



G4 2042

**Bronze
Pressure Reducing Valve
Pilot Operated
For Steam, Air & Gases
BSPB Threaded**

Bailey Birkett



The G4 series of pilot operated pressure reducing valves provide extremely accurate levels of pressure regulation for steam, air and industrial gas applications.

The valve relies upon a stable pressure signal from the outlet pipework in order to maintain stable control of the outlet pressure. However, under certain operating conditions the signal pressure may be unstable in the immediate vicinity of the valve outlet and as a result may cause erratic control. This can be easily overcome by installing a balance pipe.

All G4 valves can be remotely controlled where necessary by connecting a balance pipe from the remote control port and into the outlet pipework at a point where stable pressures are likely to occur.

Features & Benefits

- Pilot operated
- Reliable
- Compact design
- Constant outlet pressure
- High capacity
- Positive shut-off
- Spares available

Pressure & Temperature

Inlet Pressure Range:-

0.7 to 35 bar*

*Steam duty 25 bar @ 225°C & 17 bar @ 260°C

Reduced Pressure range:-

0.07 to 21 bar**

**0.07 to 0.35 bar requires a low pressure top

Temperature Range:-

St. St. Seat (Standard): -20°C to 260°C

Nitrile Seat: -20°C to 100°C

FKM Seat: -18°C to 150°C

PTFE Seat: -20°C to 170°C

DN (BSP)	15 (½")	20 (¾")	25 (1")	32 (1¼")	40 (1½")	50 (2")
A	105	105	114	124	133	162
B	60	64	67	76	79	83
C	203	210	213	244	251	260
Weight Kg	6.0	6.8	7.0	10.8	12.7	15.4

MATERIALS	
Body	Bronze
Trim	Stainless Steel (Standard) • PTFE • Nitrile (31 Bar Max) • FKM (31 Bar Max)
Pilot Top	Bronze
Pilot Top Valve	Stainless Steel
Diaphragm	Stainless Steel
Piston	Bronze

SPRING SELECTION (BAR)	COLOUR CODE
0.07 to 3.5	Yellow
0.7 to 7.0	Black
2.8 to 10.5	White
3.5 to 14.0	Green
7.0 to 21.0	Red

AVAILABLE SPARES
Routine Service Pack. Containing:- Diaphragm, set of piston rings, pilot valve cap & set of joints.
Complete Repair Kit. Containing:- Diaphragm, set of piston rings, pilot valve assembly, main valve, main valve seat, main valve spring & set of joints.

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Capacity Charts/Sizing

DRY SATURATED STEAM CAPACITY (kg/h)							
Inlet (bar)	Outlet (bar)	15	20	25	32	40	50
0.70	0.35	42.5	86.7	143	215	310	534
	0.07**	42.5	86.7	143	215	310	534
1.00	0.65	46.7	95.3	157	239	346	594
	0.55	49.5	101	166	254	367	630
	0.32**	49.5	101	166	254	367	630
	0.07**	49.5	101	166	254	367	630
2.00	1.65	58.7	120	197	300	434	747
	1.30	69.5	141	233	356	514	884
	1.10	75.5	154	254	386	559	960
	0.35	75.5	154	254	386	559	960
	0.07**	75.5	154	254	386	559	960
	4.30	108	220	363	553	799	1374
5.00	4.00	121	248	408	623	900	1547
	2.75	158	322	530	808	1168	2007
	0.35	158	322	530	808	1168	2007
	0.07**	158	322	530	808	1168	2007
10.00	9.00	172	352	580	884	1279	2198
	5.50	291	593	977	1489	2152	3699
	1.20	291	593	977	1489	2152	3699
	0.35	291	593	977	1489	2152	3699
15.00	14.00	207	422	695	1059	1531	2633
	12.00	330	673	1109	1690	2443	4199
	8.25	423	862	1420	2164	3128	5377
	2.90	423	862	1420	2164	3128	5377
	0.80	423	862	1420	2164	3128	5377
20.00	19.00	238	487	802	1222	1767	3037
	12.00	539	1101	1814	2764	3995	6868
	11.00	552	1126	1855	2827	4086	7024
	4.60	552	1126	1855	2827	4086	7024
	3.10	552	1126	1855	2827	4086	7024
	1.28	552	1126	1855	2827	4086	7024
25.00	20.70	500	1020	1680	2560	3700	6359
	13.75	684	1395	2297	3500	5059	8696
	12.00	684	1395	2297	3500	5059	8696
	6.30	684	1395	2297	3500	5059	8696
	2.80	684	1395	2297	3500	5059	8696
30.00	20.70	743	1516	2497	3805	5500	9454
	16.50	817	1667	2746	4184	6047	10395
	12.00	817	1667	2746	4184	6047	10395
	8.00	817	1667	2746	4184	6047	10395
	6.90	817	1667	2746	4184	6047	10395
	4.60	817	1667	2746	4184	6047	10395
35.00	20.70	930	1898	3126	4763	6884	11834
	19.25	943	1923	3168	4827	6977	11993
	12.00	943	1923	3168	4827	6977	11993
	9.60	943	1923	3168	4827	6977	11993
	7.50	943	1923	3168	4827	6977	11993
	6.20	943	1923	3168	4827	6977	11993

** Low pressure top required for outlet pressures below 0.35 Bar

The Max. & Min. outlet pressure for a given inlet pressure and valve size, can be determined from the above table. E.g. a 50mm valve with an inlet pressure of 35 bar has a maximum available outlet pressure of 20.70 bar and a minimum of 6.20 bar.

