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“Hydrocontrol VTR”



“Hydrocontrol VFC”



“Hydrocontrol VGC”



NPT Connection	Solder Connection	DN	Size	Absolute Minimum Flow	Nominal Minimum Flow	Nominal Maximum Flow	Absolute Maximum Flow
1061004LF	-	15	½"	0.03	0.05	1.8	5.5
1061004	1060551	15	½"	0.2	0.4	4.2	13.3
1061006	1060552	20	¾"	0.3	0.6	6.2	19.5
1061008	1060553	25	1"	0.4	1.2	9.6	30.4
1061010	1060554	32	1¼"	0.4	1.6	21.0	66.6
1061012	1060555	40	1½"	0.9	3.2	29.8	94.1
1061016	1060556	50	2"	2.1	3.9	42.0	132.7
Groove Connection	Flange Connection	DN	Size	Absolute Minimum Flow	Nominal Minimum Flow	Nominal Maximum Flow	Absolute Maximum Flow
-	1062946	20	¾"	0.1	2.2	5.2	16.3
-	1062947	25	1"	0.4	5.1	9.1	28.7
-	1062948	32	1¼"	0.3	8.1	18.5	58.4
-	1062949	40	1½"	0.7	12.3	29.1	92.0
-	1062950	50	2"	2.5	19.8	39.0	123.2
1063051	1062951	65	2½"	1.4	47	106.0	335.3
1063052	1062952	80	3"	1.5	48	132.2	418.1
1063053	1062953	100	4"	1.9	78	217.5	687.7
1063054	1062954	125	5"	4.2	87	317.0	1002.5
1063055	1602955	150	6"	5	180	437.4	1383.3
1063056	1062956	200	8"	30	163	881.3	2786.8
1063057	1062957	250	10"	70	210	1298.4	4105.7
1063058	1062958	300	12"	115	518	1731.1	5474.3
-	1062959	350	14"	221	729	2428	7680
-	1062960	400	16"	258	885	4047	12800



“Hydrocontrol MTR”

NPT Connection	DN	Size	Minimum Flow	Maximum Flow
			[GPM]	
1660464	15	½" LF	0.2	2.4
1660434	15	½" MF	0.5	5
1660404	15	½"	1	5
1660406	20	¾"	1	7
1660408	25	1"	3.8	12
1660410	32	1¼"	7	25
1660412	40	1½"	10	35
1660416	50	2"	20	50



“Hydrocontrol CS”

NPT Connection	Solder Connection	DN	Size	Minimum Flow	Maximum Flow
				[GPM]	
1660904	1660951	15	½"	0.7	3
1660906	1660952	20	¾"	1.3	5.9
1660908	1660953	25	1"	3.4	15.4
1660910	1660954	32	1¼"	7.2	32.3
1660912	1660955	40	1½"	11.5	51.3
1660916	1660956	50	2"	17	76



Dynamic Balancing Valve

NPT Connection	Solder Connection	DN	Size	Minimum Flow	Maximum Flow
				[GPM]	
81011__-A_	81012__-A_	15	½"	0.5	10
81021__-A_	81022__-A_	20	¾"	0.5	10
81031__-A_	81032__-A_	25	1"A	0.5	10
81031__-B_	81032__-B_	25	1"B	5	15
81041__-C_	81042__-C_	32	1¼"	5	20
81051__-C_	81052__-C_	40	1½"C	5	20
81051__-D_	81052__-D_	40	1½"D	5	30
81061__-E_	81062__-E_	50	2"	20	50



Dynamic Balancing Valve

Flange Connection	DN	Size	Maximum Flow 2-32 PSID	Maximum Flow 5-60 PSID
			[GPM]	
8102951	65	2½"	80	120
8102952	80	3"	135	170
8102953	100	4"	270	340
8102954	125	5"	405	510
8102955	150	6"	540	680



“Cocon QTZ”



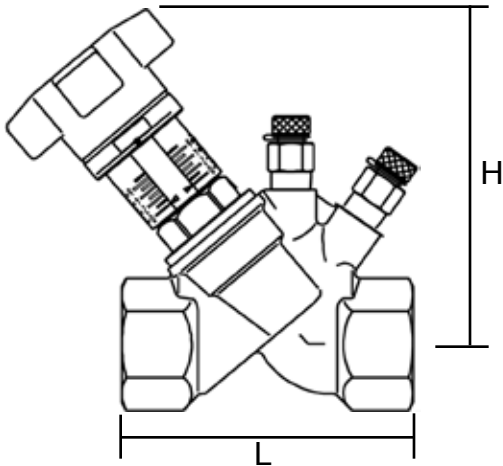
“Cocon QTR”



“Cocon QFC”

MNPTxFNPT Connection	MNPTxMNPT Connection	DN	Size	Minimum Flow	Maximum Flow
				[GPM]	
1676004	-	15	½"	0.13	0.92
1676204	-	15	½"	0.7	4.6
1676006	1676066	20	¾"	0.7	4.6
1676106	1676166	20	¾"	0.8	5.7
1676108	1676168	25	1"	1.3	8.8
1676110	1676170	32	1¼"	2.6	15.8
FNPT Connection	MNPTxMNPT Connection	DN	Size	Minimum Flow	Maximum Flow
1666112	1666172	40	1½"	6.6	33
1666116	1666174	50	2"	11	44
Groove Connection	Flange Connection	DN	Size	Minimum Flow	Maximum Flow
-	1676149	40	1½"	6.6	33
-	1676150	50	2"	8.8	35.2
1676251	1676151	65	2½"	22	88
1676252	1676152	80	3"	33	132
1676253	1676153	100	4"	55	220
-	1676154	125	5"	119	396
-	1676155	150	6"	158	660

Job Name:	Submitted by:	Date:
	Spec Section:	
Job Location:	Engineer/Architect:	
	Approval:	Date:



**Specification**

Oventrop "Hydrocontrol" coil kit is a balancing valve coil assembly for the return side of a fan coil unit or air handler. A sweat or female connection is available on the hydrocontrol valve.

"Hydrocontrol" valve made of corrosion-resistant bronze. Bonnet, stem and disc made of bronze/dezincification resistant brass. Disc with PTFE seal. Double EPDM O-ring stem seal.

Maximum working temperature: 300°F  
Maximum working pressure: 235 psi

**Using balancing valve for isolation:**

The hand wheel can be limited to any setting. This can be done by inserting a 3 mm allen key into the hole on the top of the handle and turning clockwise until it stops. Once this has been done, the valve can be closed down for isolation of the coil without losing the balanced setting. When the valve is reopened, the handle will be turned until it reaches the preset limit.

**Coil Kit Dimensions in Inches**

Dimension	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
L (F-NPT)	3.15	3.31	3.84	4.33	4.72	5.91
L (sweat)	3.51	3.81	4.31	5.03	5.57	6.60
H	4.49	4.57	4.69	5.35	5.43	5.83

**Installation Notes**

When installing the hydrocontrols, it is to be observed that the direction of flow conforms with the arrow on the valve body and that the valve is installed with a minimum of 3 D (3 x nominal pipe diameter) of straight pipe at the valve inlet and of 2 D (2 x nominal pipe diameter) of straight pipe at the valve outlet.



Hydrocontrol valves can be installed in any orientation (e.g. vertical or horizontal). It is recommended to take caution if installing the valve with the test ports pointing down, as this could lead to clogging of the test ports.

**"Hydrocontrol R" Manual Balancing Valve Coil Kit**

Size	Recommended Flow range [GPM]	Connection ends
1/2" LF	0.05 - 1.8	FNPT x FNPT
1/2"	0.4 - 4.2	FNPT x FNPT Sweat x Sweat
3/4"	0.6 - 6.2	
1"	1.2 - 9.6	
1 1/4"	1.6 - 21	
1 1/2"	3.2 - 30	
2"	3.9 - 42	



“Hydrocontrol R”  
Sweat or Thread Connection  
½” to 2” Valves

Cv Values for Various Handwheel Settings

Presetting or Handwheel Turns	½”	¾”	1”	1¼”	1½”	2”
0.5	0.40	0.58	1.08	1.20	3.09	3.13
1.0	0.53	0.84	1.77	2.40	4.80	5.88
1.5	0.66	1.08	2.42	3.37	6.67	8.31
2.0	0.84	1.33	3.00	4.67	8.53	10.66
2.5	1.14	1.57	3.59	5.91	10.12	13.55
3.0	1.56	1.86	4.29	6.98	11.65	16.55
3.5	1.98	2.37	5.14	7.97	13.02	19.01
4.0	2.38	3.00	6.00	8.88	14.37	21.51
4.5	2.77	3.63	6.92	10.06	16.05	24.07
5.0	3.14	4.24	7.81	11.27	17.74	26.66
5.5	3.56	4.97	8.51	12.44	20.17	28.49
6.0	3.95	5.69	9.20	13.60	22.62	30.04
6.5	4.33	6.33	9.78	14.88	24.36	32.27
7.0	4.51	6.64	10.34	16.17	26.10	34.20
7.5	-	-	-	17.47	27.47	36.16
8.0	-	-	-	18.73	28.86	38.06
8.5	-	-	-	19.97	29.59	40.35
9.0	-	-	-	21.14	30.34	42.65
9.5	-	-	-	22.01	31.16	44.13
10.0	-	-	-	22.62	31.99	45.09

“Hydrocontrol” Valve Accessories



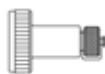
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Item 106 02 81



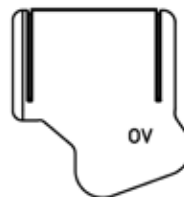
Extension piece for pressure test points  
80mm Item 106 02 95



Fill and drain ball valve ¼”  
Item 106 01 91



Measuring adapter  
for fill and drain ball valve  
Item 106 02 98



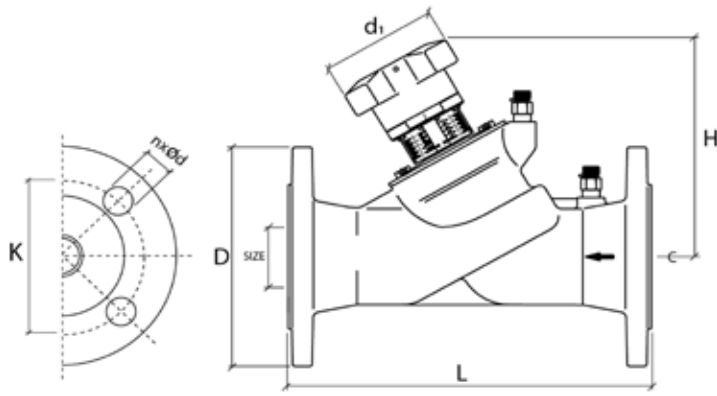
Insulation shell  
for “Hydrocontrol R”

Size	Item no.
DN15 ½”	106 00 81
DN20 ¾”	106 00 82
DN25 1”	106 00 83
DN32 1¼”	106 00 84
DN40 1½”	106 00 85
DN50 2”	106 00 86



Flow meter  
OV-DMC 2  
Item 106 91 77

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### Dimensions in Inches

Size	Item no.	Weight	L	H max.	d1	D	K	n x Ød
DN20 ¾"	106 29 46	7.5 lbs.	5.91	4.65	2.76	4.13	2.75	4 x 0.62
DN25 1"	106 29 47	7.8 lbs.	6.30	4.65	2.76	4.53	3.12	4 x 0.62
DN32 1¼"	106 29 48	12.8 lbs.	7.09	5.35	2.76	5.51	3.50	4 x 0.62
DN40 1½"	106 29 49	13.7 lbs.	7.87	5.35	2.76	5.91	3.88	4 x 0.62
DN50 2"	106 29 50	18.6 lbs.	9.06	5.71	2.76	6.50	4.75	4 x 0.75
DN65 2½"	106 29 51	31.7 lbs.	11.4	7.4	4.33	7.28	5.50	4 x 0.75
DN80 3"	106 29 52	39.8 lbs.	12.2	8.0	4.33	7.83	6.0	4 x 0.75
DN100 4"	106 29 53	61.3 lbs.	13.8	9.45	6.3	8.66	7.50	8 x 0.75
DN125 5"	106 29 54	89.9 lbs.	15.8	11.1	6.3	9.84	8.50	8 x 0.88
DN150 6"	106 29 55	113.9 lbs.	18.9	11.2	6.3	11.2	9.50	8 x 0.88
DN200 8"	106 29 56	361.9 lbs.	23.6	18.4	11.8	13.4	11.75	8 x 0.88
DN250 10"	106 29 57	431.2 lbs.	28.7	18.9	11.8	15.9	14.25	12 x 1.0
DN300 12"	106 29 58	581.9 lbs.	33.5	20.3	11.8	18.1	17.0	12 x 1.0
DN350 14"	106 29 59	770.0 lbs.	38.6	22.1	11.8	20.5	18.75	16 x 1.12

### Installation Notes

When installing the valves, it is to be observed that the direction of flow conforms with the arrow on the valve body and that the valve is installed with a minimum of 3 D (3 x nominal pipe diameter) of straight pipe at the valve inlet and of 2 D (2 x nominal pipe diameter) of straight pipe at the valve outlet.

The double regulating and commissioning valves may be installed in either the supply or the return pipe.



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### Product Specification

Oventrop double regulating and commissioning valves “Hydrocontrol F” are installed in the pipework of central hot water heating and cooling systems and serve to achieve a hydronic balance between the various circuits of the system.

The balance is achieved by a presetting with memory position. The calculated flow rate or pressure loss for each individual pipe can be preset centrally and regulated precisely. The required values of presetting can be obtained from the flow charts. All intermediate values are infinitely adjustable. The selected presetting can be read off two scales. The Oventrop double regulating and commissioning valves have two threaded ports which are equipped with the pressure test points for measuring the differential pressure.

### Specifications:

- Maximum working temperature: 300°F
- Maximum working pressure: 235 psi
- Temperature range: 15°F to 300°F
- Measuring Accuracy: +/- 5%

Valve bodies manufactured from cast iron to ASME/ANSI B16.5 and flanged to 125 lb. standards. Valve body made of cast iron (GG 25 EN-GJL-250), hole circle of the flanged connection according to ANSI 150.

- Bonnet, stem and disc made of bronze/dezincification resistant brass.
- Disc with PTFE seal.
- Double EPDM O-ring stem seal.

**Hydrocontrol F—Flanged Connection—¾” to 12” valves  
Cv Values for Various Handwheel Settings**

Presetting or Handwheel Turns	¾”	1”	1¼”	1½”	2”	2½”	3”	4”	5”	6”	8”	10”	12”
0.5	0.26	0.97	0.97	1.94	3.83	2.21	2.67	3.96	6.40	6.50	-	-	-
1.0	0.49	1.55	2.01	3.80	6.70	4.19	5.12	9.94	14.48	17.70	-	-	-
1.5	0.73	2.13	3.12	5.55	8.42	6.51	8.14	16.28	22.56	29.37	-	-	-
2.0	0.97	2.72	4.22	7.21	11.10	11.63	13.78	21.51	30.93	41.00	56.86	81.4	232.56
2.5	1.21	3.29	5.33	8.59	13.45	17.44	21.69	27.91	40.41	62.70	72.09	98.84	290.70
3.0	1.45	3.86	6.43	10.10	15.59	27.91	30.35	41.16	55.52	110.49	97.67	127.91	360.47
3.5	1.79	4.63	7.57	11.59	18.09	39.53	40.70	60.47	73.66	157.50	132.56	174.42	441.86
4.0	2.33	5.51	8.67	13.23	21.33	50.58	52.03	83.72	94.24	194.33	175.58	226.74	558.14
4.5	2.95	6.51	9.85	14.99	23.90	60.47	64.19	108.14	120.41	236.80	239.53	313.95	662.79
5.0	3.59	7.72	10.99	16.87	26.40	70.93	75.12	130.23	149.13	277.80	302.67	413.95	767.44
5.5	4.22	8.65	12.33	19.33	28.84	81.41	87.73	153.29	184.53	316.74	372.09	511.63	872.09
6.0	4.85	9.19	13.60	22.24	31.26	90.70	101.16	172.09	215.47	349.30	445.35	606.98	982.56
6.5	5.30	9.53	14.90	24.30	32.92	98.84	113.43	190.73	253.55	379.88	555.58	705.81	1069.77
7.0	5.55	9.74	15.87	25.93	34.51	104.65	124.13	208.15	283.90	413.49	592.44	793.02	1151.16
7.5	-	-	16.63	27.29	35.91	109.88	133.14	220.98	311.80	444.19	650.00	883.72	1244.19
8.0	-	-	17.28	28.50	37.21	113.95	142.09	233.72	340.70	470.12	718.60	976.74	1325.58
8.5	-	-	17.93	29.26	38.44	-	-	-	-	-	767.44	1034.88	1406.98
9.0	-	-	18.57	29.97	39.60	-	-	-	-	-	842.44	1084.88	1500.00
9.5	-	-	19.22	30.63	40.70	-	-	-	-	-	881.98	1139.53	1569.77
10.0	-	-	19.86	31.26	41.86	-	-	-	-	-	894.19	1195.35	1651.16
10.5	-	-	-	-	-	-	-	-	-	-	906.98	1255.81	1720.93
11.0	-	-	-	-	-	-	-	-	-	-	918.60	1302.33	1779.07
11.5	-	-	-	-	-	-	-	-	-	-	931.86	1348.84	1825.58
12.0	-	-	-	-	-	-	-	-	-	-	947.09	1395.35	1860.47

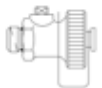
**“Hydrocontrol” Valve Accessories**



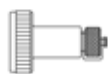
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Item 106 02 81



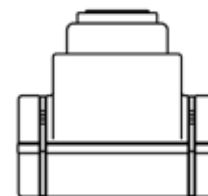
Extension piece for pressure test points  
80mm Item 106 02 95



Fill and drain ball valve ¼”  
Item 106 01 91



Measuring adapter  
for fill and drain ball valve  
Item 106 02 98



Insulation shell  
for “Hydrocontrol F” & “G”

Size	Item no.
DN20 ¾”	106 25 81
DN25 1”	106 25 82
DN32 1¼”	106 25 83
DN40 1½”	106 25 84
DN50 2”	106 25 85
DN65 2½”	106 25 86
DN80 3”	106 25 87
DN100 4”	106 25 88
DN125 5”	106 25 89
DN150 6”	106 25 90

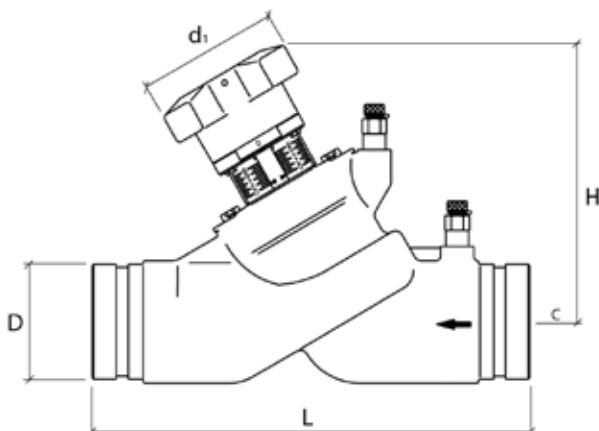


Flow meter  
OV-DMC 2  
Item 106 91 77

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# oventrop

## “Hydrocontrol G” Cast Iron Double Regulating and Commissioning Valves Grooved Connection 2½” - 12” (DN 65 - DN 300)



Dimensions in Inches

Size	Item no.	Weight	L	H	D	d1
DN65 2½"	106 30 51	19.6 lbs	11.4	7.4	2.9	4.3
DN80 3"	106 30 52	27.8 lbs	12.2	8.0	3.5	4.3
DN100 4"	106 30 53	45.2 lbs	13.8	9.45	4.5	6.3
DN125 5"	106 30 54	70.0 lbs	15.8	11.1	5.6	6.3
DN150 6"	106 30 55	95.7 lbs	18.9	11.2	6.6	6.3
DN200 8"	106 30 56	255.2 lbs	23.6	18.4	8.6	11.8
DN250 10"	106 30 57	377.3 lbs	28.7	18.9	10.8	11.8
DN300 12"	106 30 58	520.3 lbs	33.5	20.3	12.9	11.8

### Installation Notes

When installing the valves, it is to be observed that the direction of flow conforms with the arrow on the valve body and that the valve is installed with a minimum of 3 D (3 x nominal pipe diameter) of straight pipe at the valve inlet and of 2 D (2 x nominal pipe diameter) of straight pipe at the valve outlet.

The double regulating and commissioning valves may be installed in either the supply or the return pipe.



### Product Specification

Oventrop double regulating and commissioning valves “Hydrocontrol G” are installed in the pipework of central hot water heating and cooling systems and serve to achieve a hydronic balance between the various circuits of the system.

The balance is achieved by a presetting with memory position. The calculated flow rate or pressure loss for each individual pipe can be preset centrally and regulated precisely. The required values of presetting can be obtained from the flow charts. All intermediate values are infinitely adjustable. The selected presetting can be read off two scales. The Oventrop double regulating and commissioning valves have two threaded ports which are equipped with the pressure test points for measuring the differential pressure.

#### Specifications:

Maximum working temperature: 300°F  
Maximum working pressure: 300 psi  
Temperature range: 15°F to 300°F  
Measuring Accuracy: +/- 5%

Groove connections for couplings.

