Tender specification:

The Oventrop flow regulator “Hydromat QTR” for a constant control of the set flow rate is a proportional regulator which works without auxiliary energy.
The nominal value which is visible from outside can be infinitely adjusted, locked and secured with a lead seal. With isolating facility and ball valve for draining and filling, installation in the supply or return pipe, oblique pattern. Valve disc with soft seal.

Valve body, bonnet and regulator housing made of bronze, valve disc and stem made of brass resistant to dezincification (DZR), O-rings and diaphragm made of EPDM, PTFE seal.

Technical data:

Max. operating pressure p_S:	10 bar (PN 16)	
Max. differential pressure Δp_V:	2 bar	
Operating temperature t_S:	-10 °C up to + 120 °C	
Flow ranges:	DN 15	100 – 800 kg/h
	DN 20	100 – 1200 kg/h
	DN 25	200 – 1900 kg/h
	DN 32	300 – 3000 kg/h
	DN 40	400 – 4000 kg/h

Function:

Oventrop flow regulators are proportional regulators working without auxiliary energy. They are designed for use in heating or cooling systems to maintain a constant flow within a necessary proportional band. To achieve the set nominal flow, a minimum differential pressure of about 200 mbar is required. The required flow is set at the scale. The diaphragm will hold the differential pressure at a constant rate by moving the valve disc; therefore the mass flow will no exceed the nominal value.

Advantages:

- high flow capacities
- all functional components in one plane
- infinite setting of the nominal value between 100 and 4000 kg/h
- very good optical display of the set nominal value
- locking of the nominal value by use of a locking pin
- simple isolation of the riser (additional function)
- installation in the supply or return pipe
- with ball valve for filling and draining of the riser
- pressure balanced valve disc
- existing double regulating and commissioning valves can be converted to flow regulators

Installation of the regulator:

The Oventrop flow regulator “Hydromat QTR” can be installed in either the supply or the return pipe. Installation is possible in any position provided the direction of flow conforms to the direction of the arrow on the valve body. The pipework has to be flushed thoroughly before installation of the flow regulator. The installation of an Oventrop “Y” type strainer is recommended.

Setting of the nominal value:

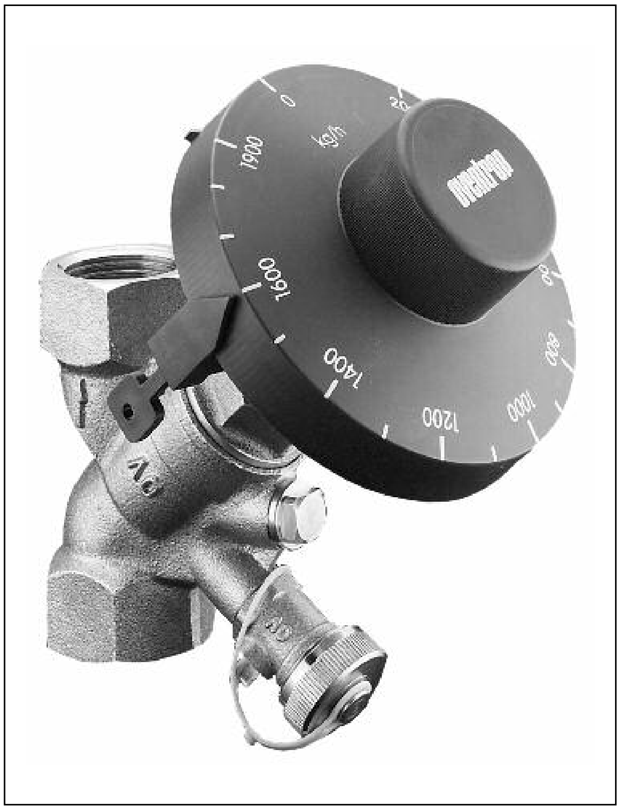
The nominal value of the flow regulator is set at the handwheel. To secure setting, the locking pin is pushed into the handwheel until it clicks into position. Additionally, the locking pin can be lead locked.

Use of the manual isolation:

The flow regulator may be isolated manually and additionally works as an isolating valve. To isolate the flow regulator manually, turn the handwheel clockwise until stop. The display will show a “0” value.