To ensure the above flows, it is critical the correct size of outlet pipe is used. Contact sales for further details.

For super heated steam the above capacities need to be derated, see table below

SUPER HEATED STEAM DERATING	FACTOR
0 to 10°C	Multiply by 0.96
10 to 50°C	Multiply by 0.92
50 to 75°C	Multiply by 0.89
75 to 100°C	Multiply by 0.86
100 to 150°C	Multiply by 0.82

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Capacity Charts/Sizing

AIR CAPACITY (l/s at 15°C)							
Inlet (bar)	Outlet (bar)	15	20	25	32	40	50
0.70	0.35	14.0	28.6	47.1	71.8	104	178
	0.07**	14.0	28.6	47.1	71.8	104	178
1.00	0.65	15.5	31.5	52.0	79.2	114	196
	0.55	16.4	33.5	55.2	84.2	122	209
	0.32**	16.4	33.5	55.2	84.2	122	209
	0.07**	16.4	33.5	55.2	84.2	122	209
2.00	1.65	19.3	39.5	65.0	99.1	143	246
	1.30	23.2	47.3	77.9	118.0	171	295
	1.10	25.3	51.6	85.0	129.0	187	322
	0.35	25.3	51.6	85.0	129.0	187	322
	0.07**	25.3	51.6	85.0	129.0	187	322
5.00	4.30	34.3	70.1	115.0	176.0	254	437
	4.00	39.1	79.8	131.0	200.0	289	497
	2.75	51.8	106.0	174.0	265.0	383	659
	0.35	51.8	106.0	174.0	265.0	383	659
	0.07**	51.8	106.0	174.0	265.0	383	659
10.00	9.00	53.3	108.0	179.0	272.0	394	678
	5.50	94.5	193.0	317.0	484.0	699	1202
	1.20	94.5	193.0	317.0	484.0	699	1202
15.00	0.35	94.5	193.0	317.0	484.0	699	1202
	14.00	61.7	125.0	207.0	316.0	456	785
	12.00	104.0	213.0	351.0	536.0	775	1332
	8.25	137.0	280.0	460.0	702.0	1014	1743
	2.90	137.0	280.0	460.0	702.0	1014	1743
20.00	0.80	137.0	280.0	460.0	702.0	1014	1743
	19.00	69.7	142.0	234.0	356.0	515	886
	12.00	175.0	357.0	589.0	897.0	1297	2229
	11.00	180.0	366.0	603.0	920.0	1329	2284
	4.60	180.0	366.0	603.0	920.0	1329	2284
	3.10	180.0	366.0	603.0	920.0	1329	2284
25.00	1.28	180.0	366.0	603.0	920.0	1329	2284
	20.70	157.0	321.0	530.0	807.0	1167	2006
	13.75	222.0	453.0	746.0	1137.0	1664	2826
	12.00	222.0	453.0	746.0	1137.0	1664	2826
	6.30	222.0	453.0	746.0	1137.0	1664	2826
30.00	2.80	222.0	453.0	746.0	1137.0	1664	2826
	20.70	238.0	487.0	802.0	1222.0	1767	3038
	16.50	265.0	540.0	889.0	1355.0	1959	3367
	12.00	265.0	540.0	889.0	1355.0	1959	3367
	8.00	265.0	540.0	889.0	1355.0	1959	3367
35.00	6.90	265.0	540.0	889.0	1355.0	1959	3367
	4.60	265.0	540.0	889.0	1355.0	1959	3367
	20.70	302.0	617.0	1017.0	1550.0	2241	3852
	19.25	307.0	627.0	1032.0	1573.0	2274	3908
	12.00	307.0	627.0	1032.0	1573.0	2274	3908
	9.60	307.0	627.0	1032.0	1573.0	2274	3908
35.00	7.50	307.0	627.0	1032.0	1573.0	2274	3908
	6.20	307.0	627.0	1032.0	1573.0	2274	3908

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To ensure the above flows, it is critical the correct size of outlet pipe is used. Contact sales for further details.
For gases other than air and temperatures other than 15°C please contact sales.

Estimated Air Capacities

1. Multiply chart capacity by 0.66 to give air flow in SCFM
2. Multiply chart capacity by 1.2 to give air flow in Nm³/h

Estimated Air Pressure Drops

For guidance, multiply the chart pressure drop by 1.23 to give an approximate air pressure drop.