Valve bodies manufactured from cast iron to ASME/ANSI B16.5 and flanged to 125 lb. standards. Valve body made of cast iron (GG 25 EN-GJL-250), hole circle of the flanged connection according to ANSI 150.

Bonnet, stem and disc made of bronze/dezincification resistant brass.  
Disc with PTFE seal.  
Double EPDM O-ring stem seal.

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3-HydrocontrolG-S-021611

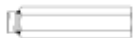
**“Hydrocontrol G”—Grooved Connection—¾” to 12” valves  
Cv Values for Various Handwheel Settings**

Presetting or Handwheel Turns	2½”	3”	4”	5”	6”	8”	10”	12”
0.5	2.21	2.67	3.96	6.40	6.50	-	-	-
1.0	4.19	5.12	9.94	14.48	17.70	-	-	-
1.5	6.51	8.14	16.28	22.56	29.37	-	-	-
2.0	11.63	13.78	21.51	30.93	41.00	56.86	81.4	232.56
2.5	17.44	21.69	27.91	40.41	62.70	72.09	98.84	290.70
3.0	27.91	30.35	41.16	55.52	110.49	97.67	127.91	360.47
3.5	39.53	40.70	60.47	73.66	157.50	132.56	174.42	441.86
4.0	50.58	52.03	83.72	94.24	194.33	175.58	226.74	558.14
4.5	60.47	64.19	108.14	120.41	236.80	239.53	313.95	662.79
5.0	70.93	75.12	130.23	149.13	277.80	302.67	413.95	767.44
5.5	81.41	87.73	153.29	184.53	316.74	372.09	511.63	872.09
6.0	90.70	101.16	172.09	215.47	349.30	445.35	606.98	982.56
6.5	98.84	113.43	190.73	253.55	379.88	555.58	705.81	1069.77
7.0	104.65	124.13	208.15	283.90	413.49	592.44	793.02	1151.16
7.5	109.88	133.14	220.98	311.80	444.19	650.00	883.72	1244.19
8.0	113.95	142.09	233.72	340.70	470.12	718.60	976.74	1325.58
8.5	-	-	-	-	-	767.44	1034.88	1406.98
9.0	-	-	-	-	-	842.44	1084.88	1500.00
9.5	-	-	-	-	-	881.98	1139.53	1569.77
10.0	-	-	-	-	-	894.19	1195.35	1651.16
10.5	-	-	-	-	-	906.98	1255.81	1720.93
11.0	-	-	-	-	-	918.60	1302.33	1779.07
11.5	-	-	-	-	-	931.86	1348.84	1825.58
12.0	-	-	-	-	-	947.09	1395.35	1860.47

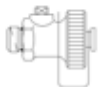
**“Hydrocontrol” Valve Accessories**



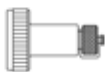
Set of 2 pressure test points  
Item 106 02 81



Extension piece for pressure test points  
80mm Item 106 02 95



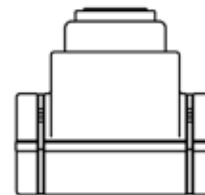
Fill and drain ball valve ¼”  
Item 106 01 91



Measuring adapter  
for fill and drain ball valve  
Item 106 02 98



Flow meter  
OV-DMC 2  
Item 106 91 77



Insulation shell  
for “Hydrocontrol F” & “G”

Size	Item no.
DN65 2½”	106 25 86
DN80 3”	106 25 87
DN100 4”	106 25 88
DN125 5”	106 25 89
DN150 6”	106 25 90

Oventrop Corporation  
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# TYPICAL SPECIFICATIONS

## BALANCING VALVES

### ½” (DN15) – 12” (DN300)

**1.0 General**—Furnish and install Oventrop balancing valves, as shown on the drawings and/or schedules, to ensure the accurate balancing of all flows in the hydronic heating and cooling systems. Water balancing shall meet the specified flows with a maximum tolerance of +/- 5%. Upon completion, the balancing shall be documented in a report, which shall be submitted to the engineer for approval.

#### **2.0 Balancing Valve Characteristics**

2.1 All balancing valves shall be of the “Y” pattern globe style design. All balancing valves must offer a minimum of seven (7) full rotations of the handwheel for positioning accuracy of +/- 1%.

2.2 All balancing valves shall have documented measuring accuracy of +/- 5% within the normal setting range of the valve.

2.3 All balancing valves shall have integral self-sealing ports for measuring differential pressure and fluid temperature using standard pressure and temperature test probes. Test ports shall be located in line with the handwheel, on the same end of the valve and shall be removable to function as integral drain ports.

2.4 All balancing valves must offer 100% positive, leak-proof shutoff against the same fluid temperature and pressure ratings as the body. Minimum body ratings are 232 psi (PN16) at 300 degrees F (150 C).

2.5 All balancing valves must include a hidden memory stop to ensure return to the balanced position after shutoff. An enclosed anti-tamper lock feature shall prevent handwheel repositioning after setting.

2.6 All balancing valves ½” (DN15) through 12” (DN300) shall have digital/vernier adjustment for precise readout.

2.7 All balancing valves shall be manufactured by the company complying with international quality standard ISO 9001.

2.8 (Option) All balancing valves in sizes ½” (DN15) through 8” (DN200) shall be capable of being enclosed within factory contoured insulations with ASTM flame spread of 25 or less and a rating of E-84. Insulation “R” value shall be 4.5.

2.9 (Option) A valved hose bib fitting shall be available for installation on all ½” (DN15) through 12” (DN300) sizes. The hose bib fitting shall be capable of being placed on either side of the valve plug to accommodate draining and filling of horizontal or vertical coils.

**3.0 Material Characteristics**—All balancing valves in sizes ½” (DN15) through 2” (DN50) shall have bronze bodies and either solder or NPT threaded connections to match the piping system. Valve bodies in sizes 2½” (DN65) through 12” (DN300) shall be manufactured from cast iron equivalent to ASME/ANSI B16.5 and shall be flanged to 125 lb. standards. All wetted brass parts shall be alloyed to resist dezincification. No dielectric fittings shall be required for installation.

**4.0 Valve Sizing**—All balancing valves shall be sized to perform in a normal operation range between 25% and 100% of the full open position, at a minimum differential pressure between 1 to 3 ft. WG.

**5.0 Manufacturer**—Oventrop Corporation.

**6.0 Warranty**—Valves shall be free from material and workmanship defects for a period of 5 years from date of installation or from 5½ years from date of shipment, whichever comes first.

*Oventrop reserves the right to make revisions to its products, their specifications, this bulletin, and related information without notice.*

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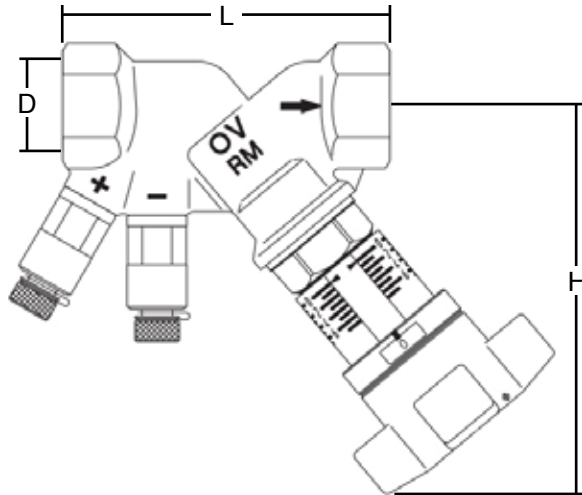
PO Box 789 · 29 Kripes Road · East Granby, Connecticut 06026 · Phone 860-413-9173 · Fax 860-413-9436

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# oventrop

## “Hydrocontrol MTR” Bronze Double Regulating and Commissioning Valves Thread Connection 1/2”-LF - 2” (DN 15LF - DN 50)

Job Name: _____	Submitted by: _____	Date: _____
_____	Spec Section: _____	_____
Job Location: _____	Engineer/Architect: _____	_____
_____	Approval: _____	Date: _____



### Product Specification

Oventrop double regulating and commissioning valves “Hydrocontrol MTR” are installed in the pipework of central hot water heating and cooling systems and serve to achieve a hydronic balance between the various circuits of the system.

The balance is achieved by a presetting with memory position. The calculated flow rate or pressure loss for each individual pipe can be preset centrally and regulated precisely. The required values of presetting can be obtained from the flow charts. All intermediate values are infinitely adjustable. The selected presetting can be read off two scales. The Oventrop double regulating and commissioning valves have two threaded ports which are equipped with the pressure test points for measuring the differential pressure across an integrated venturi.

### Specifications:

Maximum working temperature: 300 °F  
Maximum working pressure: 360 psi

Bonnet, stem and disc made of bronze/dezincification resistant brass.  
Disc with PTFE seal.  
Double EPDM O-ring stem seal.

Complies with NSF-372: contains less than 0.25% lead content by weight on wetted surfaces. AB1953; Vermont S152; Maryland House Bill 372 [Statute 12-605]. ANSI/NSF-61 Annex G Compliant.

### Dimensions in Inches

Size	Connection	Item no.	Cv	D	L	H
DN15LF ½"	FNPT	166 04 64	0.64	½"	3.4	4.5
DN15MF ½"	FNPT	166 04 34	1.39	½"	3.4	4.5
DN15 ½"	FNPT	166 04 04	2.55	½"	3.4	4.5
DN20 ¾"	FNPT	166 04 06	4.93	¾"	3.8	4.6
DN25 1"	FNPT	166 04 08	9.98	1"	4.0	4.7
DN32 1¼"	FNPT	166 04 10	18.44	1-¼"	4.7	5.3
DN40 1½"	FNPT	166 04 12	27.14	1-½"	5.2	5.4
DN50 2"	FNPT	166 04 16	54.52	2"	6.4	5.8

Size	Connection	Item no.	Minimum Flow [GPM]	Maximum Flow [GPM]
DN15LF ½"	FNPT	166 04 64	0.2	2.4
DN15MF ½"	FNPT	166 04 34	0.5	5
DN15 ½"	FNPT	166 04 04	1	5
DN20 ¾"	FNPT	166 04 06	1	7
DN25 1"	FNPT	166 04 08	3.8	12
DN32 1¼"	FNPT	166 04 10	7	25
DN40 1½"	FNPT	166 04 12	10	35
DN50 2"	FNPT	166 04 16	20	50

$$GPM = \frac{\sqrt{PSID}}{Cv}$$

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3-HydrocontroMTR-S-140828



Pressure drop [PSI] measured at the valve  
for select flow rates [GPM]

Flow rate - GPM	DN15LF 1/2"	DN15MF 1/2"	DN15 1/2"	DN20 3/4"	DN25 1"	DN32 1 1/4"	DN40 1 1/2"	DN50 2"
0.25	0.15							
0.33	0.27							
0.5	0.61	0.13						
0.75	1.38	0.29						
1	2.46	0.52	0.15					
1.25	3.84	0.81	0.24					
1.5	5.53	1.16	0.35					
1.75	7.52	1.58	0.47	0.13				
2	9.83	2.06	0.61	0.16				
2.5		3.23	0.96	0.26				
3		4.64	1.38	0.37				
4		8.26	2.46	0.66	0.16			
5		12.90	3.84	1.03	0.25			
6			5.53	1.48	0.36			
7			7.52	2.02	0.49	0.14		
8			9.83	2.63	0.64	0.19		
9			12.44	3.33	0.81	0.24		
10				4.11	1.00	0.29	0.14	
12				5.92	1.45	0.42	0.20	
15				9.26	2.26	0.66	0.31	
20					4.02	1.18	0.54	
25					6.28	1.84	0.85	0.21
30					9.04	2.65	1.22	0.30
35					12.31	3.60	1.66	0.41
40						4.70	2.17	0.54
45						5.95	2.75	0.68
50						7.35	3.39	0.84

### “Hydrocontrol” Valve Accessories



Set of two pressure test points  
Item 106 02 81



Extension piece for pressure test points  
80mm Item 106 02 95



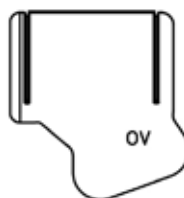
Fill and drain ball valve 1/4"  
Item 106 01 91



Measuring adapter  
for fill-and-drain ball valve  
Item 106 02 98



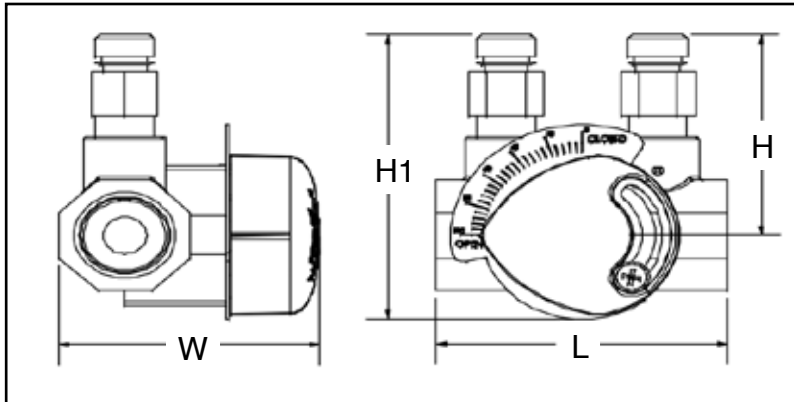
Flow meter  
OV-DMC 2  
Item 106 91 77



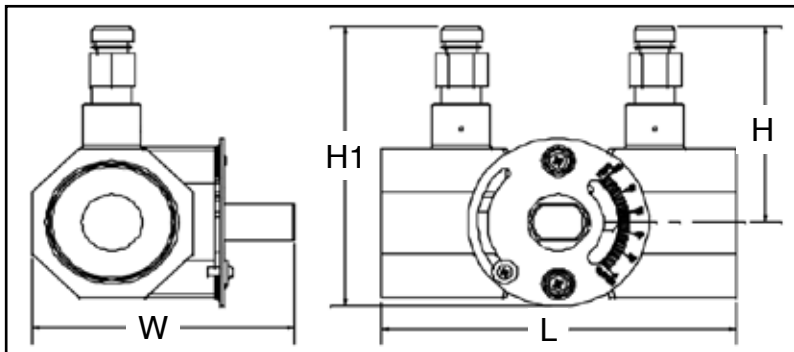
Insulation Shell  
for “Hydrocontrol MTR”

Size	Item no.
DN15 1/2"	106 00 81
DN20 3/4"	106 00 82
DN25 1"	106 00 83
DN32 1 1/4"	106 00 84
DN40 1 1/2"	106 00 85
DN50 2"	106 00 86

Job Name: _____	Submitted by: _____	Date: _____
	Spec Section: _____	
Job Location: _____	Engineer/Architect: _____	
	Approval: _____	Date: _____



1/2” - 1”



1 1/4” - 2”



**Specification**

The low lead CS balancing valve is a ball valve style valve made of a low lead brass body and a nickel plated brass ball. It is available in sizes from 1/2” to 2” with either FNPT or solder connections. The valve comes standard with two pressure test ports.

Maximum working temperature: 250°F  
Maximum working pressure: 400 psi

Item:

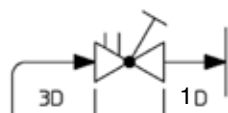
1/2” FNPT	1660904
3/4” FNPT	1660906
1” FNPT	1660908
1-1/4” FNPT	1660910
1-1/2” FNPT	1660912
2” FNPT	1660916
1/2” SWT	1660951
3/4” SWT	1660952
1” SWT	1660953
1-1/4” SWT	1660954
1-1/2” SWT	1660955
2” SWT	1660956

**Coil Kit Dimensions in Inches**

Dimension	1/2”	3/4”	1”	1 1/4”	1 1/2”	2”
<b>L - FNPT</b>	2.9	3.1	3.8	4.4	4.4	5.1
<b>L - SWT</b>	2.9	3.5	4.3	4.9	5.2	6.3
<b>H</b>	2.0	2.1	2.2	2.4	2.5	2.8
<b>H1</b>	2.9	3.0	3.0	3.5	3.6	4.2
<b>W</b>	2.3	2.3	2.8	3.3	3.5	4.1
<b>Cv</b>	1.6	3.1	8.1	17.0	27.0	40.0

**Installation Notes**

When installing the balancing valve, it is to be observed that the direction of flow conforms with the arrow on the valve body and that the valve is installed with a minimum of 3 D (3 x nominal pipe diameter) of straight pipe at the valve inlet and of 1 D (1 x nominal pipe diameter) of straight pipe at the valve outlet.



Complies with NSF-372: contains less than 0.25% lead content by weight on wetted surfaces. AB1953; Vermont S152; Maryland House Bill 372 [Statute 12-605]. ANSI/NSF-61 Annex G Compliant.

Recommended flow range

“Low lead CS” Manual Balancing Valve		
Size	Recommended Flow range [GPM]	Connection ends
1/2”	0.7 - 3.0	FNPT x FNPT Sweat x Sweat
3/4”	1.3 - 5.9	
1”	3.4 - 15.4	
1 1/4”	7.2 - 32.3	
1 1/2”	11.5 - 51.3	
2”	17.0 - 76.0	



Cv table for various settings

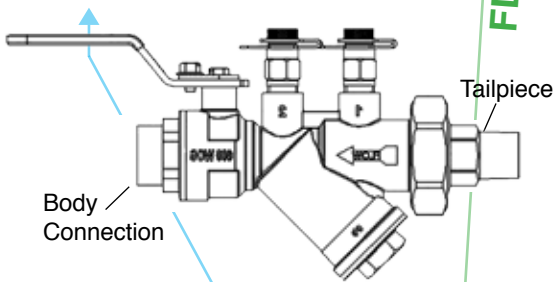
Percent open	1/2”	3/4”	1”	1 1/4”	1 1/2”	2”
20	-	-	-	1.4	2.0	1.8
30	-	0.6	1.0	3.7	6.9	9
40	0.7	1.4	1.7	7.4	11	17
50	1.2	2.3	4.4	12	18	27
60	1.7	3.2	6.2	17	28	44
70	2.5	4.7	9.2	25	40	64
80	-	-	-	37	61	90
100	5.4	10.5	28	58	90	140

Size	Body Connection	Item Number
1/2"	FNPT	810 11 -- -A --
1/2"	SWT	810 12 -- -A --
3/4"	FNPT	810 21 -- -A --
3/4"	SWT	810 22 -- -A --
1" A	FNPT	810 31 -- -A --
1" A	SWT	810 32 -- -A --
1" B	FNPT	810 31 -- -B --
1" B	SWT	810 32 -- -B --
1 1/4"	FNPT	810 41 -- -C --
1 1/4"	SWT	810 42 -- -C --
1 1/2" C	FNPT	810 51 -- -C --
1 1/2" C	SWT	810 52 -- -C --
1 1/2" D	FNPT	810 51 -- -D --
1 1/2" D	SWT	810 52 -- -D --
2"	FNPT	810 61 -- -E --
2"	SWT	810 62 -- -E --

Standard Available Flow Rates

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

FLOW RATE



**Example valve selection:**  
 9.0 GPM flow rate  
 for 1 1/4" SWT valve  
 with 1" SWT tailpiece  
 Item number - 810 4232 - CE

Dynamic balancing valve tailpiece designations

1/2" Body Tailpieces		3/4" Body Tailpieces		1" Body Tailpieces		1 1/4" Body Tailpieces		1 1/2" Body Tailpieces		2" Body Tailpieces	
Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection
11	1/2" FNPT	11	1/2" FNPT	13*	1/2" MNPT *	31	1" FNPT	41	1 1/4" FNPT	51	1 1/2" FNPT
12	1/2" SWT	12	1/2" SWT	22*	3/4" SWT *	32	1" SWT	42	1 1/4" SWT	52	1 1/2" SWT
13	1/2" MNPT	13	1/2" MNPT	23*	3/4" MNPT *	33	1" MNPT	43	1 1/4" MNPT	53	1 1/2" MNPT
		21	3/4" FNPT	31	1" FNPT	41	1 1/4" FNPT	51	1 1/2" FNPT	61	2" FNPT
		22	3/4" SWT	32	1" SWT	42	1 1/4" SWT	52	1 1/2" SWT	62	2" SWT
		23	3/4" MNPT	33	1" MNPT	43	1 1/4" MNPT	53	1 1/2" MNPT	63	2" MNPT

