





## Thermostats

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Notes:

Oventrop's standard terms and conditions of sale and warranty apply.

For information on additional items,  
please visit our website:  
[www.oventrop-us.com](http://www.oventrop-us.com)

Upon request, we will gladly investigate  
availability and pricing of items not  
mentioned in this book.

## “Uni XH”



1011365



1011375



1011565



1011575

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The “Uni-XH” is a non-electric thermostatic operator for Oventrop radiator valves. It uses a liquid element to sense the temperature and control the valve. The “Uni-XH” is designed for use in a broad range of radiator valve applications. This operator has external limiting tabs. The tabs allow the user to set limits to the temperature range on the thermostat. The setting dial is sloped to make the setting more visible from multiple directions. The “Uni-XH” is also available with a remote sensor bulb for applications with a concealed valve placement.

The “Uni-XD” has the same functions and form as the “Uni-XH” except it is for connection to Danfoss RA2000 valves.

Thermostat “Uni XH”  
connection thread M 30x1.5  
white model **101 13 65**

with remote sensor  
capillary 6½ feet **101 15 65**

capillary 16 feet **101 15 66**

Thermostat “Uni XD”  
squeeze connection  
white model **101 13 75**

with remote sensor  
capillary 6½ feet **101 15 75**

## “Uni LH”



1011465



1011475



1011665



1011685

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The “Uni-LH” is a non-electric thermostatic operator for Oventrop radiator valves. It uses a liquid element to sense the temperature and control the valve. The “Uni-LH” is designed for use in a broad range of radiator valve applications. This operator has tamper-resistant internal limiting and locking tabs. The tabs allow the installer to set limits to the temperature range on the thermostat. The “Uni-LH” is also available with a remote sensor bulb for applications with a concealed valve placement.

The “Uni-LD” has the same functions and form as the “Uni-LH” except it is for connection to Danfoss RA2000 valves.

Thermostat “Uni LH”  
white model **101 14 65**

chrome model **101 14 69**

white model  
with remote sensor  
capillary 6½ feet **101 16 65**

Thermostat “Uni LD”  
squeeze connection  
white model **101 14 75**

white model  
with remote sensor  
capillary 6½ feet **101 16 85**



1011469

## “Uni LHB”



1011410

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The “Uni-LHB” is a non-electric thermostatic operator for Oventrop radiator valves. It uses a liquid element to sense the temperature and control the valve. The “Uni-LHB” is designed for use in radiator valve applications requiring restricted access to the temperature setting. This operator has a tamper-proof internal locking setting. The single temperature set point is adjusted with a spanner-type driver bit and is hidden under a protection cap. The thermostat is designed with an internal locking collar that can withstand an impact of up to 220 pounds of force.

Thermostat “Uni LHB”  
connection thread M 30 x 1.5  
white model **101 14 10**

## “Uni FH”



1012295

The “Uni-FH” is a non-electric thermostatic operator for Oventrop radiator valves. It uses a liquid element to sense the temperature and control the valve. The “Uni-FH” is designed for use in a broad range of radiator valve applications. This operator has tamper-resistant internal limiting and locking tabs. The tabs allow the installer to set limits to the temperature range on the thermostat. The “Uni-FH” is also available with a remote sensor bulb for applications with difficult valve placement, such as units near a large window or concealed in radiator cabinets.

The “Uni-FD” has the same functions and form as the “Uni-FH” except it is for connection to Danfoss RA2000 valves. The “Uni-FD” is not available with a remote sensor bulb.

Thermostat with remote control “Uni FH”  
connection thread M 30 x 1.5  
capillary 6½ feet **101 22 95**

capillary 16 feet **101 22 96**

capillary 33 feet **101 22 97**

with additional remote sensor  
capillary 6½ feet **101 23 95**

capillary 16 feet **101 23 96**

Thermostat with remote control “Uni FD” - squeeze connection  
capillary 6½ feet **101 22 75**



1012395

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## “Uni SH”



1012085



1012065

The “Uni-SH” is a non-electric thermostatic operator for Oventrop radiator valves. It uses a liquid element to sense the temperature and control the valve. The “Uni-SH” is designed for use in radiator valve applications that require a modern-looking aesthetic finish. This operator is available in stainless steel or chrome finishes.

Thermostat “Uni SH”  
connection thread M 30 x 1.5  
white/chrome model **101 20 65**

stainless steel finish **101 20 85**

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## “Vindo TH”



1013066

1013076

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The “Vindo-TH” is a non-electric thermostatic operator for Oventrop radiator valves. It uses a liquid element to sense the temperature and control the valve. The “Vindo-TH” is designed for use in a broad range of radiator valve applications. This operator has hidden limiting and locking tabs. The tabs allow the installer or user to set limits to the temperature range on the thermostat. The “Vindo-TH” is the smallest thermostat with a liquid sensor element.

The “Vindo-TD” has the same functions and form as the “Vindo-TH” except

Thermostat “Vindo-TH”  
M 30x1.5 connection **101 30 66**

Thermostat “Vindo-TD”  
squeeze connection **101 30 76**

## “Uni DH”



1011065

1011165

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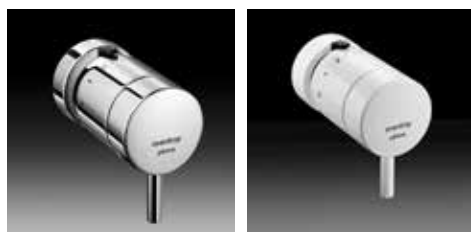
The “Uni-DH” is a non-electric thermostatic operator for Oventrop radiator valves. It uses a wax element to sense the temperature and control the valve. The “Uni-DH” is a compact model about the size of a “D” cell battery. This operator is ideal for tight installation locations.

The “Uni-DH” is also available with a remote sensor bulb for applications with a concealed valve placement.

Thermostat “Uni DH”  
M 30x1.5 connection **101 10 65**

with remote sensor  
capillary 6½ feet **101 11 65**

## “pinox”



1012165

1012166

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The “pinox” represents quality with a modern look and feel. The thermostat has a lever control for easy and precise temperature adjustment. It creates an even, comfortable room environment by modulating the heat flow through the radiator, thereby eliminating temperature fluctuations. The “pinox” has been presented with many prestigious design awards for its modern look, style, and functionality.

Thermostat “pinox”  
connection thread M 30 x 1.5

chrome model **101 21 65**

white model **101 21 66**



## "R-Tronic"

1



1159880



1159665



1159675

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The Oventrop "R-Tronic" is a wireless programmable thermostatic radiator valve controller. The "R-Tronic" has programmable daily and weekly settings, and the temperature can be displayed in either Fahrenheit or Celsius.

The wireless radiator control is based on the EnOcean standard with one thermostat controlling up to three operator heads. If contact is lost with the thermostat, the operator head will keep the air temperature at 68 °F. The actuator and thermostat are powered by standard AA batteries for simple maintenance. The service life of the batteries is up to two years in most applications.

The "R-Tronic" is designed for use with thermostatic radiator valves for steam or hot water applications.

"R-Tronic" Thermostat **115 98 80**

"R-Tronic" actuator

M 30x1.5 connection **115 96 65**

Squeeze connection **115 96 75**

## Electric Actuators



Electrothermal



Electromotive

Electrothermal actuators use a wax element with an internal heater wire. All electrothermal actuators are spring return.

Electromotive actuators use a stepper motor to position the actuator. All electromotive actuators are fail-in-place actuators.

Connection thread: M30 x 1.5

Type	Control Signal	Item Number
Electrothermal	24V, 2-pt, normally closed	<b>1012416</b>
	24V, 2-pt, normally open	<b>1012426</b>
	24V, 2-pt, normally closed with end switch	<b>1012496</b>
	24V, 0-10V, normally closed	<b>1012953</b>
Electromotive	24V, 2-pt, 3-pt, 0-10V, fail-in-place	<b>1012705</b>
	24V, 0-10V, with position feedback, fail-in-place	<b>1012706</b>

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		Item	Box Quantity	Item No.
		<b>Right angle pattern adapter</b> M 30 x 1.5/M 30 x 1.5 white model	(10)	<b>101 14 50</b>
1011450	1011452	squeeze connection/squeeze connection white model	(10)	<b>101 14 52</b>
		<b>Thread adapter</b> , nickel plated from M 30 x 1.0 to M 30 x 1.5	(10)	<b>101 14 45</b>
1011445	1011396	from M 32 x 1.0 to M 30 x 1.5	(10)	<b>166 14 45</b>
		<b>“Uni-Clip”</b> vertical reading adapter ring for “Uni XH” and “Uni XD” thermostats		
1011766	1011393	Thermostat mounted right side	(50)	<b>101 13 96</b>
		Thermostat mounted left side	(50)	<b>101 13 97</b>
1011766	1011393	<b>Vandal guard</b> for thermostat “Uni XH” white model	(25)	<b>101 17 66</b>
		<b>Two-piece trim ring</b> to hide nickel plated lock	(50)	<b>101 13 93</b>
1012565	1012575	<b>Manual handle</b> for all valves with M 30 x 1.5 thread with squeeze connection for Danfoss valves	(10) (10)	<b>101 25 65</b> <b>101 25 75</b>
		<b>“Uni LH” tool</b> to loosen the graduation cap and clip bag of 5 pieces		<b>198 91 00</b>
1011497	1989100	<b>“Uni LHB” setting key</b> for lockshield thermostat “Uni LHB”		<b>101 14 97</b>

“AZ” hot water radiator valves



Angle Pattern



Reversed Angle Pattern



Straight Pattern



Angle Pattern



Double Angle Pattern  
Left Hand



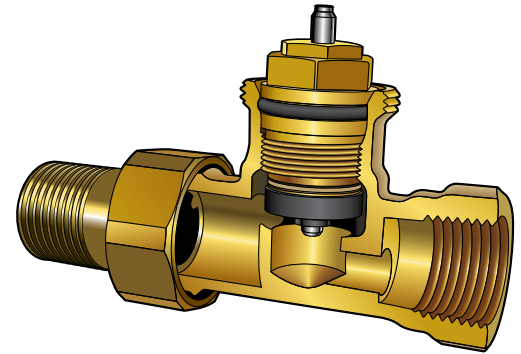
Straight Pattern



Double Angle Pattern  
Right Hand



Reversed Angle Pattern



“AZ” valves are designed for hot water heating systems. The EPDM valve disk allows for a wide range of conditions during operation. All Oventrop radiator valves are designed with field replaceable inserts. The entire working portion of the valve can be replaced without decommissioning the system, by using the “Demo-Bloc” tool.

