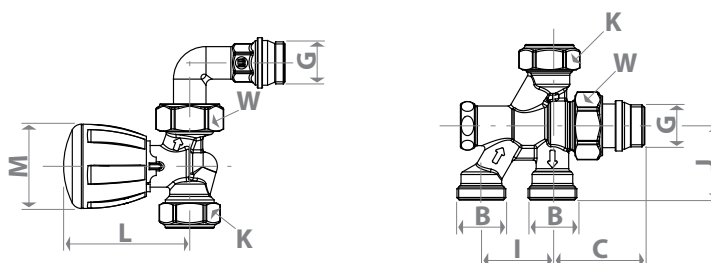


R438-1



Straight valve and lockshield valve group with thermostatic option and connections from the floor, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For twin-pipe systems. Equipped with adjustable lockshield valve. To be completed with R194 chrome plated connection pipe, Ø16 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

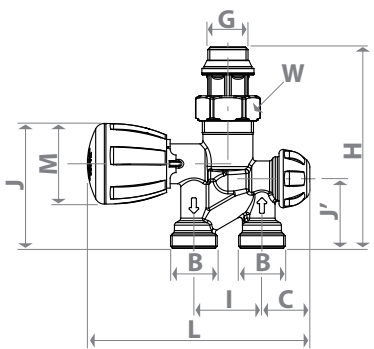
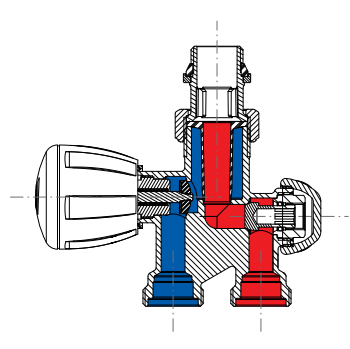
| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | M [mm] | W [mm] | K [mm] |
|-----------|--------------|--------|--------|--------|--------|--------|--------|--------|
| R438IX043 | 1/2" x 16 | 35 | 37 | 62 | 46 | 42 | 30 | 27 |
| R438IX044 | 1/2" x 18 | 50 | 42 | 62 | 38 | 42 | 30 | 27 |
| R438IX037 | 1/2" x 3/4"E | 50 | 42 | 62 | 38 | 42 | 30 | 27 |



R356B1

Straight micrometric valve with thermostatic option, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For twin-pipe systems. Equipped with adjustable lockshield valve. Supplied without injection probe. Radiator connection from below and connection to the system pipes from the floor. To be completed with R171F copper probe, Ø12 mm, lenght 450 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

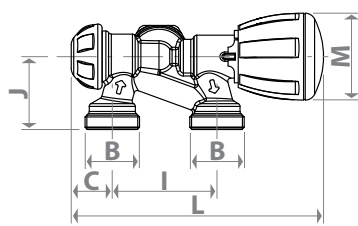
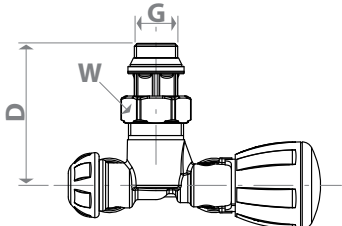
| Code | G x B | I [mm] | J [mm] | J' [mm] | L [mm] | C [mm] | H [mm] | M [mm] | W [mm] |
|-----------|-----------|--------|--------|---------|--------|--------|--------|--------|--------|
| R356BX062 | 1/2" x 18 | 50 | 43 | 35 | 116 | 22 | 103 | 42 | 30 |

R357B1

Angled micrometric valve with thermostatic option, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For twin-pipe systems. Equipped with adjustable lockshield valve. Supplied without injection probe. Radiator connection from below and connection to the system pipes from the wall with handwheel on the right. To be completed with R171F copper probe, Ø12 mm, lenght 450 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

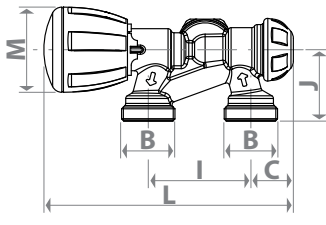
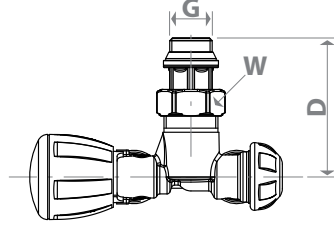
| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | D [mm] | M [mm] | W [mm] |
|-----------|-----------|--------|--------|--------|--------|--------|--------|--------|
| R357BX062 | 1/2" x 18 | 50 | 35 | 123 | 22 | 68 | 42 | 30 |

R358B1

Angled micrometric valve with thermostatic option, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For twin-pipe systems. Equipped with adjustable lockshield valve. Supplied without injection probe. Radiator connection from below and connection to the system pipes from the wall with handwheel on the left. To be completed with R171F copper probe, Ø12 mm, lenght 450 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

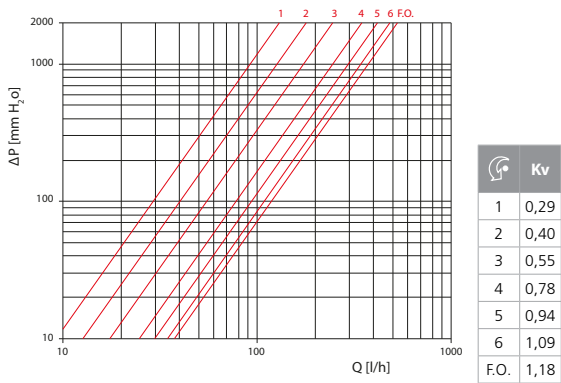
| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | D [mm] | M [mm] | W [mm] |
|-----------|-----------|--------|--------|--------|--------|--------|--------|--------|
| R356BX062 | 1/2" x 18 | 50 | 35 | 123 | 22 | 68 | 42 | 30 |

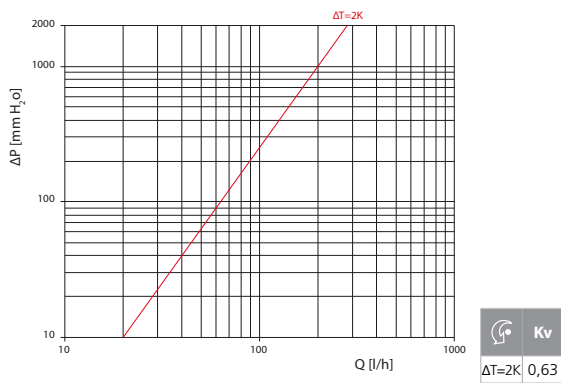
Losses of pressure

R440N

The numbers relating to the curves indicate the number of opening rotations of the lockshield valve

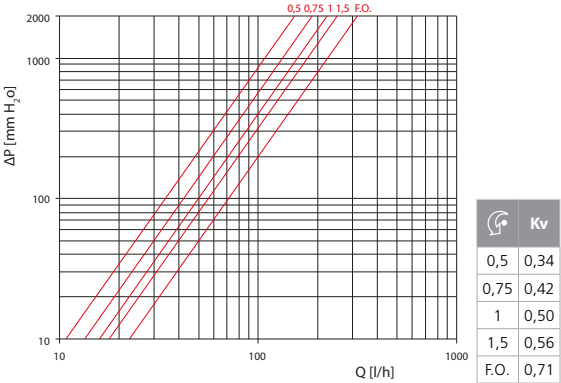


ΔT=2K lockshield valve fully open

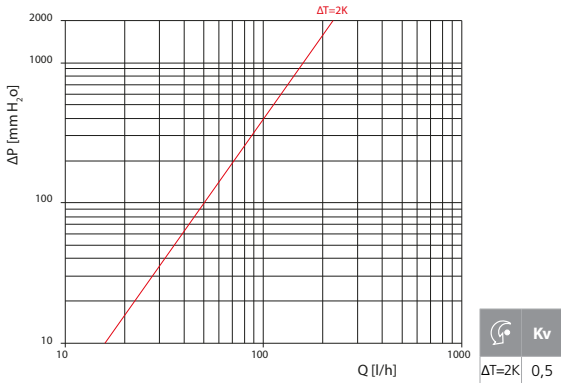


R438

The numbers relating to the curves indicate the number of opening rotations of the lockshield valve