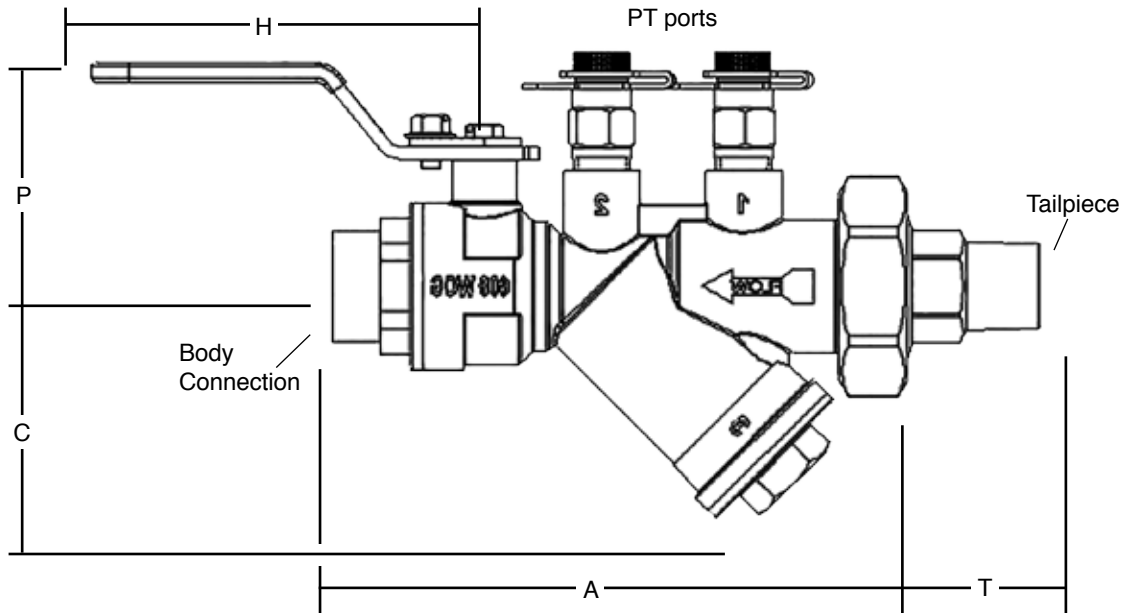
**\* For 1" A body ONLY.**

# oventrop

Dynamic balancing valve  
1/2" - 2"

Job Name: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Date: \_\_\_\_\_  
 \_\_\_\_\_ Spec Section: \_\_\_\_\_

Job Location: \_\_\_\_\_ Engineer/Architect: \_\_\_\_\_  
 \_\_\_\_\_ Approval: \_\_\_\_\_ Date: \_\_\_\_\_



**Product Specification:**

All dimensions are in inches

Body Size	1/2"	3/4"	1" A	1" B	1 1/4"	1 1/2" C	1 1/2" D	2"
A - FNPT	4.96	4.97	5.11	6.98	7.06	7.06	9.59	9.56
A - SWT	4.95	5.09	5.25	7.18	7.24	7.37	9.91	10.4
C	2.15		3.61		3.91	3.92		
H	3.66		5.03		5.66	5.65		
P	2.08		2.44		2.83			

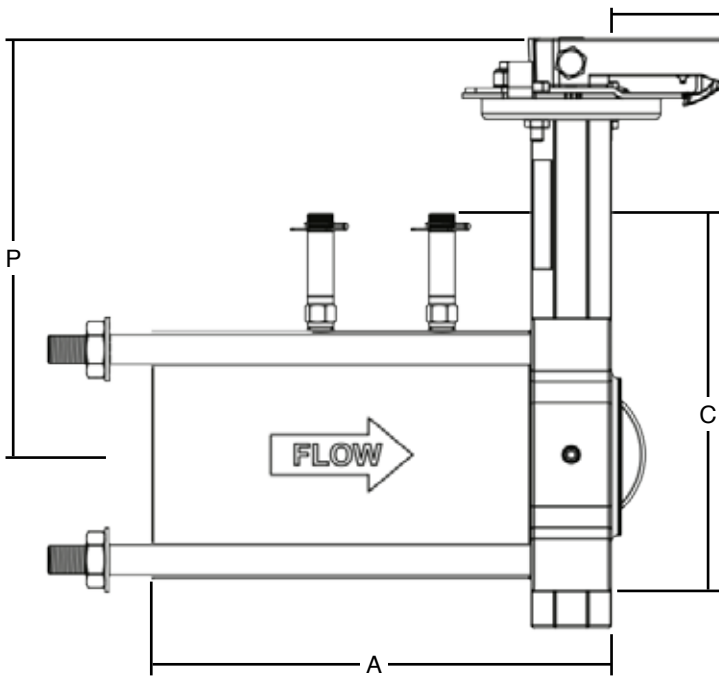
Oventrop dynamic balancing valves are design to maintain a set maximum flow rate over a large differential pressure range. The flow control mechanism is a spring loaded cartridge insert. This prevents over flow conditions at the valve.

Control Range: 2 - 32 PSID  
 Accuracy: +/- 5%  
 Maximum Working Pressure: 600 PSI  
 Maximum Temperature: 250 °F  
 Start-Up Head Loss: 5 fthd

1/2" Body Tailpieces		3/4" Body Tailpieces		1" Body Tailpieces		1 1/4" Body Tailpieces		1 1/2" Body Tailpieces		2" Body Tailpieces	
T	Connection	T	Connection	T	Connection	T	Connection	T	Connection	T	Connection
0.83	1/2" FNPT	0.83	1/2" FNPT	1.5	1/2" MNPT	0.98	1" FNPT	1.0	1 1/4" FNPT	1.98	1 1/2" FNPT
0.83	1/2" SWT	0.87	1/2" SWT	0.98	3/4" SWT	1.41	1" SWT	1.43	1 1/4" SWT	1.59	1 1/2" SWT
1.5	1/2" MNPT	1.5	1/2" MNPT	1.56	3/4" MNPT	1.8	1" MNPT	1.8	1 1/4" MNPT	1.98	1 1/2" MNPT
		0.83	3/4" FNPT	1.4	1" FNPT	1.0	1 1/4" FNPT	1.75	1 1/2" FNPT	1.8	2" FNPT
		0.98	3/4" SWT	1.0	1" SWT	1.43	1 1/4" SWT	1.17	1 1/2" SWT	1.5	2" SWT
		1.56	3/4" MNPT	1.75	1" MNPT	1.8	1 1/4" MNPT	1.8	1 1/2" MNPT	1.98	2" MNPT
				0.98	High Flow 1" FNPT						
				1.41	High Flow 1" SWT						
				1.8	High Flow 1" MNPT						

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Job Name:	Submitted by:	Date:
	Spec Section:	
Job Location:	Engineer/Architect:	
	Approval:	Date:



**Specification**

The Series 810 is a wafer type Automatic Pressure Independent Flow Limiting Device with a full flange face. The Series 810 is designed to fit between two ANSI Class 125 flanges. The Series 810 is supplied with one or more stainless steel flow limiting cartridges that can be removed for cleaning, inspection, and, if necessary, cartridge exchange. The Series 810 has two pressure/temperature ports. The Series 810 has a butterfly valve for positive shutoff.

Maximum working temperature: 250°F  
Maximum working pressure: 600 WOG / CWP

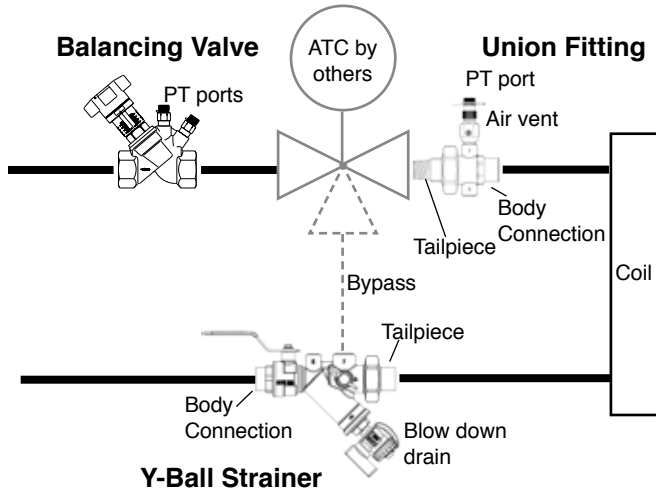
**Valve Dimensions in Inches**

Valve Sizes and Dimensions					
Dimensions	Valve Body Size				
	2 1/2"	3"	4"	5"	6"
A	7.5	10.6	11.7	12.3	12.4
C	7.0	7.5	9.0	10.0	11.0
H	9.0				
P	7.2	7.6	8.4	8.9	9.6
# of Flow Cartridges	1	1	2	3	4
Maximum flow rate [GPM] at 2 - 32 PSID	80	135	270	405	540
Maximum flow rate [GPM] at 5 - 60 PSID	120	170	340	510	680
Weight [lbs]	23	34	53	86	103
Item number	8102951	8102952	8102953	8102954	8102955

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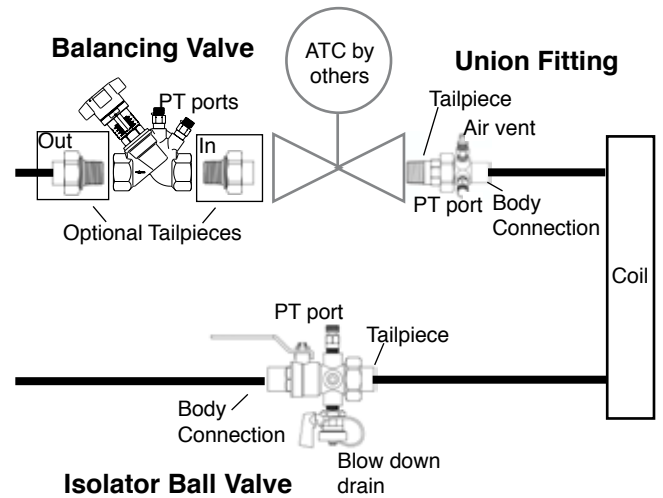
### “Hydrocontrol RY”

- “Hydrocontrol R” manual balancing valve
- Union fitting with air vent and PT port
- Y-Ball strainer with PT, bypass, and drain ports



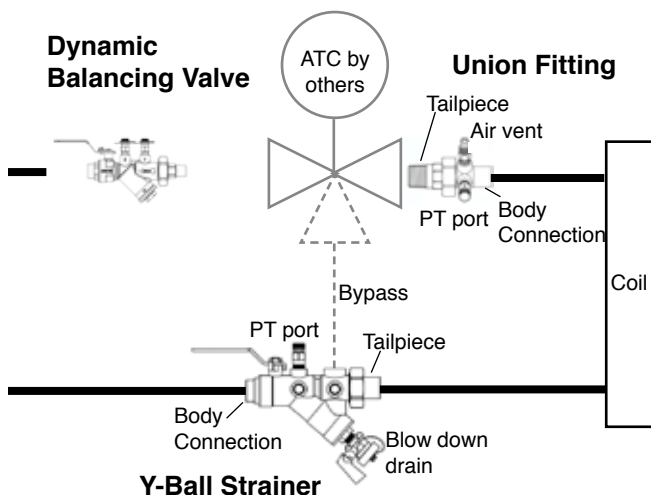
### “Hydrocontrol RI”

- “Hydrocontrol R” manual balancing valve
- Union fitting with air vent and PT port
- Isolator ball valve with PT and drain ports



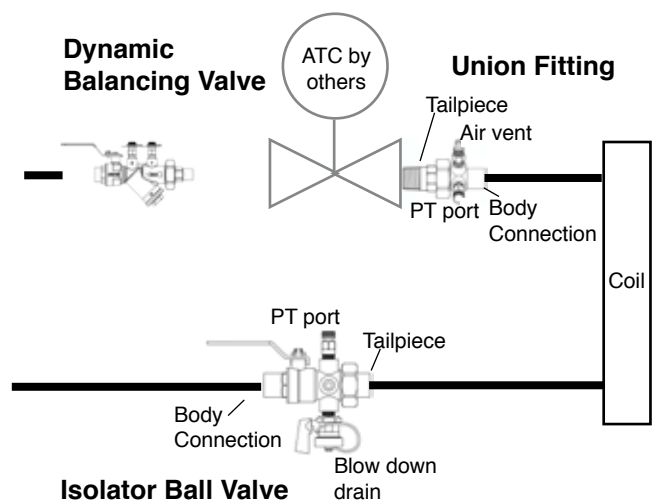
### “Hydrocontrol AY”

- Dynamic balancing valve
- Union fitting with air vent and PT port
- Y-Ball strainer with PT, bypass, and drain ports



### “Hydrocontrol AI”

- Dynamic balancing valve
- Union fitting with air vent and PT port
- Isolator ball valve with PT and drain ports



Job Name: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Date: \_\_\_\_\_

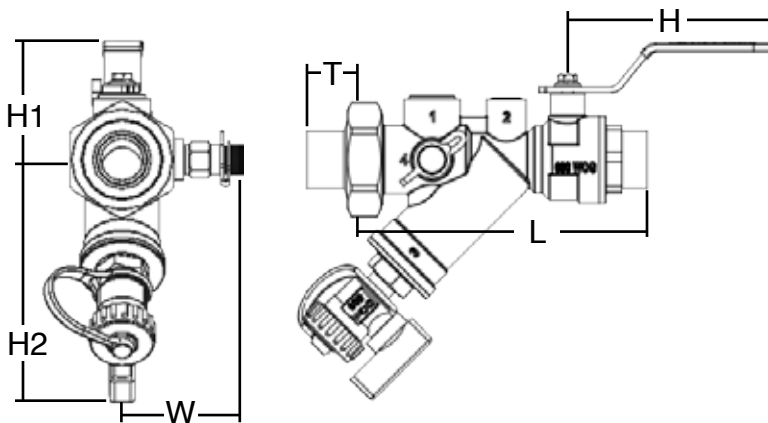
Spec Section: \_\_\_\_\_

Job Location: \_\_\_\_\_

Engineer/Architect: \_\_\_\_\_

Approval: \_\_\_\_\_

Date: \_\_\_\_\_



**Specification**

Oventrop strainer coil kit is an assembly for the supply side of a fan coil unit or air handler. Each assembly consists of a y-strainer, a ball valve, a PT port, and a drain. A union connection at the strainer is male, female, or sweat. A sweat or female connection is available on the ball valve end.

Oblique pattern strainer for vertical and horizontal installation. Bronze body, with wire basket made of stainless steel. Replaceable wire baskets. Wire basket: 20 mesh

Ball valve made of brass, ball made of chrome plated brass, PTFE seats, EPDM O-ring seal.

Fill and drain valve, with ball valve. Ball made of chrome plated brass, PTFE seats, O-ring seal.

Maximum working temperature: 250°F

Maximum working pressure: 600 PSI / CWP

**Coil Kit Dimensions in Inches**

**Strainer Kit Sizes and Dimensions**

Dimensions		Strainer Body Size					
		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
L	FNPT	4.16	4.97	5.11	6.63	6.63	9.56
	SWT	4.25	5.09	5.25	6.8	6.93	10.35
T	1/2" Tailpiece Connection	FNPT	0.83	0.83	-	-	-
		MNPT	1.5	1.5	1.5	2.13	-
		SWT	0.83	0.87	-	-	-
	3/4" Tailpiece Connection	FNPT	-	0.83	-	-	-
		MNPT	-	1.56	1.56	1.8	1.8
		SWT	-	0.98	0.98	-	-
	1" Tailpiece Connection	FNPT	-	-	1.4	-	-
		MNPT	-	-	1.75	1.8	1.8
		SWT	-	-	1.0	-	-
	1 1/4" Tailpiece Connection	FNPT	-	-	-	1.0	-
		MNPT	-	-	-	1.8	1.8
		SWT	-	-	-	1.43	-
	1 1/2" Tailpiece Connection	FNPT	-	-	-	-	1.75
		MNPT	-	-	-	-	1.8
		SWT	-	-	-	-	1.17
	2" Tailpiece Connection	FNPT	-	-	-	-	-
		MNPT	-	-	-	-	-
		SWT	-	-	-	-	-
H		3.66			5.03		5.66
H1		1.98	2.08		2.44		2.83
H2		3.41	3.88		5.62		5.31
W		1.83	2.06		2.43		2.74
Bypass port		1/2"	1/2"	1/2"	3/4"	3/4"	1 1/4"

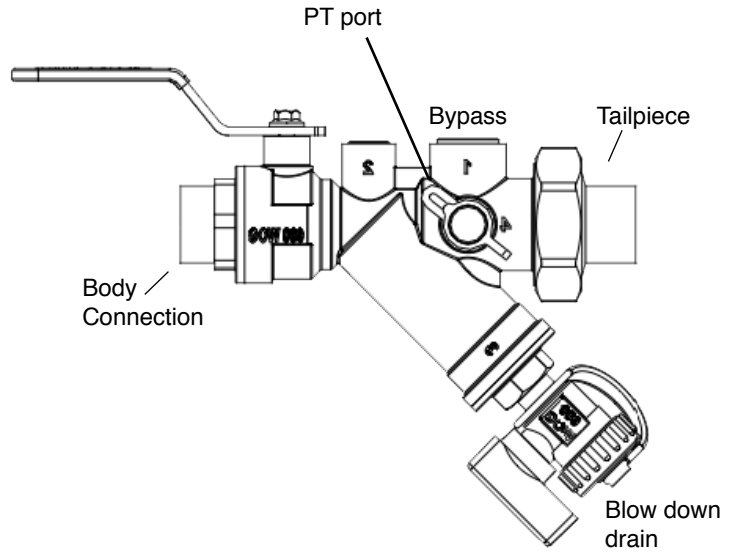


Size	Item Number
1/2"	801 1 _ _ _ _
3/4"	801 2 _ _ _ _
1"	801 3 _ _ _ _
1 1/4"	801 4 _ _ _ _
1 1/2"	801 5 _ _ _ _
2"	801 6 _ _ _ _

Example valve selection:

1 1/4" SWT valve with 3/4" MNPT tailpiece  
Item number - **801 4223**

for SWT body valves			
Item	Item	Connection	Item
1/2" MNPT	<b>4213</b>	1/2" MNPT	<b>5213</b>
3/4" MNPT	<b>4223</b>	3/4" MNPT	<b>5223</b>
1" MNPT	<b>4233</b>	1" MNPT	<b>5233</b>
1 1/4" FNPT	<b>4241</b>	1 1/4" FNPT	<b>5241</b>



### Y-Ball Strainers body and tailpiece designations for FNPT body valves

1/2" Body Tailpieces		3/4" Body Tailpieces		1" Body Tailpieces		1 1/4" Body Tailpieces		1 1/2" Body Tailpieces		2" Body Tailpieces	
Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection
<b>1111</b>	1/2" FNPT	<b>2111</b>	1/2" FNPT	<b>3113</b>	1/2" MNPT	<b>4113</b>	1/2" MNPT	<b>5123</b>	3/4" MNPT	<b>6133</b>	1" MNPT
<b>1112</b>	1/2" SWT	<b>2112</b>	1/2" SWT	<b>3122</b>	3/4" SWT	<b>4123</b>	3/4" MNPT	<b>5133</b>	1" MNPT	<b>6143</b>	1 1/4" MNPT
<b>1113</b>	1/2" MNPT	<b>2113</b>	1/2" MNPT	<b>3123</b>	3/4" MNPT	<b>4133</b>	1" MNPT	<b>5143</b>	1 1/4" MNPT	<b>6153</b>	1 1/2" MNPT
		<b>2121</b>	3/4" FNPT	<b>3131</b>	1" FNPT	<b>4141</b>	1 1/4" FNPT	<b>5151</b>	1 1/2" FNPT	<b>6161</b>	2" FNPT
		<b>2122</b>	3/4" SWT	<b>3132</b>	1" SWT	<b>4142</b>	1 1/4" SWT	<b>5152</b>	1 1/2" SWT	<b>6162</b>	2" SWT
		<b>2123</b>	3/4" MNPT	<b>3133</b>	1" MNPT	<b>4143</b>	1 1/4" MNPT	<b>5153</b>	1 1/2" MNPT	<b>6163</b>	2" MNPT

### Y-Ball Strainers body and tailpiece designations for SWT body valves

1/2" Body Tailpieces		3/4" Body Tailpieces		1" Body Tailpieces		1 1/4" Body Tailpieces		1 1/2" Body Tailpieces		2" Body Tailpieces	
Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection
<b>1211</b>	1/2" FNPT	<b>2211</b>	1/2" FNPT	<b>3213</b>	1/2" MNPT	<b>4213</b>	1/2" MNPT	<b>5223</b>	3/4" MNPT	<b>6233</b>	1" MNPT
<b>1212</b>	1/2" SWT	<b>2212</b>	1/2" SWT	<b>3222</b>	3/4" SWT	<b>4223</b>	3/4" MNPT	<b>5233</b>	1" MNPT	<b>6243</b>	1 1/4" MNPT
<b>1213</b>	1/2" MNPT	<b>2213</b>	1/2" MNPT	<b>3223</b>	3/4" MNPT	<b>4233</b>	1" MNPT	<b>5243</b>	1 1/4" MNPT	<b>6253</b>	1 1/2" MNPT
		<b>2221</b>	3/4" FNPT	<b>3231</b>	1" FNPT	<b>4241</b>	1 1/4" FNPT	<b>5251</b>	1 1/2" FNPT	<b>6261</b>	2" FNPT
		<b>2222</b>	3/4" SWT	<b>3232</b>	1" SWT	<b>4242</b>	1 1/4" SWT	<b>5252</b>	1 1/2" SWT	<b>6262</b>	2" SWT
		<b>2223</b>	3/4" MNPT	<b>3233</b>	1" MNPT	<b>4243</b>	1 1/4" MNPT	<b>5253</b>	1 1/2" MNPT	<b>6263</b>	2" MNPT

Job Name: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Date: \_\_\_\_\_

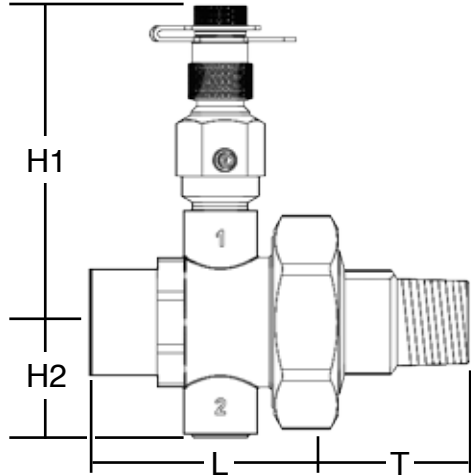
Spec Section: \_\_\_\_\_

Job Location: \_\_\_\_\_

Engineer/Architect: \_\_\_\_\_

Approval: \_\_\_\_\_

Date: \_\_\_\_\_



### Specification

Oventrop union for the return side of a fan coil unit or air handler. The fixed connection of the union is female or sweat. The union connection is available on the control valve side.