Actuator connection: M30x1.5  
Maximum temperature: 248 °F  
Maximum pressure: 145 PSI  
Maximum differential pressure: 14.5 PSID

Connection	Pattern Type	Size	Item Number	Box Qty.
Threaded FNPTxMNPT	Angle	½"	<b>1889004</b>	25
		¾"	<b>1889006</b>	25
		1"	<b>1889008</b>	10
		1 ¼"	<b>1889010</b>	10
	Straight	½"	<b>1889104</b>	25
		¾"	<b>1889106</b>	25
		1"	<b>1889108</b>	10
		1 ¼"	<b>1889110</b>	10
	Reversed angle	½"	<b>1889204</b>	25
		¾"	<b>1889206</b>	25
	Double angle left hand	½"	<b>1694062</b>	25
	Duble angle right hand	½"	<b>1694063</b>	25
Solder SWTxSWT (union tailpieces)	Angle	½"	<b>1694404</b>	25
		¾"	<b>1694406</b>	25
	Straight	½"	<b>1694414</b>	25
		¾"	<b>1694416</b>	25
	Reversed angle	½"	<b>1694424</b>	25
		¾"	<b>1694426</b>	25
“AZ” insert	All patterns	-	<b>1187060</b>	100

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## "S" two-pipe steam radiator valves

## Radiator Valves

1



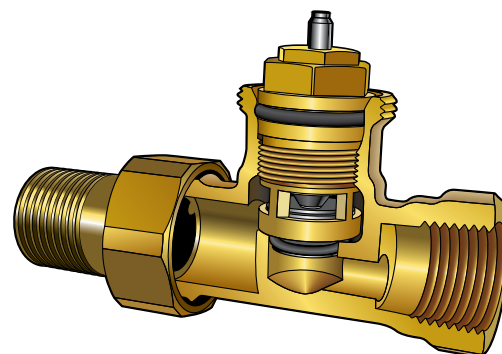
Angle Pattern



Straight Pattern



Reversed Angle Pattern



"S" valves are designed for two-pipe steam heating systems. The stainless steel valve disk and seat offer superior longevity and performance for steam operation. All Oventrop radiator valves are designed with field-replaceable inserts. The entire working portion of the valve can be replaced without decommissioning the system, by using the "Demo-Bloc" tool.

Actuator connection:	M30x1.5
Maximum temperature:	248 °F
Maximum pressure:	15 PSI
Maximum differential pressure:	14.5 PSID

Connection	Pattern Type	Size	Item Number	Box Qty.
Threaded FNPTxMNPT	Angle	½"	<b>1899004</b>	25
		¾"	<b>1899006</b>	25
		1"	<b>1899008</b>	10
		1 ¼"	<b>1899010</b>	10
	Straight	½"	<b>1899104</b>	25
		¾"	<b>1899106</b>	25
		1"	<b>1899108</b>	10
		1 ¼"	<b>1899110</b>	10
	Reversed angle	½"	<b>1899204</b>	25
		¾"	<b>1899206</b>	25
"S" insert	All patterns	-	<b>1186200</b>	100

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“QV” automatic balancing radiator valves

1



Angle Pattern

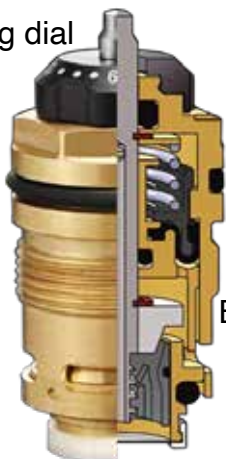


Straight Pattern



Reversed Angle Pattern

Setting dial



Brass body

Integrated strainer



“QV” valves are designed for hot water heating systems. At the core is a pressure independent automatic balancing insert. The valve has a field adjustable balancing range of 0.05 to 0.75 GPM. The valve has an integrated strainer screen to improve performance and longevity. All Oventrop radiator valves are designed with field replaceable inserts. The entire working portion of the valve can be replaced without decommissioning the system, by using the “Demo-Bloc” tool.

#### Flow rate table:

Setting	Flow rate (GPM)
1	0.05
2	0.09
3	0.13
4	0.18
5	0.22
6	0.26
7	0.31
8	0.35
9	0.40
10	0.44
11	0.48
12	0.53
13	0.57
14	0.62
15	0.66
16	0.70
17	0.75

Actuator connection: M30x1.5  
 Maximum temperature: 194 °F  
 Maximum pressure: 145 PSI  
 Minimum dP: 2.2 PSID  
 Maximum dP: 21.75 PSID

Connection	Pattern Type	Size	Item Number	Box Qty.
Threaded FNPTxMNPT	Angle	½"	<b>1883064</b>	10
	Straight	½"	<b>1883164</b>	10
	Reversed angle	½"	<b>1883264</b>	10
“QV” insert	All patterns	-	<b>1187065</b>	100

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## Radiator Valve Inserts

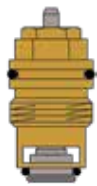


### 1 - "Series AZ"

Item no. 118 70 60

Standard for hot water radiator valves. Most versatile insert. Can be used for most hot water installations.

Maximum body pressure: 145 PSI  
Maximum pressure drop: 14.5 PSID  
Temperature range: 35 to 250 °F



### 2 - "Series S"

Item no. 118 62 00

Valve insert with stainless steel seat. Recommended for steam systems. Valve 2K Cv = 0.7

Maximum body pressure: 15 PSIG (low-pressure steam)  
Maximum pressure drop: 14.5 PSID  
Temperature range: 35 to 250 °F

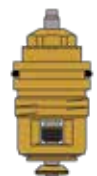


### 3 - "Series AV6" with presetting

Item no. 118 70 57

Adjustable Cv valve insert, allows technician to balance flow rates. Six different settings.

Maximum body pressure: 145 PSI  
Maximum pressure drop: 14.5 PSID  
Temperature range: 35 to 250 °F



### 4 - "Series ADV6" with presetting and vandal function

Item no. 118 60 01

Same as "Series AV6" with the additional feature that, if the thermostat is removed, flow will be restricted to 5% normal flow.

Maximum body pressure: 145 PSI  
Maximum pressure drop: 14.5 PSID  
Temperature range: 35 to 250 °F



### 5 - "Series TM"

Item no. 106 70 85

Insert for pressure differentials of up to 60 PSID.

2K Cv  
1/2" = 1.1  
3/4" = 1.2  
1" = 1.3  
1 1/4" = 1.6

Maximum body pressure: 145 PSI  
Maximum pressure drop: 60 PSID  
Temperature range: 14 to 250 °F



### 6 - "Special"

Item no. 118 70 70

Reduced Cv to correct reversed supply/ return hook-up. Provides a solution for the reversed installation of the valve to be corrected without repiping the valve body.

2K Cv = 0.52

Maximum body pressure: 145 PSI  
Maximum pressure drop: 14.5 PSID  
Temperature range: 35 to 250 °F

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1888551



1888552



1888554

“S” valves are designed for steam heating systems. The stainless-steel valve disk and seat offer superior longevity and performance for steam operation.

The one-pipe steam radiator valve is ideal for retrofit applications because of its simple four-step installation procedure. When installing the thermostatic valve, no decommissioning or system changes are required.

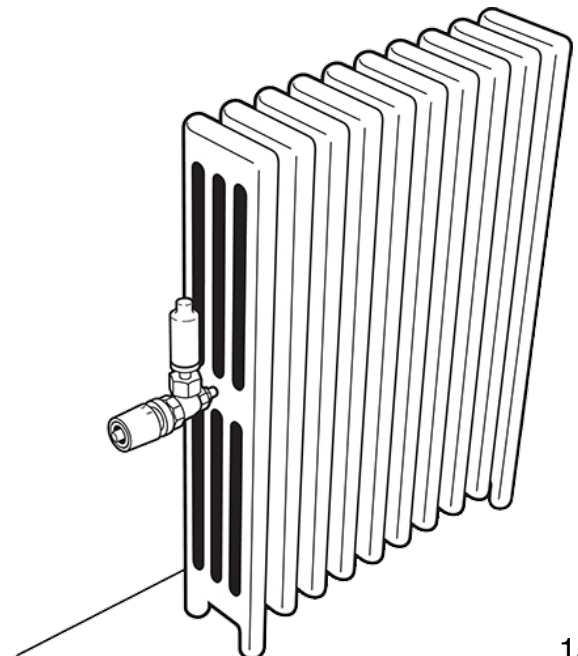
Actuator connection: M30x1.5  
 Maximum temperature: 248 °F  
 Maximum pressure: 15 PSI  
 Maximum differential pressure: 14.5 PSID

Connection	Pattern Type	Size	Item Number	Box Qty.
Threaded FNPTxMNPT	Angle	1/8"	<b>1888551</b>	25
Threaded FNPTxMNPT	Angle with vacuum breaker kit	1/8"	<b>1888553</b>	25
“S” insert	All patterns	-	<b>1186200</b>	100
Adapter tee for vacuum breaker			<b>1888552</b>	100
Vacuum breaker		1/8"	<b>1888554</b>	10

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**Installation procedure:**

1. Remove old air vent.
2. Attach thermostat to valve assembly.
3. Attach thermostat and valve assembly to radiator.
4. Attach new air vent to radiator valve.



## Steam radiator conversion valves

## Radiator Valves

1

Oventrop radiator valves for converting single entry steam radiators to hot water use. These valves are designed for bypass control of a single entry radiator. The valves accept all standard Oventrop thermostatic actuators. PEX and copper compression fittings are available.



Horizontal Insertion

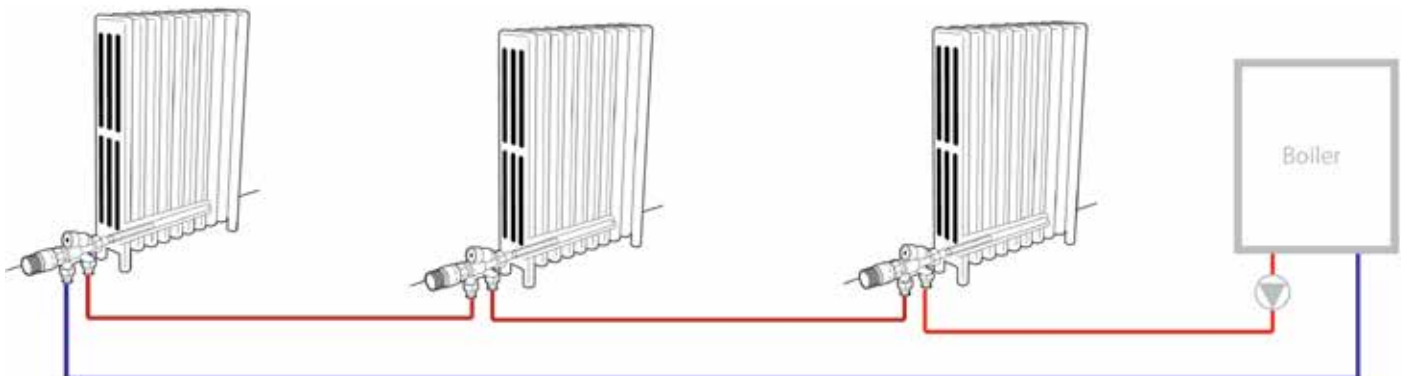
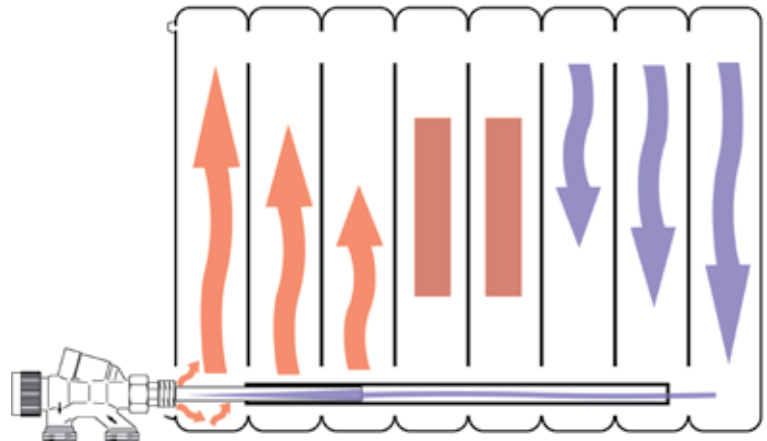
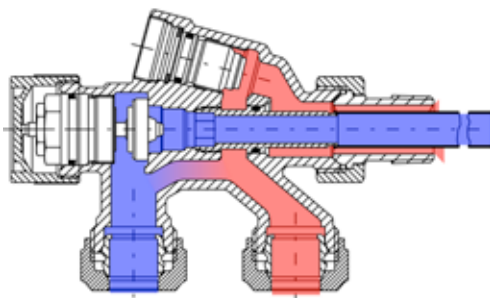


