Tender specification:
Oventrop three-way conversion valves for one pipe heating and cooling systems with closed circuits for operation with non-aggressive, harmless fluids.
Valve insert replaceable by using the special tool “Demo-Bloc” without draining the system.
Connection thread M 30 x 1.5
Body made of nickel plated bronze/brass, inner part made of brass, stem and spring made of stainless steel, valve disc with soft seal.
Connection: Flat sealing male thread

Technical data:
Dimensions according to TGL 43 191.

Operating temperature t_S:	2 °C up to 120 °C (for short periods up to 130 °C)
Max. operating pressure p_S:	16 bar
Max. differential pressure:	1 bar
Fluid:	Water or suitable ethylene/propylene glycol water mixtures according to VDI 2038/ÖNORM 5195 (max. glycol proportion 50%, ph value 6.5-10). Not suitable for steam, oily and aggressive fluids.
Type:	Three-way conversion valve
Sizes:	DN 15, 20
Models:	with presetting left hand side connection right hand side connection

Function:
When the valve closes, the flow through the radiator reduces and the flow through the bypass increases and vice versa.
The Oventrop three-way conversion valves are supplied with a plastic cap for protection and for manual operation during construction. Later, temperature control is carried out by a thermostat. All Oventrop thermostats with connection thread M 30 x 1.5 can be fitted.

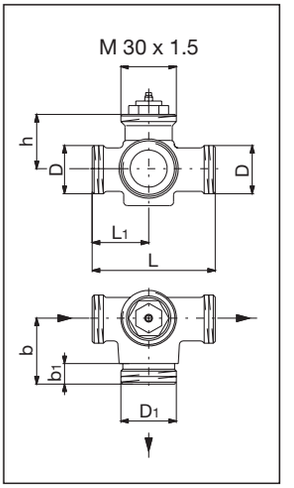
Application:
The Oventrop three-way conversion valves have the same dimensions as the manual radiator valves according to TGL 43 191 (models A, B, C and D).
With a P-deviation of 2 K, the k_V values of theses valves, including bypasses and radiators, correspond to the k_V values of the manual radiator valves according to TGL with a flow of 100% through the radiator. Installation of the Oventrop valves does not affect the hydronic balance of the system.
The special valve design of the Oventrop three-way conversion valves allows for the use of existing bypasses. The valves feature a presetting facility. Presetting limits the flow to the radiator to the required value which is adjustable between 15 % and 55 %.
The manual radiator valve is easily exchanged by loosening the collar nuts, the coupling must not be replaced. The old seals must be removed and replaced with the ones supplied with each conversion valve. Residues of the old seals are to be removed from the sealing surfaces. The sealing surface must not be damaged.
The orifice plates which might be attached to the manual radiator valves are not to be reused.
The heating systems must be operated according to the current guidelines (e.g. VDI 2035, ÖNORM 5195) in respect of temperature, pressure, chemical additives (deposit and corrosion) etc. This means all materials to be used should be taken into account.
Y-type strainers should be installed in the system to clear it from any dirt particles.

Important note:
By installing the thermostatic three-way conversion valves, the flow through the radiator compared with the original installation, will be reduced (see performance data). Furthermore it must be checked whether the heat output of a radiator is still sufficient when radiators in rooms next door or neighbouring dwellings are closed off.
To successfully avoid an unacceptable drop in heat output, the heating system must be recalculated. If necessary, larger radiators must be installed or the pump pressures and/or the flow temperatures must be increased.

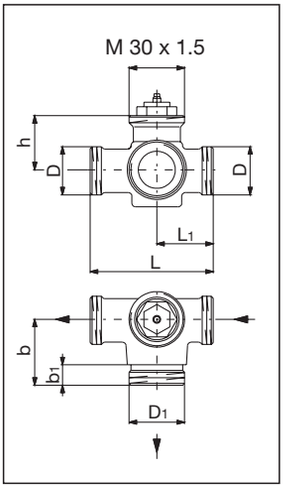
Three-way conversion valve

One pipe systems with top and bottom connections at the radiators may experience a slight warming up of the radiators even when valves are closed, all depending on the size and type of the radiator and the flow temperature. This warming up is system related and cannot be eliminated by using thermostatic radiator valves.