Union made of forged brass, O-ring seal for union  
The union has an air vent and a pressure test point

Maximum working temperature: 250°F  
Maximum working pressure: 600 psi / CWP

### Coil Kit Dimensions in Inches

#### Union Kit Sizes and Dimensions

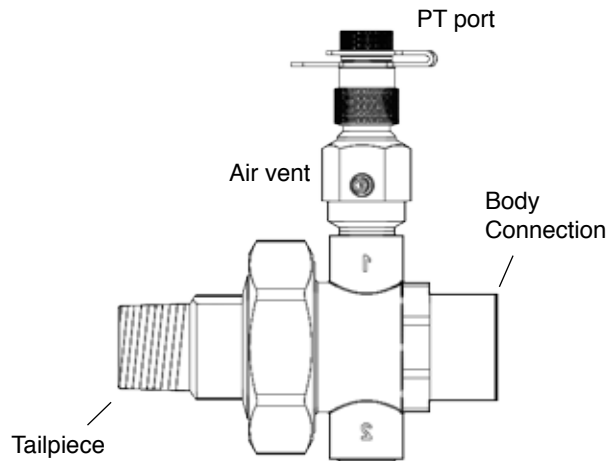
Dimensions		Union Body Size						
		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	
H1		2.78	3.02	3.02	3.39	3.39	3.7	
H2		0.87	1.11	1.11	1.49	1.49	1.8	
L	FNPT	1.99	2.04	2.15	2.39	2.39	2.49	
	SWT	1.88	2.12	2.28	2.56	2.69	3.03	
T	1/2" Union Connection	FNPT	0.83	0.83	-	-	-	-
		MNPT	1.5	1.5	1.5	2.13	-	-
		SWT	0.83	0.87	-	-	-	-
	3/4" Union Connection	FNPT	-	0.83	-	-	-	-
		MNPT	-	1.56	1.56	1.8	1.8	-
		SWT	-	0.98	0.98	-	-	-
	1" Union Connection	FNPT	-	-	1.4	-	-	-
		MNPT	-	-	1.75	1.8	1.8	2.51
		SWT	-	-	1.0	-	-	-
	1 1/4" Union Connection	FNPT	-	-	-	1.0	-	-
		MNPT	-	-	-	1.8	1.8	1.98
		SWT	-	-	-	1.43	-	-
	1 1/2" Union Connection	FNPT	-	-	-	-	1.75	-
		MNPT	-	-	-	-	1.8	1.98
		SWT	-	-	-	-	1.17	-
	2" Union Connection	FNPT	-	-	-	-	-	1.8
		MNPT	-	-	-	-	-	1.98
		SWT	-	-	-	-	-	1.5

Size	Item Number
1/2"	802 1 _ _ _ _
3/4"	802 2 _ _ _ _
1"	802 3 _ _ _ _
1 1/4"	802 4 _ _ _ _
1 1/2"	802 5 _ _ _ _
2"	802 6 _ _ _ _

Example valve selection:

1 1/4" SWT valve with 3/4" MNPT tailpiece  
Item number - **802 4223**

for SWT body valves			
Item	Connection	Item	Connection
4213	1/2" MNPT	4223	3/4" MNPT
4233	1" MNPT	4241	1 1/4" FNPT
4241	1 1/4" FNPT	4242	1 1/4" SWT



### Isolator body and tailpiece designations for FNPT body valves

1/2" Body Tailpieces		3/4" Body Tailpieces		1" Body Tailpieces		1 1/4" Body Tailpieces		1 1/2" Body Tailpieces		2" Body Tailpieces	
Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection
1111	1/2" FNPT	2111	1/2" FNPT	3113	1/2" MNPT	4113	1/2" MNPT	5123	3/4" MNPT	6133	1" MNPT
1112	1/2" SWT	2112	1/2" SWT	3122	3/4" SWT	4123	3/4" MNPT	5133	1" MNPT	6143	1 1/4" MNPT
1113	1/2" MNPT	2113	1/2" MNPT	3123	3/4" MNPT	4133	1" MNPT	5143	1 1/4" MNPT	6153	1 1/2" MNPT
		2121	3/4" FNPT	3131	1" FNPT	4141	1 1/4" FNPT	5151	1 1/2" FNPT	6161	2" FNPT
		2122	3/4" SWT	3132	1" SWT	4142	1 1/4" SWT	5152	1 1/2" SWT	6162	2" SWT
		2123	3/4" MNPT	3133	1" MNPT	4143	1 1/4" MNPT	5153	1 1/2" MNPT	6163	2" MNPT

### Isolator body and tailpiece designations for SWT body valves

1/2" Body Tailpieces		3/4" Body Tailpieces		1" Body Tailpieces		1 1/4" Body Tailpieces		1 1/2" Body Tailpieces		2" Body Tailpieces	
Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection
1211	1/2" FNPT	2211	1/2" FNPT	3213	1/2" MNPT	4213	1/2" MNPT	5223	3/4" MNPT	6233	1" MNPT
1212	1/2" SWT	2212	1/2" SWT	3222	3/4" SWT	4223	3/4" MNPT	5233	1" MNPT	6243	1 1/4" MNPT
1213	1/2" MNPT	2213	1/2" MNPT	3223	3/4" MNPT	4233	1" MNPT	5243	1 1/4" MNPT	6253	1 1/2" MNPT
		2221	3/4" FNPT	3231	1" FNPT	4241	1 1/4" FNPT	5251	1 1/2" FNPT	6261	2" FNPT
		2222	3/4" SWT	3232	1" SWT	4242	1 1/4" SWT	5252	1 1/2" SWT	6262	2" SWT
		2223	3/4" MNPT	3233	1" MNPT	4243	1 1/4" MNPT	5253	1 1/2" MNPT	6263	2" MNPT

Job Name: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Date: \_\_\_\_\_

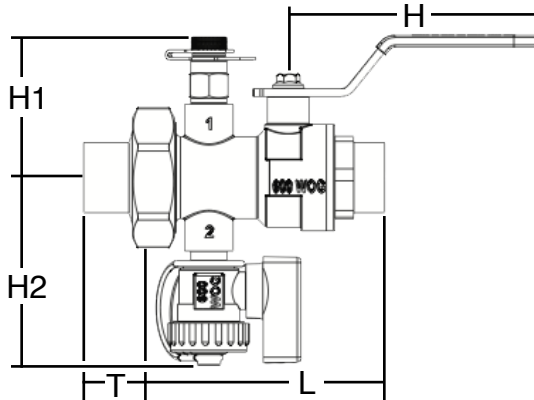
Spec Section: \_\_\_\_\_

Job Location: \_\_\_\_\_

Engineer/Architect: \_\_\_\_\_

Approval: \_\_\_\_\_

Date: \_\_\_\_\_



### Specification

Oventrop strainer coil kit is an assembly for the supply side of a fan coil unit or air handler. Each assembly consists of a ball valve, a PT port, and a drain. A union connection at the isolator is male, female, or sweat. A sweat or female connection is available on the ball valve end.

Ball valve made of brass, ball made of chrome plated brass, PTFE seats, EPDM O-ring seal.

Fill and drain valve, with ball valve. Ball made of chrome plated brass, PTFE seats, O-ring seal.

Maximum working temperature: 250°F

Maximum working pressure: 600 PSI / CWP

Coil Kit Dimensions in Inches

### Isolator Kit Sizes and Dimensions

Dimensions		Isolator Body Size					
		1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
L	FNPT	3.19	3.33	3.48	4.02	4.44	5.03
	SWT	3.29	3.45	3.61	4.19	4.74	5.82
T	1/2" Tailpiece Connection	FNPT	0.83	0.83	-	-	-
		MNPT	1.5	1.5	1.5	2.13	-
		SWT	0.83	0.87	-	-	-
	3/4" Tailpiece Connection	FNPT	-	0.83	-	-	-
		MNPT	-	1.56	1.56	1.8	1.8
		SWT	-	0.98	0.98	-	-
	1" Tailpiece Connection	FNPT	-	-	1.4	-	-
		MNPT	-	-	1.75	1.8	1.8
		SWT	-	-	1.0	-	-
1 1/4" Tailpiece Connection	FNPT	-	-	-	1.0	-	
	MNPT	-	-	-	1.8	1.8	
	SWT	-	-	-	1.43	-	
1 1/2" Tailpiece Connection	FNPT	-	-	-	-	1.75	
	MNPT	-	-	-	-	1.8	
	SWT	-	-	-	-	1.17	
2" Tailpiece Connection	FNPT	-	-	-	-	-	
	MNPT	-	-	-	-	-	
	SWT	-	-	-	-	-	
H		3.66		5.03		5.66	
H1		1.98	2.08		2.22	2.83	
H2		2.53	2.74		3.12		3.51

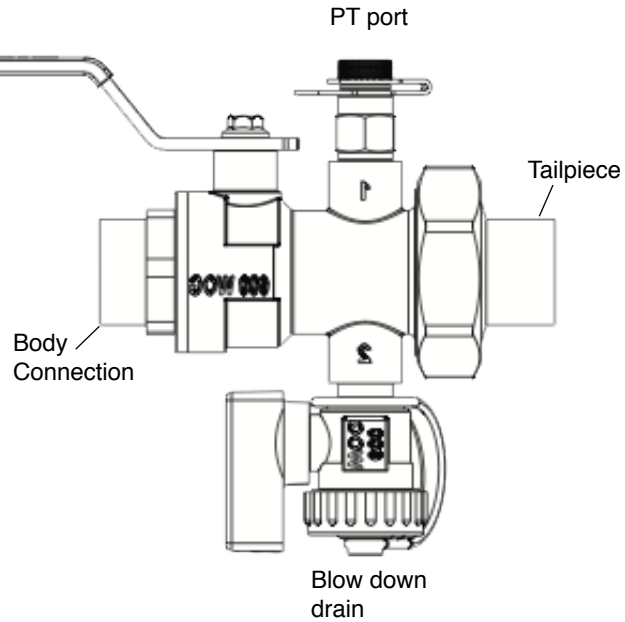
Oventrop Corporation  
PO Box 789  
East Granby, CT 06026  
Phone (860) 413-9173  
www.oventrop-us.com

Size	Item Number
1/2"	803 1
3/4"	803 2
1"	803 3
1 1/4"	803 4
1 1/2"	803 5
2"	803 6

Example valve selection:

1 1/4" SWT valve with 3/4" MNPT tailpiece  
Item number - **803 4223**

for SWT body valves			
Item	Connection	Item	Connection
4213	1/2" MNPT	4223	3/4" MNPT
4233	1" MNPT	4241	1 1/4" FNPT
4241	1 1/4" FNPT	4242	1 1/4" SWT



### Isolator body and tailpiece designations for FNPT body valves

1/2" Body Tailpieces		3/4" Body Tailpieces		1" Body Tailpieces		1 1/4" Body Tailpieces		1 1/2" Body Tailpieces		2" Body Tailpieces	
Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection
1111	1/2" FNPT	2111	1/2" FNPT	3113	1/2" MNPT	4113	1/2" MNPT	5123	3/4" MNPT	6133	1" MNPT
1112	1/2" SWT	2112	1/2" SWT	3122	3/4" SWT	4123	3/4" MNPT	5133	1" MNPT	6143	1 1/4" MNPT
1113	1/2" MNPT	2113	1/2" MNPT	3123	3/4" MNPT	4133	1" MNPT	5143	1 1/4" MNPT	6153	1 1/2" MNPT
		2121	3/4" FNPT	3131	1" FNPT	4141	1 1/4" FNPT	5151	1 1/2" FNPT	6161	2" FNPT
		2122	3/4" SWT	3132	1" SWT	4142	1 1/4" SWT	5152	1 1/2" SWT	6162	2" SWT
		2123	3/4" MNPT	3133	1" MNPT	4143	1 1/4" MNPT	5153	1 1/2" MNPT	6163	2" MNPT

### Isolator body and tailpiece designations for SWT body valves

1/2" Body Tailpieces		3/4" Body Tailpieces		1" Body Tailpieces		1 1/4" Body Tailpieces		1 1/2" Body Tailpieces		2" Body Tailpieces	
Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection	Item	Connection
1211	1/2" FNPT	2211	1/2" FNPT	3213	1/2" MNPT	4213	1/2" MNPT	5223	3/4" MNPT	6233	1" MNPT
1212	1/2" SWT	2212	1/2" SWT	3222	3/4" SWT	4223	3/4" MNPT	5233	1" MNPT	6243	1 1/4" MNPT
1213	1/2" MNPT	2213	1/2" MNPT	3223	3/4" MNPT	4233	1" MNPT	5243	1 1/4" MNPT	6253	1 1/2" MNPT
		2221	3/4" FNPT	3231	1" FNPT	4241	1 1/4" FNPT	5251	1 1/2" FNPT	6261	2" FNPT
		2222	3/4" SWT	3232	1" SWT	4242	1 1/4" SWT	5252	1 1/2" SWT	6262	2" SWT
		2223	3/4" MNPT	3233	1" MNPT	4243	1 1/4" MNPT	5253	1 1/2" MNPT	6263	2" MNPT

Job Name: _____	Submitted by: _____	Date: _____
_____	Spec Section: _____	_____
Job Location: _____	Engineer/Architect: _____	_____
_____	Approval: _____	Date: _____

Size	Item Number
1/2"	106 1015-__C
3/4"	106 1020-__C
1"	106 1025-__C
1 1/4"	106 1032-__C
1 1/2"	106 1040-__C
2"	106 1050-__C

**Specification**

Oventrop flex hoses are made of EPDM with a 304 single stainless steel braid.

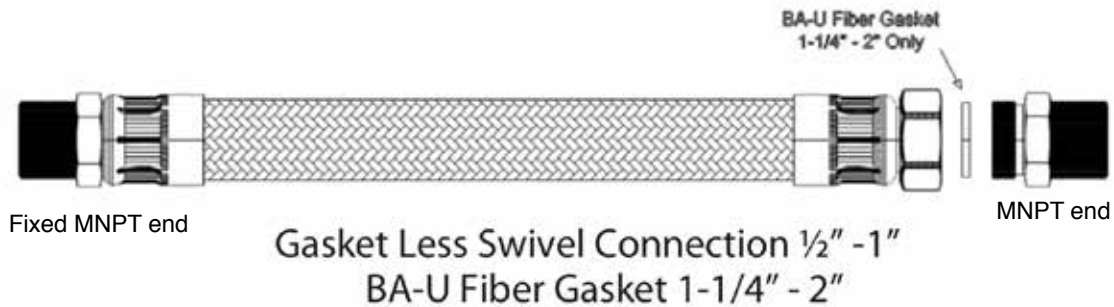
Working temperature range: 5 to 230 °F

Standard connection: Brass Fixed MNPT x Brass Swivel MNPT

Example hose selection:

3/4" Hose with 24" overall length  
Item number - **106 1020-24C**

Size	Lengths [in.]	Hose Type	Minimum Bend Radius	Maximum Working Pressure
1/2"	12, 18, 24, 36	304 stainless steel braided EPDM	5"	375 PSI
3/4"	12, 18, 24, 36		7"	300 PSI
1"	12, 18, 24, 36		7"	225 PSI
1 1/4"	18, 24, 36		12"	200 PSI
1 1/2"	18, 24, 36		12"	175 PSI
2"	24, 36		20"	150 PSI



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# oventrop


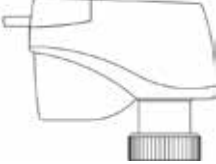
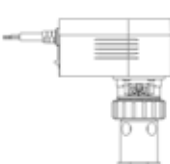
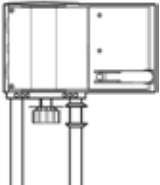
Pressure Independent  
Control Valves

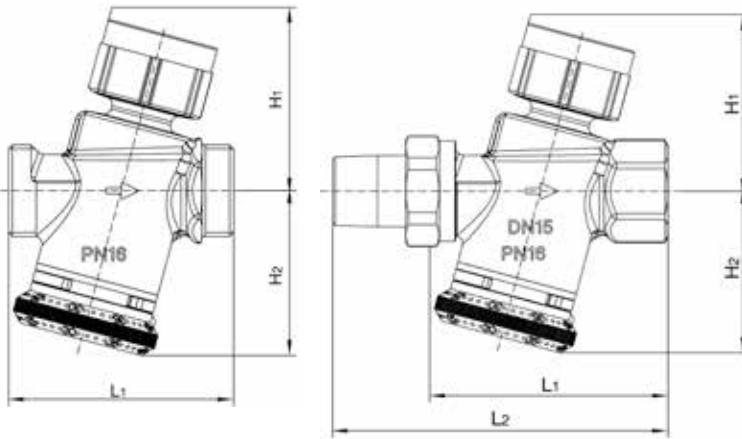
Item Number	101 24 96
Operating Voltage	24V
Control Signal	2 Point
Fail Position	Normally Closed
Stroke time [seconds]	270 s
Characteristic	
Notes	with End Switch

Item Number	Size	Flow rate [GPM]		Stroke [mm]	Connection Type	
		Minimum	Maximum			
167 60 04	1/2"	0.13	0.92	2.8	MNPTxFNPT	x
167 62 04	1/2"	0.66	4.6	2.8	MNPTxFNPT	x
167 60 06	3/4"	0.66	4.6	2.8	MNPTxFNPT	x
167 61 06	3/4"	0.8	5.7	3.5	MNPTxFNPT	
167 61 08	1"	1.3	8.8	4.5	MNPTxFNPT	
167 61 10	1 1/4"	2.6	15.8	4.5	MNPTxFNPT	
166 61 12	1 1/2"	6.6	33	10	FNPTxFNPT	
166 61 16	2"	11	44	10	FNPTxFNPT	
167 61 51	2 1/2"	22	88	20	Flanged	
167 61 52	3"	33	132	20	Flanged	
167 61 53	4"	55	220	20	Flanged	
167 61 54	5"	119	396	36	Flanged	
167 61 55	6"	158	660	40	Flanged	





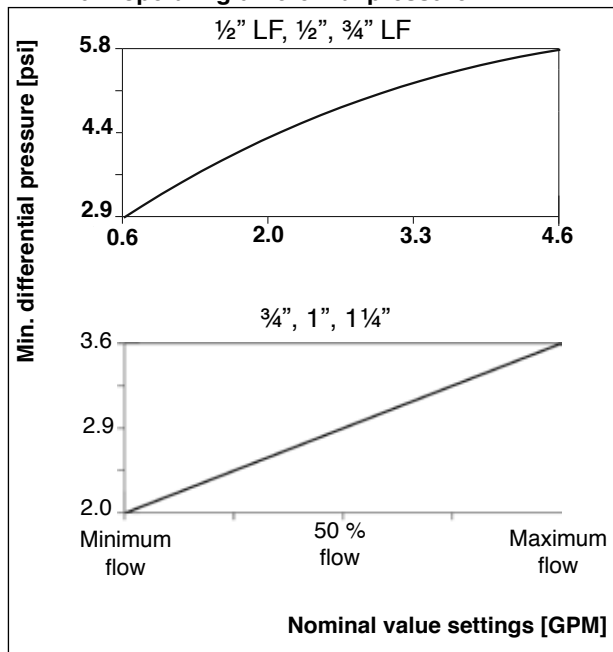
							
101 24 16	101 24 26	101 29 52	101 27 06	101 27 08	115 80 10	115 80 30	
24V	24V	24V	24V	24V	24V	24V	
2 Point	2 Point	0-10V DC	0-10V DC	3 point	2 point, 3 point, 0-10V,	2 point, 3 point, 0-10V,	
Normally Closed	Normally Open	Normally Closed	-	-	-	-	
270 s	270 s	60 s/mm	15 s/mm	15 s/mm	2 s/mm	2 s/mm	
		Linear	Linear or equal percent- age	Linear	Linear, equal per- centage, or x2	Linear, equal per- centage, or x2	
-	-	-	with Feedback	-	with Feedback	with Feedback	
							Valve Size
x	x	x	x	x			1/2"
x	x	x	x	x			1/2"
x	x	x	x	x			3/4"
			x	x			3/4"
			x	x			1"
			x	x			1 1/4"
					x		1 1/2"
					x		2"
						x	2 1/2"
						x	3"
						x	4"
						x	5"
						x	6"



Size:	L1	L2	H1	H2
½", ½" LF	2.75	3.9	2.0	1.9
¾" LF	2.9	4.2	2.0	1.9
¾"	3.4	4.6	2.3	2.1
1"	4.6	6.1	2.6	3.1
1¼"	4.9	6.5	2.6	3.1

See back for dimensions with actuators

### Minimum operating differential pressure



1

Oventrop Corporation  
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Phone: (860) 413-9173  
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### Product specification

#### Function:

The Oventrop pressure independent control valve “Cocon Q” maintains a valve authority of 100% and the desired flow over a wide range of differential pressures. The “Cocon Q” is ideal for variable flow applications and makes selection and commissioning easy. Select the valve with the flow range that satisfies the desired flow rate, and set the design flow rate on site with a quick turn of the hand wheel.