Draining and filling of the installation:

The installation may be drained and filled by use of the ball valve. The hose connection is suitable for a G ½ hose.

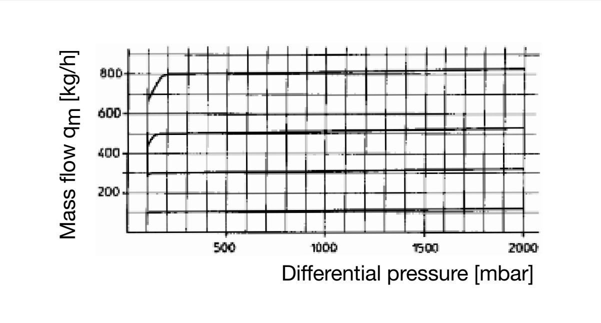


“Hydromat QTR”

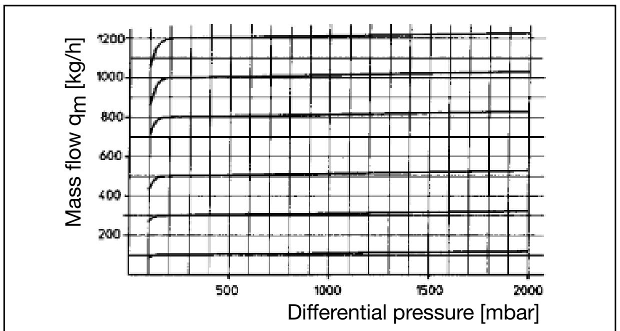
Illustrated section

Technical data:

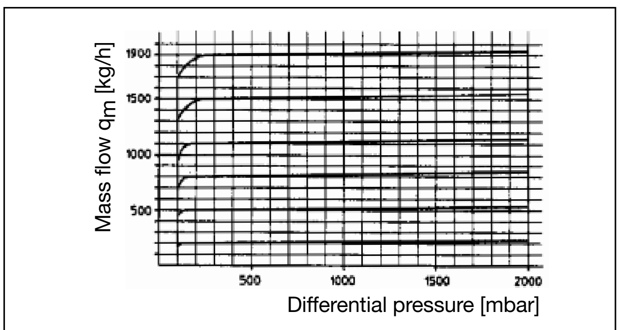
k_{vs} = 0.002 x set value
valid for all sizes
e.g. set value = 1400 kg/h k_{vs} = 0.002 x 1400 = 2.8



