ENGINEERING TOMORROW

Data sheet

Shut-off ball valve

Type GBC for R744 / CO_2 (45 bar / 650 psi)

Danfoss shut-off ball valves, type GBC for CO_2 are manually operated shut-off valves only for single-flow direction.

The valves are approved for applications in liquid, suction and hot-gas lines in refrigeration and airconditioning systems.

The valves offer maximum tightness across the seat/seal with minimum pressure drop.

These ball valves give maximum flow in the fully open position. They are designed for operation within a broad temperature range.

The valves are equipped with a one-piece seal cap to prevent tampering.

Features

- Slimline body – easier to install and service.
- ¼ turn from fully open to fully closed.
- Rotation stops at fully open and fully closed positions.
- Indicator on spindle top shows degree of opening.
- Precision laser welded construction.
- Burst-proof spindle design.
- Valve seal of low friction, tight-sealing modified PTFE Teflon®.
- Drilled and tapped for panel mounting.
- Release of entrapped liquid via hole in the ball.

Approvals

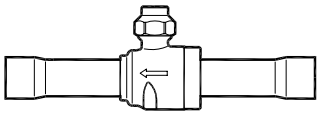
Technical data

- *Refrigerants:* R 744 (CO_2)
- *Media temperature range:* -40 – 150 °C /-40 – 300 °F
- *Max. working pressure (PS / MWP):* 45 bar / 650 psig
- Max. test pressure: 75 bar / 1088 psig
- *Flow direction:* single-flow

Notes: For the application use with R744 as part of a secondary loop or cascade:

1. The design pressure of the refrigerant containing component is not less than the design pressure of the associated components.
2. The component is not provided with any pressure relief or pressure regulating relief valve and that a sufficient number of valves having capacity deemed adequate shall be field-installed on the refrigeration system.
3. When the refrigeration system is de-energized, venting of R744 may occur through the pressure regulating relief valves, and may need to be recharged, but the valve should not be defeated or bypassed.
4. A sufficient number of pressure relief and pressure regulating valves may need to be provided based upon system capacity and located such that no stop valve is provided between the relief valve and the parts or section of the system being protected.

Ordering

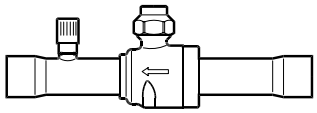


GBC without access port

GBC without access port, ODF / ODF

Type	Solder ODF / ODF connection		K_v value [1]	C_v value [1]	Code no.
	[inch]	[mm]	[m³/h]	[gal/min]	
GBC 6s	1/4	-	1.74	2.01	009G7520
	-	6	1.74	2.01	009G7570
GBC 10s	3/8	-	7.52	8.69	009G7521
	-	10	7.52	8.69	009G7571
GBC 12s	1/2	-	12.92	14.94	009G7522
	-	12	12.92	14.94	009G7572
GBC 16s	5/8	16	15.66	18.10	009G7523
GBC 18s	3/4	-	21.93	25.35	009G7524
	-	18	21.93	25.35	009G7574
GBC 22s	7/8	22	33.34	38.54	009G7525
GBC 28s	1 1/8	-	62.25	71.96	009G7526
	-	28	62.25	71.96	009G7576
GBC 35s	1 3/8	35	92.76	107.23	009G7528
GBC 42s	1 5/8	-	134.76	155.78	009G7529
	-	42	134.76	155.78	009G7579

[1]) calculated based on fluid dynamic equations



GBC with access port, ODF / ODF

GBC with access port, ODF / ODF

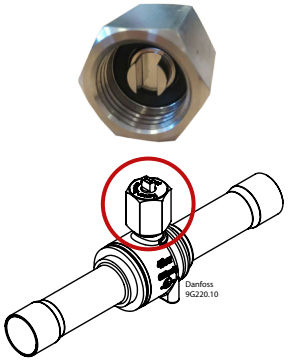
Type	Solder ODF / ODF connection		K_v value [1]	C_v value [1]	Code no.
	[inch]	[mm]	[m³/h]	[gal/min]	
GBC 6s	1/4	-	1.74	2.01	009G7553
	-	6	1.74	2.01	009G7554
GBC 10s	3/8	-	7.52	8.69	009G7555
	-	10	7.52	8.69	009G7556
GBC 12s	1/2	-	12.92	14.94	009G7557
	-	12	12.92	14.94	009G7558
GBC 16s	5/8	16	15.66	18.10	009G7534
GBC 18s	3/4	-	21.93	25.35	009G7563
	-	18	21.93	25.35	009G7564
GBC 22s	7/8	22	33.34	38.54	009G7536
GBC 28s	1 1/8	-	62.25	71.96	009G7565
	-	28	62.25	71.96	009G7566
GBC 35s	1 3/8	35	92.76	107.23	009G7567
GBC 42s	1 5/8	-	134.76	155.78	009G7568
	-	42	134.76	155.78	009G7569