The valve is used for the hydronic balancing and temperature control of appliances or sections of the system in chilled ceiling, fan-coil, convector, central heating, and surface heating systems.

#### Performance data:

Maximum working temperature:	250°F (120°C)
Minimum working temperature:	14°F (-10°C)
Maximum working pressure:	232 psi (16 Bar)
Maximum differential pressure:	60 psi (4 Bar)
Minimum differential pressure:	2 to 6 psi (0.15 to 0.4 Bar)
Flow accuracy:	+/- 10%
Positioning accuracy:	0.1 GPM
Close-off pressure with 1012705:	232 psi

#### Item numbers:

Size	Flow range	Male/female ports	Male ports
½" LF	0.13 - 0.9 GPM	167 60 04	167 60 64
½"	0.7 - 4.6 GPM	167 62 04	167 62 64
¾" LF	0.7 - 4.6 GPM	167 60 06	167 60 66
¾"	0.8 - 5.7 GPM	167 61 06	167 61 66
1"	1.3 - 8.8 GPM	167 61 08	167 61 68
1¼"	2.6 - 15.8 GPM	167 61 10	167 61 70

#### Accessories:

Lead sealing locking wire:	108 90 91
----------------------------	-----------

### 24V actuators with M30x1.5 connection

Item number	Model	Operating behavior (control signal)	Medium floating time	Maximum fluid temperature [F]	Allowable installation position	Actuator addition to H1 [in]
101 24 96*	Electrothermal, N.C., with end switch	On / Off	~ 4.5 minutes	212	Any	1.25
101 28 16*	Electrothermal, N.C.					
101 28 26*	Electrothermal, N.O.					
101 29 52*	Electrothermal, N.C.	0-10 V	~ 60 s/mm	203	Any, but not upside down	1.9
101 27 06	Electromotive, N.C. or N.O.	0-10 V with feedback	~ 15 s/mm			
101 27 08	Electromotive	Floating (3-point)				

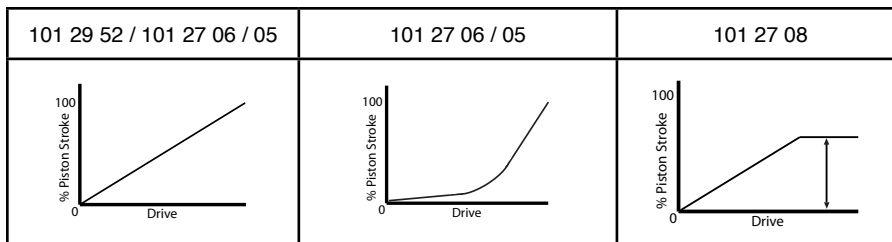
\*Not for use with 1" or 1 1/4" valves.



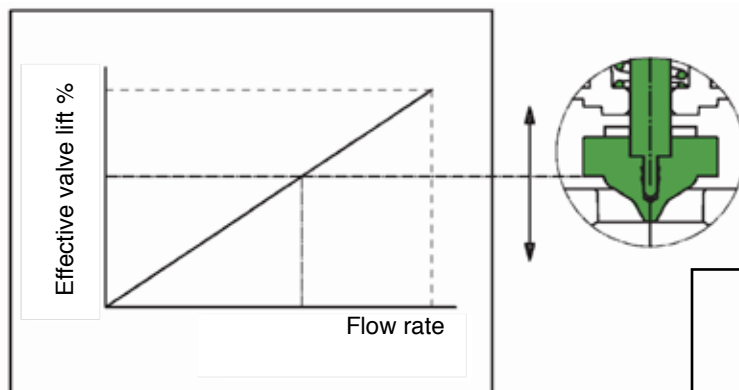
### Construction:

The “Cocon Q” has a brass body and is alloyed to resist dezincification (DZR). No dielectric fittings are required for installation. The valve stem is stainless steel and the flexible components are made of EPDM and PTFE. The “Cocon Q” offers a hand wheel mounted opposite and inline with the actuator. The actuator and hand wheel are oriented 15 degrees from vertical to allow for easier operation. The valve has integral self-sealing ports for measuring differential pressure and fluid temperature using standard pressure and temperature test probes. Test ports are located perpendicular to the hand wheel, on the same side of the valve, and are replaceable with blind plugs if not needed. Test ports are spaced 1.0 inch apart and extend 1.5 inches from the valve body. The hand wheel is adjustable while the valve is in operation with the actuator installed. The “Cocon Q” includes a locking clip stop to ensure the balanced position while in operation and to prevent hand wheel repositioning after setting.

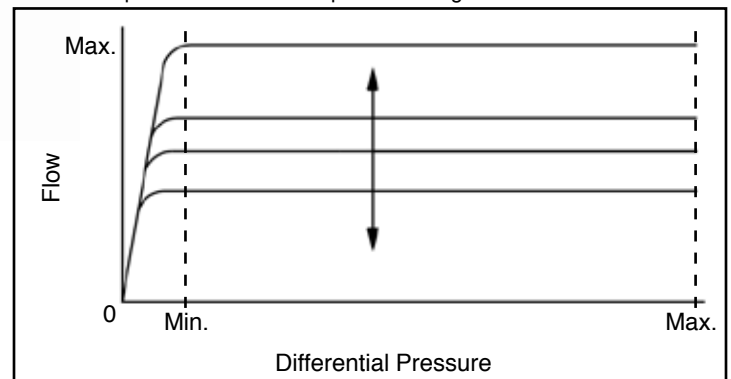
### Proportional actuator characteristic lines



### Valve characteristic line



Flow performance over full pressure range



# TYPICAL SPECIFICATIONS

## Pressure independent control valves

### ½" (DN15) – 1¼" (DN32)

**1.0 General** – Furnish and install Oventrop balancing valves, as shown on the drawings and/or schedules, to ensure the accurate balancing of all flows in the hydronic heating and cooling systems. Water balancing and control shall meet the specified flows.

#### 2.0 Construction

2.1 All control valves shall be of the pressure-independent design. All control valves shall have a constant control valve authority of 100% over the full allowable pressure and flow range. All control valves must offer a hand wheel mounted opposite and inline with the actuator. The actuator and hand wheel shall be oriented 15 degrees from vertical to allow for easier operation.

2.2 All control valves shall have documented measuring accuracy of +/- 10% within the normal setting range of the valve.

2.3 All control valves shall have integral self-sealing ports for measuring differential pressure and fluid temperature using standard pressure and temperature test probes. Test ports shall be located perpendicular to the hand wheel, on the same side of the valve, and shall be replaceable with blind plugs if not needed. Test ports shall be spaced no more than 1.0 inch apart and extend no more than 1.5 inches from the valve body.

2.4 All control valves shall have maximum body ratings no less than 232 psi (PN16) at 250 degrees F (120 C).

2.5 All control valves must include a locking clip stop to ensure the balanced position while in operation and to prevent hand wheel repositioning after setting.

2.6 All control valves ½" (DN15) through 1¼" (DN32) shall have hand wheel adjustment for precise readout on the opposite side of the valve from the actuator. The hand wheel shall be adjustable while the valve is in operation with the actuator installed. The hand wheel shall be marked in gallons per minute and shall have a minimum positioning accuracy of 0.1 GPM.

2.7 All control valves shall be manufactured by the company complying with international quality standard ISO 9001.

2.8 All control valves shall have a threaded connection of M30x1.5 for the actuator. All control valves shall have a stem travel of no less than 0.11 inches (2.8mm) over the full range of valve flow. All actuators shall be supplied by Oventrop. All actuators shall be capable of operating over the full flow and pressure range of the valve.

**3.0 Material Characteristics** – All control valves in sizes ½" (DN15) through 1¼" (DN32) shall have brass bodies and NPT threaded connections to match the piping system. All wetted brass parts shall be alloyed to resist dezincification (DZR). No dielectric fittings shall be required for installation. The valve stem shall be stainless steel. The flexible components shall be made of EPDM and PTFE.

**4.0 Valve Sizing** – All control valves shall be sized to perform in a normal operation range at a minimum differential pressure of 2.2 to 6 psi (0.15 to 0.4 Bar). All control valves shall have a maximum working differential pressure of no less than 60 psi (4 Bar). All control valves shall be selected based on their allowable flow range.

**5.0 Manufacturer** – Oventrop Corporation.

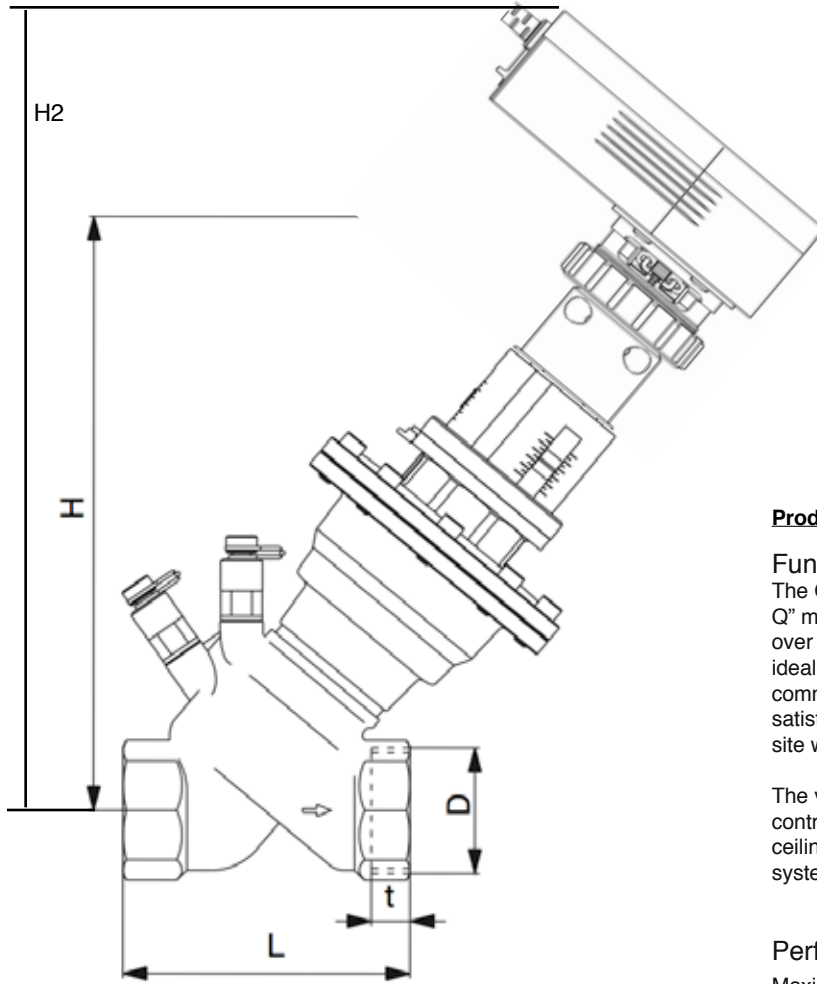
**6.0 Warranty** – Valves shall be free from material and workmanship defects for a period of 5 years from date of installation or from 5½ years from date of shipment, whichever comes first.

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**Product specification**

**Function:**

The Oventrop pressure independent control valve “Cocon Q” maintains a valve authority of 100% and the desired flow over a wide range of differential pressures. The “Cocon Q” is ideal for variable flow applications and makes selection and commissioning easy. Select the valve with the flow range that satisfies the desired flow rate, and set the design flow rate on site with a quick turn of the hand wheel.

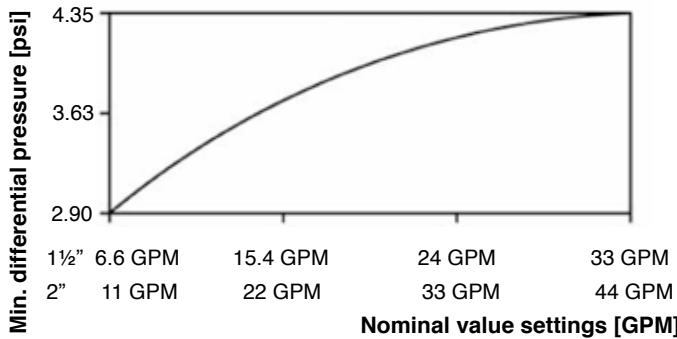
The valve is used for the hydronic balancing and temperature control of appliances or sections of the system in chilled ceiling, fan-coil, convector, central heating, and surface heating systems.

**Performance data:**

- Maximum working temperature: 250°F (120°C)
- Minimum working temperature: -4°F (-20°C)
- Maximum working pressure: 232 psi (16 Bar)
- Maximum differential pressure: 60 psi (4 Bar)
- Minimum differential pressure: 2.9 to 4.35 psi (0.2 to 0.3 Bar)
- Flow accuracy: +/- 10%
- Positioning accuracy: 1 GPM
- Close-off pressure with 1158010: 232 psi

Size	D	L	t	H	H2
1½	1½	4.72	¾	9.65	13.78
2	2	5.9	1	10.0	14.25

**Minimum operating differential pressure**



**Item numbers:**

With test points

Size	Flow range	Item number
1½"	6.6 - 33 GPM	166 61 12
2"	11 - 44 GPM	166 61 16

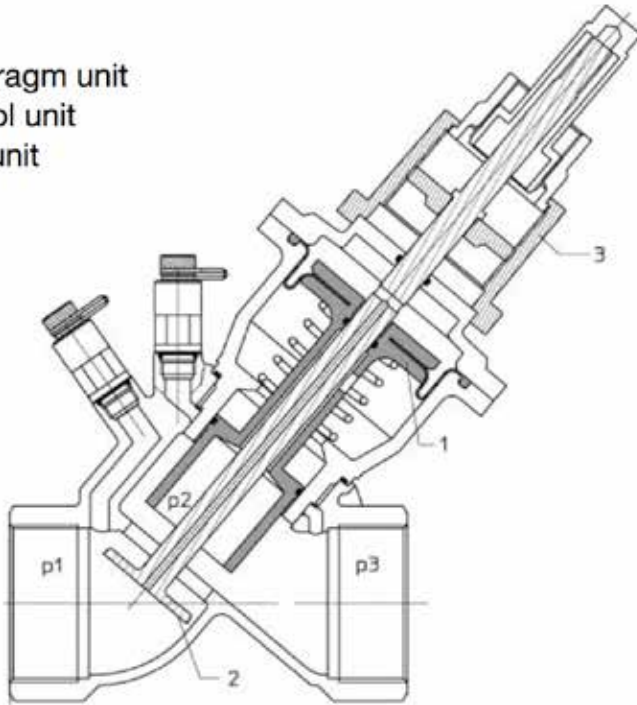
**Accessories:**

Lead sealing locking wire: 108 90 91

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### Legend:

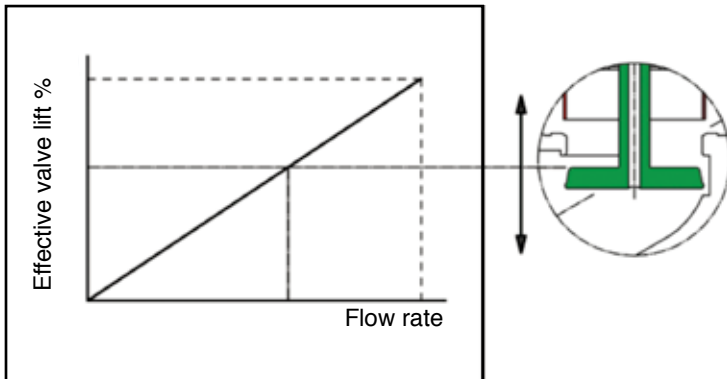
1. Diaphragm unit
2. Control unit
3. Flow unit



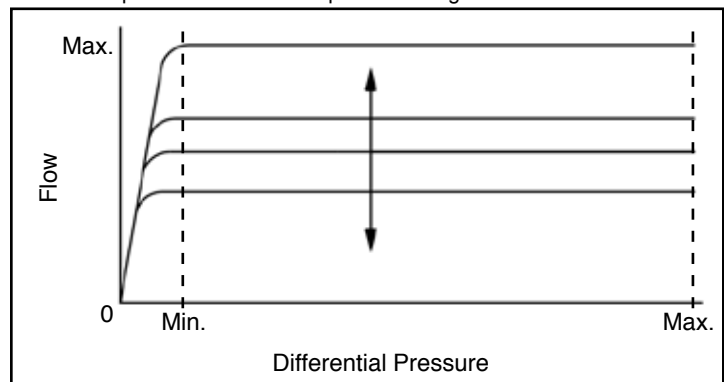
### Construction:

The “Cocon Q” has a bronze body and the brass components are alloyed to resist dezincification (DZR). No dielectric fittings are required for installation. The valve stem is stainless steel and the flexible components are made of EPDM and PTFE. The “Cocon Q” offers a hand wheel mounted inline with the actuator. The valve has integral self-sealing ports for measuring differential pressure and fluid temperature using standard pressure and temperature test probes. Test ports are located on the same end and on the same side of the valve. Test ports are spaced 1.0 inch apart and extend 1.5 inches from the valve body. The “Cocon Q” includes a locking clip stop to ensure the balanced position while in operation and to prevent hand wheel repositioning after setting.

### Valve characteristic line



### Flow performance over full pressure range



# TYPICAL SPECIFICATIONS

## Pressure independent control valves

### 1½" (DN40) – 2" (DN50)

**1.0 General** – Furnish and install Oventrop balancing valves, as shown on the drawings and/or schedules, to ensure the accurate balancing of all flows in the hydronic heating and cooling systems. Water balancing and control shall meet the specified flows.

#### 2.0 Construction

- 2.1 All control valves shall be of the pressure-independent design. All control valves shall have a constant control valve authority of 100% over the full allowable pressure and flow range.
- 2.2 All control valves shall have documented measuring accuracy of +/- 10% within the normal setting range of the valve.
- 2.3 All control valves shall have integral self-sealing ports for measuring differential pressure and fluid temperature using standard pressure and temperature test probes. Test ports shall be located on the same end and on the same side of the valve. Test ports shall be spaced no more than 1.0 inch apart and extend no more than 1.5 inches from the valve body.
- 2.4 All control valves shall have maximum body ratings no less than 232 psi (PN16) at 250 degrees F (120 C).
- 2.5 All control valves must include a locking clip stop to ensure the balanced position while in operation and to prevent hand wheel repositioning after setting.
- 2.6 All control valves 1½" (DN40) through 2" (DN50) shall have hand wheel adjustment for precise readout. The hand wheel shall be marked in gallons per minute and shall have a minimum positioning accuracy of 1 GPM.

2.7 All control valves shall be manufactured by the company complying with international quality standard ISO 9001.

2.8 All actuators shall be supplied by Oventrop. All actuators shall be capable of operating over the full flow and pressure range of the valve.

**3.0 Material Characteristics** – All control valves in sizes 1½" (DN40) through 2" (DN50) shall have bronze bodies and NPT threaded connections to match the piping system. All wetted brass parts shall be alloyed to resist dezincification (DZR). No dielectric fittings shall be required for installation. The valve stem shall be stainless steel. The flexible components shall be made of EPDM and PTFE.

**4.0 Valve Sizing** – All control valves shall be sized to perform in a normal operation range at a minimum differential pressure of 2.9 to 4.35 psi (0.2 to 0.3 Bar). All control valves shall have a maximum working differential pressure of no less than 60 psi (4 Bar). All control valves shall be selected based on their allowable flow range.

**5.0 Manufacturer** – Oventrop Corporation.

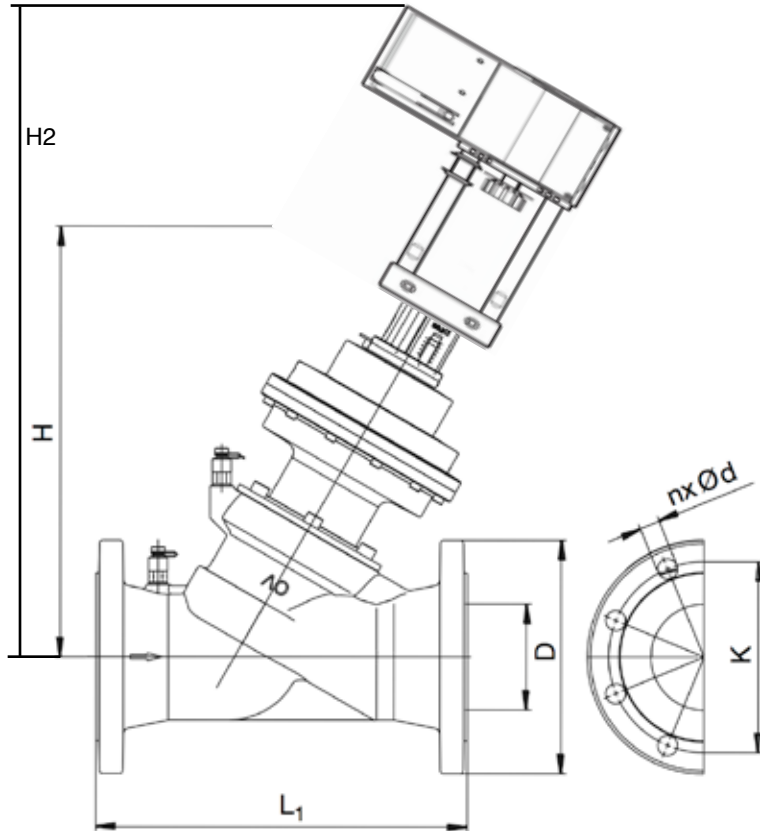
**6.0 Warranty** – Valves shall be free from material and workmanship defects for a period of 5 years from date of installation or 5½ years from date of shipment, whichever comes first.

