



G4 2046

**Carbon Steel
Pressure Reducing Valve
Pilot Operated
For Steam, Air & Gasses**

Flanged PN40
PN16/25, ANSI150/300 & BST F/H
drillings available on request

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 42 bar*

*Steam duty 42 bar @ 280°C & 32 bar @ 400°C
Air duty 35 bar @ 120°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 400°C

Nitrile Seat: -20°C to 100°C

FKM Seat: -18°C to 150°C

PTFE Seat: -20°C to 170°C

DN	15	20	25	32	40	50	65	80	100
A	171	171	171	229	229	229	254	286	343
B	70	70	70	89	89	89	130	146	178
C	213	213	213	267	267	267	286	286	324
D	114	114	121	140	150	165	190	210	255
Weight Kg	13.5	13.5	13.5	26.3	26.3	26.3	42	52	87

MATERIALS

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

SPRING SELECTION (BAR)

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.

G4 2046

Capacity Charts/Sizing

DRY SATURATED STEAM CAPACITY (kg/h)										
Inlet (bar)	Outlet (bar)	15	20	25	32	40	50	65	80	100
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	1072	1337	2397
2.00	0.07**	49.5	101	166	254	367	630	1072	1337	2397
	1.65	58.7	120	197	300	434	747	-	-	-
	1.30	69.5	141	233	356	514	884	1418	1769	3171
	1.10	75.5	154	254	386	559	960	1540	1920	3442
	0.35	75.5	154	254	386	559	960	1540	1920	3442
5.00	0.07**	75.5	154	254	386	559	960	1540	1920	3442
	4.30	108	220	363	553	799	1374	-	-	-
	4.00	121	248	408	623	900	1547	2388	2978	5338
	2.75	158	322	530	808	1168	2007	3219	4015	7196
	0.35	158	322	530	808	1168	2007	3219	4015	7196
10.00	0.07**	158	322	530	808	1168	2007	3219	4015	7196
	9.00	172	352	580	884	1279	2198	3024	3771	6759
	5.50	291	593	977	1489	2152	3699	5932	7398	13260
	1.20	291	593	977	1489	2152	3699	5932	7398	13260
15.00	0.35	291	593	977	1489	2152	3699	5932	7398	13260
	14.00	207	422	695	1059	1531	2633	3216	4011	7190
	12.00	330	673	1109	1690	2443	4199	6629	8267	14819
	8.25	423	862	1420	2164	3128	5377	8624	10755	19277
	2.90	423	862	1420	2164	3128	5377	8624	10755	19277
20.00	0.80	423	862	1420	2164	3128	5377	8624	10755	19277
	19.00	238	487	802	1222	1767	3037	3360	4190	7511
	12.00	539	1101	1814	2764	3995	6868	11014	13736	24636
	11.00	552	1126	1855	2827	4086	7024	11265	14048	25180
	4.60	552	1126	1855	2827	4086	7024	11265	14048	25180
25.00	3.10	552	1126	1855	2827	4086	7024	11265	14048	25180
	1.28	552	1126	1855	2827	4086	7024	-	-	-
	20.70	500	1020	1680	2560	3700	6359	9717	12118	21720
	13.75	684	1395	2297	3500	5059	8696	13946	17392	31174
	12.00	684	1395	2297	3500	5059	8696	13946	17392	31174
30.00	6.30	684	1395	2297	3500	5059	8696	13946	17392	31174
	2.80	684	1395	2297	3500	5059	8696	-	-	-
	20.70	743	1516	2497	3805	5500	9454	15162	18908	33891
	16.50	817	1667	2746	4184	6047	10395	16671	20789	37264
	12.00	817	1667	2746	4184	6047	10395	16671	20789	37264
35.00	8.00	817	1667	2746	4184	6047	10395	16671	20789	37264
	6.90	817	1667	2746	4184	6047	10395	16671	20789	37264
	4.60	817	1667	2746	4184	6047	10395	-	-	-
	20.70	930	1898	3126	4763	6884	11834	18979	23668	42425
	19.25	943	1923	3168	4827	6977	11993	19234	23986	42993
40.00	12.00	943	1923	3168	4827	6977	11993	19234	23986	42993
	9.60	943	1923	3168	4827	6977	11993	19234	23986	42993
	7.50	943	1923	3168	4827	6977	11993	19234	23986	42993
	6.20	943	1923	3168	4827	6977	11993	-	-	-
	20.70	1074	2195	3615	5508	7961	13684	21945	27367	49055
42.00	12.00	1074	2195	3615	5508	7961	13684	21945	27367	49055
	10.30	1074	2195	3615	5508	7961	13684	21945	27367	49055
	8.07	1074	2195	3615	5508	7961	13684	21945	27367	49055
	6.20	1074	2195	3615	5508	7961	13684	-	-	-
	20.70	1125	2295	3780	5760	8325	14310	22950	28619	51299
42.00	12.00	1125	2295	3780	5760	8325	14310	22950	28619	51299
	10.30	1125	2295	3780	5760	8325	14310	22950	28619	51299
	8.30	1125	2295	3780	5760	8325	14310	22950	28619	51299
	6.20	1125	2295	3780	5760	8325	14310	-	-	-

