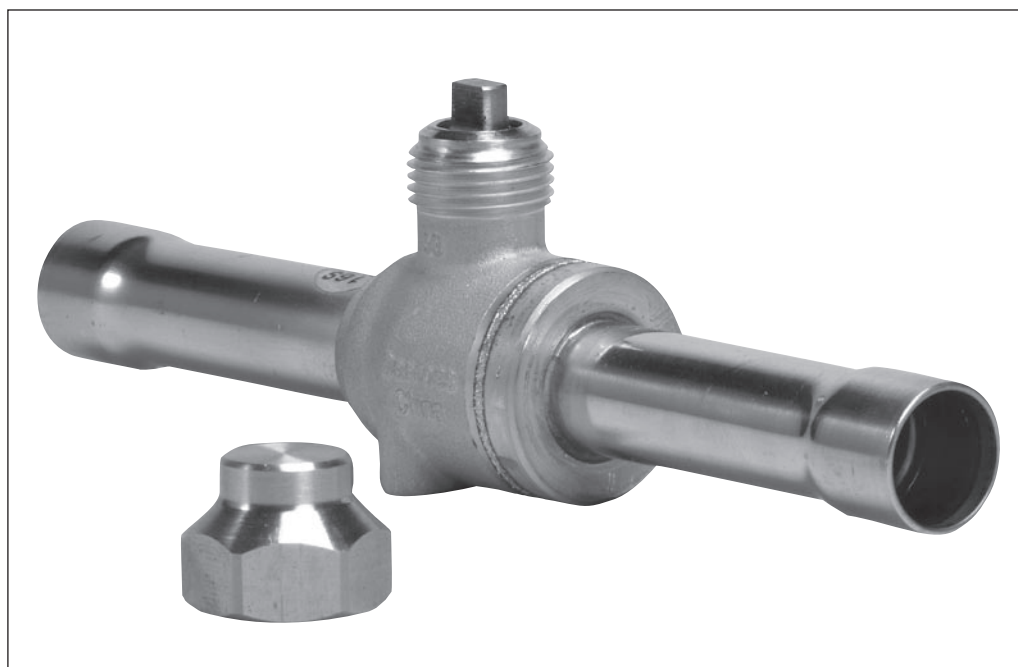




## **Ball valves, type GBC**

Introduction



Danfoss ball valves, type GBC, are manually operated shut-off valves suitable for bi-directional flow.

GBC valves are used in liquid, suction and hot-gas lines in refrigeration and air-conditioning systems.

GBC valves offer maximum tightness across the seat/seal.

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

GBC valves are equipped with a one-piece seal cap and can be wire sealed to prevent unintentional cap removal or tampering in-between services.

Features

- Flow without pressure drop.
- ¼ turn from fully open to fully closed valve.
- Rotation stop for fully open and fully closed valve.
- Ball status indicator on spindle top indicating open or closed position.
- Holes for panel mounting.
- Bi-directional flow, i.e. valve orientation is unimportant.
- Laser welded construction.
- Burst-proof spindle design.
- Valve seal of modified PTFE.
- Valve design prevents liquids from being trapped internally.
- One-piece seal cap for safety purpose – complies with European Safety Directive EN 378\*.

Technical data

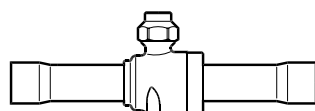
Refrigerants	CFC, HCFC, HFC
Temperature range	-40 → +150°C (-40 → +300°F)
Max. working pressure (PS/MWP)	45 bar (653 psig)
Max. test pressure	65 bar (943 psig)
Approvals	

\*Safety and environmental requirements

Ordering

The product range consists of two valve types: one with and one without access port. Both versions can be supplied in inch or

millimetre sizes from 1/4 in. to 3 1/8 in. (6 mm to 54 mm). All valves have holes for panel mounting.