[1]) calculated based on fluid dynamic equations

Spare parts

Bracket kit

Type	Valve connection size		Industrial pack [pcs.]	Code no.
	[inch]	[mm]		
GBC 6s - GBC 16s	$^1/_4$ - $^5/_8$	6 - 16	12	**009G7084**
GBC 18s - GBC 22s	$^3/_4$ - $^7/_8$	18 - 22	12	**009G7085**
GBC 28s	1 $^1/_8$	28	10	**009G7086**
GBC 35s	1 $^3/_8$	35	5	**009G7087**
GBC 42s	1 $^5/_8$	42	4	**009G7088**

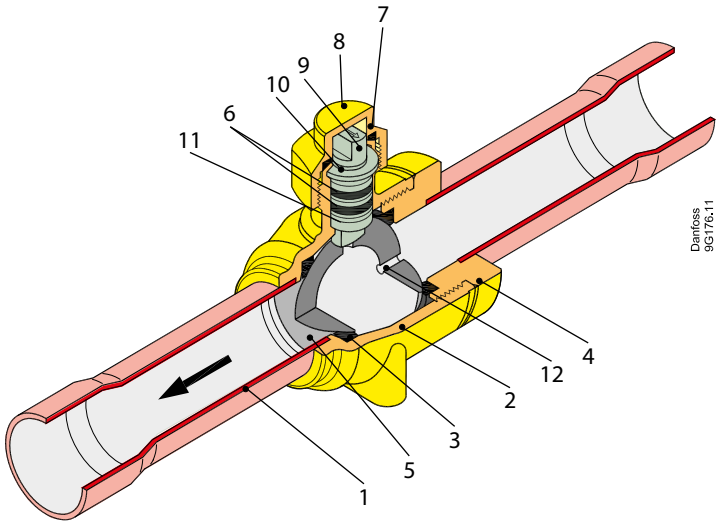


Service kit

Type	Valve connection size		Multi pack [pcs.]	Code no.
	[inch]	[mm]		
GBC 6s - GBC 22s	$^1/_4$ - $^7/_8$	6 - 22	116	**009G8012**
GBC 28s - GBC 35s	1 $^1/_8$ - 1 $^3/_8$	28 - 35	60	**009G8014**
GBC 42s	1 $^5/_8$	42	50	**009G8016**