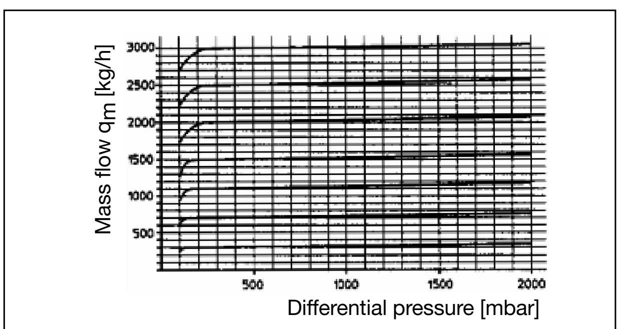
DN 15



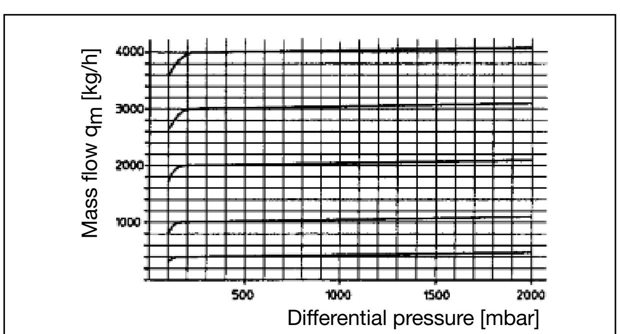
DN 20



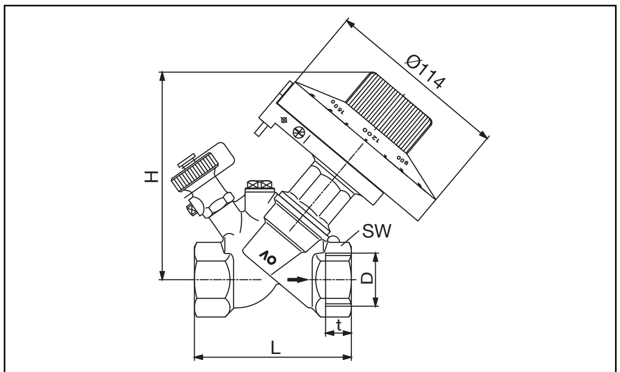
DN 25



DN 32

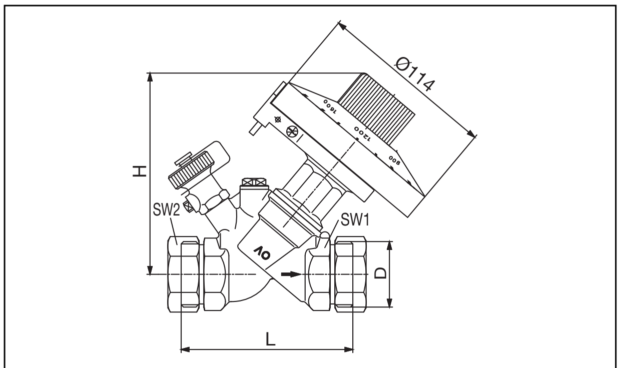


DN 40



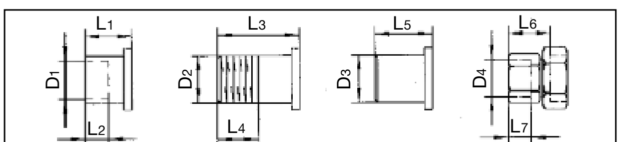
Item no.	D EN 10226	t	SW*	L	H
1061504	Rp ½"	13.2	27	80	131
1061506	Rp ¾"	14.5	32	84	133
1061508	Rp 1"	16.8	41	97.5	136
1061510	Rp 1¼"	19.1	50	110	145
1061512	Rp 1½"	19.1	54	120	150

Dimensions *SW = spanner size



Item no.	DN	D ISO 228	SW_1*	SW_2*	L	H
1061604	15	G ¾	27	30	88	131
1061606	20	G 1	32	37	93	133
1061608	25	G 1¼	41	46	110	136
1061610	32	G 1½	50	52	110	145
1061612	40	G 1¾	54	58	120	150

Dimensions *SW = spanner size



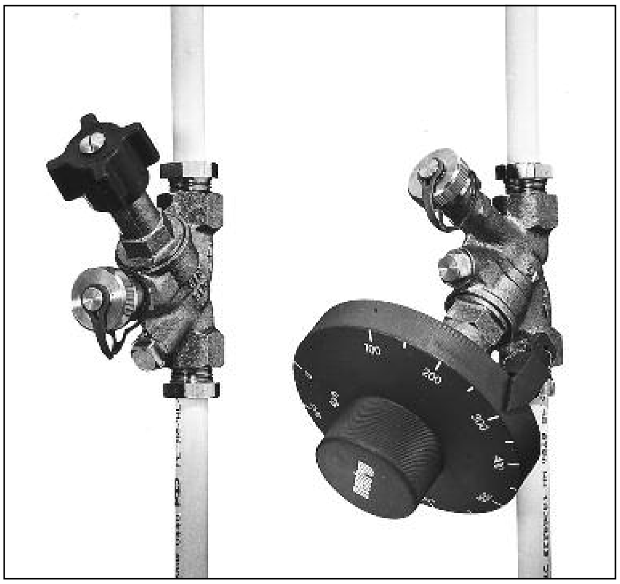
DN	D_1	L_1	L_2	D_2 EN 10226	L_3	L_4	D_3	L_5	D_4 EN 10226	L_6	L_7
15	15	18	12	R ½	31	13.2	20.5	50	Rp ½	37	13.2
20	18	23	15	R ¾	34	14.5	26	50	Rp ¾	38	14.5
20	22	24	17								
25	28	27	20	R 1	40	16.8	33	60	Rp 1	53	16.8
32	35	32	25	R 1¼	46	19.1	41	60	Rp 1¼	55	19.1
40	42	37	29	R 1½	49	19.1	47.5	65			