Vertical Insertion

Actuator connection: M30x1.5  
 Maximum temperature: 248 °F  
 Maximum pressure: 145 PSI  
 Maximum differential pressure: 14.5 PSID

Connection	Pattern Type	Size	Item Number	Box Qty.
Threaded G $\frac{3}{4}$ "xMNPT	Horizontal insertion	$\frac{1}{2}$ "	1183561	1
Threaded G $\frac{3}{4}$ "xMNPT	Vertical insertion	$\frac{1}{2}$ "	1183571	1
<b>Compression fittings, sold as pairs</b>				
G $\frac{3}{4}$ "xComp.	PEX	$\frac{3}{8}$ "	1646849	50
G $\frac{3}{4}$ "xComp.	PEX	$\frac{1}{2}$ "	1646850	50
G $\frac{3}{4}$ "xComp.	PEX	$\frac{5}{8}$ "	1646851	50
G $\frac{3}{4}$ "xComp.	Copper	$\frac{1}{2}$ "	1016844	50
G $\frac{3}{4}$ "xComp.	Copper	$\frac{1}{2}$ "	1016864	50

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## “Combi 2” radiator service valves



Angle Pattern

“Combi 2” radiator balancing valves are used for balancing and shutoff at the return side of a radiator. This small service valve is made of nickel-plated dezincification-resistant brass with threaded or solder connections.

Maximum temperature:

248 °F

Maximum pressure:

145 PSI



Straight Pattern

Connection	Pattern Type	Size	Item Number	Box Qty.
Threaded FNPTxMNPT	Angle	1/2"	<b>1091082</b>	25
		3/4"	<b>1091083</b>	10
	Straight	1/2"	<b>1091182</b>	25
		3/4"	<b>1091183</b>	10
Solder SWTxSWT	Angle	1/2"	<b>1091092</b>	25
	Straight	1/2"	<b>1091192</b>	25

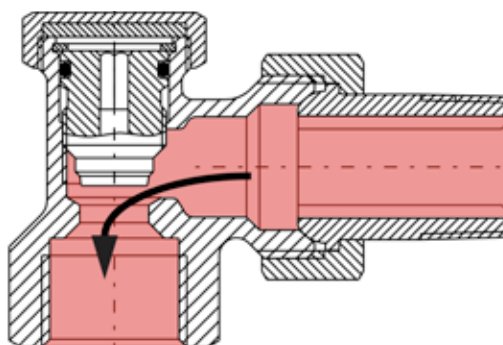
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Angle Pattern



Straight Pattern



## “Combi 4” radiator service valves



Angle Pattern



Straight Pattern

“Combi 4” radiator balancing valves are used for balancing and shutoff, as well as filling and draining of a radiator. This small service valve is made of nickel-plated dezincification-resistant brass and can be used to isolate and drain the radiator with the help of a service tool.

The “Combi 4” service tool is used to fill, drain, or vent the radiator valve “Combi 4”.

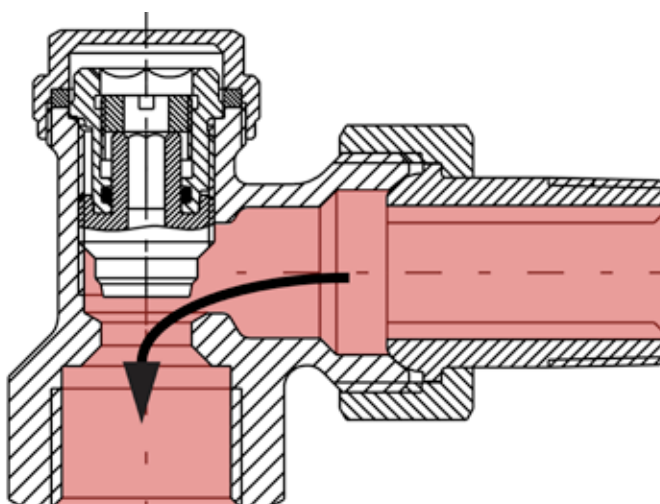
Maximum temperature: 248 °F  
Maximum pressure: 145 PSI

Connection	Pattern Type	Size	Item Number	Box Qty.
Threaded FNPTxMNPT	Angle	½"	<b>1090682</b>	25
		¾"	<b>1090683</b>	10
	Straight	½"	<b>1090782</b>	25
		¾"	<b>1090783</b>	10
"Combi 4" service tool			<b>1090551</b>	1

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“Combi 4” Service Tool





1015813



1015814

Oventrop radiator valves for installation and service of close entry panel radiators. These valves can be used for flow bypass, balancing, shut-off, filling, and draining. PEX and copper compression fittings are available.

Maximum temperature: 248 °F

Maximum pressure: 145 PSI



1015884



1015883



1015934



1015933



1015781



1028253



1016674



1646849/50/51



1016844



1016864

Connection	Pattern Type	Size	Item Number	Box Qty.
<b>Isolation and balancing valve for close connection radiators</b>				
Threaded G $\frac{3}{4}$ "xG $\frac{3}{4}$ "	Straight	-	<b>1015813</b>	10
Threaded G $\frac{3}{4}$ "xG $\frac{3}{4}$ "	Angle	-	<b>1015814</b>	10
<b>Isolation and balancing valve for close connection radiators</b>				
Threaded G $\frac{3}{4}$ "xMNPT	Angle	$\frac{1}{2}$ "	<b>1015933</b>	10
Threaded G $\frac{3}{4}$ "xMNPT	Straight	$\frac{1}{2}$ "	<b>1015934</b>	10
<b>Isolation and balancing valve with bypass for close connection radiators</b>				
Threaded G $\frac{3}{4}$ "xMNPT	Angle	$\frac{1}{2}$ "	<b>1015883</b>	10
Threaded G $\frac{3}{4}$ "xMNPT	Straight	$\frac{1}{2}$ "	<b>1015884</b>	10
<b>Isolation and balancing valve for close connection radiators</b>				
Threaded G $\frac{3}{4}$ "xMNPT	Swivel	$\frac{1}{2}$ "	<b>1015781</b>	10
<b>Connection adapter G<math>\frac{3}{4}</math>" male x <math>\frac{1}{2}</math>" BSP</b>				
Threaded G $\frac{3}{4}$ "xMNPT	Adapter	$\frac{1}{2}$ "	<b>1028253</b>	10
<b>Compression fittings, sold as pairs</b>				
G $\frac{3}{4}$ "xComp.	PEX	$\frac{3}{8}$ "	<b>1646849</b>	50
G $\frac{3}{4}$ "xComp.	PEX	$\frac{1}{2}$ "	<b>1646850</b>	50
G $\frac{3}{4}$ "xComp.	PEX	$\frac{5}{8}$ "	<b>1646851</b>	50
G $\frac{3}{4}$ "xComp.	Copper	$\frac{1}{2}$ "	<b>1016844</b>	50
G $\frac{3}{4}$ "xComp.	Copper	$\frac{1}{2}$ "	<b>1016864</b>	50
<b>Accessories</b>				
Rosette cover for $\frac{1}{2}$ " pipe at 50mm spacing, sold as pair			<b>1016674</b>	50

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## "Demo-bloc" radiator valve service tool

1



1188051

All Oventrop radiator valves are designed with field replaceable inserts. The entire working portion of the valve can be replaced without decommissioning the system, by using the "Demo-Bloc" tool.

Maximum temperature:

248 °F

Maximum pressure:

145 PSI



1188094



1188093

Description	Item Number	Box Qty.
"Demo-Bloc" service tool for M30x1.5 and "QV" inserts	<b>1188051</b>	1
Differential pressure measurement kit	<b>1188093</b>	1
"QV" removal stem	<b>1188094</b>	1
M30x1.0 insert removal stem		1

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1



2



3



4

## Stainless Steel Manifold

2



- Flow rate of 2 GPM per circuit
- Maximum of 12 circuits
- Air vent and drain port on both supply and return manifolds
- Control valve and flow metering balance valve on each circuit
- Positive shut off at each circuit
- Installation brackets provided

Connection thread: M30 x 1.5

Circuits	Item Number
2	1684172
3	1684173
4	1684174
5	1684175
6	1684176
7	1684177
8	1684178
9	1684179
10	1684180
11	1684181
12	1684182



1646849/50/51

Connection	Pattern Type	Size	Item Number	Box Qty.
Compression fittings, sold as pairs				
G $\frac{3}{4}$ "xComp.	PEX	3/8"	1646849	50
G $\frac{3}{4}$ "xComp.	PEX	1/2"	1646850	50
G $\frac{3}{4}$ "xComp.	PEX	5/8"	1646851	50

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## “Hydrocontrol MTR” Venturi balancing valve



Precision balancing valves for hydronic systems. Venturi valves incorporate the speed of a single Cv and the precision of a multi-turn hand wheel. Oventrop hand wheels have a minimum rotation of seven turns to enable fine adjustment of the flow setting. The hand wheel has an integrated hidden memory stop to enable the valve to be shut off without losing the balance position. The valve's setting can also be locked in place with a lead sealing wire to prevent tampering. These valves are compliant with ANSI/NSF 372 lead free standard.

Maximum temperature:	300 °F
Maximum pressure (threaded):	362 PSI
Maximum pressure (solder):	235 PSI

Connection	Recommended Flow Range [GPM]	Size	Item Number	Box Qty.
Threaded FNPTxFNPT	0.2 to 2.4	½"	<b>1660464</b>	10
	0.5 to 5	½"	<b>1660434</b>	10
	1 to 5	½"	<b>1660404</b>	10
	2 to 7	¾"	<b>1660406</b>	10
	3.8 to 12	1"	<b>1660408</b>	10
	7 to 25	1¼"	<b>1660410</b>	5
	10 to 35	1½"	<b>1660412</b>	5
	21 to 50	2"	<b>1660416</b>	5
Solder SWTxSWT	0.2 to 2.4	½"	<b>1660449</b>	10
	0.5 to 5	½"	<b>1660450</b>	10
	1 to 5	½"	<b>1660451</b>	10
	2 to 7	¾"	<b>1660452</b>	10
	3.8 to 12	1"	<b>1660453</b>	10
	7 to 25	1¼"	<b>1660454</b>	5
	10 to 35	1½"	<b>1660455</b>	5
	21 to 50	2"	<b>1660456</b>	5

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## “Hydrocontrol VTR” calibrated balancing valve



Precision balancing valves for hydronic systems. Calibrated balancing valves use a multi-turn hand wheel to provide precise flow measurement. Oventrop hand wheels have a minimum rotation of seven turns to enable fine adjustment of the flow setting. The hand wheel has an integrated hidden memory stop to enable the valve to be shut off without losing the balance position. The valve's setting can also be locked in place with a lead sealing wire to prevent tampering. The “Hydrocontrol VTR” is constructed from bronze with dezincification-resistant brass trim. EPDM seals and a PTFE valve seat maximize performance over the life of the valve.