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**Product specification**

**Function:**

The Oventrop pressure independent control valve “Cocon Q” maintains a valve authority of 100% and the desired flow over a wide range of differential pressures. The “Cocon Q” is ideal for variable flow applications and makes selection and commissioning easy. Select the valve with the flow range that satisfies the desired flow rate, and set the design flow rate on site with a quick turn of the hand wheel.

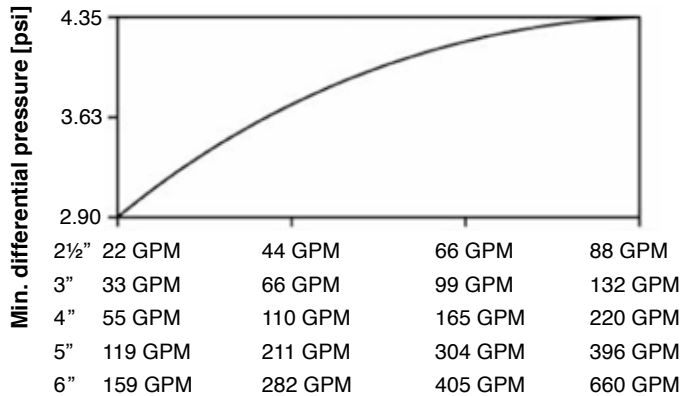
The valve is used for the hydronic balancing and temperature control of appliances or sections of the system in chilled ceiling, fan-coil, convactor, central heating, and surface heating systems.

Size	L1	H	H2	D	K	n x Ød
2½	11.42	15.57	25.38	7.28	5.50	4 x 0.75
3	12.20	15.16	25.97	7.87	6.0	8 x 0.75
4	13.78	15.94	26.76	8.66	7.50	8 x 0.75
5	15.75	20.47	30.54	9.84	8.50	8 x 0.88
6	18.90	20.47	30.54	11.22	9.50	8 x 0.88

**Performance data:**

- Maximum working temperature: 250°F (120°C)
- Minimum working temperature: 14°F (-10°C)
- Maximum working pressure: 232 psi (16 Bar)
- Maximum differential pressure: 60 psi (4 Bar)
- Minimum differential pressure: 2.9 to 4.35 psi (0.2 to 0.3 Bar)
- Flow accuracy: +/- 10%
- Positioning accuracy: 1 GPM
- Close-off pressure with 1158030: 232 psi

**Minimum operating differential pressure**



**Nominal value settings [GPM]**

**Item numbers:**

With test points

Size	Flow range	Item number
2½"	22 - 88 GPM	167 61 51
3"	33 - 132 GPM	167 61 52
4"	55 - 220 GPM	167 61 53
5"	119 - 396 GPM	167 61 54
6"	158 - 660 GPM	167 61 55

**Accessories:**

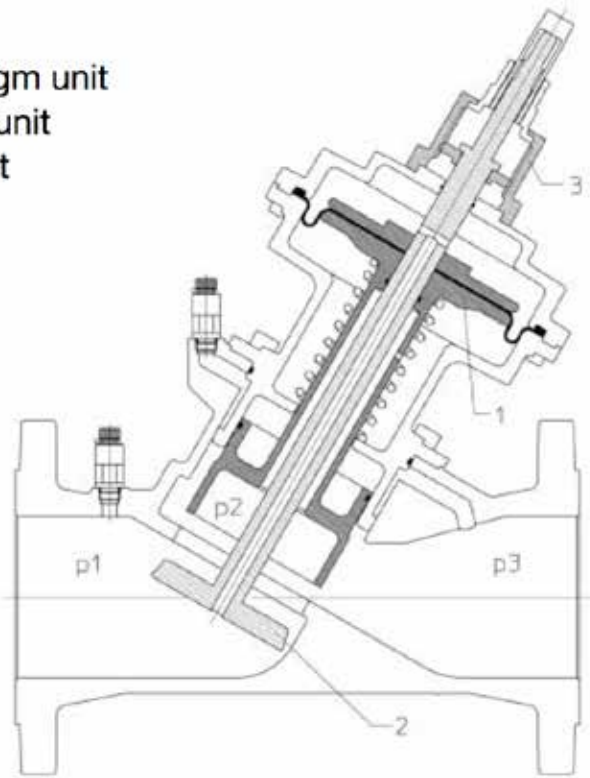
- Lead sealing locking wire: 108 90 91

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### Legend:

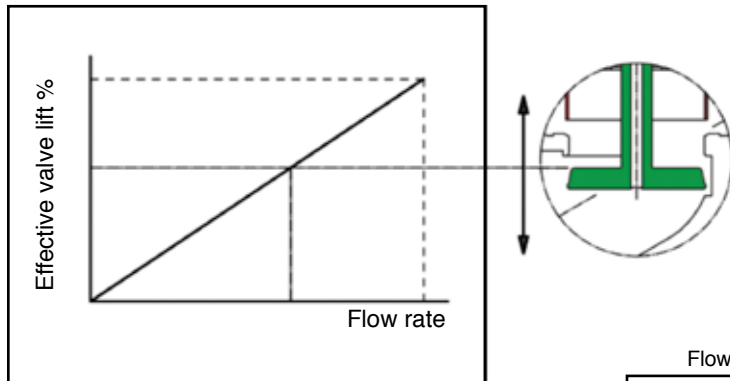
1. Diaphragm unit
2. Control unit
3. Flow unit



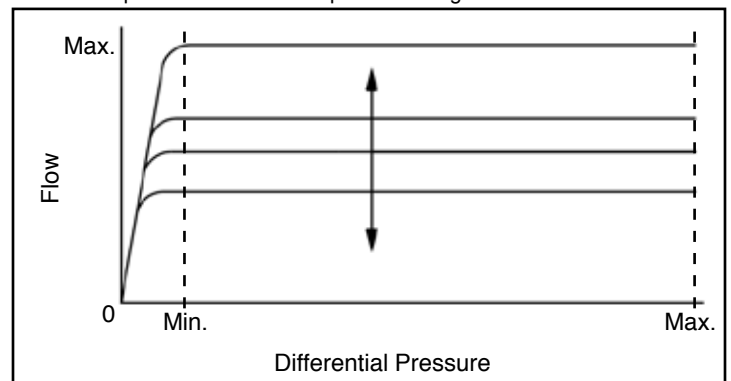
### Construction:

The “Cocon Q” has a cast iron body and the brass components are alloyed to resist dezincification (DZR). No dielectric fittings are required for installation. The valve stem is stainless steel and the flexible components are made of EPDM and PTFE. The “Cocon Q” offers a hand wheel mounted in-line with the actuator. The valve has integral self-sealing ports for measuring differential pressure and fluid temperature using standard pressure and temperature test probes. Test ports are located on the same end and on the same side of the valve. Test ports are spaced 1.0 inch apart and extend 1.5 inches from the valve body. The “Cocon Q” includes a locking clip stop to ensure the balanced position while in operation and to prevent hand wheel repositioning after setting.

### Valve characteristic line



### Flow performance over full pressure range



# TYPICAL SPECIFICATIONS

## Pressure independent control valves

### 2½" (DN65) – 6" (DN150)

**1.0 General** – Furnish and install Oventrop balancing valves, as shown on the drawings and/or schedules, to ensure the accurate balancing of all flows in the hydronic heating and cooling systems. Water balancing and control shall meet the specified flows.

#### 2.0 Construction

2.1 All control valves shall be of the pressure-independent design. All control valves shall have a constant control valve authority of 100% over the full allowable pressure and flow range. All control valves must offer a hand wheel mounted inline with the actuator.

2.2 All control valves shall have documented measuring accuracy of +/- 10% within the normal setting range of the valve.

2.3 All control valves shall have integral self-sealing ports for measuring differential pressure and fluid temperature using standard pressure and temperature test probes. Test ports shall be located on the same end and on the same side of the valve. Test ports shall be spaced no more than 1.0 inch apart and extend no more than 1.5 inches from the valve body.

2.4 All control valves shall have maximum body ratings no less than 232 psi (PN16) at 250 degrees F (120 C).

2.5 All control valves must include a locking clip stop to ensure the balanced position while in operation and to prevent hand wheel repositioning after setting.

2.6 All control valves 2½" (DN65) through 6" (DN150) shall have hand wheel adjustment for precise readout. The hand wheel shall be adjustable while the valve is in operation with the actuator installed. The hand wheel shall be marked in gallons per minute and shall have a minimum positioning accuracy of 1 GPM.

2.7 All control valves shall be manufactured by the company complying with international quality standard ISO 9001.

2.8 All actuators shall be supplied by Oventrop. All actuators shall be capable of operating over the full flow and pressure range of the valve.

**3.0 Material Characteristics** – All control valves in sizes 2½" (DN65) through 6" (DN150) shall have cast iron bodies and ANSI class 150 flanged connections to match the piping system. All wetted brass parts shall be alloyed to resist dezincification (DZR). No dielectric fittings shall be required for installation. The valve stem shall be stainless steel. The flexible components shall be made of EPDM and PTFE.

**4.0 Valve Sizing** – All control valves shall be sized to perform in a normal operation range at a minimum differential pressure of 2.9 to 4.35 psi (0.2 to 0.3 Bar). All control valves shall have a maximum working differential pressure of no less than 60 psi (4 Bar). All control valves shall be selected based on their allowable flow range.

**5.0 Manufacturer** – Oventrop Corporation.

**6.0 Warranty** – Valves shall be free from material and workmanship defects for a period of 5 years from date of installation or from 5½ years from date of shipment, whichever comes first.

*Oventrop reserves the right to make revisions to its products, their specifications, this bulletin, and related information without notice.*

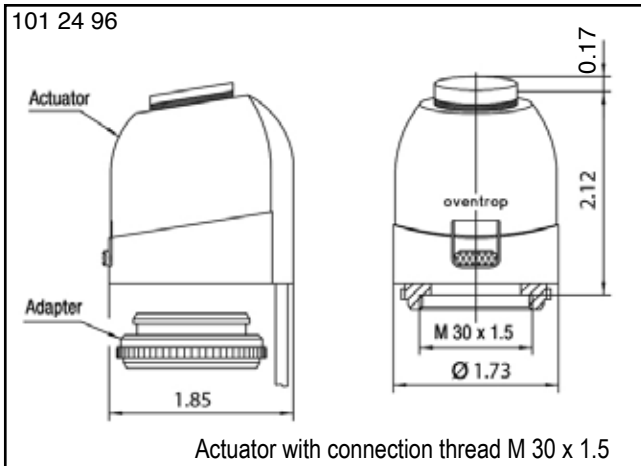
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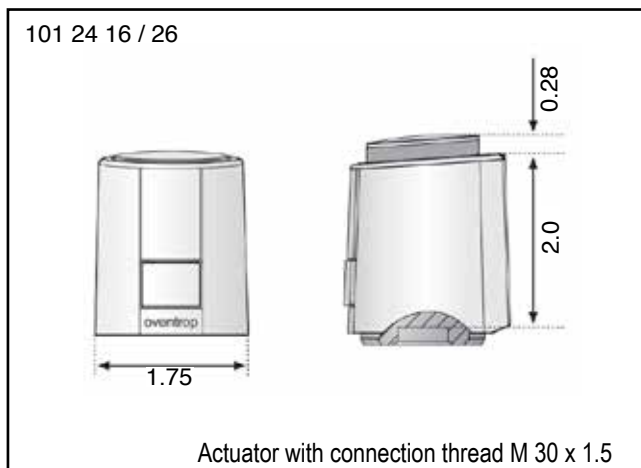
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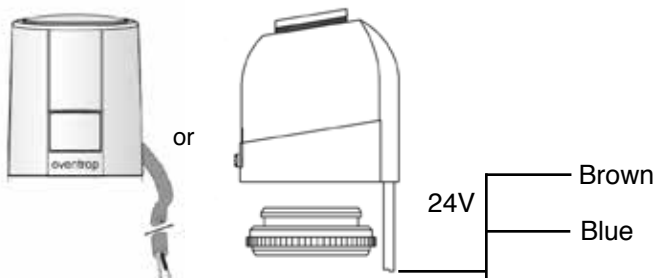
Job Name: _____	Submitted by: _____	Date: _____
_____	Spec Section: _____	_____
Job Location: _____	Engineer/Architect: _____	_____
_____	Approval: _____	Date: _____



Dimensions in inches



Dimensions in inches



### Specifications

The Oventrop actuators operate with an expansion type low-power element which is electrically heated for silent operation. Available as 2- and 4-wire models “normally closed,” and 2-wire model “normally open.” The actuator can be installed in any position. No tools are necessary for installing the actuator. The normally closed actuators contain a “first-open” function and are supplied from the factory open with current “off.” This allows the operation of the heating system during construction work even if the wiring to the actuator has not been installed. During initial operation, the “first-open” function is released automatically by switching the operating current on for more than 6 minutes. Once the “first-open” function has been completed, the valve will be closed with the current off.

Actuator connection thread: M 30 x 1.5

Operating current:	24V AC/DC
Start up load:	250 mA [6 W] for a maximum of 2 min.
Current:	75 mA
Maximum end switch current:	24V AC 5A 24V DC 3A
Closing/opening time:	about 3 min.
Piston stroke:	4.5 mm (0.17 in.)
Operating power:	> 90 N (20.2 lbs.)
Fluid temperature:	32 °F - 212 °F
Max. Steam Pressure:	14 Psi
Ambient temperature:	32 °F - 140 °F
Connecting cable:	18 AWG / 3 ft.

### Models:

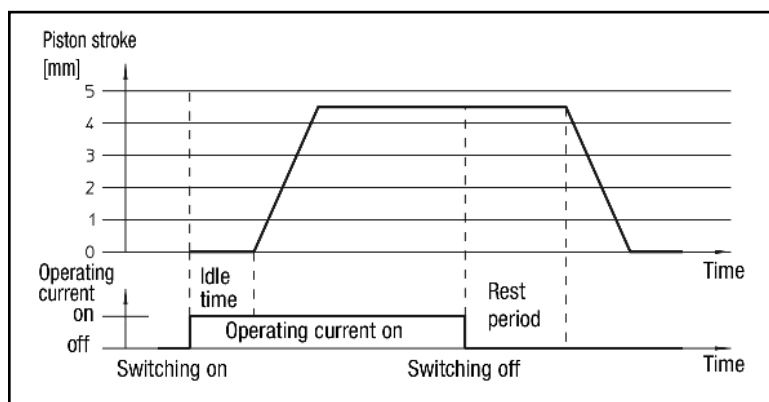
Closed with current “off”/4-wire with auxilliary end switch	<b>101 24 96</b>
Closed with current “off”/2-wire	<b>101 24 16</b>
Open with current “off”/2-wire	<b>101 24 26</b>

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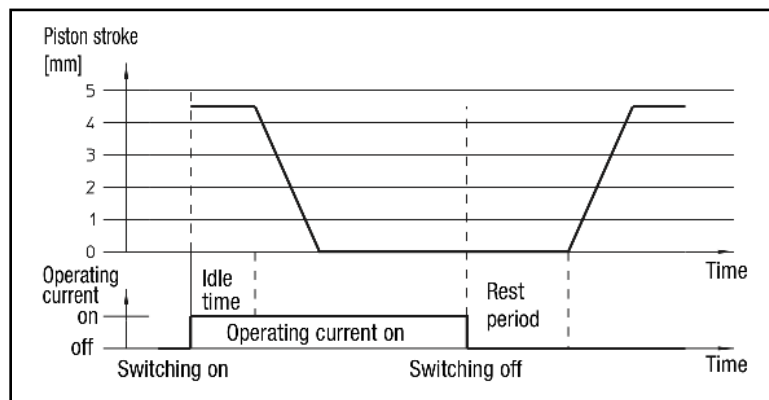
101 24 96 only

1-ElectrothermalActuator-S-070711

Wire Cross Section AWG	24V Wiring Maximum Length [Feet]
2 x 18 AWG	550
2 x 16 AWG	1100
2 x 14 AWG	1800



Characteristic line, closed with current “off”



Characteristic line, open with current “off”

Max. length of cable for 1 actuator, with given wire cross sections (indication with a voltage drop of about 5%, for 24 V voltage drop about 1 V).

When installing several actuators, the indicated length of cable must be divided by the number of connected actuators. A class II FCC safety transformer must always be used with the 24V actuators.

Selection of the transformer is determined by the start up power of the actuators.

Rule-of-thumb:  $P_{\text{Transformer}} [W] = 6 [W] \times n$   
n = Number of actuators

The actuator is mounted with the help of the valve adapter, no tools are required. The valve adapter is manually screwed onto the valve and the actuator is attached to the adapter by use of the snap-on connection.

Oventrop electrothermal actuators can be installed in any position but a vertical or horizontal installation is preferable. In case of vertical downward installation, special circumstances (e.g. dirt or water) may reduce the service life.

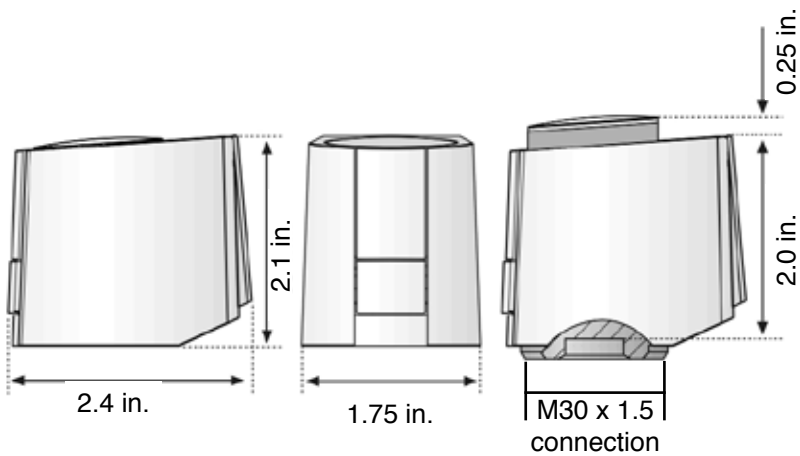
### Installation and fitting

Electrical connection must be carried out in accordance with the requirements of all applicable codes. It is recommended that the circuit be protected from excessive current. Connecting cables must be installed away from hot pipework as excessive heat will accelerate the ageing of the cable insulation. When choosing other electrical components, the start up load must be taken into consideration. The voltage loss must not exceed 10% so that the indicated operating time is kept.

# Oventrop

0 - 10V Proportional Actuator  
for Three-way and Control Valves  
Part No. 101 29 53

Job Name:	Submitted by:	Date:
	Spec Section:	
Job Location:	Engineer/Architect:	
	Approval:	Date:



**Product specification:**

24V powered, 0-10V proportional actuator for use with three-way mixing valves and two-way control valves.

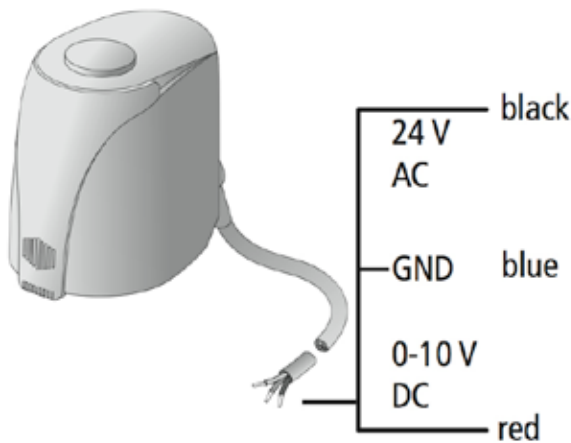
Can be used with:

- Oventrop three-way mixing valves
- Oventrop Cocon-Q automatic balancing and control valve
- Manifold distributor

Connection:	M30x1.5 thread
Operating Voltage:	24V +40 / -10%
Control Voltage:	0 to 10VDC
Operating Capacity:	1W
Stroke:	5 mm
Mean floating time:	30 s/mm
Spring strength:	100 N (tolerance +/-5%)
Ambient temperature:	32°F - 140°F
Connection cable:	AWG24 - 3 wire, 3 ft.