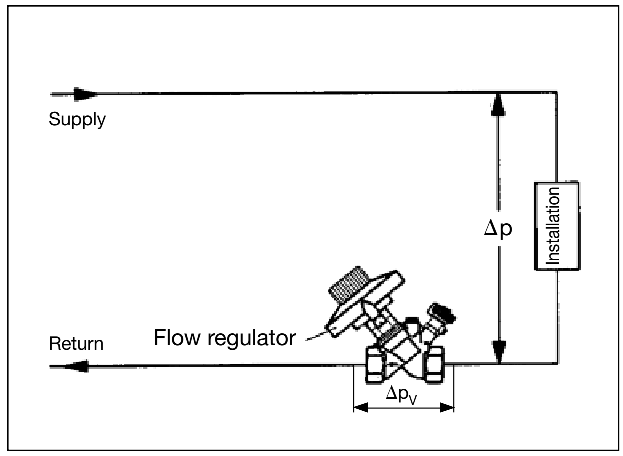
Dimensions

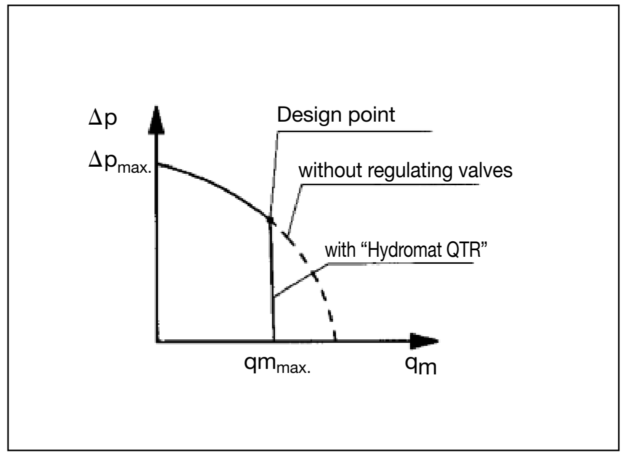
Examples of installation:

“Hydromat QTR” / “Hydrocontrol ATR”

For the hydronic balancing of the pipework for the calculated design point.
Condition:
The mass flow must be known and the minimum differential pressure must be 200 mbar.
Note:
Simple regulation by setting the required nominal value at the handhweel.

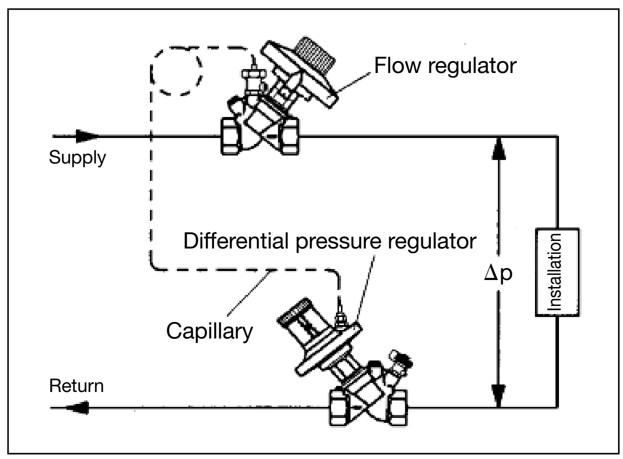


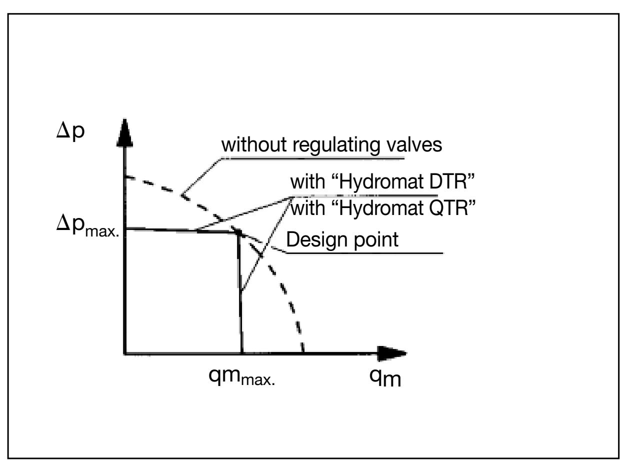




“Hydromat QTR” / “Hydromat DTR”

Setting and automatic regulation of the flow rate and of the differential pressure in a riser.
Condition:
Calculation must have been carried out (i.e. total mass flow of the riser which shall be regulated must be known to find out the correct size of the valve)
Note:
Simple setting of the nominal values at the handwheel of the flow and differential pressure regulator.