GBC without access port

GBC without access port

Type	Solder ODF connection		Solder ODF connection		K <sub>v</sub> value *) [m <sup>3</sup> /h]
	[in.]	Code no.	[mm]	Code no.	
GBC 6s	1/4	009G7020	6	009G7030	1.96
GBC 10s	3/8	009G7021	10	009G7031	5.68
GBC 12s	1/2	009G7022	12	009G7032	10.58
GBC 16s	5/8	009G7023	16	009G7023	14.11
GBC 18s	3/4	009G7024	18	009G7035	20.42
GBC 22s	7/8	009G7025	22	009G7025	28.17
GBC 28s	1 1/8	009G7026	28	009G7033	51.95
GBC 35s	1 3/8	009G7027	35	009G7027	80.89
GBC 42s	1 5/8	009G7028	42	009G7034	121.07
GBC 54s	2 1/8	009G7029	54	009G7029	224.96
GBC 67s	2 5/8	009G7036			245.78
GBC 79s	3 1/8	009G7037			222.52



GBC with access port

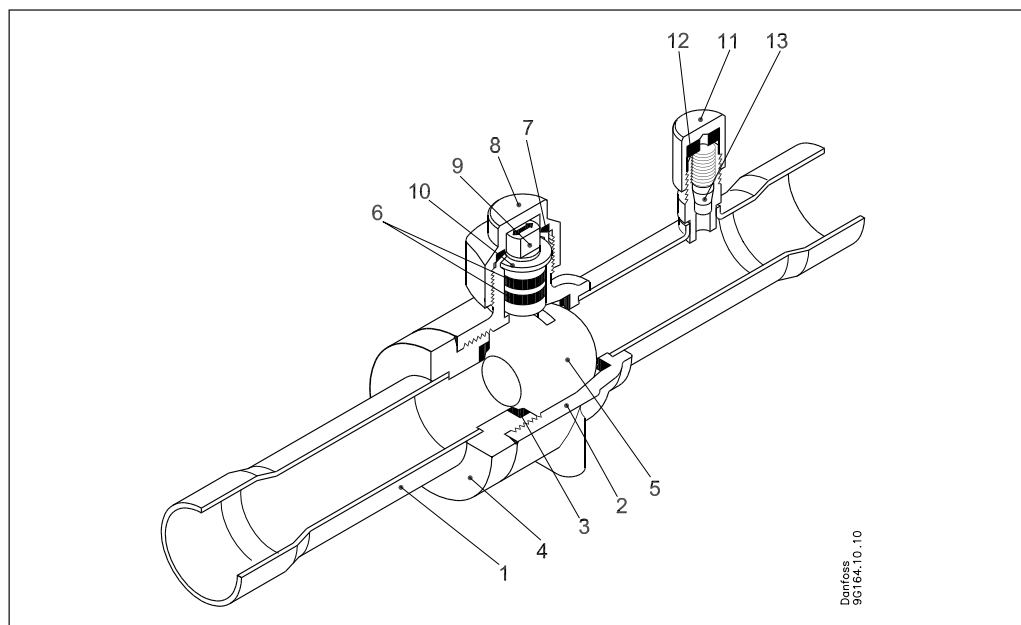
GBC with access port

Type	Solder ODF connection		Solder ODF connection		K <sub>v</sub> value *) [m <sup>3</sup> /h]
	[in.]	Code no.	[mm]	Code no.	
GBC 6s	1/4	009G7050	6	009G7060	1.96
GBC 10s	3/8	009G7051	10	009G7061	5.68
GBC 12s	1/2	009G7052	12	009G7062	10.58
GBC 16s	5/8	009G7053	16	009G7053	14.11
GBC 18s	3/4	009G7054	18	009G7065	20.42
GBC 22s	7/8	009G7055	22	009G7055	28.17
GBC 28s	1 1/8	009G7056	28	009G7063	51.95
GBC 35s	1 3/8	009G7057	35	009G7057	80.89
GBC 42s	1 5/8	009G7058	42	009G7064	121.07
GBC 54s	2 1/8	009G7059	54	009G7059	224.96
GBC 67s	2 5/8	009G7066			245.78
GBC 79s	3 1/8	009G7067			222.52

\*) CFD calculated values (Computational Fluid Dynamics)