Normally closed for two-way valves

Wiring Diagram



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PO Box 789  
East Granby, CT 06026  
Phone: (860)413-9173  
www.ventrop-us.com

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Job Name: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Date: \_\_\_\_\_

Spec Section: \_\_\_\_\_

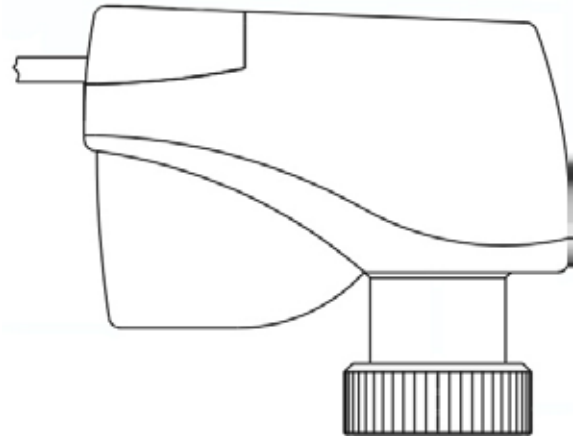
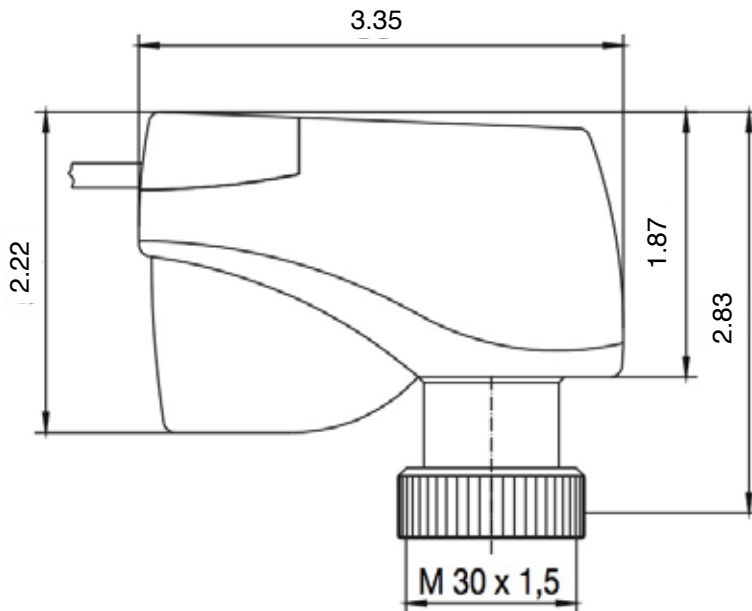
Job Location: \_\_\_\_\_

Engineer/Architect: \_\_\_\_\_

Approval: \_\_\_\_\_

Date: \_\_\_\_\_

All dimensions are in inches



#### Product specification:

The Series 1012700 valve actuator is an electromotive proportional actuator. The actuator is available with 0-10V control with positional feedback (1012706) or with three point actuation (1012708). The Series 1012700 actuators can be used on any Oventrop valve with an M30x1.5 actuator connection.

Can be used with:

- Oventrop three-way mixing valves
- Oventrop Cocon-Q automatic balancing and control valve
- Manifold distributor

Connection: M30x1.5 thread

Operating Voltage: 24V +/- 15%

Power consumption: 0.8 W active

2.5 VA

Stroke: 4 mm

Operating speed: approx. 15 s/mm

Spring strength: > 150 N

Ambient temperature: max. 120F

Air humidity: non-condensing

Connection cable: AWG22 - 4 wire

Item:

Item Number

with 0-10V control without feedback

**1012705**

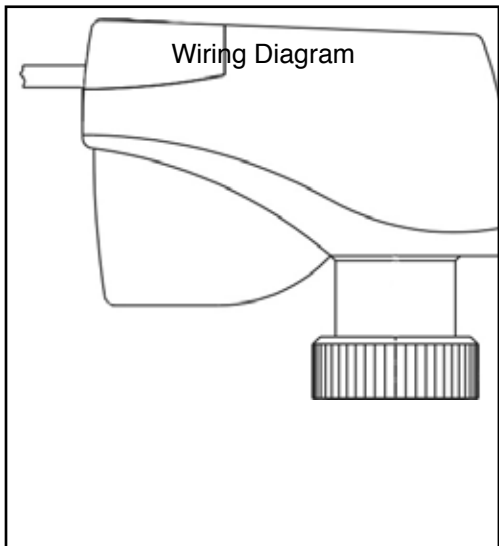
with 0-10V control and feedback

**1012706**

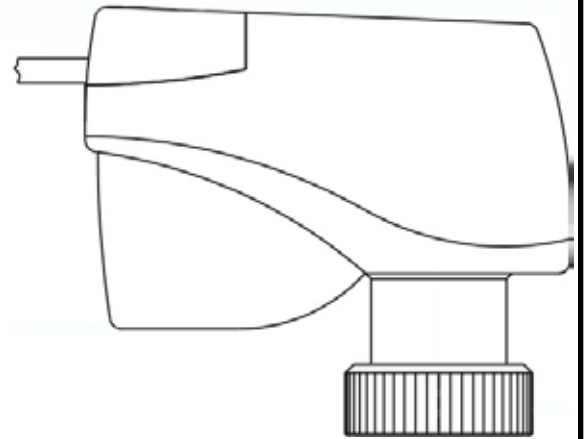
with three point control

**1012708**





For 1012706

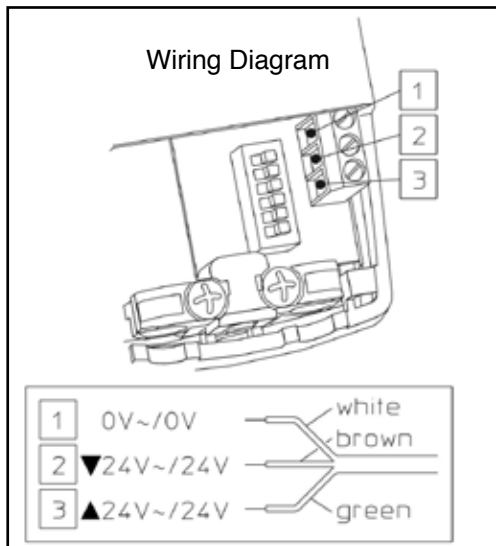


### 1 - Dip Switch settings

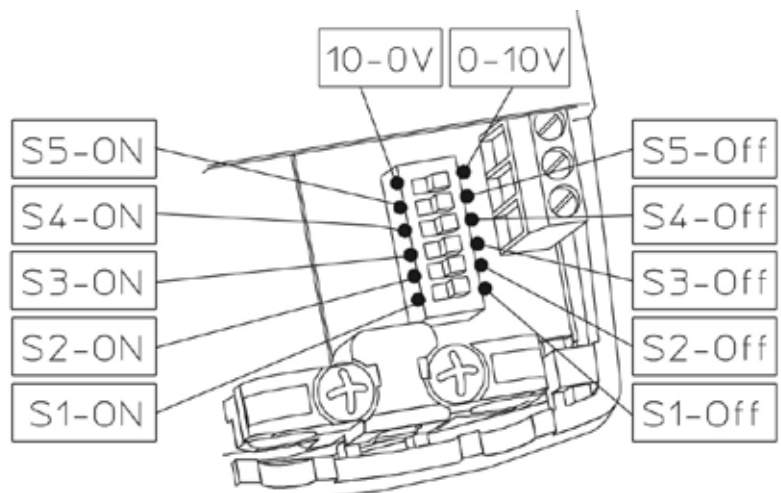
For 1012705 and 1012706:

For an equal percentage characteristic line set S1 through S5 to ON.

For a linear characteristic line set S1 through S5 to off.



For 1012708

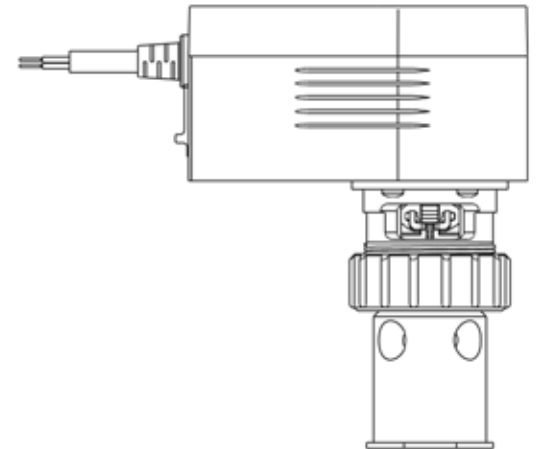
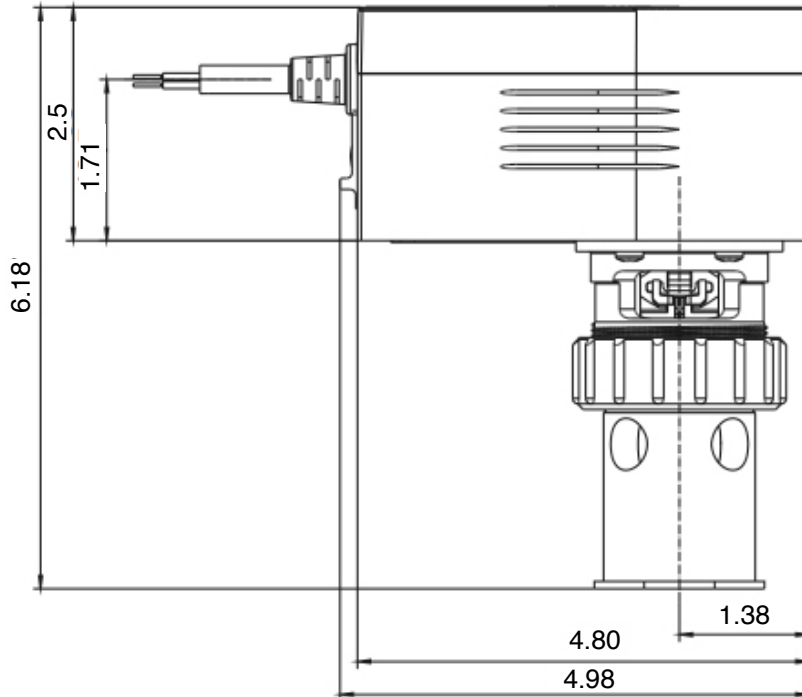


Item no. 101 27 05		
1	0V AC/DC	white WH
2	24V AC/DC	brown BN (V)
3	0-10V DC	green GN (Y)
Item no. 101 27 06		
1	0V AC/DC	white WH
2	24V AC/DC	brown BN (V)
3	0-10V DC	green GN (Y)
4	0V DC	yellow YE (Y0)
5	0-10V DC	grey GY (Y0)
Item no. 101 27 08		
1	0V AC/DC	white WH
2	24V AC/DC	brown BN (▼)
3	24V AC/DC	green GN (▲)

Wiring diagram of the terminals

Job Name:	Submitted by:	Date:
	Spec Section:	
Job Location:	Engineer/Architect:	
	Approval:	Date:

All dimensions are in inches



**Product specification:**

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.

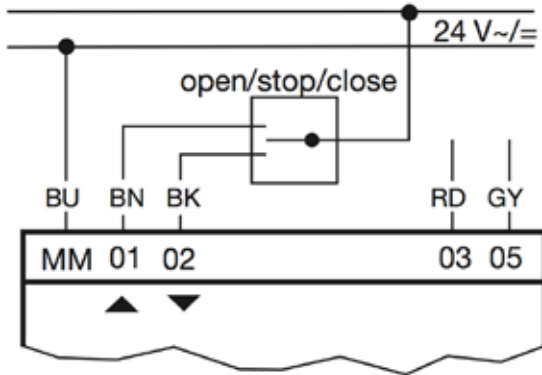
Can be used with:  
1½" - 2" Cocon Q valves

Operating current:	24V~/=
Power consumption:	2.5-5W
Drive:	0-10V
Maximum piston stroke:	10 mm (0.4 in.)
Operating power:	500 N (112.4 lbf)
Floating time:	7.5/15s/mm (190.5/381 s/in.)
Protection:	IP 54 (NEMA 3)
Maximum fluid temperature:	248 °F
Ambient temperature:	14 °F - 131 °F
Storage temperature:	14 °F - 131 °F
Connecting cable:	5 x 20 AWG

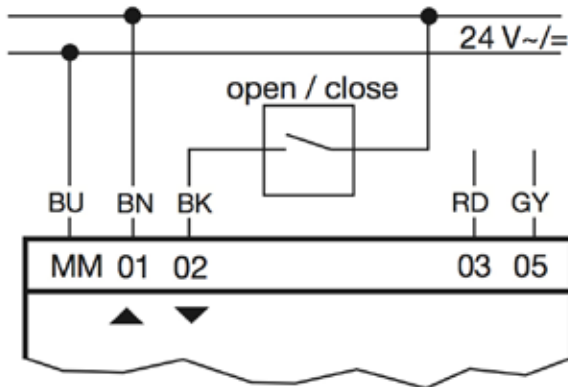
Oventrop Corporation  
PO Box 789  
East Granby, CT 06026  
Phone:(860)413-9173  
www.oventrop-us.com

All dimensions are in inches

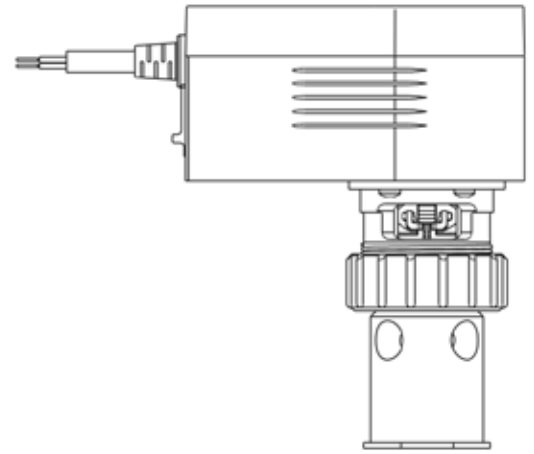
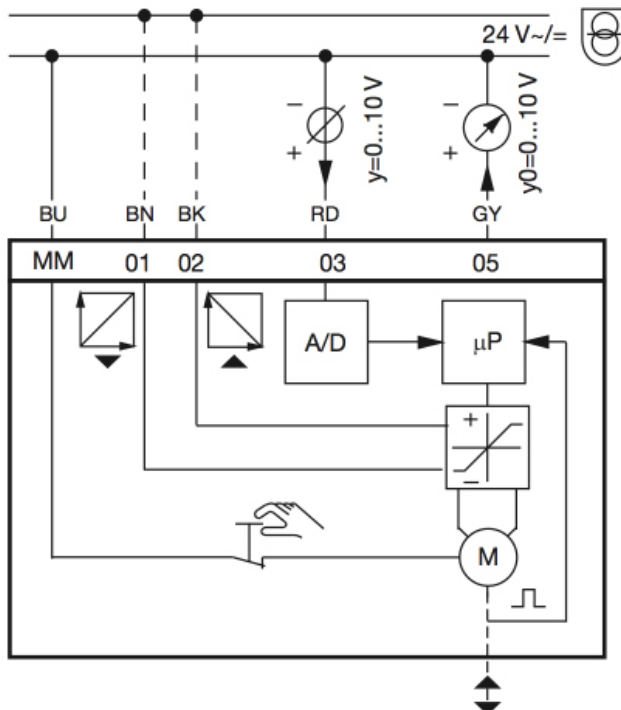
Variant 1 (3pt)



Variant 2 (2pt)



Variant 3 (0-10 V)



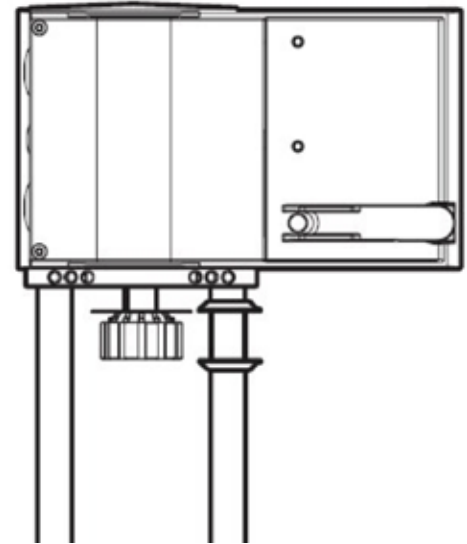
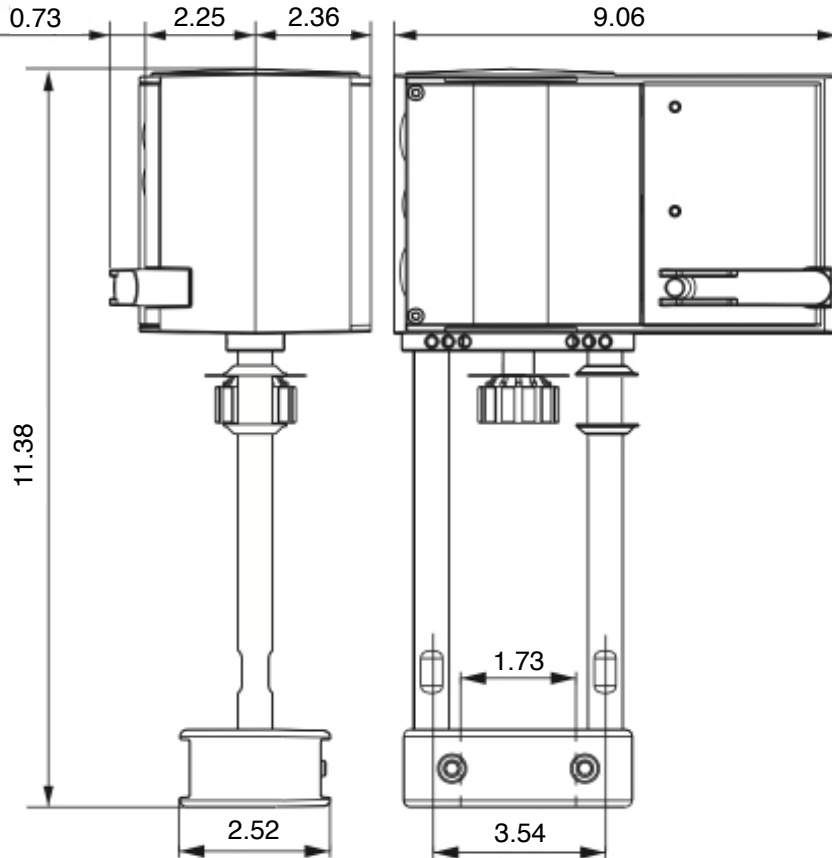
- 1 - Variant 1 for 3 point control wiring diagram
- 2 - Variant 2 for 2 point control wiring diagram
- 3 - Variant 3 for 0-10V control wiring diagram

# oventrop

Electromotive Actuators  
for large Cocon Q Valves

Job Name:	Submitted by:	Date:
	Spec Section:	
Job Location:	Engineer/Architect:	
	Approval:	Date:

All dimensions are in inches



**Product specification:**

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.