Maximum temperature: 300 °F  
Maximum pressure (threaded): 362 PSI  
Maximum pressure (solder): 235 PSI

Connection	Recommended Flow Range [GPM]	Size	Item Number	Box Qty.
Threaded FNPTxFNPT	0.4 to 4.2	½"	<b>1061004</b>	10
	0.6 to 6.2	¾"	<b>1061006</b>	10
	1.2 to 9.6	1"	<b>1061008</b>	10
	1.6 to 21	1¼"	<b>1061010</b>	5
	3.2 to 29.8	1½"	<b>1061012</b>	5
	3.9 to 42	2"	<b>1061016</b>	5
Solder SWTxSWT	0.4 to 4.2	½"	<b>1060551</b>	10
	0.6 to 6.2	¾"	<b>1060552</b>	10
	1.2 to 9.6	1"	<b>1060553</b>	10
	1.6 to 21	1¼"	<b>1060554</b>	5
	3.2 to 29.8	1½"	<b>1060555</b>	5
	3.9 to 42	2"	<b>1060556</b>	5

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## “Hydrocontrol VFC” calibrated balancing valve



Precision balancing valves for hydronic systems. Calibrated balancing valves use a multi-turn hand wheel to provide precise flow measurement. Oventrop hand wheels have a minimum rotation of seven turns to enable fine adjustment of the flow setting. The hand wheel has an integrated hidden memory stop to enable the valve to be shut off without losing the balance position. The valve's setting can also be locked in place with the provided lead sealing wire to prevent tampering.



Maximum temperature: 300 °F  
Maximum pressure: 235 PSI  
Connection: ANSI 125# flanged

Size	Recommended Flow Range [GPM]	Item Number
¾"	2.2 to 5.2	<b>1062946</b>
1"	5.1 to 9.1	<b>1062947</b>
1¼"	8.1 to 18.5	<b>1062948</b>
1½"	12.3 to 29.1	<b>1062949</b>
2"	19.8 to 39	<b>1062950</b>
2 ½"	47 to 106	<b>1062951</b>
3"	48 to 132	<b>1062952</b>
4"	78 to 217	<b>1062953</b>
5"	87 to 317	<b>1062954</b>
6"	180 to 437	<b>1062955</b>
8"	163 to 881	<b>1062956</b>
10"	210 to 1298	<b>1062957</b>
12"	518 to 1731	<b>1062958</b>
14"	729 to 2428	<b>1062959</b>
16"	885 to 4047	<b>1062960</b>

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“Hydrocontrol VGC” calibrated balancing valve



Precision balancing valves for hydronic systems. Calibrated balancing valves use a multi-turn hand wheel to provide precise flow measurement. Oventrop hand wheels have a minimum rotation of seven turns to enable fine adjustment of the flow setting. The hand wheel has an integrated hidden memory stop to enable the valve to be shut off without losing the balance position. The valve's setting can also be locked in place with the provided lead sealing wire to prevent tampering.

Maximum temperature: 300 °F  
Maximum pressure: 362 PSI  
Connection: Grooved



Size	Recommended Flow Range [GPM]	Item Number
2 ½"	47 to 106	1063051
3"	48 to 132	1063052
4"	78 to 217	1063053
5"	87 to 317	1063054
6"	180 to 437	1063055
8"	163 to 881	1063056
10"	210 to 1298	1063057
12"	518 to 1731	1063058

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“Hydrocontrol” calibrated balancing valve accessories



1060191

Fill and drain ball valve  
1/2"

(10) **106 01 91**



1060298

Measuring adapter  
for fill and drain ball valve

(10) **106 02 98**



1060281

Pressure test points  
set of two(2)

(10) **106 02 81**

Extension piece for pressure test points  
length at 80mm

(50) **106 02 95**



Insulation shells for “Hydrocontrol” valves

Valve Type	Size	Item Number
Threaded / solder	1/2"	<b>1060081</b>
	3/4"	<b>1060082</b>
	1"	<b>1060083</b>
	1 1/4"	<b>1060084</b>
	1 1/2"	<b>1060085</b>
	2"	<b>1060086</b>
Flanged / grooved	2 1/2"	<b>1062586</b>
	3"	<b>1062587</b>
	4"	<b>1062588</b>
	5"	<b>1062589</b>
	6"	<b>1062590</b>
	8"	<b>1062591</b>



Ball-style manual balancing valve for lead-free applications. Simple, quarter-turn operation with memory stop and setting indicator. All valves come equipped with integrated PT ports.

Maximum temperature: 250 °F  
Maximum pressure: 600 PSI

Connection	Recommended Flow Range [GPM]	Size	Item Number
Threaded FNPTxFNPT	0.7 to 3	½"	1660904
	1.3 to 5.9	¾"	1660906
	3.4 to 15.4	1"	1660908
	7.2 to 32.3	1¼"	1660910
	11.5 to 51.3	1½"	1660912
	17 to 76	2"	1660916
Solder SWTxSWT	0.7 to 3	½"	1660951
	1.3 to 5.9	¾"	1660952
	3.4 to 15.4	1"	1660953
	7.2 to 32.3	1¼"	1660954
	11.5 to 51.3	1½"	1660955
	17 to 76	2"	1660956

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## “Hydromat DTR” differential pressure controller



The “Hydromat DTR” is a differential pressure controller valve for hydronic systems. It has an infinitely adjustable differential pressure set point in two ranges, 0.725 to 4.35 PSID and 3.625 to 10.15 PSID. When combined with the Oventrop “Hydrocontrol VTR” balancing valve, the “Hydromat DTR” provides reliable dynamic balancing. The “Hydromat DTR” is constructed from bronze with dezincification-resistant brass trim. EPDM seals and a PTFE valve seat maximize performance over the life of the valve.

Maximum temperature: 300 °F  
Maximum pressure: 362 PSI  
Connection: Threaded

Differential Pressure Range	Recommended Flow Range [GPM]	Size	Item Number
0.725 to 4.35 PSID	0.1 to 5.5	½"	<b>1064504</b>
	0.2 to 10.5	¾"	<b>1064506</b>
	0.26 to 14.8	1"	<b>1064508</b>
	0.44 to 23	1¼"	<b>1064510</b>
	0.55 to 34	1½"	<b>1064512</b>
	0.9 to 57	2"	<b>1064516</b>
3.625 to 10.15 PSID	0.24 to 8.3	½"	<b>1064704</b>
	0.42 to 14.7	¾"	<b>1064706</b>
	0.6 to 22	1"	<b>1064708</b>
	0.9 to 35	1¼"	<b>1064710</b>
	2.4 to 52	1½"	<b>1064712</b>
	3.7 to 88	2"	<b>1064716</b>

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## “Hydromat DFC” differential pressure controller



The “Hydromat DFC” is a differential pressure controller valve for hydronic systems. It has an infinitely adjustable differential pressure set point from 5.8 to 26.1 PSID. When combined with the Oventrop “Hydrocontrol VFC” balancing valve, the “Hydromat DFC” provides reliable dynamic balancing. The “Hydromat DFC” body is constructed from cast iron with bronze and dezincification-resistant brass trim. EPDM seals and a PTFE valve seat maximize performance over the life of the valve.

Maximum temperature: 300 °F  
Maximum pressure: 235 PSI  
Connection: ANSI 125# flanged

Size	Recommended Flow Range [GPM]	Item Number
2 ½"	4 to 238	<b>1064951</b>
3"	5 to 369	<b>1064952</b>
4"	6 to 644	<b>1064953</b>
5"	8 to 857	<b>1064954</b>
6"	9 to 1003	<b>1064955</b>
8"	24 to 1777	<b>1064956</b>

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Dynamic balancing valves are used as flow limiting devices. They are designed to limit the maximum flow through the valve regardless of the differential pressure of the system.

Maximum temperature: 250 °F  
Maximum pressure: 600 PSI  
Differential pressure range: 2-32 PSID

First Letter	A	B	C	D	E
Second Letter	Flow Rate [GPM]				
A	0.35	5	5	5	20
B	0.5	6	6	6	22
C	0.75	7	7	7	24
D	1	8	8	8	26
E	1.5	9	9	9	28
F	2	10	10	10	30
G	2.5	11	11	11	32
H	3	12	12	12	34
I	3.5	13	13	13	36
J	4	14	14	14	38
K	4.5	15	15	15	40
L	5		16	16	42
M	6		17	17	44
N	7		18	18	45
O	8		19	19	48
P	9		20	20	50
Q	10			22	
R				24	
S				26	
T				28	
U				30	

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Size:	Flow Range:	Connection Type:	Item Number:
1/2"	0.35 to 10 GPM	FNPTxFNPT	8101111
3/4"	0.35 to 10 GPM	FNPTxFNPT	8102121
1"	0.35 to 10 GPM	FNPTxFNPT	8103131-A
1"	5 to 15 GPM	FNPTxFNPT	8103131-B
1-1/4"	5 to 20 GPM	FNPTxFNPT	8104141
1-1/2"	5 to 20 GPM	FNPTxFNPT	8105151-C
1-1/2"	5 to 30 GPM	FNPTxFNPT	8105151-D
2"	20 to 50 GPM	FNPTxFNPT	8106161
1/2"	0.35 to 10 GPM	SWTxSWT	8101212
3/4"	0.35 to 10 GPM	SWTxSWT	8102222
1"	0.35 to 10 GPM	SWTxSWT	8103232-A
1"	5 to 15 GPM	SWTxSWT	8103232-B
1-1/4"	5 to 20 GPM	SWTxSWT	8104242
1-1/2"	5 to 20 GPM	SWTxSWT	8105252-C
1-1/2"	5 to 30 GPM	SWTxSWT	8105252-D
2"	20 to 50 GPM	SWTxSWT	8106262
1/2"	0.35 to 10 GPM	FNPTxMNPT	8101113
3/4"	0.35 to 10 GPM	FNPTxMNPT	8102123
1"	0.35 to 10 GPM	FNPTxMNPT	8103133-A
1"	5 to 15 GPM	FNPTxMNPT	8103133-B
1-1/4"	5 to 20 GPM	FNPTxMNPT	8104143
1-1/2"	5 to 20 GPM	FNPTxMNPT	8105153-C
1-1/2"	5 to 30 GPM	FNPTxMNPT	8105153-D
2"	20 to 50 GPM	FNPTxMNPT	8106163
1/2"	0.35 to 10 GPM	SWTxMNPT	8101213
3/4"	0.35 to 10 GPM	SWTxMNPT	8102223
1"	0.35 to 10 GPM	SWTxMNPT	8103232-A
1"	5 to 15 GPM	SWTxMNPT	8103233-B
1-1/4"	5 to 20 GPM	SWTxMNPT	8104243
1-1/2"	5 to 20 GPM	SWTxMNPT	8105253-C
1-1/2"	5 to 30 GPM	SWTxMNPT	8105253-D
2"	20 to 50 GPM	SWTxMNPT	8106263





## Small dynamic balancing valve



Dynamic balancing valves are used as flow limiting devices. They are designed to limit the maximum flow through the valve, regardless of the differential pressure of the system.