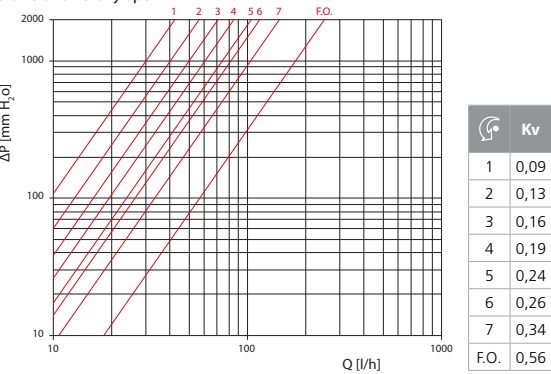


ΔT=2K lockshield valve fully open

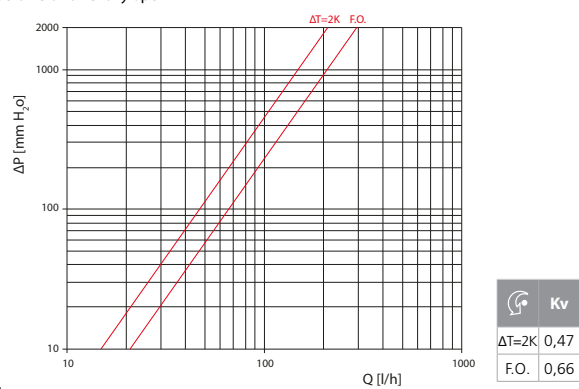


R438P

The numbers relating to the curves indicate the number of opening rotations of the micrometric valve with the lockshield valve fully open

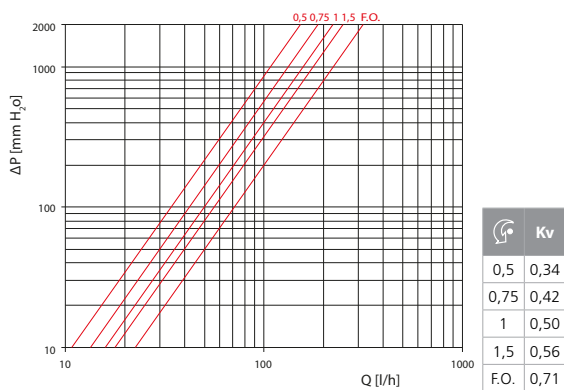


F.O. handwheel fully open and lockshield valve fully open
ΔT=2K lockshield valve fully open

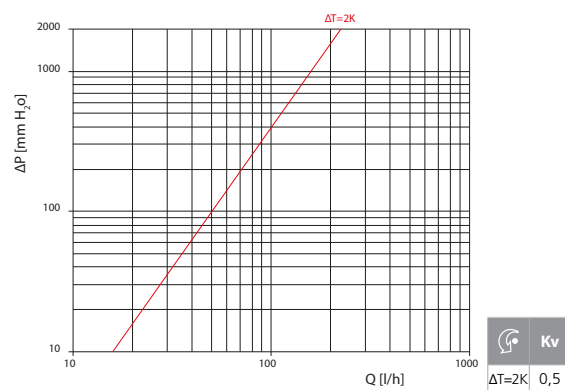


R438-1

The numbers relating to the curves indicate the number of opening rotations of the lockshield valve

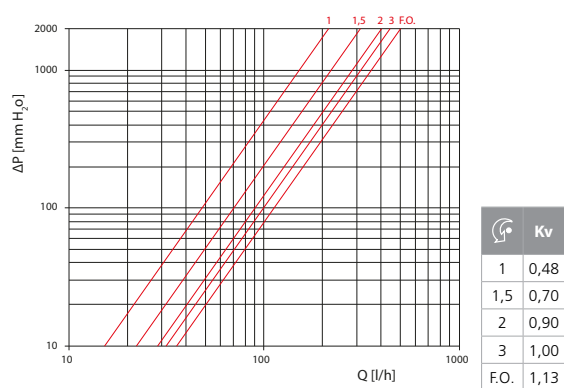


$\Delta T=2K$ lockshield valve fully open

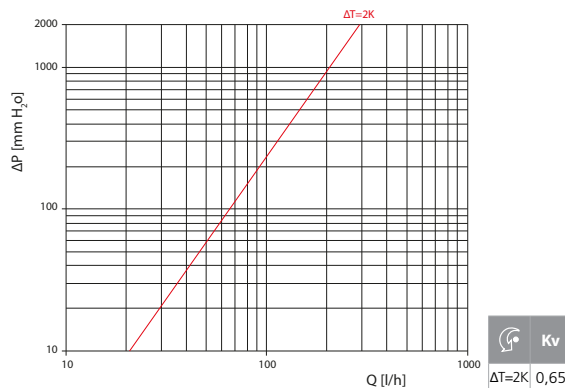


R356B1

The numbers relating to the curves indicate the number of opening rotations of the lockshield valve

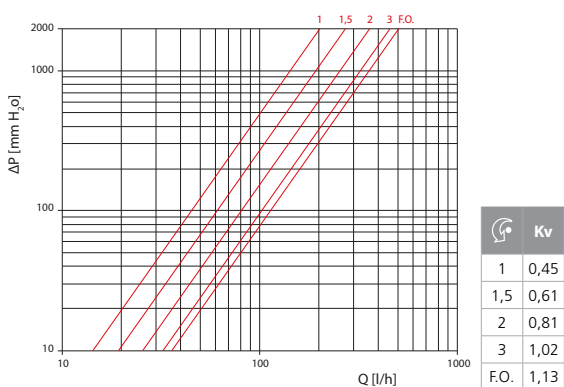


$\Delta T=2K$ lockshield valve fully open

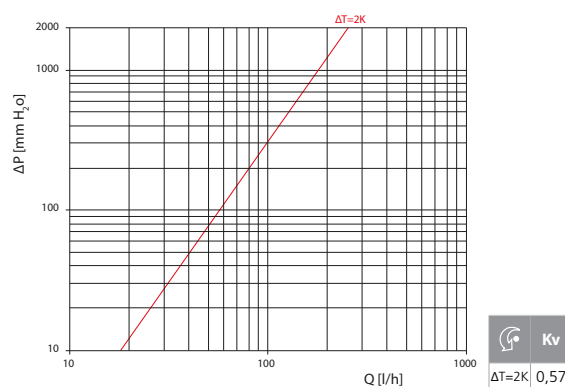


R357B1 & R358M1

The numbers relating to the curves indicate the number of opening rotations of the lockshield valve



$\Delta T=2K$ lockshield valve fully open



Single-pipe valves with thermostatic option

Use

Giacomini's series of "single-pipe" valves is designed to enhance single-pipe systems with the methods already in use in traditional collector systems, offering the market a series of micrometric valves with thermostatic option compatible with any type of Giacomini thermostatic heads.

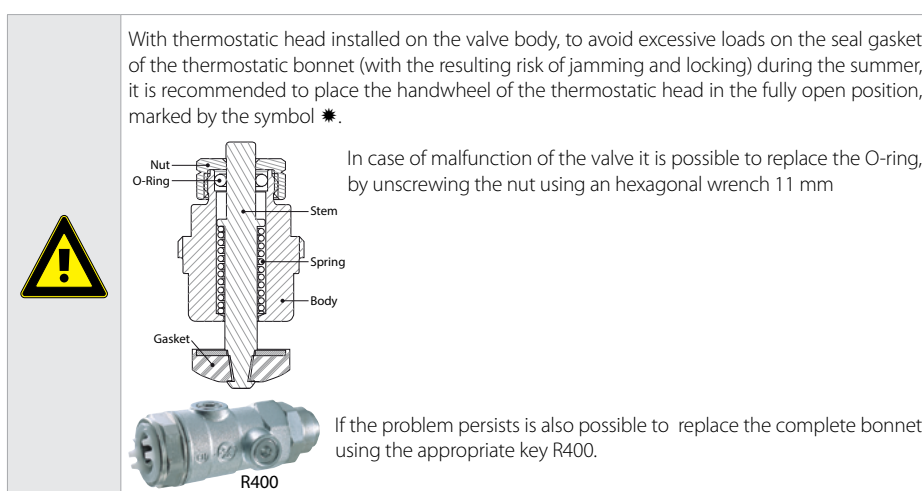
Technical data

- Temperature range: $5 \div 110$ °C ($5 \div 90$ °C with plastic probe)
- Max. working pressure: 10 bar
- Max. differential pressure: 1,4 bar
- Percentage of flow rate to the radiator in the single-pipe version with the manual handwheel fully open: 47 %
- Percentage of flow rate to the radiator in the single-pipe version with a thermostatic head: 33 %

Main features

The Giacomini "single-pipe" valves allow the total exclusion of the heating element from the supply circuit, so interventions can be made on it even when the system is operating.

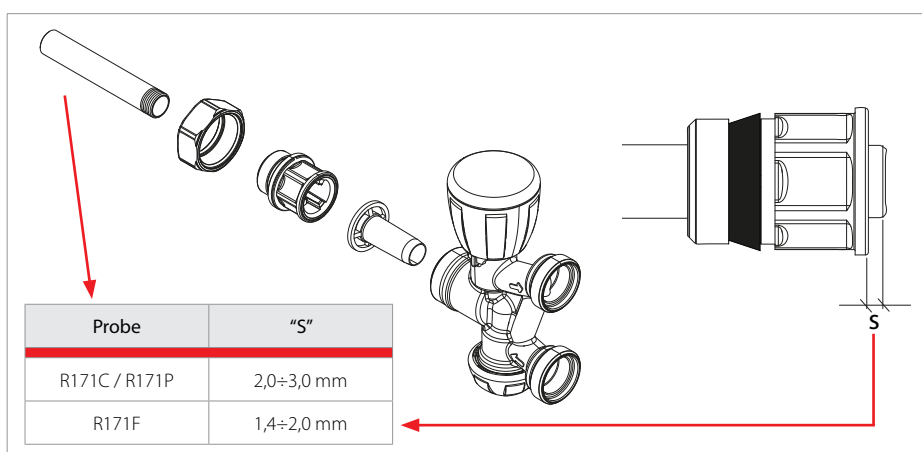
By closing the handwheel and lockshield valve, in fact, the heating fluid crosses over the valve by-pass and reaches the heating element.



