



G4 2045

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

Flanged PN16
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 35 bar*

*Steam duty 25 bar @ 225°C & 17 bar @ 260°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 260°C
PTFE Seat: -20°C to 170°C

DN	65	80	100
A	254	286	343
B	130	146	178
C	286	286	324
D	190	210	255
Weight Kg	38	56	80

MATERIALS

Body	Carbon Steel
Trim	Stainless Steel (Standard) • PTFE
Pilot Top	Bronze
Pilot Top Valve	Stainless Steel
Diaphragm	Stainless Steel
Piston	Bronze

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.

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Capacity Charts/Sizing

DRY SATURATED STEAM CAPACITY (kg/h)					
Inlet (bar)	Outlet (bar)	65	80	100	
0.70	0.35	-	-	-	
	0.07**	-	-	-	
1.00	0.65	-	-	-	
	0.55	-	-	-	
	0.32**	1072	1337	2397	
	0.07**	1072	1337	2397	
2.00	1.65	-	-	-	
	1.30	1418	1769	3171	
	1.10	1540	1920	3442	
	0.35	1540	1920	3442	
	0.07**	1540	1920	3442	
5.00	4.30	-	-	-	
	4.00	2388	2978	5338	
	2.75	3219	4015	7196	
	0.35	3219	4015	7196	
	0.07**	3219	4015	7196	
10.00	9.00	3024	3771	6759	
	5.50	5932	7398	13260	
	1.20	5932	7398	13260	
	0.35	5932	7398	13260	
15.00	14.00	3216	4011	7190	
	12.00	6629	8267	14819	
	8.25	8624	10755	19277	
	2.90	8624	10755	19277	
	0.80	8624	10755	19277	
20.00	19.00	3360	4190	7511	
	12.00	11014	13736	24636	
	11.00	11265	14048	25180	
	4.60	11265	14048	25180	
	3.10	11265	14048	25180	
25.00	1.28	-	-	-	
	20.70	9717	12118	21720	
	13.75	13946	17392	31174	
	12.00	13946	17392	31174	
	6.30	13946	17392	31174	
30.00	2.80	-	-	-	
	20.70	15162	18908	33891	
	16.50	16671	20789	37264	
	12.00	16671	20789	37264	
	8.00	16671	20789	37264	
	6.90	16671	20789	37264	
35.00	4.60	-	-	-	
	20.70	18979	23668	42425	
	19.25	19234	23986	42993	
	12.00	19234	23986	42993	
	9.60	19234	23986	42993	
	7.50	19234	23986	42993	
	6.20	-	-	-	

** 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

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Capacity Charts/Sizing

AIR CAPACITY (l/s @ 15°C)

Inlet (bar)	Outlet (bar)	65	80	100
0.70	0.35	-	-	-
	0.07**	-	-	-
1.00	0.65	-	-	-
	0.55	-	-	-
	0.32**	357	445	797
2.00	0.07**	357	445	797
	1.65	-	-	-
	1.30	473	590	1057
	1.10	516	643	1153
	0.35	516	643	1153
	0.07**	516	643	1153
5.00	4.30	-	-	-
	4.00	765	954	1711
	2.75	1057	1318	2363
	0.35	1057	1318	2363
10.00	0.07**	1057	1318	2363
	9.00	912	1137	2039
	5.50	1928	2404	4309
	1.20	1928	2404	4309
	0.35	1928	2404	4309
15.00	14.00	908	1132	2029
	12.00	2099	2618	4692
	8.25	2796	3486	6249
	2.90	2796	3486	6249
	0.80	2796	3486	6249
20.00	19.00	892	1112	1994
	12.00	3579	4459	7993
	11.00	3664	4569	8190
	4.60	3664	4569	8190
	3.10	3664	4569	8190
	1.28	-	-	-
25.00	20.70	3049	3802	6815
	13.75	4532	5651	10130
	12.00	4532	5651	10130
	6.30	4532	5651	10130
30.00	2.80	-	-	-
	20.70	4872	60766	10891
	16.50	5400	6734	12070
	12.00	5400	6734	12070
	8.00	5400	6734	12070
	6.90	5400	6734	12070
35.00	4.60	-	-	-
	20.70	6178	7705	13811
	19.25	6268	7817	14011
	12.00	6268	7817	14011
	9.60	6268	7817	14011
7.50	6268	7817	14011	
6.20	-	-	-	

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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.