Maximum temperature: 250 °F  
Maximum pressure: 600 PSI  
Differential pressure range: 2-32 PSID

First Letter	A	B	C	D	E
Second Letter	Flow Rate [GPM]				
A	0.35	5	5	5	20
B	0.5	6	6	6	22
C	0.75	7	7	7	24
D	1	8	8	8	26
E	1.5	9	9	9	28
F	2	10	10	10	30
G	2.5	11	11	11	32
H	3	12	12	12	34
I	3.5	13	13	13	36
J	4	14	14	14	38
K	4.5	15	15	15	40
L	5		16	16	42
M	6		17	17	44
N	7		18	18	45
O	8		19	19	48
P	9		20	20	50
Q	10			22	
R				24	
S				26	
T				28	
U				30	

Size:	Flow Range:	Connection Type:	Item Number:
Single Reduction Fitting			
3/4" x 1/2"	0.35 to 10 GPM	FNPTxFNPT	8102111
1" x 3/4"	0.35 to 10 GPM	FNPTxFNPT	8103121-A
1" x 3/4"	5 to 15 GPM	FNPTxFNPT	8103121-B
1-1/4" x 1"	5 to 20 GPM	FNPTxFNPT	8104131
1-1/2" x 1-1/4"	5 to 20 GPM	FNPTxFNPT	8105141-C
1-1/2" x 1-1/4"	5 to 30 GPM	FNPTxFNPT	8105141-D
2" x 1-1/2"	20 to 50 GPM	FNPTxFNPT	8106151
3/4" x 1/2"	0.35 to 10 GPM	SWTxSWT	8102212
1" x 3/4"	0.35 to 10 GPM	SWTxSWT	8103222-A
1" x 3/4"	5 to 15 GPM	SWTxSWT	8103222-B
1-1/4" x 1"	5 to 20 GPM	SWTxSWT	8104232
1-1/2" x 1-1/4"	5 to 20 GPM	SWTxSWT	8105242-C
1-1/2" x 1-1/4"	5 to 30 GPM	SWTxSWT	8105242-D
2" x 1-1/2"	20 to 50 GPM	SWTxSWT	8106252
3/4" x 1/2"	0.35 to 10 GPM	FNPTxMNPT	8102113
1" x 3/4"	0.35 to 10 GPM	FNPTxMNPT	8103123-A
1" x 3/4"	5 to 15 GPM	FNPTxMNPT	8103123-B
1-1/4" x 1"	5 to 20 GPM	FNPTxMNPT	8104133
1-1/2" x 1-1/4"	5 to 20 GPM	FNPTxMNPT	8105143-C
1-1/2" x 1-1/4"	5 to 30 GPM	FNPTxMNPT	8105143-D
2" x 1-1/2"	20 to 50 GPM	FNPTxMNPT	8106153
3/4" x 1/2"	0.35 to 10 GPM	SWTxMNPT	8102213
1" x 3/4"	0.35 to 10 GPM	SWTxMNPT	8103223-A
1" x 3/4"	5 to 15 GPM	SWTxMNPT	8103223-B
1-1/4" x 1"	5 to 20 GPM	SWTxMNPT	8104233
1-1/2" x 1-1/4"	5 to 20 GPM	SWTxMNPT	8105243-C
1-1/2" x 1-1/4"	5 to 30 GPM	SWTxMNPT	8105243-D
2" x 1-1/2"	20 to 50 GPM	SWTxMNPT	8106253
Double Reduction Fitting			
1" x 1/2"	0.35 to 10 GPM	FNPTxFNPT	8103111-A
1" x 1/2"	5 to 15 GPM	FNPTxFNPT	8103111-B
1-1/4" x 3/4"	5 to 20 GPM	FNPTxFNPT	8104121
1-1/2" x 1"	5 to 20 GPM	FNPTxFNPT	8105131-C
1-1/2" x 1"	5 to 30 GPM	FNPTxFNPT	8105131-D
2" x 1-1/4"	20 to 50 GPM	FNPTxFNPT	8106141
1" x 1/2"	0.35 to 10 GPM	SWTxSWT	8103212-A
1" x 1/2"	5 to 15 GPM	SWTxSWT	8103212-B
1-1/4" x 3/4"	5 to 20 GPM	SWTxSWT	8104222
1-1/2" x 1"	5 to 20 GPM	SWTxSWT	8105232-C
1-1/2" x 1"	5 to 30 GPM	SWTxSWT	8105232-D
2" x 1-1/4"	20 to 50 GPM	SWTxSWT	8106242
1" x 1/2"	0.35 to 10 GPM	FNPTxMNPT	8103113-A
1" x 1/2"	5 to 15 GPM	FNPTxMNPT	8103113-B
1-1/4" x 3/4"	5 to 20 GPM	FNPTxMNPT	8104123
1-1/2" x 1"	5 to 20 GPM	FNPTxMNPT	8105133-C
1-1/2" x 1"	5 to 30 GPM	FNPTxMNPT	8105133-D
2" x 1-1/4"	20 to 50 GPM	FNPTxMNPT	8106143
1" x 1/2"	0.35 to 10 GPM	SWTxMNPT	8103213-A
1" x 1/2"	5 to 15 GPM	SWTxMNPT	8103213-B
1-1/4" x 3/4"	5 to 20 GPM	SWTxMNPT	8104223
1-1/2" x 1"	5 to 20 GPM	SWTxMNPT	8105233-C
1-1/2" x 1"	5 to 30 GPM	SWTxMNPT	8105233-D
2" x 1-1/4"	20 to 50 GPM	SWTxMNPT	8106243



Dynamic balancing valves are used as flow limiting devices. They are designed to limit the maximum flow through the valve regardless of the differential pressure of the system.

Maximum temperature: 250 °F  
Maximum pressure: 600 PSI  
Differential pressure range: 2-32 PSID  
Connection: Wafer

Size	Maximum Flow Rate [GPM]	Item Number
2 ½"	80	<b>8102951</b>
3"	135	<b>8102952</b>
4"	270	<b>8102953</b>
5"	405	<b>8102954</b>
6"	540	<b>8102955</b>

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## “Cocon QTZ” pressure independent control valve



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Pressure independent control valves for hydronic systems. The body is made of dezincification-resistant brass. The internal pressure controller is made of high-temperature engineered polymer for prolonged service life.

- Close-off pressure rating of 232 PSI.
- Linear valve characteristic, modified by the actuator characteristic.
- Lockable setting.
- Flow setting range.-
- Field adjustable.
- Easily visible flow setting dial.
- The flow rate can be adjusted without removing the actuator or decommissioning the valve.
- The flow setting of the valve is read off in GPM. No conversion chart is necessary.

Maximum temperature: 300 °F  
Maximum pressure: 235 PSI  
Connection: MNPTxFNPT



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Size	Recommended Flow Range [GPM]	Item Number
1/2"	0.13 to 0.92	<b>1676004</b>
1/2"	0.7 to 4.6	<b>1676204</b>
3/4"	0.7 to 4.6	<b>1676006</b>
3/4"	0.8 to 5.7	<b>1676106</b>
1"	1.3 to 8.8	<b>1676108</b>
1 1/4"	2.6 to 15.8	<b>1676110</b>
Actuators		
Fail-in-place, 24V, 2-pt, 3-pt, 0(2)-10V		<b>1012705</b>
Fail-in-place, 24V, 0(2)-10V with position feedback		<b>1012706</b>

The “Series 1012700” valve actuator is an electromotive proportional actuator. The actuator is available with 0-10V control with positional feedback (1012706) or with on/off or three point actuation (1012705). The “Series 1012700” actuators can be used on any Oventrop valve with an M30x1.5 actuator connection.

## “Cocon QTR” pressure independent control valve



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Pressure independent control valves for hydronic systems. The body is made of bronze with dezincification-resistant brass trim. The internal pressure controller is made of high temperature engineered polymer for prolonged service life.

- Close-off pressure rating of 232 PSI.
- Linear valve characteristic, modified by the actuator characteristic.
- Lockable setting.
- Flow setting range.
- Field adjustable.
- Easily visible flow setting dial.
- The flow rate can be adjusted without removing the actuator or decommissioning the valve.
- The flow setting of the valve is read off in GPM. No conversion chart is necessary.

Maximum temperature: 300 °F  
Maximum pressure: 235 PSI  
Connection: FNPTxFNPT



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Size	Recommended Flow Range [GPM]	Item Number
1 ½"	6.6 to 33	<b>1666112</b>
2"	11 to 44	<b>1666116</b>
<b>Actuator</b>		
Fail-in-place, 24V, 2-pt, 3-pt, 0(2)-10V with position feedback		<b>1158010</b>

Oventrop electromotive actuator for steady control. The actuator can be used for two-point, three-point or proportional control (0-10 V), with squeeze connection. Type of characteristic line is adjustable.

- Synchronous motor with activation and switch off technology.
- Electronic recognition of the limit of travel and actuator switch off via time switch.
- Maintenance-free gear with magnetic coupling.
- The valve can be manually positioned by disengaging the gear. This is achieved by actuating the lateral sliding switch and by setting the actuator to the required position with the supplied key.

## “Cocon QFC” pressure independent control valve



[Go to Product Documentation](#)

Pressure independent control valves for hydronic systems. The body is made of cast iron with bronze and dezincification-resistant brass trim. The internal pressure controller is made of high temperature engineered polymer for prolonged service life.

- Close-off pressure rating of 232 PSI.
- Linear valve characteristic, modified by the actuator characteristic.
- Lockable setting.
- Flow setting range.
- Field adjustable.
- Easily visible flow setting dial.
- The flow rate can be adjusted without removing the actuator or decommissioning the valve.
- The flow setting of the valve is read off in GPM. No conversion chart is necessary.

Maximum temperature:

300 °F

Maximum pressure:

235 PSI

Connection:

ANSI 125#  
flanged



[Go to Product Documentation](#)

Size	Recommended Flow Range [GPM]	Item Number
1 ½"	6.6 to 33	<b>1676149</b>
2"	8.8 to 44	<b>1676150</b>
2 ½"	22 to 88	<b>1676151</b>
3"	33 to 132	<b>1676152</b>
4"	55 to 220	<b>1676153</b>
5"	119 to 396	<b>1676154</b>
6"	158 to 660	<b>1676155</b>
Actuator		
Fail-in-place, 24V, 2-pt, 3-pt, 4-20mA, 0(2)-10V with position feedback		<b>1158030</b>

Oventrop electromotive actuator for steady control. The actuator can be used for two-point, three-point, or proportional control (0-10 V or 4-20 mA), with squeeze connection. Type of characteristic line is adjustable.

## “Cocon Q4” pressure dependent control and balancing valve



Oventrop multi-function valve “Q4”.

- Manual balancing with positive shut-off and memory stop.
- Draining/bleeding and filling port.
- Fixed orifice design for simple flow measurement.
- Control valve insert with quick opening characteristic line.