Connection to the radiator

The connection to the heating element is made with a self-sealing tail piece which will allow you to quickly produce practical installations with long-lasting reliability.

The Giacomini self-sealing tail piece is, in fact, fitted with an elastomer part so it can be assembled on the heating element without the addition of hemp, paste or other sealing materials. To tighten the tail piece, just apply a torque no greater than 25 Nm, lubricating the elastomer element if necessary with silicone-based products.



R171C = copper R171F = threaded copper R171P = plastic

To obtain a good yield from the heating element, you are advised to apply probes with a length equal to roughly 2/3 of the heating element itself.

Connection to the system



When connecting the valve to the supply pipes, it is important to respect the correct flow direction indicated by the arrows on the body.

In this way, the stopper is struck by the fluid current in the opening direction, guaranteeing optimum operation in both manual and thermostatic version.

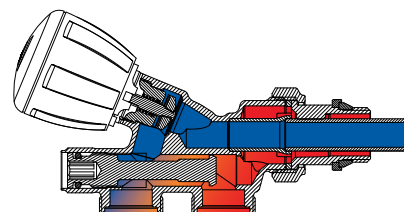
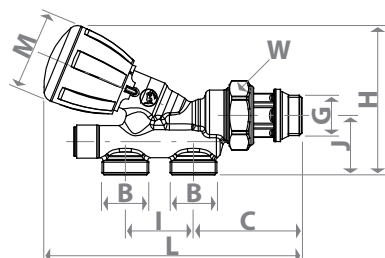
Versions and product codes

R437N



Compact micrometric valve with thermostatic option, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. Equipped with adjustable lockshield valve. Supplied with R171P plastic probe, Ø 12 mm, lenght 450 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I [mm] | H [mm] | J [mm] | L [mm] | C [mm] | M [mm] | W [mm] |
|-----------|-----------|--------|--------|--------|--------|--------|--------|--------|
| R437NX031 | 1/2" x 16 | 35 | 77 | 31 | 133 | 56 | 42 | 32 |

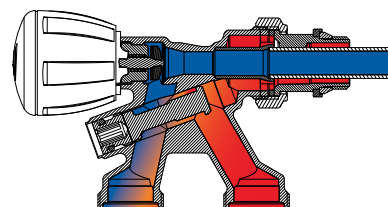
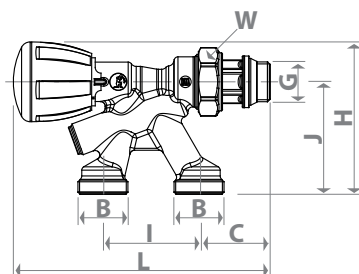


R437



Micrometric valve with thermostatic option, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. Equipped with adjustable lockshield valve. Supplied with R171P plastic probe, Ø 12 mm, lenght 450 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | M [mm] | W [mm] |
|----------|-----------|--------|--------|--------|--------|--------|--------|
| R437X032 | 1/2" x 18 | 50 | 59 | 134 | 37 | 42 | 32 |

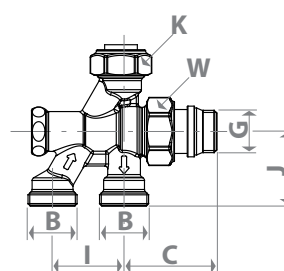
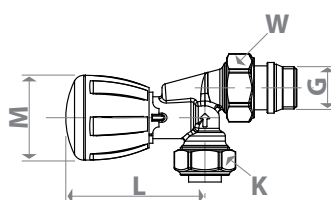


R436



Angled valve and lockshield valve group with thermostatic option and connections from the floor, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. Equipped with adjustable lockshield valve. To be completed with R194 chrome plated connection pipe, Ø16 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

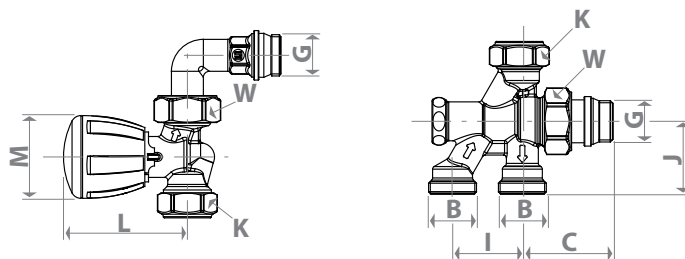
| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | M [mm] | K [mm] | W [mm] |
|----------|-----------|--------|--------|--------|--------|--------|--------|--------|
| R436X062 | 1/2" x 16 | 35 | 37 | 68 | 46 | 42 | 27 | 30 |
| R436X063 | 1/2" x 18 | 50 | 42 | 68 | 38 | 42 | 27 | 30 |



R436-1

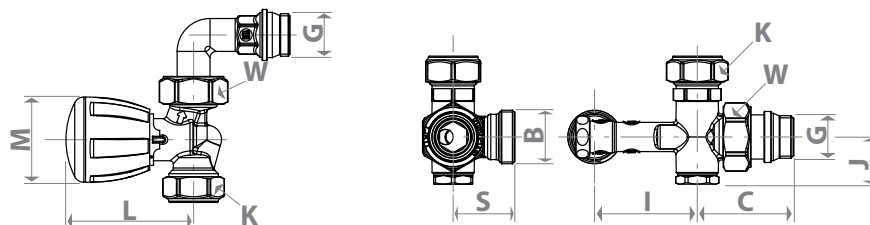
Straight valve and lockshield valve group with thermostatic option and connections from the floor, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. Equipped with adjustable lockshield valve. To be completed with R194 chrome plated connection pipe, Ø16 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | M [mm] | K [mm] | W [mm] |
|-----------|-----------|--------|--------|--------|--------|--------|--------|--------|
| R436IX043 | 1/2" x 16 | 35 | 37 | 62 | 46 | 42 | 27 | 30 |
| R436IX044 | 1/2" x 18 | 50 | 42 | 62 | 38 | 42 | 27 | 30 |

**R436M-1**

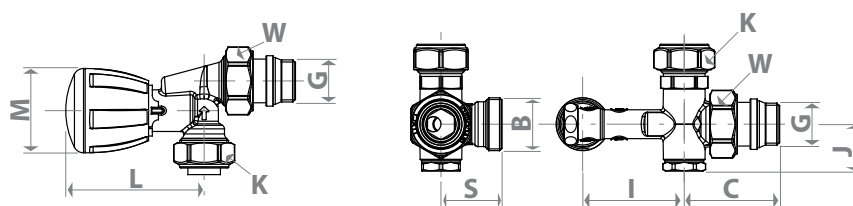
Straight valve and lockshield valve group with thermostatic option and connections from the wall, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. Equipped with adjustable lockshield valve. To be completed with R194 chrome plated connection pipe, Ø16 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | S [mm] | M [mm] | W [mm] | K [mm] |
|-----------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|
| R436MX033 | 1/2" x 18 | 50 | 23 | 62 | 47 | 30 | 42 | 27 | 30 |

**R436M**

Angled valve and lockshield valve group with thermostatic option and connections from the wall, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. Equipped with adjustable lockshield valve. To be completed with R194 chrome plated connection pipe, Ø16 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

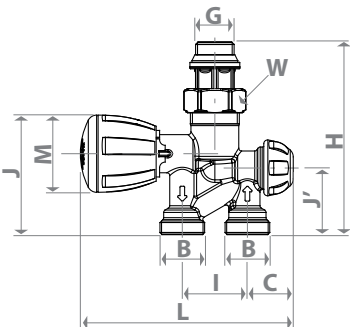
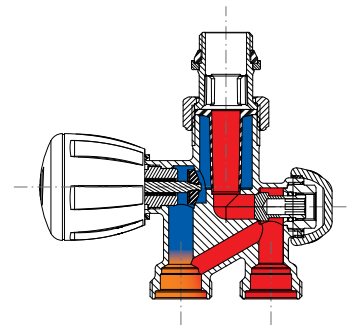
| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | S [mm] | M [mm] | W [mm] | K [mm] |
|-----------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|
| R436MX037 | 1/2" x 18 | 50 | 23 | 68 | 47 | 30 | 42 | 27 | 30 |



R356M1

Straight micrometric valve with thermostatic option, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. Equipped with adjustable lockshield valve. Supplied without injection probe. Radiator connection from below and connection to the system pipes from the floor. To be completed with R171F copper probe, Ø12 mm, lenght 450 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