** 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 100mm valve with an inlet pressure of 15.0 bar has a maximum available outlet pressure of 14.0 bar and a minimum of 0.80 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

G4 2046

Capacity Charts/Sizing

AIR CAPACITY (l/s @ 15°C)										
Inlet (bar)	Outlet (bar)	15	20	25	32	40	50	65	80	100
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	357	445	797
	0.07**	16.4	33.5	55.2	84.2	122	209	357	445	797
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	473	590	1057
	1.10	25.3	51.6	85.0	129.0	187	322	516	643	1153
	0.35	25.3	51.6	85.0	129.0	187	322	516	643	1153
5.00	0.07**	25.3	51.6	85.0	129.0	187	322	516	643	1153
	4.30	34.3	70.1	115.0	176.0	254	437	-	-	-
	4.00	39.1	79.8	131.0	200.0	289	497	765	954	1711
	2.75	51.8	106.0	174.0	265.0	383	659	1057	1318	2363
10.00	0.35	51.8	106.0	174.0	265.0	383	659	1057	1318	2363
	0.07**	51.8	106.0	174.0	265.0	383	659	1057	1318	2363
	9.00	53.3	108.0	179.0	272.0	394	678	912	1137	2039
	5.50	94.5	193.0	317.0	484.0	699	1202	1928	2404	4309
15.00	1.20	94.5	193.0	317.0	484.0	699	1202	1928	2404	4309
	0.35	94.5	193.0	317.0	484.0	699	1202	1928	2404	4309
	14.00	61.7	125.0	207.0	316.0	456	785	908	1132	2029
	12.00	104.0	213.0	351.0	536.0	775	1332	2099	2618	4692
20.00	8.25	137.0	280.0	460.0	702.0	1014	1743	2796	3486	6249
	2.90	137.0	280.0	460.0	702.0	1014	1743	2796	3486	6249
	0.80	137.0	280.0	460.0	702.0	1014	1743	2796	3486	6249
	19.00	69.7	142.0	234.0	356.0	515	886	892	1112	1994
25.00	12.00	175.0	357.0	589.0	897.0	1297	2229	3579	4459	7993
	11.00	180.0	366.0	603.0	920.0	1329	2284	3664	4569	8190
	4.60	180.0	366.0	603.0	920.0	1329	2284	3664	4569	8190
	3.10	180.0	366.0	603.0	920.0	1329	2284	3664	4569	8190
30.00	1.28	180.0	366.0	603.0	920.0	1329	2284	-	-	-
	20.70	157.0	321.0	530.0	807.0	1167	2006	3049	3802	6815
	13.75	222.0	453.0	746.0	1137.0	1664	2826	4532	5651	10130
	12.00	222.0	453.0	746.0	1137.0	1664	2826	4532	5651	10130
35.00	6.30	222.0	453.0	746.0	1137.0	1664	2826	4532	5651	10130
	2.80	222.0	453.0	746.0	1137.0	1664	2826	-	-	-
	20.70	238.0	487.0	802.0	1222.0	1767	3038	4872	60766	10891
	16.50	265.0	540.0	889.0	1355.0	1959	3367	5400	6734	12070
40.00	12.00	265.0	540.0	889.0	1355.0	1959	3367	5400	6734	12070
	8.00	265.0	540.0	889.0	1355.0	1959	3367	5400	6734	12070
	6.90	265.0	540.0	889.0	1355.0	1959	3367	5400	6734	12070
	4.60	265.0	540.0	889.0	1355.0	1959	3367	-	-	-
42.00	20.70	302.0	617.0	1017.0	1550.0	2241	3852	6178	7705	13811
	19.25	307.0	627.0	1032.0	1573.0	2274	3908	6268	7817	14011
	12.00	307.0	627.0	1032.0	1573.0	2274	3908	6268	7817	14011
	9.60	307.0	627.0	1032.0	1573.0	2274	3908	6268	7817	14011
45.00	7.50	307.0	627.0	1032.0	1573.0	2274	3908	6268	7817	14011
	6.20	307.0	627.0	1032.0	1573.0	2274	3908	-	-	-
	20.70	350.0	714.0	1175.0	1791.0	2589	4450	7136	8899	15951
	12.00	350.0	714.0	1175.0	1791.0	2589	4450	7136	8899	15951
50.00	10.30	350.0	714.0	1175.0	1791.0	2589	4450	7136	8899	15951
	8.07	350.0	714.0	1175.0	1791.0	2589	4450	7136	8899	15951
	6.20	350.0	714.0	1175.0	1791.0	2589	4450	-	-	-
	20.70	367.0	748.0	1233.0	1878.0	2715	4666	7483	9332	16728
55.00	12.00	367.0	748.0	1233.0	1878.0	2715	4666	7483	9332	16728
	10.30	367.0	748.0	1233.0	1878.0	2715	4666	7483	9332	16728
	8.30	367.0	748.0	1233.0	1878.0	2715	4666	7483	9332	16728
	6.20	367.0	748.0	1233.0	1878.0	2715	4666	-	-	-

** 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 100mm valve with an inlet pressure of 15 bar has a maximum available outlet pressure of 14.00 bar and a minimum of 0.80 bar.

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.