Models:	**Item no.:**
Left hand side connection	
DN 15	1180584
DN 20	1180586
Right hand side connection	
DN 15	1180585
DN 20	1180587



Dimensions
Left hand side connection

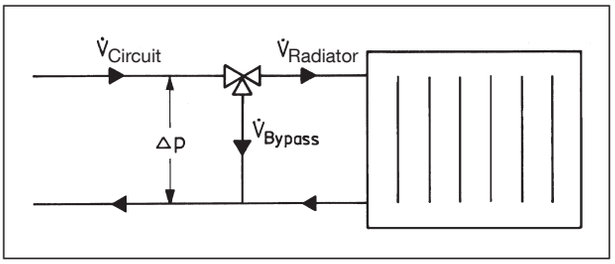


Dimensions
Right hand side connection

DN	D	D_1	L	L_1	b	b_1	h
15	G ¾	G ⅞	66.5	30.5	34	11	29.5
20	G 1	G 1⅛	74	36	40	13.5	33.5

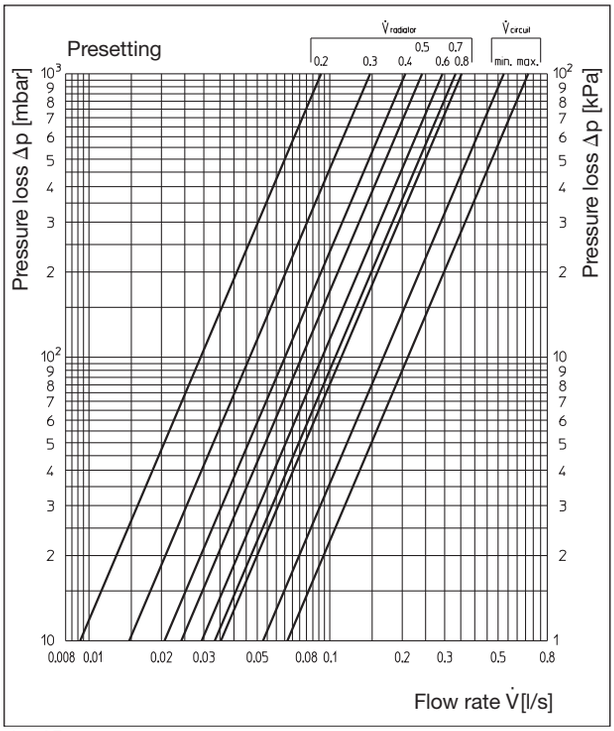
Performance data:

All values in the below table are valid for the conversion valves including the bypass and the radiator ($k_{v\ radiator}$ = 3,14 ≙ single panel radiator).

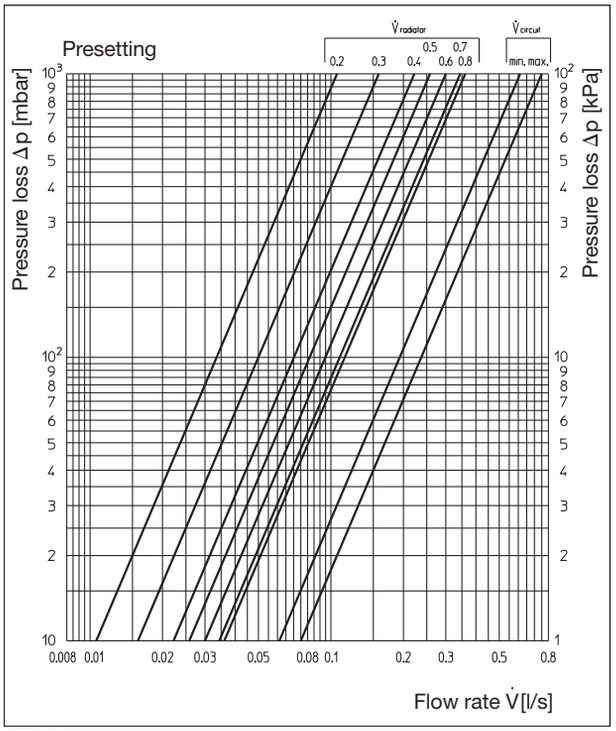


			Presetting values*						
		Valve closed	0.2	0.3	0.4	0.5	0.6	0.7	0.8
DN 15	k_v	1.9	2.2	2.2	2.3	2.3	2.4	2.4	2.3
	Radiator share	-	15%	24%	32%	38%	44%	50%	55%
DN 20	k_v	2.2	2.5	2.6	2.65	2.65	2.7	2.7	2.6
	Radiator share	-	15%	22%	30%	35%	40%	46%	50%