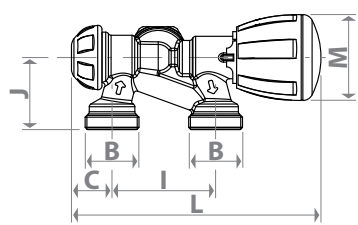
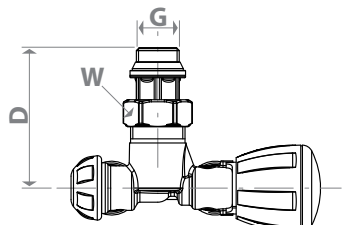
| Code | G x B | I [mm] | J [mm] | J' [mm] | L [mm] | C [mm] | H [mm] | M [mm] | W [mm] |
|-----------|-----------|--------|--------|---------|--------|--------|--------|--------|--------|
| R356MX061 | 1/2" x 16 | 35 | 44 | 36 | 115 | 25 | 104 | 42 | 30 |
| R356MX062 | 1/2" x 18 | 50 | 43 | 35 | 116 | 22 | 103 | 42 | 30 |

R357M1

Angled micrometric valve with thermostatic option, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. Equipped with adjustable lockshield valve. Supplied without injection probe. Radiator connection from below and connection to the system pipes from the wall with handwheel on the right. To be completed with R171F copper probe, Ø12 mm, lenght 450 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

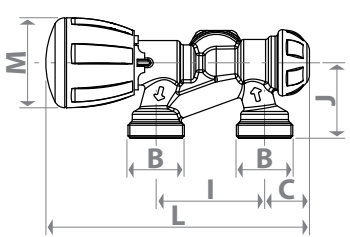
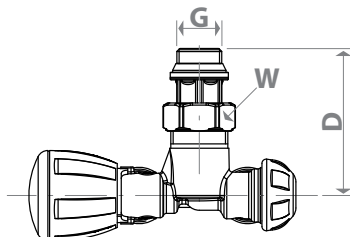
| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | D [mm] | M [mm] | W [mm] |
|-----------|-----------|--------|--------|--------|--------|--------|--------|--------|
| R357MX061 | 1/2" x 16 | 35 | 35 | 124 | 31 | 68 | 42 | 30 |
| R357MX062 | 1/2" x 18 | 50 | 35 | 123 | 22 | 68 | 42 | 30 |

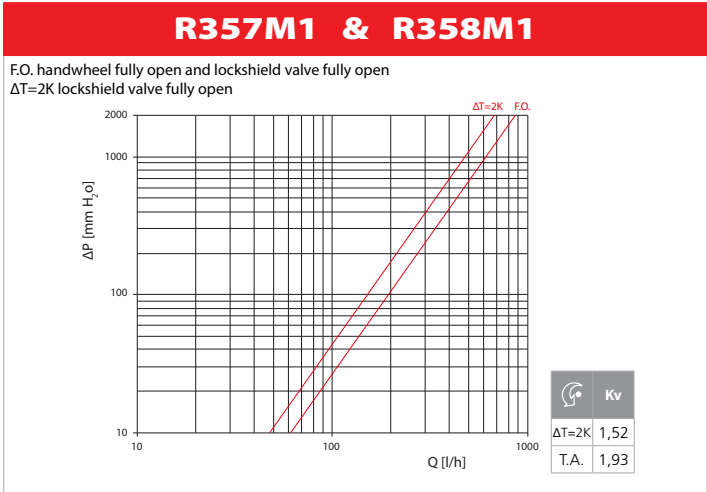
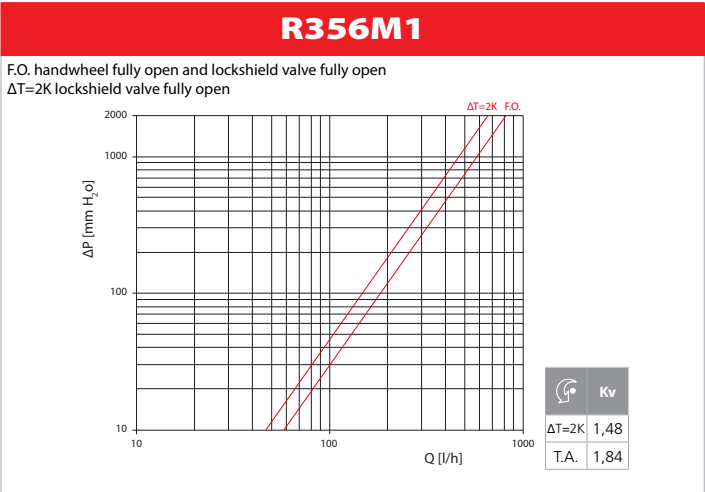
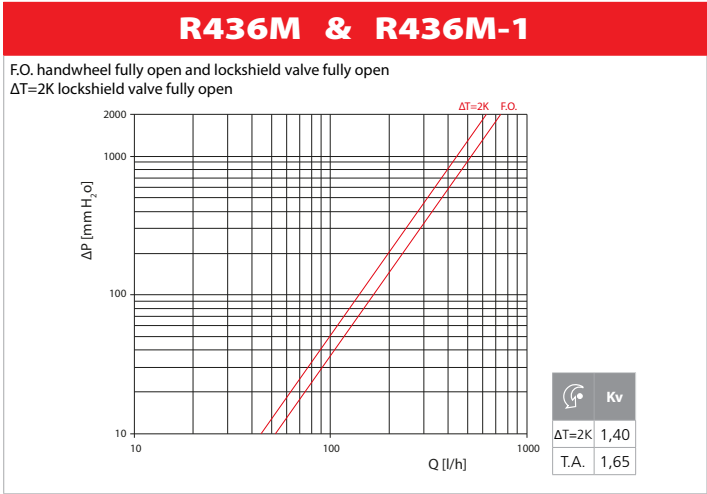
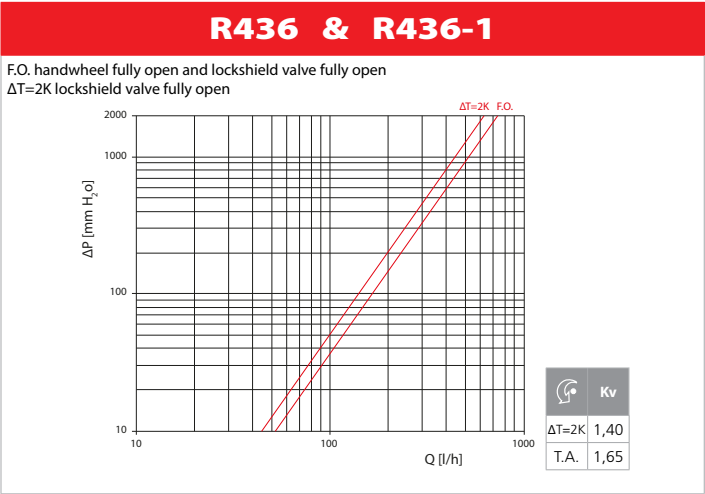
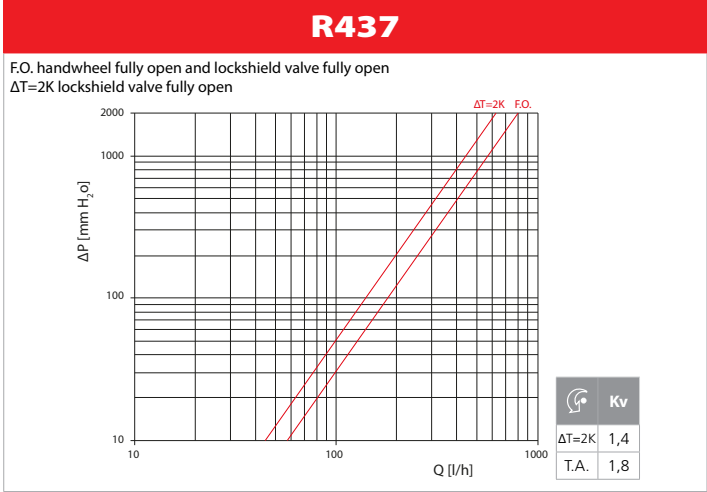
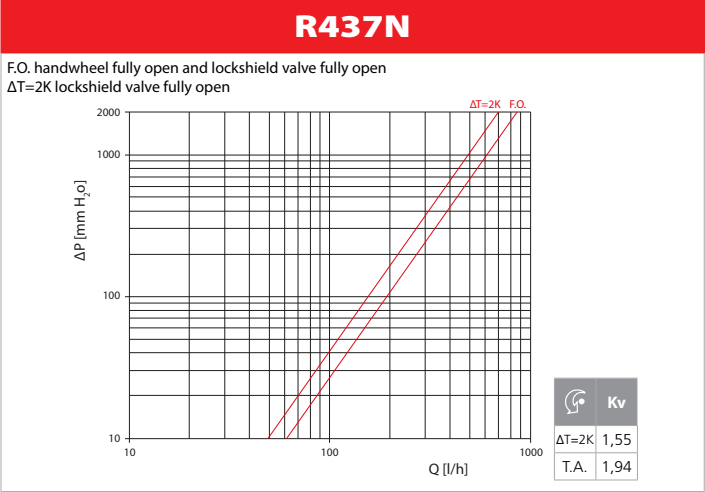
R358M1

Angled micrometric valve with thermostatic option, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. Equipped with adjustable lockshield valve. Supplied without injection probe. Radiator connection from below and connection to the system pipes from the wall with handwheel on the left. To be completed with R171F copper probe, Ø12 mm, lenght 450 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I [mm] | J [mm] | L [mm] | C [mm] | D [mm] | M [mm] | W [mm] |
|-----------|-----------|--------|--------|--------|--------|--------|--------|--------|
| R358MX061 | 1/2" x 16 | 35 | 35 | 124 | 31 | 68 | 42 | 30 |
| R358MX062 | 1/2" x 18 | 50 | 35 | 123 | 22 | 68 | 42 | 30 |

Losses of pressure



Single-pipe and twin-pipe valve with thermostatic option, R304T

Use

La valvola R304T consente di realizzare impianti di tipo monotubo o bitubo, manuali o termostatici.