Example of calculation:

Required: Size "Hydromat QTR", differential pressure of the regulator Δp_0

Given: Mass flow of the riser $q_m = 1000$ kg/h
Existing differential pressure of the riser $\Delta p_0 = 380$ mbar
Differential pressure of the installation $\Delta p = 100$ mbar

Solution: Size "Hydromat QTR" DN 20
(taken from pressure loss charts DN 15 – DN 40)

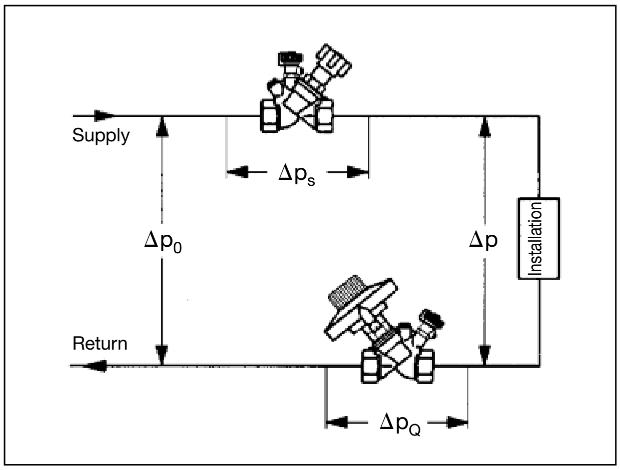
According to the charts, the minimum size of the regulator is chosen for $q_m = 1000$ kg/h.

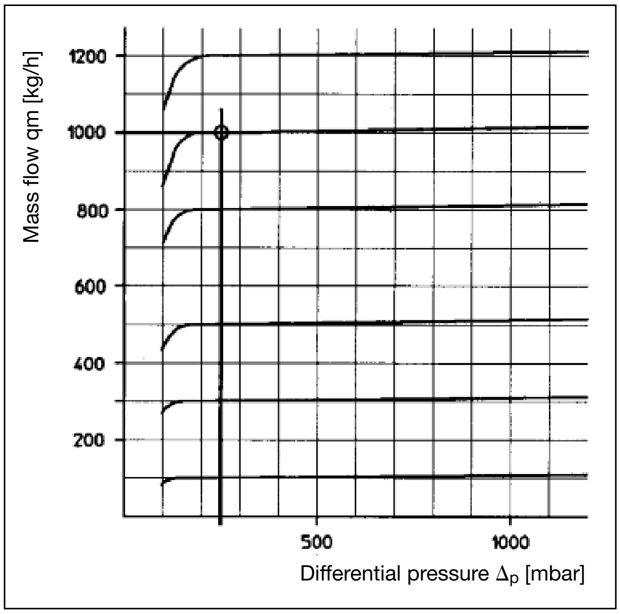
The flow regulator is to be set to 1000 kg/h.

Differential pressure of the isolating valve $\Delta p_s = 30$ mbar
(taken from technical information "Hydrocontrol" $k_v = 5.71$)

Differential pressure of the regulator:
$\Delta p_Q = \Delta p_0 - (\Delta p_s + \Delta p)$
$= 380 - (30 + 100)$ mbar
$\Delta p_Q = 250$ mbar

The excess differential pressure which has to be absorbed by the regulator is $\Delta p_Q = 250$ mbar.
That means that the necessary minimum differential pressure of 250 mbar exists.





Section from chart DN 20

OVENTROP GmbH & Co. KG
Paul-Oventrop-Straße 1
D-59939 Olsberg, Germany
Telephone +49(0) 29 62 82-0
Fax +49(0) 29 62 82-450
E-Mail mail@oventrop.de
Internet www.oventrop.de

For an overview of our global presence visit www.oventrop.de

Product range 3
ti 96-EN/10/MW
Edition 2015