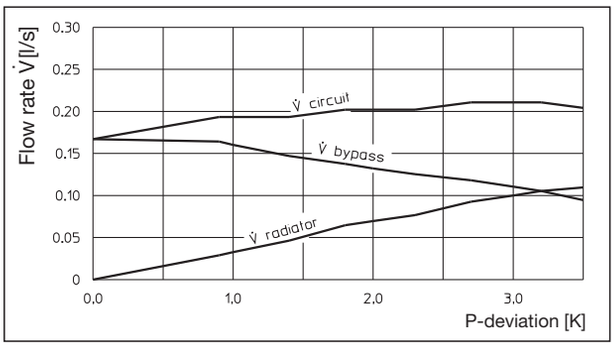
* The indicated radiator shares are the maximum radiator shares which are reached at the respective presetting.
The P-deviation is between 1and 3 K, depending on the presetting.



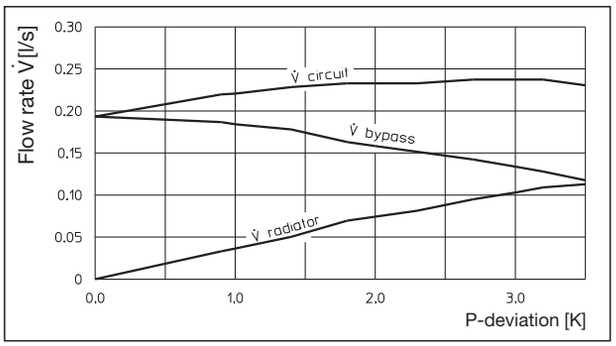
DN 15



DN 20



Flow rate depending on the P-deviation DN 15,
pressure loss Δp = const. 100 mbar



Flow rate depending on the P-deviation DN 20,
pressure loss Δp = const. 100 mbar

Isolation fittings:

The system related warming up of the radiators even with the valve closed can be reduced considerably by using Oventrop isolation fittings.

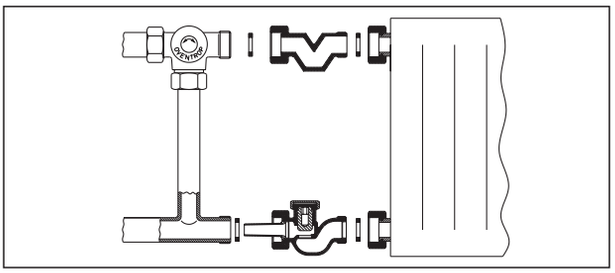
Installation advice:

The isolation loop and shut off set is an additional part fitted between the radiator and the valve or the radiator and the T-piece. If it is installed, the radiator must be moved by 60 mm. The loop must point exactly downwards.

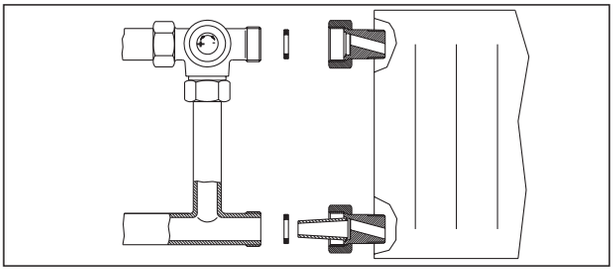
With the isolation tailpipes, the existing fittings at the radiator must be replaced with the new parts. The tailpipes are marked “O” and this mark must point exactly upwards to achieve the desired effect.