La collocazione trasversale del volantino di comando consente l'applicazione di elementi termostatici anche in condizioni di scarsa disponibilità di spazio in nicchia, inoltre grazie alla possibilità di orientare il volantino può essere collocata sia con attacchi a parete, sia con attacchi a pavimento.

Technical data

- Temperature range: $5 \div 110$ °C ($5 \div 90$ °C with plastic probe)
- Max. working pressure: 10 bar
- Max. differential pressure: 1,4 bar
- Percentage of flow rate to the radiator in the single-pipe version with the manual handwheel fully open: 47 %
- Percentage of flow rate to the radiator in the single-pipe version with a thermostatic head: 33 %

Main features



Thanks to its special double lockshield valve, the R304T valve can be used in both the single pipe and the twin pipe versions.

In the twin pipe version, the lockshield valve enables the balancing of the heating element as specified by the system designer.

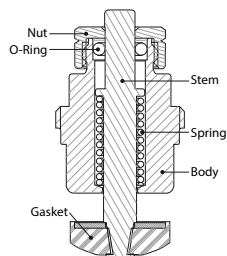
The total closure of the lockshield valve and command handwheel allow the heating element to be disconnected from the system.

The fact that the head can be oriented allows installation to both the right and the left of the heating element, even on fairly narrow radiators like those made of aluminium or steel. In particular conditions, the special internal conformation of the valve body allows the entry of the supply flow from either of the two connections.

If the differential pressure of the valve connections is high, it is better if the inlet connection is the one nearest the radiator.

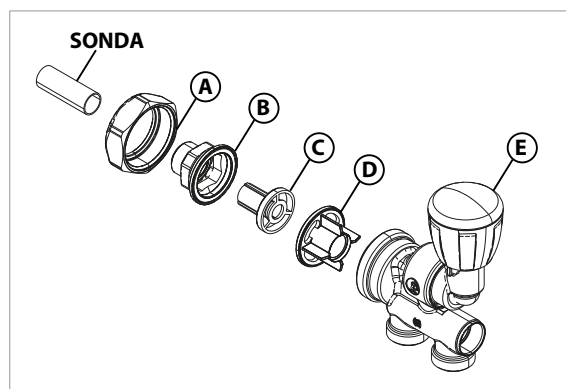
With thermostatic head installed on the valve body, to avoid excessive loads on the seal gasket of the thermostatic bonnet (with the resulting risk of jamming and locking) during the summer, it is recommended to place the handwheel of the thermostatic head in the fully open position, marked by the symbol

In case of malfunction of the valve it is possible to replace the O-ring, by unscrewing the nut using an hexagonal wrench 11 mm



If the problem persists is also possible to replace the complete bonnet using the appropriate key R400.

Connection to the radiator



1) Insert the probe in the black probe-holder separator (C); the probe size must correspond to the diameter of the hole on the probe-holder.

2) Tighten the tail piece (B) and nut (A) on the radiator connection.

3) After positioning the separator (D) in the valve body (E), tighten the nut (A) to the valve body of the R304T.



To obtain a good yield from the heating element, you are advised to apply probes with a length equal to roughly 2/3 of the heating element itself.

Versions and product codes

R304T



Micrometric valve with thermostatic option, with adjustable handwheel 0÷180°, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. Both for single-pipe or twin-pipe systems. Equipped with adjustable lockshield valve. Supplied without injection probe.

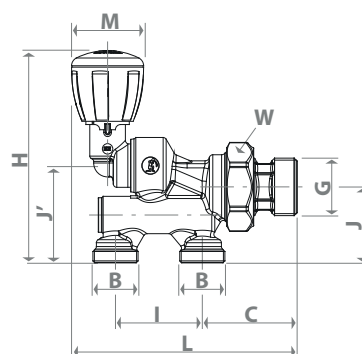
- R304TX011, R304TX012: to be completed with R171C copper probe, Ø 11 mm, lunghezza 450 mm or with R171P plastic probe, Ø 11 mm, lenght 450 mm.

- R304TX013, R304TX014: to be completed with R171C copper probe, Ø 12 mm, lunghezza 450 mm or with R171P plastic probe, Ø 12 mm, lenght 450 mm.

- R304TX015, R304TX016, R304TX017: to be completed with R171C copper probe, Ø 14 mm, lunghezza 450 mm or with R171P plastic probe, Ø 14 mm, lenght 450 mm.

Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I [mm] | J [mm] | J' [mm] | L [mm] | C [mm] | H [mm] | M [mm] | W [mm] | Ø probe [mm] |
|-----------|-------------|--------|--------|---------|--------|--------|--------|--------|--------|--------------|
| R304TX011 | 1/2" x 16 | 35 | 38 | 50 | 115 | 51 | 116 | 42 | 46 | 11 |
| R304TX012 | 1/2" x 18 | 50 | 44 | 56 | 125 | 51 | 122 | 42 | 46 | 11 |
| R304TX013 | 3/4" x 16 | 35 | 38 | 50 | 116 | 53 | 116 | 42 | 46 | 12 |
| R304TX014 | 3/4" x 18 | 50 | 44 | 56 | 126 | 53 | 122 | 42 | 46 | 12 |
| R304TX015 | 1"right x16 | 35 | 38 | 50 | 118 | 55 | 116 | 42 | 46 | 14 |
| R304TX016 | 1"left x 16 | 35 | 38 | 50 | 118 | 55 | 116 | 42 | 46 | 14 |
| R304TX017 | 1"right x18 | 50 | 44 | 56 | 128 | 55 | 122 | 42 | 46 | 14 |
| R304TX018 | 1"left x 18 | 50 | 44 | 56 | 128 | 55 | 122 | 42 | 46 | 14 |



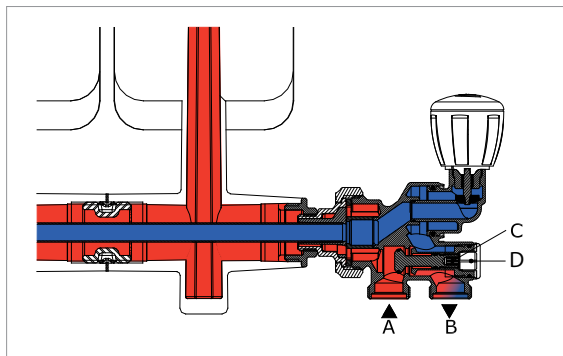
P304T - Spare part tail pieces kit for R304T valves



| Code | Size |
|-----------|-----------------|
| P304TX003 | 1/2" |
| P304TX004 | 3/4" |
| P304TX005 | 1" right thread |
| P304TX006 | 1" left thread |

Applications

Single-pipe application



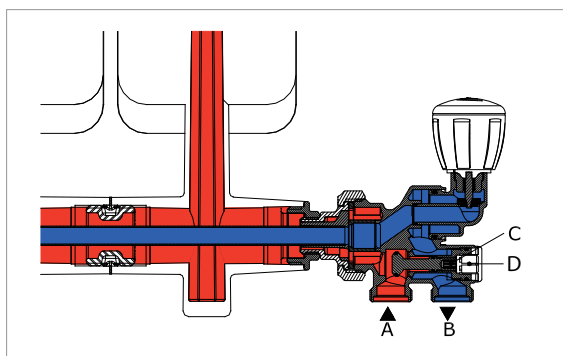
To use the R304T valve in the single pipe version, use a 10 mm Allen spanner to rotate the external lockshield valve (D) counterclockwise in order to fully open the by-pass.

The radiator can be disconnected from the system if the internal lockshield valve (C) is fully closed with the aid of a 4 mm Allen spanner.

For the valve to work in the best possible manner, the delivery fluid should enter the valve from the connection nearest the heating element.

If the differential pressure of the valve connections is not high (less than 2 m.H₂O - as in the case of fairly small heating elements), operation is still guaranteed even when the supply arrives from the connection furthest from the heating element.