The control insert is completely replaceable under operating conditions with the “Demo-Bloc” tool for the 1/2” valve. The valve is compatible with all Oventrop M30x1.5 actuators and thermostats. The body is made of dezincification resistant brass for the 1/2” valve, or bronze for the 3/4” valve. The control insert valve disc made of EPDM or PTFE, seat made of brass, O-rings made of EPDM, and stem made of stainless steel. Simple fixed orifice balancing with one Cv reduces commissioning time. The balancing valve can be positively shut off and has an integrated memory stop, so no rebalancing is required. Filling, draining, and bleeding of the heating or cooling unit can be performed with the service tool (Item No. 1090551).

Maximum temperature: 300 °F  
Maximum pressure: 145 PSI



Size	Recommended Flow Range [GPM]	Item Number
1/2"	0.13 to 5	
3/4"	0.7 to 10	<b>1145475</b>
Actuators		
Fail-in-place, 24V, 2-pt, 3-pt, 0(2)-10V		<b>1012705</b>
Fail-in-place, 24V, 0(2)-10V with position feedback		<b>1012706</b>

The Series 1012700 valve actuator is an electromotive proportional actuator. The actuator is available with 0-10V control with positional feedback (1012706) or with on/off or three point actuation (1012705). The Series 1012700 actuators can be used on any Oventrop valve with an M30x1.5 actuator connection.

## “Series 801” combination Y-strainer ball valve



Size	Connection	Item Number
½"	FNPT x FNPT	8011111
¾"	FNPT x FNPT	8012121
1"	FNPT x FNPT	8013131
1¼"	FNPT x FNPT	8014141
1½"	FNPT x FNPT	8015151
2"	FNPT x FNPT	8016161
½"	SWT x SWT	8011212
¾"	SWT x SWT	8012222
1"	SWT x SWT	8013232
1¼"	SWT x SWT	8014242
1½"	SWT x SWT	8015252
2"	SWT x SWT	8016262
½"	FNPT x MNPT	8011113
¾"	FNPT x MNPT	8012123
1"	FNPT x MNPT	8013133
1¼"	FNPT x MNPT	8014143
1½"	FNPT x MNPT	8015153
2"	FNPT x MNPT	8016163
½"	SWT x MNPT	8011213
¾"	SWT x MNPT	8012223
1"	SWT x MNPT	8013233
1¼"	SWT x MNPT	8014243
1½"	SWT x MNPT	8015253
2"	SWT x MNPT	8016263

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Documentation

Supply valve for hydronic coils. This combination valve combines the functions of a Y-strainer, a shut-off ball valve, PT port, and blow-down drain. Pipe size reduction fittings are also available to make the installation quicker and easier.

Maximum temperature:

250 °F

Maximum pressure:

600 PSI

Size	Connection	Item Number
<b>Single Reduction Fitting</b>		
¾" x ½"	FNPT x FNPT	8012111
1" x ¾"	FNPT x FNPT	8013121
1¼" x 1"	FNPT x FNPT	8014131
1½" x 1¼"	FNPT x FNPT	8015141
2" x 1½"	FNPT x FNPT	8016151
¾" x ½"	SWT x SWT	8012212
1" x ¾"	SWT x SWT	8013222
1¼" x 1"	SWT x SWT	8014232
1½" x 1¼"	SWT x SWT	8015242
2" x 1½"	SWT x SWT	8016252
¾" x ½"	FNPT x MNPT	8012113
1" x ¾"	FNPT x MNPT	8013123
1¼" x 1"	FNPT x MNPT	8014133
1½" x 1¼"	FNPT x MNPT	8015143
2" x 1½"	FNPT x MNPT	8016153
¾" x ½"	SWT x MNPT	8012213
1" x ¾"	SWT x MNPT	8013223
1¼" x 1"	SWT x MNPT	8014233
1½" x 1¼"	SWT x MNPT	8015243
2" x 1½"	SWT x MNPT	8016253
<b>Double Reduction Fitting</b>		
1" x ½"	FNPT x FNPT	8013111
1¼" x ¾"	FNPT x FNPT	8014121
1½" x 1"	FNPT x FNPT	8015131
2" x 1¼"	FNPT x FNPT	8016141
1" x ½"	SWT x SWT	8013212
1¼" x ¾"	SWT x SWT	8014222
1½" x 1"	SWT x SWT	8015232
2" x 1¼"	SWT x SWT	8016242
1" x ½"	FNPT x MNPT	8013113
1¼" x ¾"	FNPT x MNPT	8014123
1½" x 1"	FNPT x MNPT	8015133
2" x 1¼"	FNPT x MNPT	8016143
1" x ½"	SWT x MNPT	8013213
1¼" x ¾"	SWT x MNPT	8014223
1½" x 1"	SWT x MNPT	8015233
2" x 1¼"	SWT x MNPT	8016243

### “Series 802” accessory union



The “Series 802” union fitting is designed with a PT port and a manual air vent. It is a full brass fitting. There are numerous reducing tailpiece combinations available to make the installation quicker and easier.

Maximum temperature: 250 °F  
Maximum pressure: 600 PSI

Size	Connection	Item Number
½"	FNPT x FNPT	8021111
¾"	FNPT x FNPT	8022121
1"	FNPT x FNPT	8023131
1¼"	FNPT x FNPT	8024141
1½"	FNPT x FNPT	8025151
2"	FNPT x FNPT	8026161
½"	SWT x SWT	8021212
¾"	SWT x SWT	8022222
1"	SWT x SWT	8023232
1¼"	SWT x SWT	8024242
1½"	SWT x SWT	8025252
2"	SWT x SWT	8026262
½"	FNPT x MNPT	8021113
¾"	FNPT x MNPT	8022123
1"	FNPT x MNPT	8023133
1¼"	FNPT x MNPT	8024143
1½"	FNPT x MNPT	8025153
2"	FNPT x MNPT	8026163
½"	SWT x MNPT	8021213
¾"	SWT x MNPT	8022223
1"	SWT x MNPT	8023233
1¼"	SWT x MNPT	8024243
1½"	SWT x MNPT	8025253
2"	SWT x MNPT	8026263

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Size	Connection	Item Number
<b>Single Reduction Fitting</b>		
¾" x ½"	FNPT x FNPT	8022111
1" x ¾"	FNPT x FNPT	8023121
1¼" x 1"	FNPT x FNPT	8024131
1½" x 1¼"	FNPT x FNPT	8025141
2" x 1½"	FNPT x FNPT	8026151
¾" x ½"	SWT x SWT	8022212
1" x ¾"	SWT x SWT	8023222
1¼" x 1"	SWT x SWT	8024232
1½" x 1¼"	SWT x SWT	8025242
2" x 1½"	SWT x SWT	8026252
¾" x ½"	FNPT x MNPT	8022113
1" x ¾"	FNPT x MNPT	8023123
1¼" x 1"	FNPT x MNPT	8024133
1½" x 1¼"	FNPT x MNPT	8025143
2" x 1½"	FNPT x MNPT	8026153
¾" x ½"	SWT x MNPT	8022213
1" x ¾"	SWT x MNPT	8023223
1¼" x 1"	SWT x MNPT	8024233
1½" x 1¼"	SWT x MNPT	8025243
2" x 1½"	SWT x MNPT	8026253
<b>Double Reduction Fitting</b>		
1" x ½"	FNPT x FNPT	8023111
1¼" x ¾"	FNPT x FNPT	8024121
1½" x 1"	FNPT x FNPT	8025131
2" x 1¼"	FNPT x FNPT	8026141
1" x ½"	SWT x SWT	8023212
1¼" x ¾"	SWT x SWT	8024222
1½" x 1"	SWT x SWT	8025232
2" x 1¼"	SWT x SWT	8026242
1" x ½"	FNPT x MNPT	8023113
1¼" x ¾"	FNPT x MNPT	8024123
1½" x 1"	FNPT x MNPT	8025133
2" x 1¼"	FNPT x MNPT	8026143
1" x ½"	SWT x MNPT	8023213
1¼" x ¾"	SWT x MNPT	8024223
1½" x 1"	SWT x MNPT	8025233
2" x 1¼"	SWT x MNPT	8026243



### “Series 803” isolation ball valve



Size	Connection	Item Number
½"	FNPT x FNPT	8031111
¾"	FNPT x FNPT	8032121
1"	FNPT x FNPT	8033131
1¼"	FNPT x FNPT	8034141
1½"	FNPT x FNPT	8035151
2"	FNPT x FNPT	8036161
½"	SWT x SWT	8031212
¾"	SWT x SWT	8032222
1"	SWT x SWT	8033232
1¼"	SWT x SWT	8034242
1½"	SWT x SWT	8035252
2"	SWT x SWT	8036262
½"	FNPT x MNPT	8031113
¾"	FNPT x MNPT	8032123
1"	FNPT x MNPT	8033133
1¼"	FNPT x MNPT	8034143
1½"	FNPT x MNPT	8035153
2"	FNPT x MNPT	8036163
½"	SWT x MNPT	8031213
¾"	SWT x MNPT	8032223
1"	SWT x MNPT	8033233
1¼"	SWT x MNPT	8034243
1½"	SWT x MNPT	8035253
2"	SWT x MNPT	8036263

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Supply valve for hydronic coils. This combination valve combines the functions of a shut off ball valve, PT port, and blow-down drain. Pipe size reduction fittings are also available to make the installation quicker and easier.

Maximum temperature:

250 °F

Maximum pressure:

600 PSI

Size	Connection	Item Number
<b>Single Reduction Fitting</b>		
¾" x ½"	FNPT x FNPT	8032111
1" x ¾"	FNPT x FNPT	8033121
1¼" x 1"	FNPT x FNPT	8034131
1½" x 1¼"	FNPT x FNPT	8035141
2" x 1½"	FNPT x FNPT	8036151
¾" x ½"	SWT x SWT	8032212
1" x ¾"	SWT x SWT	8033222
1¼" x 1"	SWT x SWT	8034232
1½" x 1¼"	SWT x SWT	8035242
2" x 1½"	SWT x SWT	8036252
¾" x ½"	FNPT x MNPT	8032113
1" x ¾"	FNPT x MNPT	8033123
1¼" x 1"	FNPT x MNPT	8034133
1½" x 1¼"	FNPT x MNPT	8035143
2" x 1½"	FNPT x MNPT	8036153
¾" x ½"	SWT x MNPT	8032213
1" x ¾"	SWT x MNPT	8033223
1¼" x 1"	SWT x MNPT	8034233
1½" x 1¼"	SWT x MNPT	8035243
2" x 1½"	SWT x MNPT	8036253
<b>Double Reduction Fitting</b>		
1" x ½"	FNPT x FNPT	8033111
1¼" x ¾"	FNPT x FNPT	8034121
1½" x 1"	FNPT x FNPT	8035131
2" x 1¼"	FNPT x FNPT	8036141
1" x ½"	SWT x SWT	8033212
1¼" x ¾"	SWT x SWT	8034222
1½" x 1"	SWT x SWT	8035232
2" x 1¼"	SWT x SWT	8036242
1" x ½"	FNPT x MNPT	8033113
1¼" x ¾"	FNPT x MNPT	8034123
1½" x 1"	FNPT x MNPT	8035133
2" x 1¼"	FNPT x MNPT	8036143
1" x ½"	SWT x MNPT	8033213
1¼" x ¾"	SWT x MNPT	8034223
1½" x 1"	SWT x MNPT	8035233
2" x 1¼"	SWT x MNPT	8036243

“Series 804” union adapter for connection from balancing valve to control valve.