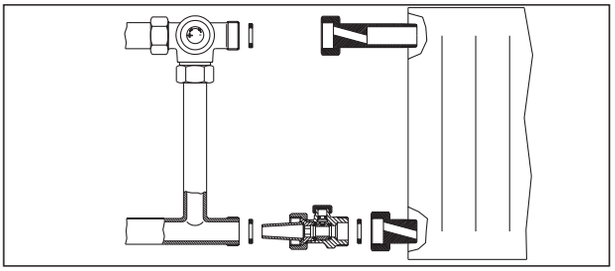
With the isolation-compensation-shut off set, the existing fittings at the radiator must also be replaced with new parts. In addition, a ball valve must be installed in the return pipe. The radiator has to be moved by 45 mm.

All isolation fittings come with a small nozzle. This nozzle must always be inserted into the T-piece. If the nozzle is not inserted, then the isolation effect could be lost. The isolation fittings must always be installed in the supply and the return pipe.



Isolation loop and shut off set


Isolation tailpipe (set)


Isolation-compensation-shut off set

Models:

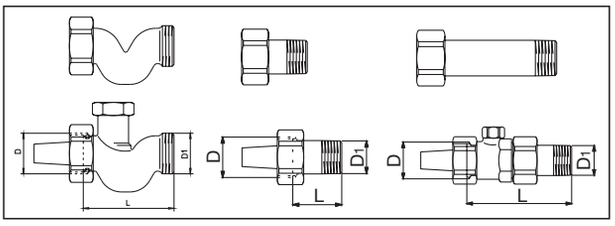
Size	DN 15	DN 20
Isolation loop and shut off set	Item no. 1016284	Item no. 1016286
Isolation tailpipe (set)	Item no. 1016295	Item no. 1016297
Isolation-compensation-shut off set	Item no. 1016254	Item no. 1016256

Performance data:

The k_V values will change after installation of the isolation fittings.

The values in the below table are valid for the conversion valves including the bypass, the isolation fittings, radiators and the connection set.

(k_V radiator = 3.14 ≙ single panel radiator. Please compare with the table on the previous page.)



Item no.	D	D_1	L
1016284	G ¾	G ¾	60
1016286	G 1	G 1	60
1016295	G ¾	G ½	32
1016297	G 1	G ½	32
1016254	G ¾	G ½	79
1016256	G 1	G ½	79

Dimensions

			Presetting values*						
		Valve closed	0.2	0.3	0.4	0.5	0.6	0.7	0.8
DN 15	k_V	1.7	2.0	2.1	2.2	2.2	2.2	2.2	2.1
	Radiator share	-	15%	24%	32%	38%	44%	50%	55%
DN 20	k_V	2.1	2.35	2.4	2.45	2.5	2.5	2.5	2.4
	Radiator share	-	15%	22%	30%	35%	40%	46%	50%

* The indicated radiator share are the maximum radiator shares which are reached at the respective presetting.
The P-deviation is between 1 and 3 K, depending on the presetting.

Connection set:
The connection set with bypass consists of a full exchange pack of all the fittings required in front of the radiator. These components are required in combination with the three-way conversion valves and isolating fittings.
Advice regarding installation see previous page.

Performance data:
See isolating fittings on previous page.

Models:		**Item no.:**
DN 15	Centre distance 552 mm	1010558
DN 20	Centre distance 552 mm	1010559
DN 15	Centre distance 992 mm	1010568
DN 20	Centre distance 992 mm	1010569

Connection fittings:

Tailpipe sets (2 piece each)

Male threaded tailpipes (set)

DN 15	(R ½ male thread)	1061492
DN 20	(R ¾ male thread)	1061493

Female threaded tailpipes (set)

DN 15	(Rp ½ female thread)	1061392
DN 20	(Rp ¾ female thread)	1061393

Weldable tailpipes (set)

DN 15		1060592
DN 20		1060593

Fittings, flat sealing

- to the radiator

DN 15	(R ½ male / collar nut G ¾ female)	1019394
DN 20	(R ½ male / collar nut G 1 female)	1019396

- to the bypass pipe

DN 15	(G ½ female / collar nut G ⅞ female)	1019384
DN 20	(G ¾ female / collar nut G 1⅛ female)	1019386