Twin-pipe application



In the twin-pipe version, the R304T valve works by closing (clockwise) the external lockshield valve (D) with a 10 mm Allen spanner in order to prevent the by-pass of the fluid in the valve. You can use a 4 mm Allen spanner to intervene on the internal lockshield valve (C), firstly to balance the flow rate of the fluid that passes through the heating element, but also to disconnect the radiator from the system (if the internal lockshield valve is fully closed).

For the valve to work in the best possible manner, the delivery fluid should enter the valve from the connection nearest the heating element.

If the differential pressure of the valve connections is not high (less than 2 m.H₂O - as in the case of fairly small heating elements), operation is still guaranteed even when the supply arrives from the connection furthest from the heating element.

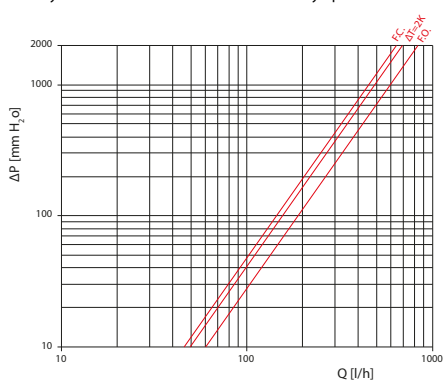
Losses of pressure

R304T single-pipe version

F.O. handwheel fully open and lockshield valve fully open

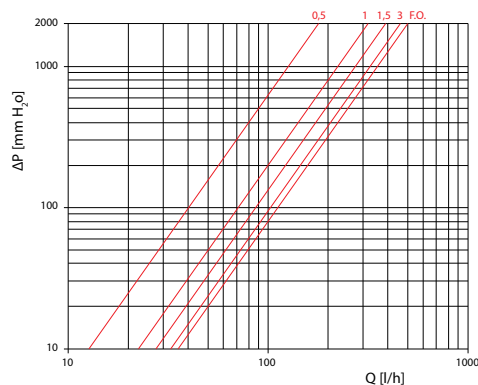
$\Delta T=2K$ internal lockshield valve fully open

F.C. handwheel fully close and internal lockshield valve fully open



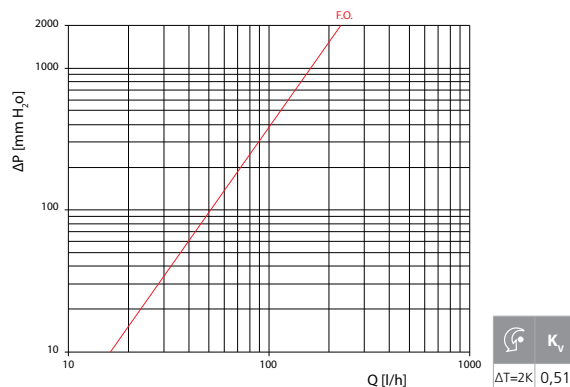
R304T twin-pipe version

F.O. handwheel fully open and lockshield valve fully open



R304T twin-pipe version with opening corresponding to $\Delta T=2K$

F.O. handwheel fully open and lockshield valve fully open



Manual single-pipe valves

Use


When creating traditional single-pipe heating systems, manual 4-way valves (without thermostatic option) are often preferred.

Technical data

- Temperature range: 5÷110 °C (5÷90 °C with plastic probe)
- Max. working pressure: 10 bar

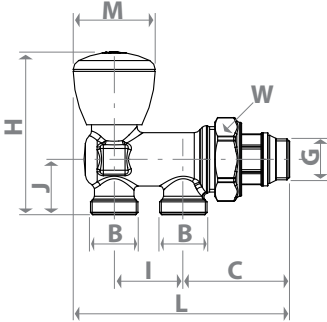
Versions and product code

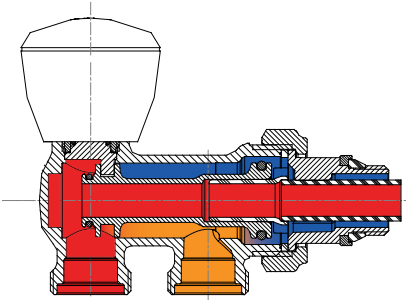
R314N

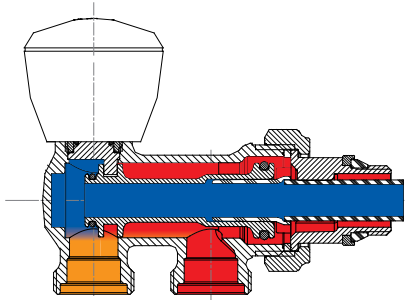


Manual valve with thermostatic option, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. Supplied with R171P plastic probe, Ø 12 mm, lenght 450 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I [mm] | H [mm] | J [mm] | L [mm] | C [mm] | M [mm] | W [mm] |
|-----------|-----------|--------|--------|--------|--------|--------|--------|--------|
| R314NX002 | 1/2" x 16 | 35 | 83 | 28 | 110 | 54 | 42 | 38 |







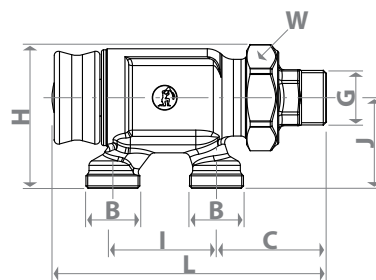
R324N

Manual valve with micrometric presetting, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. Supplied without injection probe.

- R324NX011, R324NX012: to be completed with R171C copper probe, Ø 11 mm, lunghezza 450 mm or with R171P plastic probe, Ø 11 mm, lenght 450 mm.
- R324NX013, R324NX014: to be completed with R171C copper probe, Ø 12 mm, lunghezza 450 mm or with R171P plastic probe, Ø 12 mm, lenght 450 mm.
- R324NX015, R324NX016, R324NX017: to be completed with R171C copper probe, Ø 14 mm, lunghezza 450 mm or with R171P plastic probe, Ø 14 mm, lenght 450 mm.

Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I [mm] | J [mm] | H [mm] | L [mm] | C [mm] | W [mm] | Ø probe [mm] | Kv |
|-----------|------------|--------|--------|--------|--------|--------|--------|--------------|------|
| R324NX011 | 1/2" x 16 | 35 | 38 | 64 | 126 | 52 | 46 | 11 | 1,80 |
| R324NX012 | 1/2" x 18 | 50 | 44 | 69 | 131 | 52 | 46 | 11 | 1,80 |
| R324NX013 | 3/4" x 16 | 35 | 38 | 64 | 127 | 53 | 46 | 12 | 1,80 |
| R324NX014 | 3/4" x 18 | 50 | 44 | 69 | 132 | 53 | 46 | 12 | 2,10 |
| R324NX015 | 1" sx x 16 | 35 | 38 | 64 | 129 | 55 | 46 | 14 | 2,50 |
| R324NX016 | 1" sx x 18 | 50 | 44 | 69 | 134 | 55 | 46 | 14 | 2,50 |
| R324NX017 | 1" dx x 16 | 35 | 38 | 64 | 129 | 55 | 46 | 14 | 2,50 |
| R324NX018 | 1" dx x 18 | 50 | 44 | 69 | 134 | 55 | 46 | 14 | 2,50 |



The R324N valve is a single pipe valve with the possibility to allocate the flow rate in the radiator between 0 % and 100 %.

The complete closure of the handwheel leads to the total isolation of the heating element, thereby deviating the entire flow rate onto the by-pass conduit.

This operation allows interventions on a single radiator without the need to interrupt system operation.

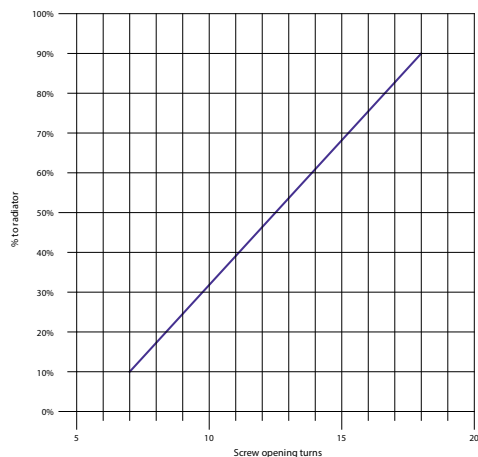
The special internal conformation of the valve means it can work even if the delivery and return connections are inverted.

The micrometric adjustment is essential in all applications where it is important to limit the maximum valve opening.

In this way, you can balance the flow rates to the heating elements installed on the ring, and recover the ring after any maintenance work.



In the R324N valve, the coupling of the probe with the flow separator is made easier by using the P16S probe-holder separator.

Regulation

The flow rate is allocated with the aid of the micrometric adjustment screw.

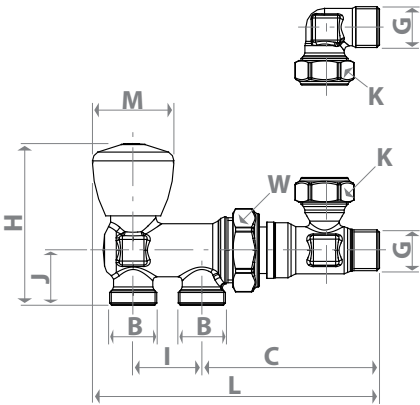
Starting from the complete closure of the valve and the adjustment screw, the latter is then re-opened by a number of rotations corresponding to the required percentage (refer to the diagram).