Maximum temperature: 250 °F  
Maximum pressure: 600 PSI

Size	Connection	Item Number
½"	MNPT x MNPT	8041313
¾"	MNPT x MNPT	8042323
1"	MNPT x MNPT	8043333
1¼"	MNPT x MNPT	8044343
1½"	MNPT x MNPT	8045353
2"	MNPT x MNPT	8046363
<b>Single Reduction Fitting</b>		
¾" x ½"	MNPT x MNPT	8042313
1" x ¾"	MNPT x MNPT	8043323
1¼" x 1"	MNPT x MNPT	8044333
1½" x 1¼"	MNPT x MNPT	8045343
2" x 1½"	MNPT x MNPT	8046353
<b>Double Reduction Fitting</b>		
1" x ½"	MNPT x MNPT	8043313
1¼" x ¾"	MNPT x MNPT	8044323
1½" x 1"	MNPT x MNPT	8045333
2" x 1¼"	MNPT x MNPT	8046343





Stainless steel braided EPDM lined hoses for coil kits. The hoses are constructed from an EPDM core with a stainless steel braided cover. The connections are male x male swivel NPT connections. Hoses are rated at 230 °F on all sizes.

Maximum temperature: 230 °F

Size:	Length:	Connection Type:	Item Number:
1/2"	12"	MNPTxMNPT	1061015-12C
3/4"	12"	MNPTxMNPT	1061020-12C
1"	12"	MNPTxMNPT	1061025-12C
1/2"	18"	MNPTxMNPT	1061015-18C
3/4"	18"	MNPTxMNPT	1061020-18C
1"	18"	MNPTxMNPT	1061025-18C
1-1/4"	18"	MNPTxMNPT	1061032-18C
1-1/2"	18"	MNPTxMNPT	1061040-18C
1/2"	24"	MNPTxMNPT	1061015-24C
3/4"	24"	MNPTxMNPT	1061020-24C
1"	24"	MNPTxMNPT	1061025-24C
1-1/4"	24"	MNPTxMNPT	1061032-24C
1-1/2"	24"	MNPTxMNPT	1061040-24C
2"	24"	MNPTxMNPT	1061050-24C
1/2"	36"	MNPTxMNPT	1061015-36C
3/4"	36"	MNPTxMNPT	1061020-36C
1"	36"	MNPTxMNPT	1061025-36C
1-1/4"	36"	MNPTxMNPT	1061032-36C
1-1/2"	36"	MNPTxMNPT	1061040-36C
2"	36"	MNPTxMNPT	1061050-36C

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Documentation

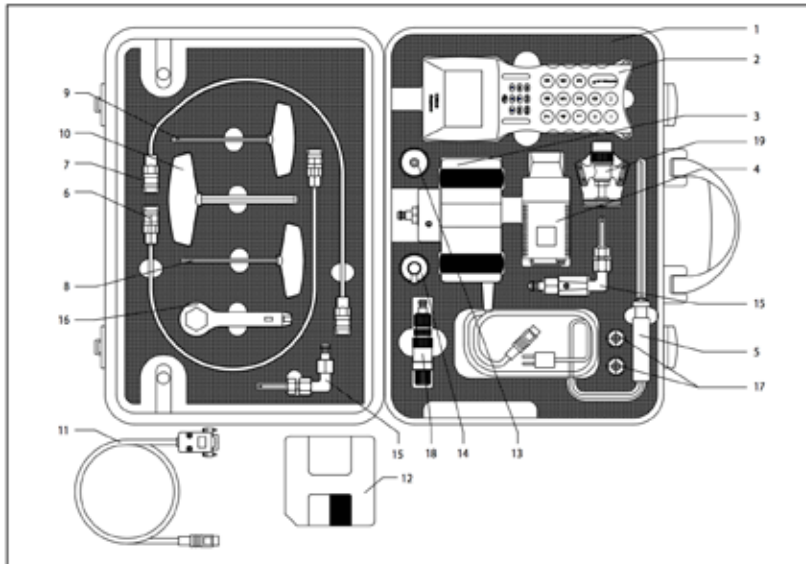
## "OV-DMC 2" differential pressure flow computer



The "OV-DMC 2" differential pressure computer is used to measure flow and balance Oventrop valves.

Item:	"OV-DMC2"
Item number:	106 91 77
Set of test needles (2)	106 91 99

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Documentation



1. Measuring case
2. Flow meter "OV-DMC 2" with shoulder strap
3. Measuring head with connection cable, connection nipple for measuring hose and two rubber rings protecting the measuring head against impact
4. Power pack with connecting cable
5. Temperature sensor with connecting cable 1 m long
6. Measuring hose, red with quick couplings 0.5 m long
7. Measuring hose, blue with quick couplings 0.5 m long
8. Allen key 3 mm with black handle
9. Allen key 4 mm with black handle
10. Allen key 8 mm with black handle
11. PC connection cable to transmit stored data of the "OV-DMC 2" to the serial interface RS-232
12. Diskette for data transmission
13. 2 measuring adapters with connection thread  $\frac{3}{4}$ " for quick-coupling technic suitable for "Hydrocontrol" as well and the fill and drain tool 106 17 91 of "Hycococon"
14. Measuring adapter with connection thread  $\frac{3}{4}$ " for double regulating and commissioning valves "Hydrocontrol" with needle technic
15. Set of measuring needles 106 91 99 for measuring technic "classic" of double regulating and commissioning valves, e.g. "Hydrocontrol"
16. Operating key 106 01 85 for older double regulating and commissioning valves "Hydrocontrol"
17. Two connection nipples 106 91 86 for replacement at measuring head
18. Set of measuring needles 106 17 99 for measuring technic "eco" of double regulating and commissioning valves, e.g. "Hycococon"
19. 2 fill and drain tools 106 17 91 for measuring technic "eco" of double regulating and commissioning valves, e.g. "Hycococon"

Operating instructions



### "Tri-M" Three-way mixing valve

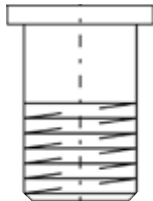


Three-way mixing valves are used for temperature mixing and modulating. This valve can be controlled by an Oventrop non-electric temperature controller or an electric actuator in conjunction with an external control.

Maximum temperature: 250 °F  
Maximum pressure: 145 PSI  
Actuator connection: M30 x 1.5

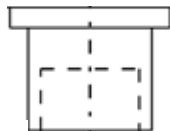
Connection	Maximum Recommended Flow [GPM]	Size	Item Number
Flat-sealing union	17.2	¾"	<b>1131706</b>
	20.3	1"	<b>1131708</b>
	18.8	1½"	<b>1131712</b>

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#### Set of three (3) tailpieces

Connection	Size	Item Number
MNPT	¾"	<b>1706006</b>
	1"	<b>1706008</b>
	1½" x 1¼" reduction	<b>1706010</b>
	1½"	<b>1706012</b>



#### Set of three (3) tailpieces

Connection	Size	Item Number
SWT	¾"	<b>1987672</b>
	1"	<b>1987673</b>
	1½" x 1¼" reduction	<b>1130196</b>
	1½"	<b>1987675</b>

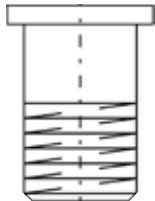
### "Tri-CTR" Three-way valve



Three-way valves are used for temperature modulating and can be piped in either diverting or mixing configuration. This valve can be controlled by an Oventrop non-electric temperature controller or an electric actuator in conjunction with an external control.

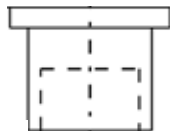
Maximum temperature: 250 °F  
Maximum pressure: 145 PSI  
Actuator connection: M30 x 1.5

Connection	Maximum Recommended Flow [GPM]	Size	Item Number
Flat-sealing union	17.2	¾"	<b>1131206</b>
	20.3	1"	<b>1131208</b>
	18.8	1½"	<b>1131212</b>



#### Set of three (3) tailpieces

Connection	Size	Item Number
MNPT	¾"	<b>1706006</b>
	1"	<b>1706008</b>
	1½" x 1¼" reduction	<b>1706010</b>
	1½"	<b>1706012</b>



#### Set of three (3) tailpieces

Connection	Size	Item Number
SWT	¾"	<b>1987672</b>
	1"	<b>1987673</b>
	1½" x 1¼" reduction	<b>1130196</b>
	1½"	<b>1987675</b>



Temperature control with contact sensor for three-way valves. This self-contained actuator provides modulating control using the non-electric contact sensor bulb.

Connection thread: M30 x 1.5

Temperature Control Range: Deg. °F (°C)	Item Number
68 - 122 (20 - 50)	<b>1142861</b>
86 - 140 (30 - 60)	<b>1142862</b>
104 - 158 (40 - 70)	<b>1142863</b>
122 - 178 (50 - 80)	<b>1142864</b>

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## Electric actuator



Electrothermal

Electrothermal actuators use a wax element with an internal heater wire. All electrothermal actuators are spring return.

Electromotive actuators use a stepper motor to position the actuator. All electromotive actuators are fail-in-place actuators.

Connection thread: M30 x 1.5

Type	Control Signal	Item Number
Electrothermal	24V, 2-pt, normally closed	<b>1012416</b>
	24V, 2-pt, normally open	<b>1012426</b>
	24V, 2-pt, normally closed with end switch	<b>1012496</b>
	24V, 0-10V, normally closed	<b>1012953</b>
Electromotive	24V, 2-pt, 3-pt, 0-10V, fail-in-place	<b>1012705</b>
	24V, 0-10V, with position feedback	<b>1012706</b>

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Electromotive

## Differential pressure bypass valve



Valve for preventing pump noise and cavitation during periods of low demand. Settable DP range 2 - 17 fthd.

Size	Item Number
¾"	1659806
1"	1659808
1 ¼"	1659810

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## Automatic air vent



Automatic air vent for hydronic systems. Flow stop check valve for easy servicing operation.

Size	Item Number
3/8"	1088303

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## Fuel oil filters



Standard



Magnum



Standard



Magnum

Heating oil filter for one pipe systems with quick acting isolating valve with double O-ring seal. Body made of brass, with bracket, transparent filter cup for suction.

Size	Item Number
Filter assembly, standard, 3/8"	<b>2632761 (discontinued)</b>
Filter assembly, magnum, 3/8"	<b>2632771 (discontinued)</b>
Replacement filter element, standard	<b>2632861</b>
Replacement filter element, magnum	<b>2632871</b>

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## Tank accessories



One-pipe



Two-pipe

"Flexo-Bloc" floating suction kit for 2" tank connections and 3/8" pipe connection. For one-pipe systems with suction pipe and float. The heating oil is drawn off approximately 1½" to 2¼" below the oil level. With non-return ball check valve and quick-acting isolation.

Type	Item Number
One-pipe	<b>2053651</b>
Two-pipe	<b>2053653</b>

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Oventrop Corp. 2017

OVENTROP CORP.

#### TERMS AND CONDITIONS OF SALE

These General Terms and Conditions of Sale and Delivery (these "Terms") are applicable to all U.S. customers (the "Customers" and each, individually, a "Customer") of Oventrop Corp., a Delaware corporation (the "Company").