- to the pipework

DN 15	(weldable tailpipe / collar nut G ¾ female)	1019374
DN 20	(weldable tailpipe / collar nut G 1 female)	1019376

Isolating fitting, flat sealing

45 mm

DN 15	(G ¾ male / collar nut G ¾ female)	1016194
DN 20	(G 1 male / collar nut G 1 female)	1016196

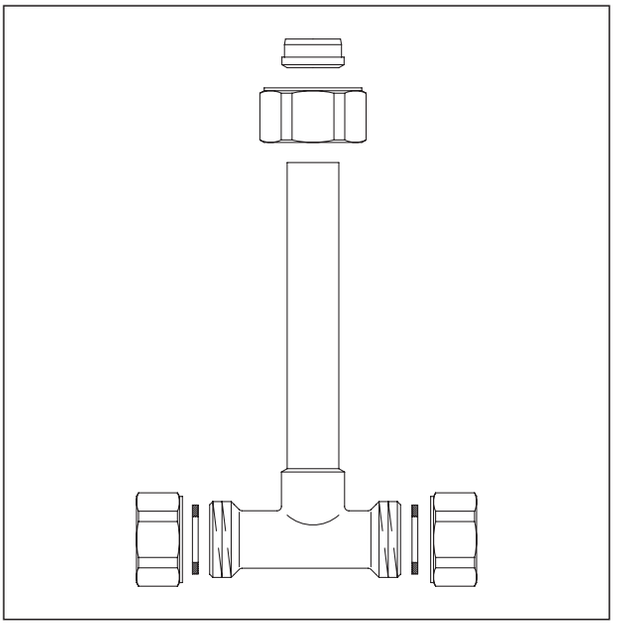
Compensating fittings, flat sealing

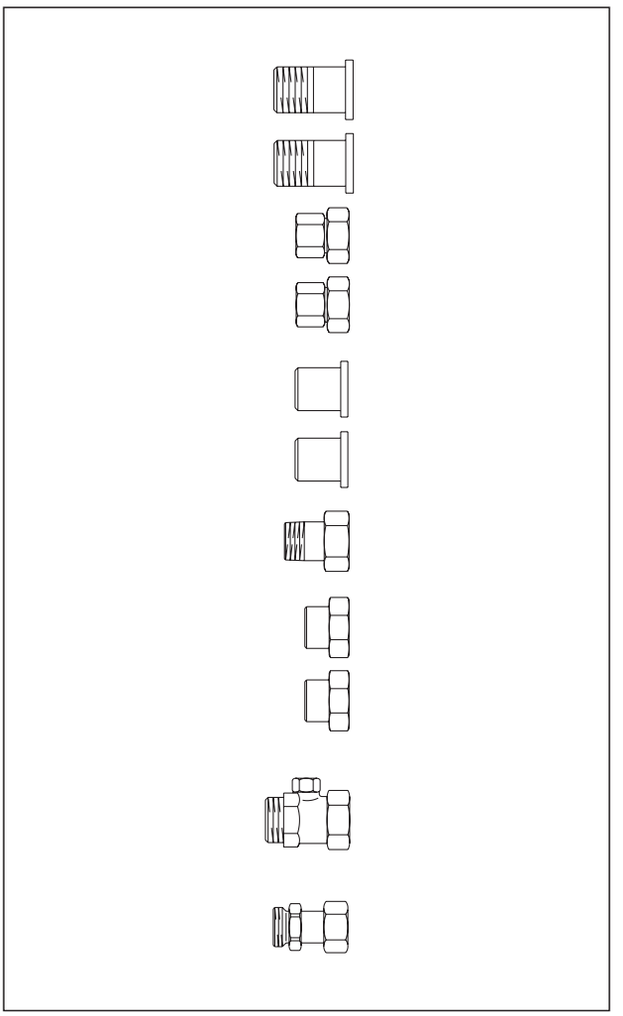
45 mm

DN 15	(G ¾ male / collar nut G ¾ female)	1016394

79 mm

DN 15	(G ½ male / collar nut G ¾ female)	1019194
DN 20	(G ½ male / collar nut G 1 female)	1019196





Subject to technical modifications without notice.

Product range 1
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