R314DN



Manual valve and lockshield valve group, brass chrome plated, with connection for copper, plastic or multilayer pipe adaptors. For single-pipe systems. To be completed with R194 chrome plated connection pipe, Ø16 mm. Connection to the system pipes with R178, R178C, R179 or R179AM adaptors.

| Code | G x B | I | H | J | L | C | M | W | K |
|-----------|-----------|----|----|----|-----|----|----|----|----|
| R314DX032 | 1/2" x 16 | 35 | 83 | 28 | 141 | 91 | 42 | 38 | 27 |



Layout of the connections

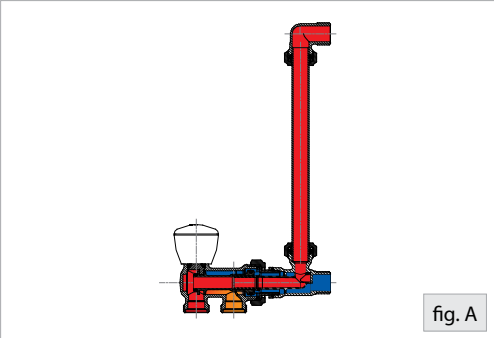


fig. A

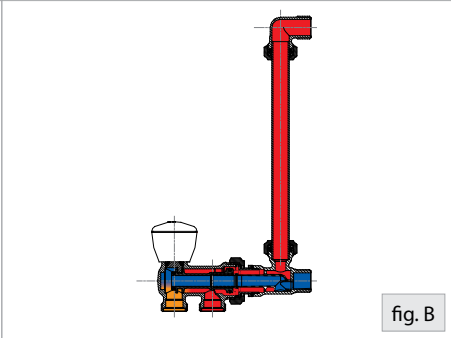


fig. B

In the standard configuration, the return is near the radiator and the delivery is on the outside (fig.A). If the opposite configuration is necessary (delivery near the radiator and return on the outside - Fig.B), you must intervene on the separation group, with the operations shown in fig.C.

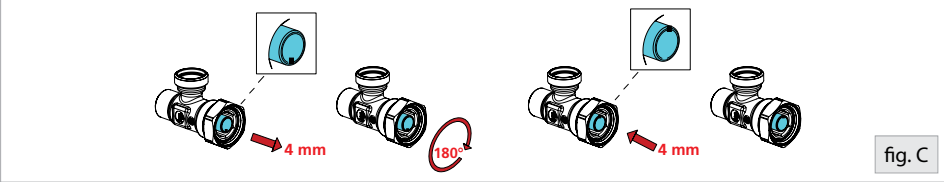
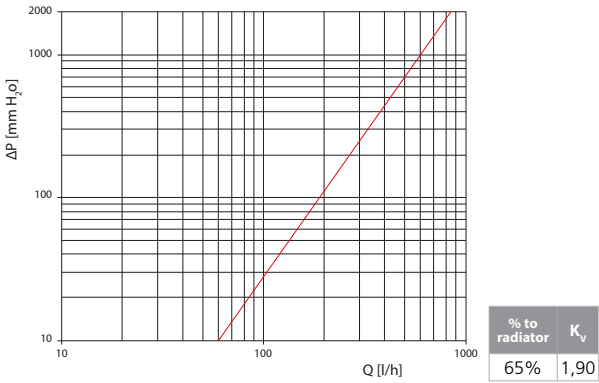


fig. C

Losses of pressure

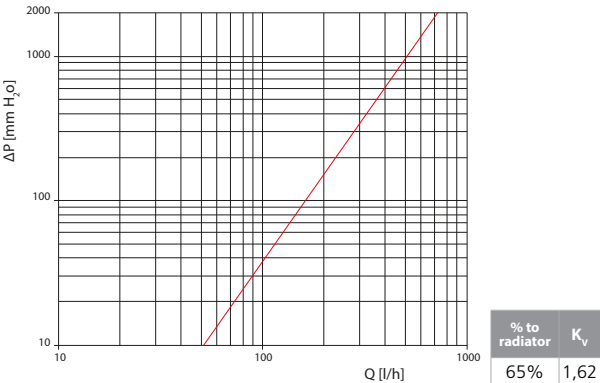
R314N

With the valve in the open position, the flow rate to the radiator corresponds to 65% of the total inflow



R314DN

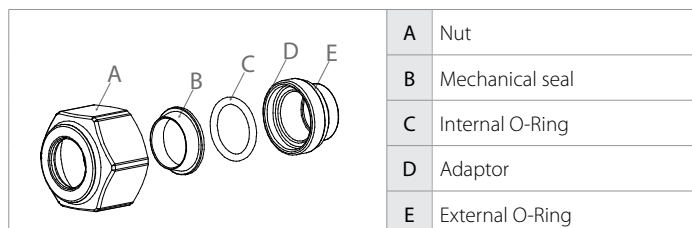
With the valve in the open position, the flow rate to the radiator corresponds to 65% of the total inflow



Adaptors

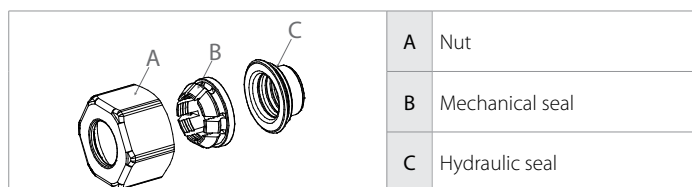
The connection of the pipes to the thermo-hydraulic distribution systems can be made with the following types of fittings. You are advised to check the sizes and codes available, referring to the latest price list catalogue.

R178 - Compression fittings for copper pipes



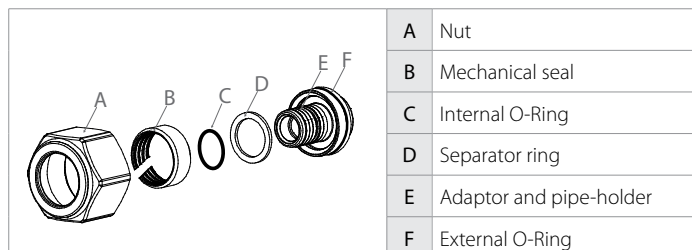
- 1) The pipe must be cut perpendicular to its axis, and deburred on the outer surface.
- 2) Fit first the nut (A) and then the mechanical seal element (B) on the pipe.
- 3) Lubricate the hydraulic seal elements (this is essential to prevent any damage to the O-Ring during installation, that could jeopardise the effectiveness of the joint).
- 4) Install the internal O-Ring (C) in the seat of the adaptor (D) (where envisaged) or the seat of the end part of the thermo-hydraulic distribution system.
- 5) Insert the pipe in the adaptor (D) (where envisaged) or in the end part of the thermo-hydraulic distribution system, pushing it right down as far as it will go.
- 6) Tighten the nut (A) to the end part of the thermo-hydraulic distribution.

R178C - Raccordi a compressione compatti per tubi rame



- 1) The pipe must be cut perpendicular to its axis, and deburred on the outer surface.
- 2) Fit first the nut (A) and then the mechanical seal element (B) on the pipe.
- 3) Lubricate the hydraulic seal element (C) (this is essential to prevent any damage to it during installation, jeopardising the effectiveness of the joint).
- 4) Install the hydraulic seal element (C) in the seat of the end part of the thermo-hydraulic distribution system.
- 5) Insert the pipe in the end part of the thermo-hydraulic distribution system, pushing it right down as far as it will go.
- 6) Tighten the nut (A) to the end part of the thermo-hydraulic distribution system.

R179AM - Raccordi a compressione per tubazioni in plastica o multistrato



When connecting the multilayer pipes to the thermo-hydraulic distribution systems, the positioning of the plastic separator ring between the exposed surface of the metal layer of the pipe and the adaptor body will prevent electro-corrosive phenomena that could jeopardise the reliability of the joint.

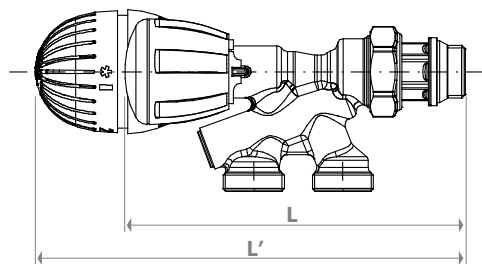
- 1) The pipe must be cut perpendicular to its axis, using shears (you are advised to rotate the shears slightly while cutting, to facilitate the operation). In the case of multilayer pipes, use the wheel pipe-cutter to limit the ovaling effect.
- 2) Make sure the hydraulic seal elements are not damaged during installation, as this could jeopardise the effectiveness of the joint:
 - a. deburr the internal surface of the pipe, using the RP205 tool;
 - b. calibrate the internal surface of the pipe, using the RP209 tool (only in the case of multilayer pipes);
 - c. lubricate the hydraulic seal elements and the internal pipe surface in contact with the internal O-Ring (C).
- 3) Fit first the separator ring (D) and then the pipe on the adaptor pipe-holder, pushing it right down as far as it will go.
- 4) House the adaptor in the end part of the thermo-hydraulic distribution system, via the external O-Ring (F).
- 5) Tighten the nut (A) to the end part of the thermo-hydraulic distribution system.