##### 1. Terms and Conditions of Sale:

1.1 Company shall sell and deliver to Customer and Customer shall purchase and accept from Company the products (herein, the "Products") described on or in any confirmed order, agreement or quotation, or any combination thereof (the "Order"), pursuant to the terms and conditions of the Order and those specified below, which taken together shall constitute the entire agreement between Company and Customer regarding the Products (herein, this "Agreement").

1.2 No other terms or conditions shall be of any effect unless otherwise specifically agreed to by Company in a separate written agreement duly signed by an officer of Company. Customer will be deemed to have assented to all Terms if any part of the Products is accepted by Customer. If Customer finds any Term not acceptable, Customer must so notify Company at once and must reject the Products delivered under this Agreement.

Any additional or different terms or conditions contained in Customer's order or response hereto shall be deemed objected to by Company and shall be of no effect. No general terms and conditions of a Customer shall at any time form a part of the content of any contract or agreement between the Customer and the Company, even if they are not further expressly rejected by the Company.

1.3 No Order is binding upon the Company until the earlier of: (1) acceptance of the Order in writing or (2) the delivery of the Products to the Customer. Notwithstanding any prior acceptance of an Order by Company, Company shall have no obligation if the Customer is in breach of any of

its obligations hereunder, or any other agreement between the Customer and Company, at the time Company's performance was due.

1.4 All verbal agreements concerning the terms of any Order, including agreements made by telephone, shall have no force and effect unless and until acknowledged by the Company in writing.

1.5 Customer shall bear all costs associated with the cancellation or modification of the Order.

2. Technical Data and Information in Catalogs: All technical data and specifications in catalogs, installation instructions, product documentation, price lists, etc. are bench marks only and are not warranted or guaranteed in any manner by the Company. Oventrop may from time to time adjust such technical data and specifications without notice.

##### 3. Prices:

3.1 Unless otherwise stated, all price quotations are EX WORKS (per Incoterms 2000) and do not include costs for packaging, postage or other freight charges, insurance or taxes, if any.

3.2 Products prices will be governed by the Company's current prices in effect from time. A price list is available on request.

3.3 Prices quoted in a currency other than United States Dollars are based on the official exchange rate on the date of the quote. Prices will be invoiced on the basis of the currency exchange rate in effect on the date of confirmation of any Order.

3.4 Company may without notice to Customer increase the price of the Products by the amount of any new or increased tax or duty (excluding franchise, net income and excess profits taxes) which Company may be required to pay on the manufacture, sale, transportation, delivery, export, import or use of the Products or the materials required for their manufacture or which affects the cost of such materials.

##### 4. Terms of Payment:

4.1 Payment terms are net 30 days from the date of invoice.

4.2 Prices for future deliveries of Products will be governed by the Company's current price list then in effect, which is available on request. All pricing information contained in catalogs or price lists of Oventrop is subject to confirmation by Company.

4.3 Company may change its prices and delivery terms for Products in its sole discretion, by giving Buyer at least ten (10) days prior notice that there will be a change.

4.4 Company may without notice to Buyer increase the price of the Products by the amount of any new or increased tax (excluding franchise, net income and excess profits taxes) which Company may be required to pay on the manufacture, sale, transportation, import, export, delivery or use of the Products or the materials required for their manufacture or which affects the cost of such materials

5. Taxes: Purchaser agrees to provide Oventrop with its assigned tax exemption number and agrees to pay, in addition to the purchase price, all applicable sales, use, excise, value added or other similar taxes.

##### 6. Delivery Terms

6.1 Except as specified elsewhere herein or in any other as otherwise agreed to in writing between Company and Buyer, orders for Products may not be cancelled without Company's prior written consent and the payment of cancellation charges. Company shall specify the cancellation charges

upon inquiry by Buyer.

6.2 Title to and risk of loss for the Products shall pass to Buyer upon Company's delivery thereof to carrier and any reference in these terms and conditions to "deliver" shall refer to such delivery.

6.3 The Customer shall not be liable to Buyer for delays in delivery or damage to Products while in transit, irrespective of whether Customer or Buyer determined the mode of transportation

7. Force Majeure: The Company shall not be liable to Buyer or any other person for any failure or delay in the performance of any obligation under this Agreement due to events beyond its reasonable control, including, but not limited to, re, storm, flood, earthquake, explosion, accident, acts of the public enemy, wars, riots and public disorder, sabotage, strikes, lockouts, labor disputes, labor shortages, work slowdown, stoppages or

delays, shortages or failures or delays of energy, materials, supplies or equipment, transportation embargoes or delays, acts of God, breakdown in

8. Indemnification by Customer:

8.1 Except in cases of Company's willful misconduct or gross negligence, Customer agrees to diligently defend, and to hold harmless and indemnify,

Company and its directors, officers, employees, shareholders, affiliates, agents and representatives (the "Company Indemnitees") from and against any

and all liability, claims, lawsuits, losses, demands, damages, costs and expenses, including, without limitation, attorney's fees and costs, expert's fees and costs, and court costs, and in each case as such costs are incurred (the "Losses"), (i) arising directly or indirectly out of any use of the

Products, whether authorized or unauthorized, and irrespective of whether such claim alleges personal injury, product liability, strict or absolute liability, breach of contract or implied contract or warranty, or any other claim of any nature on any theory of recovery, except to the extent such Losses have

been incurred as a direct result of a breach of Company's warranty pursuant to Section 10 or Company's gross negligence or willful misconduct, or

(ii) arising out of any breach or misrepresentation of any of Customer's representations or covenants or other terms of this Agreement, including, without limitation, any failure to use or supervise use of the Products strictly in accordance with the User Manual.

8.2 Company will promptly notify Customer of any claim, suit or proceeding that Customer may have indemnification obligations with respect to under this Section; provided, however, that any failure by Company to provide prompt written notice hereunder shall excuse Customer only to the extent that Customer is prejudiced by such failure to give notice. Company shall cooperate with Customer with regard to the defense of any suit or threatened suit. Customer may assume control of the defense of any such claim, proceeding or suit and shall have the authority to settle or otherwise dispose of any such suit or threatened suit, and to appeal any adverse judgment which may be entered, except that Customer must obtain Company's prior written consent

to any settlement unless the settlement involves solely the payment of money and all of such payment is payable by Customer, its insurers, and parties other than the Company Indemnitees.

8.3 Customer shall notify Company in writing within 10 days of Customer's receipt of knowledge of any accident or safety incident involving the Products which results in personal injury or damage to property, or any government or similar investigation, claim or inquiry involving the Products. Customer shall fully cooperate with Company in the investigation and determination of the cause of any such accident or incident, and shall make available to Company all statements, reports and tests made by Customer or made available to Customer by others. The furnishing of such information to Company and any

investigation by Company of such information or incident report shall not in any way constitute any assumption of any liability for such accident or incident by Company, nor shall it affect the indemnification obligations above.

8.4 Customer represents and warrants that it has in place the necessary insurance and liability waivers to cover the use and operation of the Products

by Customer's personnel, customers, and third-party users. In addition, Customer represents and warrants that it maintains a policy of insurance at levels sufficient to support the indemnification obligations assumed by it in this Agreement. Customer will notify Company promptly if Customer's coverage is materially reduced or cancelled.

9. Choice of law and forum: These terms and conditions and any order shall be construed and the rights of the parties shall be interpreted in accordance with the laws of New York. The parties agree that courts located in the New York City, borough of Manhattan, shall be the exclusive forum for any dispute arising hereunder or with respect to any order. The parties expressly waive any objections based on personal jurisdiction or venue and consent to service

of process by certified mail, return receipt requested.

10. Limited Warranty: For Warranty terms, see ATTACHMENT A (Warranty).

## Oventrop Corporation Limited Warranty

Oventrop Corporation warrants to its "Customers" that all Oventrop products, used for heating and plumbing applications and sold in accordance with these warranty provisions, shall be free from defects in material and workmanship. "Customer" as used herein shall mean an end-user of Oventrop products.

This limited warranty shall last two (2) years for electric parts (pumps, controls and miscellaneous electric parts), ten (10) years for solar collectors, twenty (20) years for PEX tubing, and five (5) years for all other products (valves and domestic water tanks) from the date of purchase, unless otherwise specified in writing.

In order to be eligible for a warranty claim, Products sold

- (1) must be installed and maintained professionally according to the relevant assembly instructions and the product manual,
- (2) must only be used for purposes provided in the Oventrop Corporation's product description or assembly instructions,
- (3) must be exposed only to gaseous or liquid media approved for the product by Oventrop Corporation, and
- (4) Shall not be combined with products of other manufacturers unless otherwise stated in the product manual.

Oventrop Corporation's sole obligation hereunder shall be, at its option, to issue credit, repair or replace any component or part thereof which is proved to be defective. The limited warranty does not cover cost for transportation or labor charges (including installation and removal) unless such charges are authorized in writing in advance by the Oventrop Corporation. Any repairs without the express written consent of Oventrop Corporation shall render this limited warranty invalid. Oventrop Corporation disclaims allowances for dismounting and consequential losses and damages.

Warranty claims must be received by Oventrop Corporation within the applicable warranty period and within thirty (30) days from when the cause for the claim occurred or was discovered. Upon receipt of prompt notice of a warranty claim, Oventrop Corporation shall have ten (10) business days in which to determine whether it acknowledges responsibility for any asserted defects in material or workmanship and the appropriate action to be taken.

This limited warranty and any claims arising from the breach of warranty, or any other claim arising hereunder, shall be governed and construed under the laws of the State of New York. No other persons than Oventrop Corporation employees have any expressed or implied authority to bind Oventrop Corporation to any agreement or warranty of any kind without the express written consent of Oventrop Corporation.

**Disclaimer of Warranties:**

OVENTROP CORPORATION DISCLAIMS ANY WARRANTY NOT PROVIDED HEREIN INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. IT IS EXPRESSLY UNDERSTOOD THAT OVENTROP CORPORATION IS NOT RESPONSIBLE FOR ANY CONSEQUENTIAL OR OTHER DAMAGES THAT MAY ARISE FROM USING OVENTROP CORPORATION SYSTEM COMPONENTS. DAMAGE RESULTING FROM WATER FREEZING IN THE TUBING DOES NOT CONSTITUTE A DEFECT IN MATERIAL OR WORKMANSHIP, AND SHALL NOT BE COVERED BY THIS WARRANTY. OVENTROP-TUBING MAY NOT BE STORED IN DIRECT SUNLIGHT FOR ANY PERIOD LONGER THAN THREE WEEKS, OR THIS LIMITED WARRANTY BECOMES INVALID. OVENTROP CORPORATION DISCLAIMS ANY STATUTORY OR IMPLIED WARRANTY OF HABITABILITY. OVENTROP CORPORATION FURTHER DISCLAIMS ANY RESPONSIBILITY FOR LOSSES; EXPENSES; INCONVENIENCES; AND SPECIAL, INDIRECT, SECONDARY, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING FROM OWNERSHIP OR USE OF THE ARTICLES SOLD HEREUNDER.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE FACE HEREOF.





VA Medical Center, Phoenix, AZ



Dodgers Stadium, Los Angeles, CA



Oak Grove Elementary, Richmond, VA



Humber River Hospital, Toronto, ON



UCSB - San Joaquin Apartments, Santa Barbara, CA



Richardson Apartments, San Francisco, CA

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