Can be used with:  
2½" through 6" Cocon Q valves

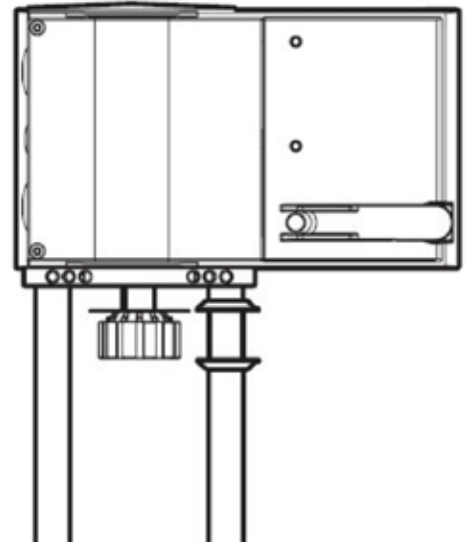
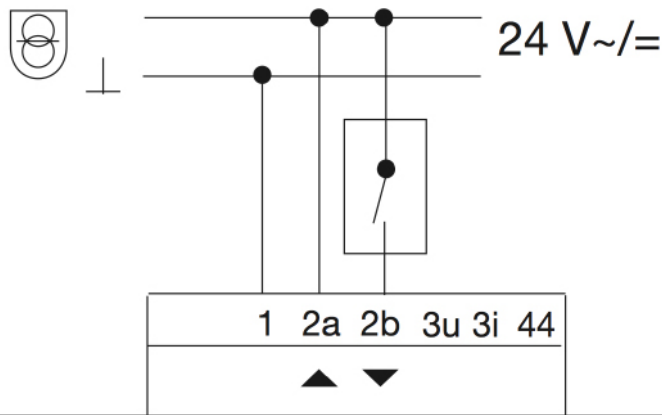
Operating current:	24 V ~/=
Power consumption:	10 W
Drive:	0 – 10 V or 4 – 20 mA
Maximum piston stroke:	40 mm (1.57 inch)
Operating power:	2500 N (562 lbf)
Floating time:	2 / 4 / 6 s/mm (51 / 102 / 152 s/inch)
Protection:	IP 66 (NEMA 4X)
Maximum fluid temperature:	248 °F
Ambient temperature:	14 °F - 131 °F
Storage temperature:	14 °F - 131 °F

Description	Item Number
24V actuator	115 80 30
24V actuator with spring return	115 80 31

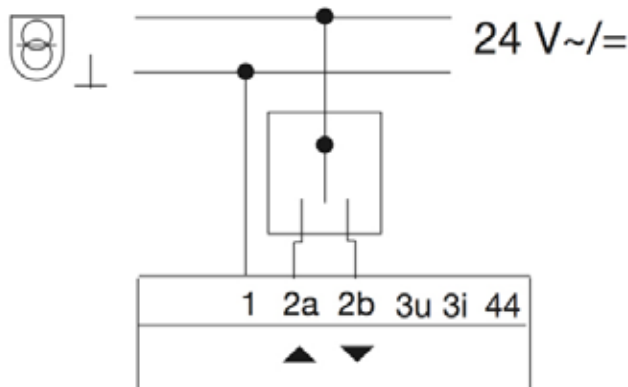
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East Granby, CT 06026  
Phone:(860)413-9173  
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All dimensions are in inches

2pt



3pt

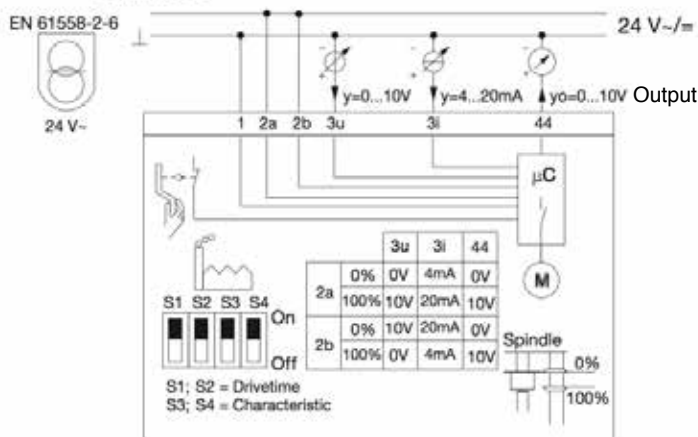


1 - Wiring diagram for two point control

2 - Wiring diagram for three point control

3 - Wiring diagram for proportionsl control

Continuous



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Job Name: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Date: \_\_\_\_\_

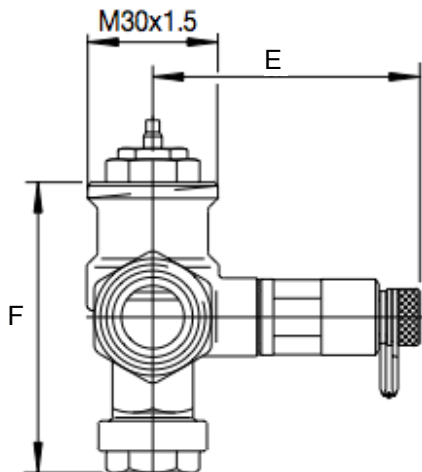
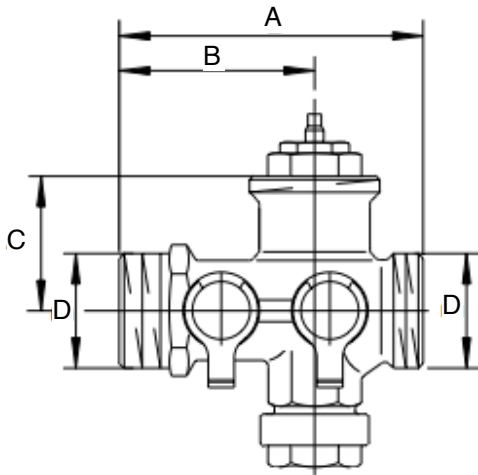
Spec Section: \_\_\_\_\_

Job Location: \_\_\_\_\_

Engineer/Architect: \_\_\_\_\_

Approval: \_\_\_\_\_

Date: \_\_\_\_\_



### Product specification

- 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. 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 re-balancing is required. Filling, draining, and bleeding of the heating or cooling unit can be performed with the service tool, item no. 109 05 51.

### Performance data:

Actuator connection: **M30x1.5**

Working temperature range: 14°F to 250°F

Maximum working pressure: 145 psi

Maximum differential pressure: 14.5 psi

Size:	A	B	C	D	E	F
1/2”	2.76	1.77	1.24	3/4	2.42	2.76
3/4”	3.15	1.65	1.77	1	2.58	3.58

Available in sweat connections only.

### Item numbers:

With test points

Size	Cv	Flow range	Item number
1/2”	2.09	Up to 5.0 GPM	167 53 73
3/4”	5.22	Up to 10.0 GPM	167 54 75

### Accessories:

Service tool:	109 05 51
Demo-Bloc tool:	118 80 51

### Actuators:

24V Proportional 0-10V	101 27 06
24V Three point	101 27 08
24V On/Off Normally Open	101 28 16

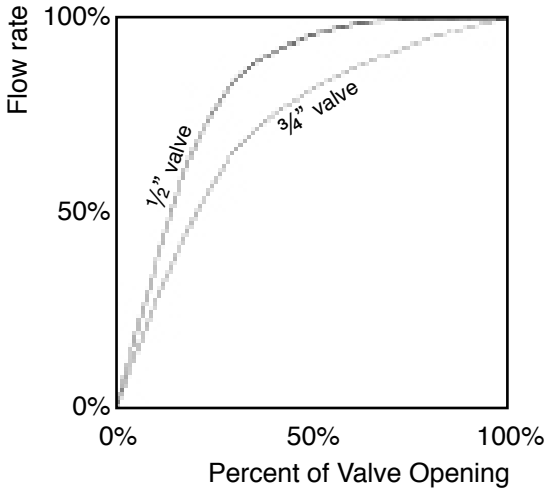
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“OV-Q4”

Control and Balance Valve  
Part No.

Characteristic lines for the 1/2" and 3/4" valves

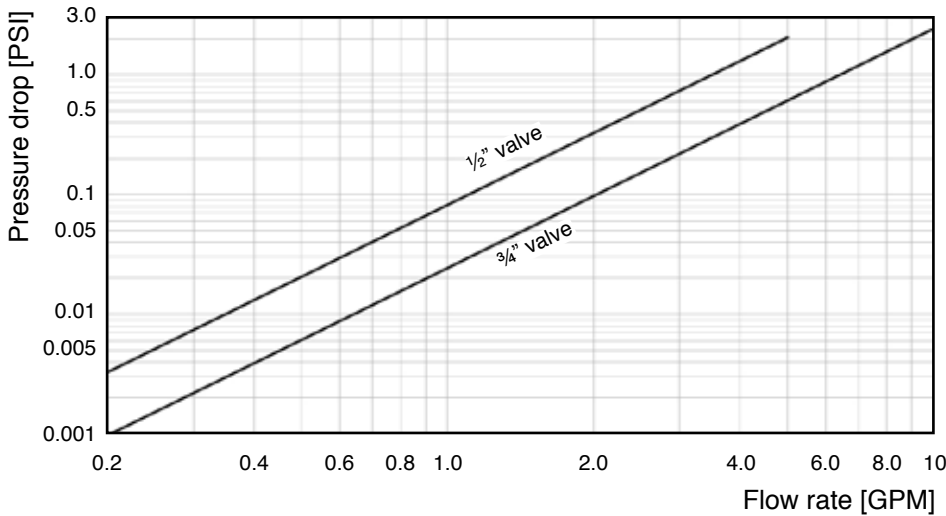


**Fixed Orifice Flow Measurement:**  
When measuring the differential pressure, the control insert must be completely opened because the valve seat acts as the measuring orifice. The fixed orifice design creates a simple and fast commissioning process.

**Commissioning:**

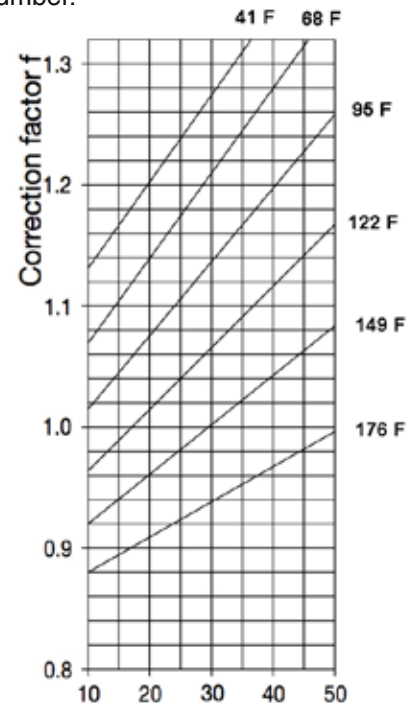
1. Using the chart or table to the left select the pressure drop that corresponds to the desired flow rate
2. Remove the brass cap, and using a 5/32" allen key, close the balancing valve until the differential pressure across the ports reaches the desired number.

Balancing flow chart for the fixed orifice ports



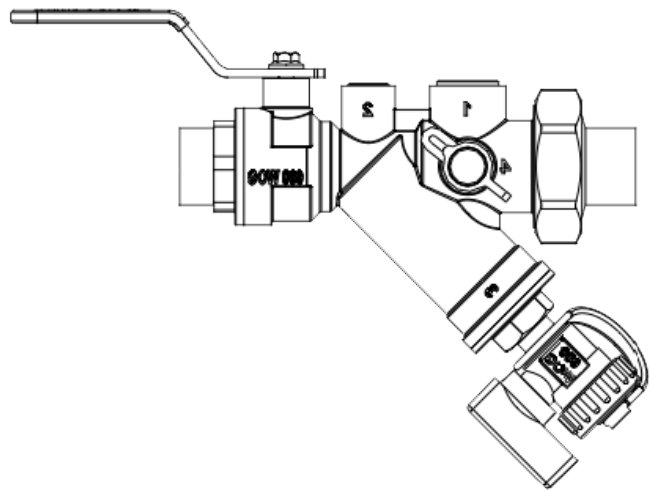
Fixed orifice pressure drop [PSI] for typical flow rates

GPM	1/2"	3/4"
0.2	0.0033	0.0010
0.25	0.0052	0.0015
0.3	0.0074	0.0022
0.4	0.0132	0.0039
0.5	0.0206	0.0061
0.6	0.0297	0.0088
0.75	0.0464	0.0138
0.8	0.0528	0.0157
1.0	0.0826	0.0246
1.5	0.1858	0.0553

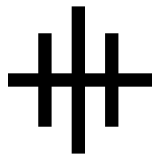
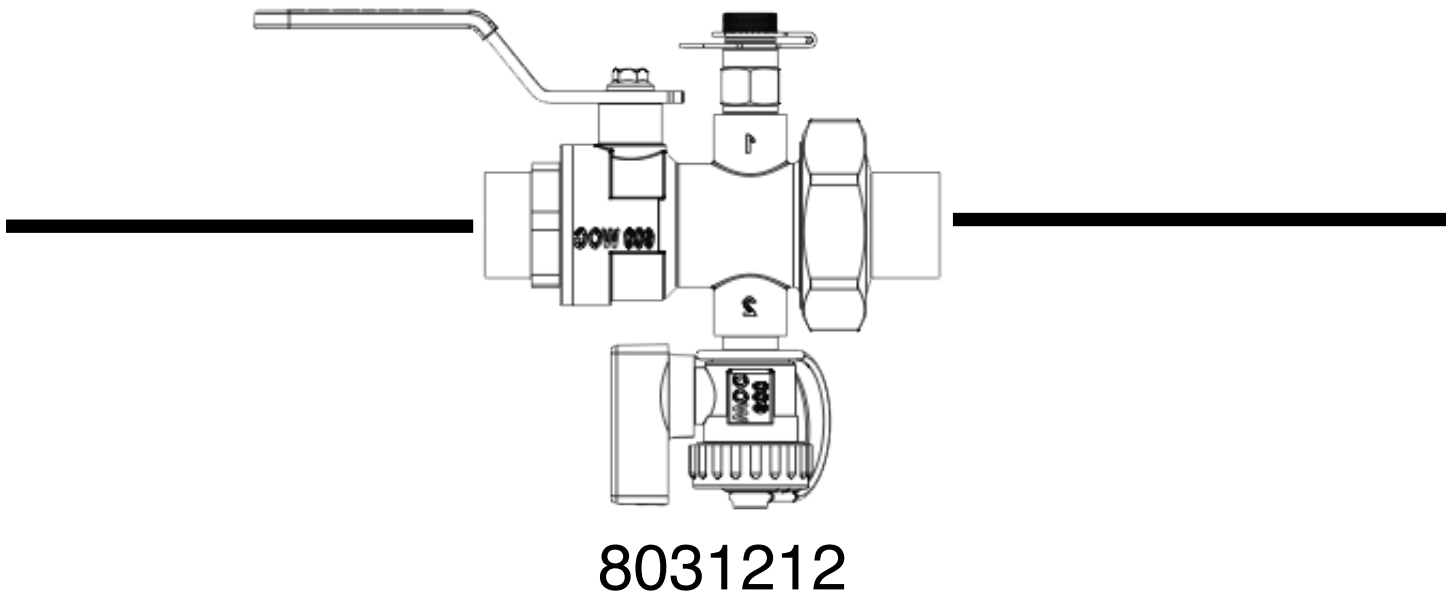
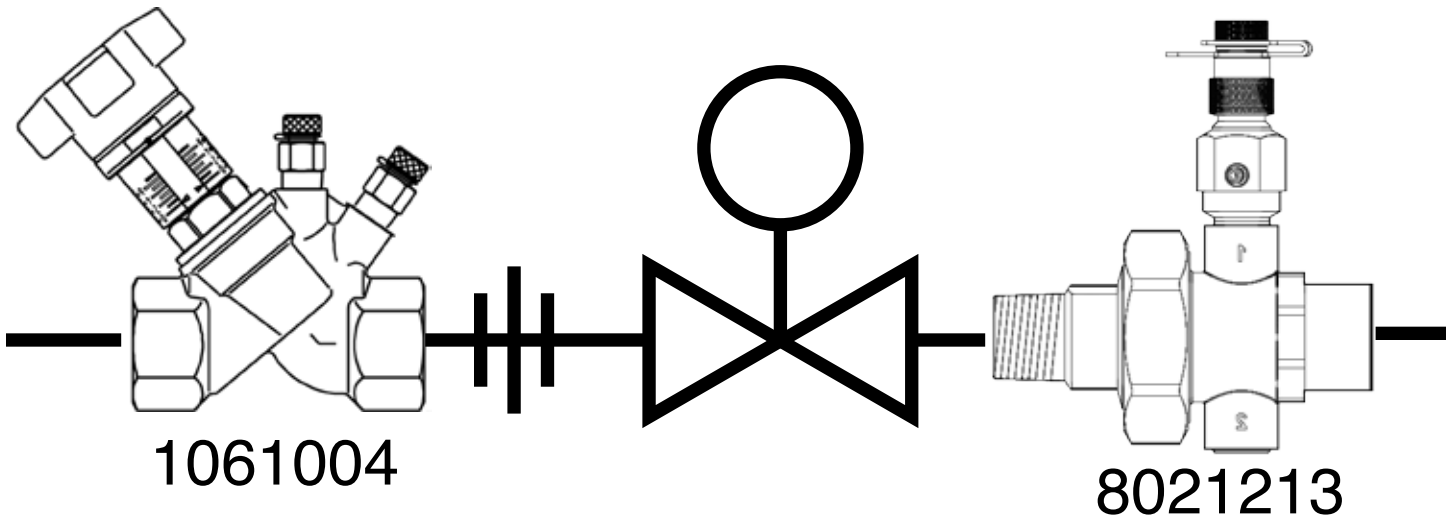


P-Drop Mixture = f x P-Drop chart

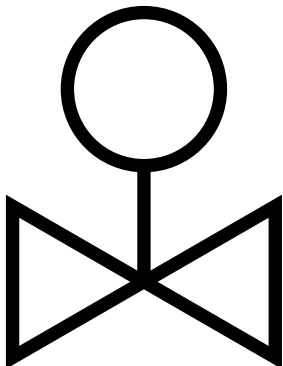
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1/2" Union fitting MNPT x MNPT to be **provided by CCTF**

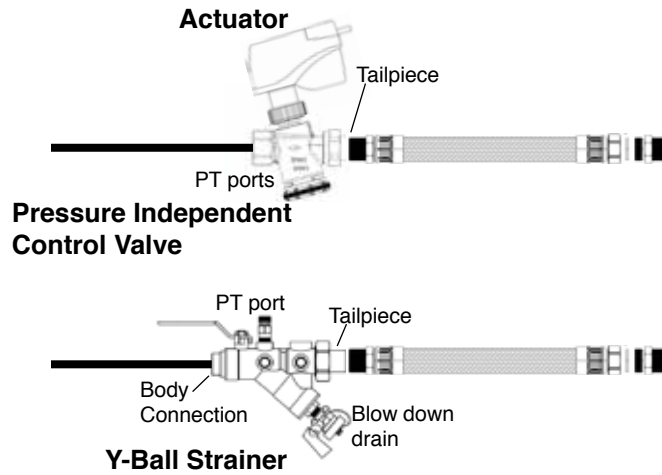


1/2" Control Valve to be provided by others

“Cocon QTZ”  
Sizes ½” to 1¼”



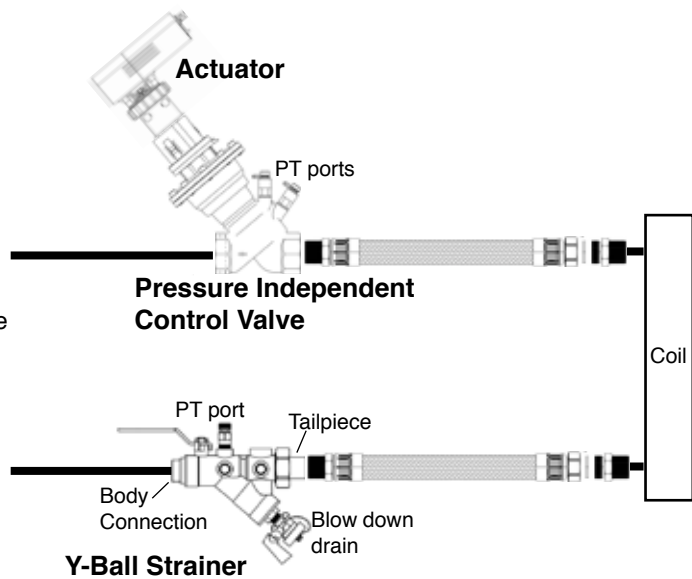
- “Cocon QTZ” pressure independent control valve with PT ports
- Y-Ball strainer with PT, bypass, and drain ports
- Stainless steel braided hose



“Cocon QTR”  
Sizes 1½” to 2”

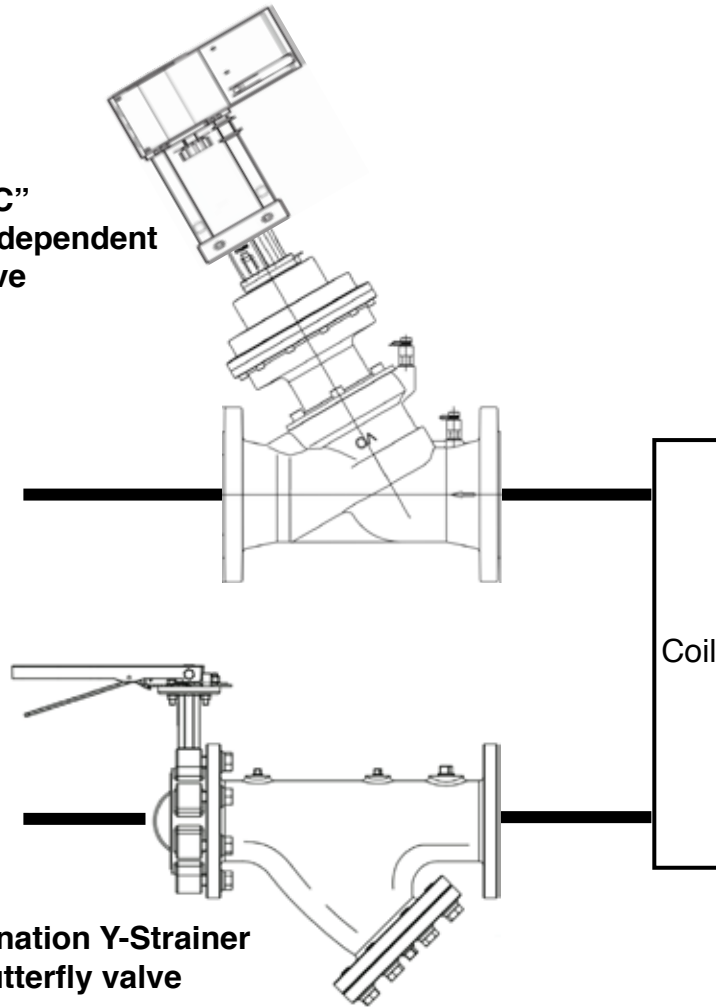


- “Cocon QTR” pressure independent control valve with PT ports
- Y-Ball strainer with PT, bypass, and drain ports
- Stainless steel braided hose



Job Name: _____	Submitted by: _____	Date: _____
_____	Spec Section: _____	_____
Job Location: _____	Engineer/Architect: _____	_____
_____	Approval: _____	Date: _____

**“Cocon QFC”  
Pressure Independent  
Control Valve**



**“Cocon QFC”  
Pressure Independent Control Valve**

Item Number	DN	Size	Minimum Flow	Maximum Flow
			GPM	
<b>1676151</b>	65	2½"	22	88
<b>1676152</b>	80	3"	33	132
<b>1676153</b>	100	4"	55	220
<b>1676154</b>	125	5"	119	396
<b>1676155</b>	150	6"	158	660

**Combination Y-Strainer  
and Butterfly valve**

Item Number	DN	Size
<b>1668301</b>	65	2½"
<b>1668302</b>	80	3"
<b>1668303</b>	100	4"
<b>1668304</b>	125	5"
<b>1668305</b>	150	6"