Thermostatic heads

On the Giacomini twin pipe and single pipe valves with thermostatic option, just remove the manual handwheel (with the aid of a screwdriver) to then easily assemble the Giacomini thermostatic heads, using the CLIP CLAP fixing system.



| Code | R460X001 | R468X001 | R468CX001 | R470X001 |
|--------|----------|----------|-----------|----------|
| L' - L | 53 | 52 | 63 | 35 |



In the case of systems with thermostatic heads, you are advised to use R147N differential valves to avoid any risk of overpressure when the actuators close.

Injection probes and connection pipes

| R171P | Plastic probe for single-pipe and twin-pipe valves. Temperature range: 5÷90 °C | |
|-------|--|----------------------|
| | Code | Misura |
| | R171PY001 | Ø 11 - Lenght 450 mm |
| | R171PY002 | Ø 12 - Lenght 450 mm |
| | R171PY003 | Ø 14 - Lenght 450 mm |

| R194 | Chrome plated pipe for the connection of single-pipe/twin-pipe valves with lockshield valves. Temperature range: 5÷110 °C | |
|------|---|-----------------------|
| | Code | Misura |
| | R194X002 | Ø 16 - Lenght 600 mm |
| | R194X003 | Ø 16 - Lenght 900 mm |
| | R194X004 | Ø 16 - Lenght 1000 mm |
| | R194X006 | Ø 16 - Lenght 1200 mm |

| R171C | Threaded copper probe for single-pipe and twin-pipe valves. Temperature range: 5÷110 °C | |
|-------|---|----------------------|
| | Code | Misura |
| | R171FY002 | Ø 12 - Lenght 450 mm |
| | R171FY012 | Ø 12 - Lenght 200 mm |

| R171C | Copper probe for single-pipe and twin-pipe valves. Temperature range: 5÷110 °C | |
|-------|--|----------------------|
| | Code | Misura |
| | R171CY001 | Ø 11 - Lenght 450 mm |
| | R171CY002 | Ø 12 - Lenght 450 mm |
| | R171CY003 | Ø 14 - Lenght 450 mm |

Tail pieces

P15TG



Chrome plated tail piece with self-sealing for valves and lockshield valves.

- P15TGX002: 3/8"x3/8" tail piece, for versions with 3/8" iron connection.
- P15TGX003: 1/2"x3/8" reduced tail piece, for versions with 1/2"x16, 1/2"x18 adaptor connections and 1/2" iron connection.
- P15TGX004: 1/2"x1/2" tail piece, for versions with 1/2"x16, 1/2"x18 adaptor connections and 1/2" iron connection.
- P15TGX043: for R437, R437N and R440N valves.
- P15TGX045: for R356B1, R356M1, R357B1, R357M1, R358B1, R358M1 valves.

| Code | Size |
|------------|-------------|
| P15TGX002 | 3/8" |
| P15TGX003 | 1/2" x 3/8" |
| P15TGX004 | 1/2" |
| P15TGX0043 | 1/2" |
| P15TGX0045 | 1/2" |

P15-7



Chrome plated tail piece for R324N, R304T valves.

| Code | Size |
|---------|-----------------|
| P15X033 | 1/2" |
| P15X034 | 3/4" |
| P15X035 | 1" right thread |
| P15X036 | 1" left thread |

Other accessories

P26PD



Plastic cap for lockshield valves.

- P26PY012: for 3/8" iron connection versions.
- P26PY013: for 1/2" iron connection versions and 3/8"x16, 1/2"x16 and 1/2"x 18 adaptor connection.

| Code | Size |
|----------|------|
| P26PY012 | 3/8" |
| P26PY013 | 1/2" |

P16S



Sensor-holder separator for R324N and R304T valves.

| Code | Size |
|----------|-------------------|
| P16SY001 | 1/2" - probe Ø 11 |
| P16SY002 | 3/4" - probe Ø 12 |
| P16SY003 | 1" - probe Ø 14 |

P16-1



Plastic flow separator for R356B1, R356M1, R357B1, R357M1, R358B1, R358M1 valves.

| Code | Size |
|---------|------|
| P16Y001 | - |

P16-3



Plastic flow separator, for R437, R437N and R440N

| Code | Size |
|---------|------|
| P16Y003 | - |

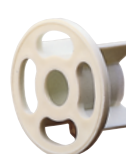
P16-5



Plastic flow separator for R324N valves.

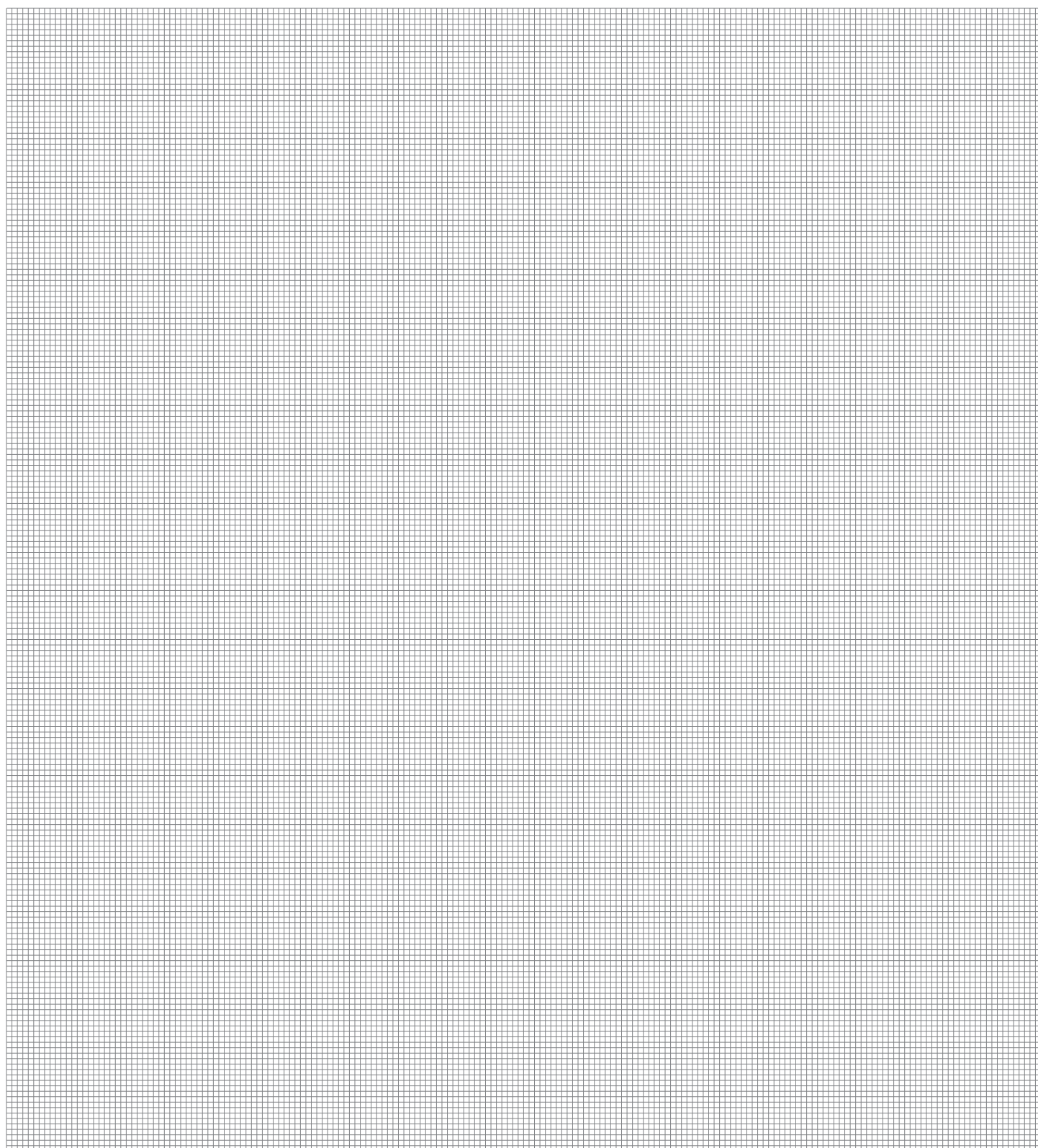
| Code | Size |
|---------|------|
| P16Y005 | - |

P16-6



Plastic flow separator for R304T valves.

| Code | Size |
|---------|------|
| P16Y006 | - |

**NB:**

The product codes mentioned in this technical document may be changed without any notice.
Check available product codes in the most up-to-date product catalogue.

Additional information

For additional information please check the website: www.giacomini.com or contact the technical service: ☎ +39 0322 923372 📠 +39 0322 923255 ✉ consulenza.prodotti@giacomini.com
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