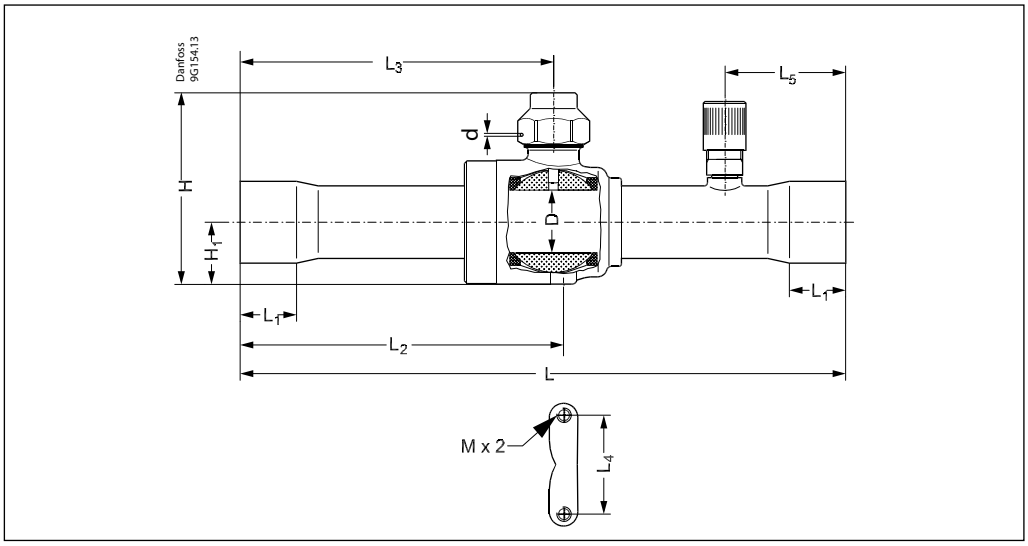
Construction

1. Connection
2. Laser welded valve body (with single directional arrow)
3. Ball seat (modified PTFE)
4. Valve adapter
5. Stainless steel ball
6. Double spindle O-ring seal (chloroprene)
7. Cap O-ring seal (chloroprene)
8. Seal cap
9. Spindle
10. Support gasket
11. Seal gasket
12. Relief hole



Direct port gives maximum flow with minimum pressure drop across the valve.

Dimensions and weights



SI units

Type	Connection		H	H1	L	L1	L2	L3	L4	L5	M	D	d	Weight
	[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[Kg] [1])
GBC 6s	1/4	6	53	15	139	7	75	73	22	31	M4 × 0.7	14.0	1.5	0.2
GBC 10s	3/8	-	53	15	139	8	75	73	22	31	M4 × 0.7	14.0	1.5	0.2
	-	10	53	15	139	9	75	73	22	31	M4 × 0.7	14.0	1.5	0.2
GBC 12s	1/2	12	53	15	161	10	86	84	22	31	M4 × 0.7	14.0	1.5	0.2
GBC 16s	5/8	16	53	15	161	12	86	84	22	31	M4 × 0.7	14.0	1.5	0.2
GBC 18s	3/4	18	61	19	185	14	99	96	30	37	M4 × 0.7	19.0	1.5	0.4
GBC 22s	7/8	22	61	19	185	17	99	96	30	37	M4 × 0.7	19.0	1.5	0.4
GBC 28s	1 1/8	28	81	25	208	20	112	108	38	44	M4 × 0.7	25.5	1.5	0.9
GBC 35s	1 3/8	35	91	30	251	25	136	130	48	44	M6 × 1.0	32.0	1.5	1.4
GBC 42s	1 5/8	42	110	35	281	29	151	145	55	56	M6 × 1.0	38.0	1.5	2.2

[1]) Calculated value

US units

Type	Connection		H	H1	L	L1	L2	L3	L4	L5	M	D	d	Weight
	[inch]	[mm]	[inch]	[inch]	[inch]	[inch]	[inch]	[inch]	[inch]	[inch]	[mm]	[inch]	[inch]	[lbs] [1])
GBC 6s	1/4	6	2.09	0.59	5.47	0.28	2.95	2.87	0.87	1.22	M4 × 0.7	0.55	0.06	0.44
GBC 10s	3/8	–	2.09	0.59	5.47	0.32	2.95	2.87	0.87	1.22	M4 × 0.7	0.55	0.06	0.44
	-	10	2.09	0.59	5.47	0.35	2.95	2.87	0.87	1.22	M4 × 0.7	0.55	0.06	0.44
GBC 12s	1/2	12	2.09	0.59	6.34	0.39	3.39	3.31	0.87	1.22	M4 × 0.7	0.55	0.06	0.44
GBC 16s	5/8	16	2.09	0.59	6.34	0.47	3.39	3.31	0.87	1.22	M4 × 0.7	0.55	0.06	0.44
GBC 18s	3/4	18	2.40	0.75	7.29	0.55	3.90	3.78	1.18	1.46	M4 × 0.7	0.75	0.06	0.88
GBC 22s	7/8	22	2.40	0.75	7.29	0.67	3.90	3.78	1.18	1.46	M4 × 0.7	0.75	0.06	0.88
GBC 28s	1 1/8	28	3.19	0.99	8.20	0.79	4.41	4.26	1.50	1.73	M4 × 0.7	1.00	0.06	1.98
GBC 35s	1 3/8	35	3.59	1.18	9.89	0.99	5.36	5.12	1.89	1.73	M6 × 1.0	1.26	0.06	3.09
GBC 42s	1 5/8	42	4.33	1.38	11.07	1.14	5.95	5.71	2.17	2.21	M6 × 1.0	1.50	0.06	4.85

[1]) Calculated value