Construction

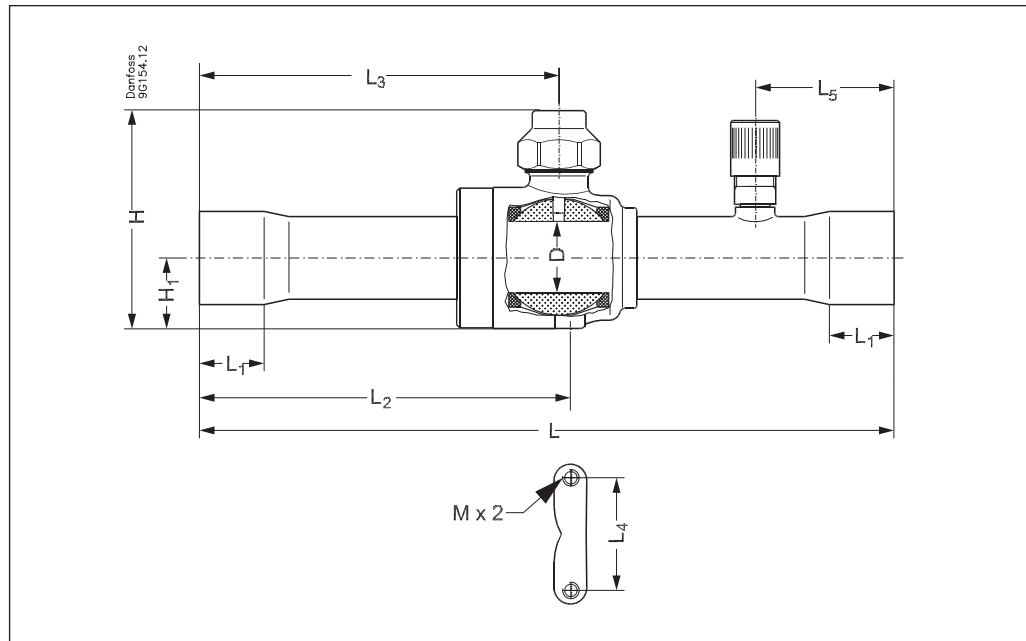
1. Connection
2. Laser-welded valve body
3. Ball seat (modified PTFE)
4. Valve adapter
5. Stainless steel ball
6. Double spindle O-ring seal (chloroprene)
7. Cap seal (PTFE)
8. Seal cap
9. Spindle
10. Support gasket
11. Access port cap
12. Seal gasket
13. Schraeder valve



Direct flow gives maximum through-flow with minimum pressure drop across valve. The combination of laser-welded valve body (2), ball

seat/seal (3), double spindle O-ring seal (6), and cap seal (7) gives absolutely minimum leakage.

Dimensions and weights



Type	Connection		H [mm]	H <sub>1</sub> [mm]	L [mm]	L <sub>1</sub> [mm]	L <sub>2</sub> [mm]	L <sub>3</sub> [mm]	L <sub>4</sub> [mm]	L <sub>5</sub> [mm]	M [mm]	D [mm]	d [mm]	Weight [Kg]*
	[in.]	[mm]												
GBC 6s		6	54	15	138	7	74	72	22	31	M4 × 0.7	14.0	1.5	0.2
GBC 6s	1/4		54	15	138	7	74	72	22	31	M4 × 0.7	14.0	1.5	0.2
GBC 10s	3/8		54	15	138	8	74	72	22	31	M4 × 0.7	14.0	1.5	0.2
GBC 10s		10	54	15	138	9	74	72	22	31	M4 × 0.7	14.0	1.5	0.2
GBC 12s		12	54	15	160	10	85	83	22	31	M4 × 0.7	14.0	1.5	0.2
GBC 12s	1/2		54	15	160	10	85	83	22	31	M4 × 0.7	14.0	1.5	0.2
GBC 16s	5/8		54	15	160	12	85	83	22	31	M4 × 0.7	14.0	1.5	0.2
GBC 18s		18	62	19	185	14	99	96	30	37	M4 × 0.7	19.0	1.5	0.4
GBC 18s	3/4		62	19	185	14	99	96	30	37	M4 × 0.7	19.0	1.5	0.4
GBC 22s	7/8		62	19	185	17	99	96	30	37	M4 × 0.7	19.0	1.5	0.4
GBC 28s		28	81	25	208	20	112	108	38	44	M4 × 0.7	25.5	1.5	0.9
GBC 28s	1 1/8		81	25	208	20	112	108	38	44	M4 × 0.7	25.5	1.5	0.9
GBC 35s	1 3/8		91	30	251	25	136	130	48	44	M6 × 1.0	32.0	1.5	1.4
GBC 42s	1 5/8		111	35	281	29	151	145	55	56	M6 × 1.0	38.0	1.5	2.2
GBC 42s		42	111	35	281	29	151	145	55	56	M6 × 1.0	38.0	1.5	2.2
GBC 54s	2 1/8		132	46	305	34	167	157	74	56	M6 × 1.0	50.0	1.5	4.2
GBC 67s	2 5/8		132	46	305	37	167	157	74	56	M6 × 1.0	50.0	1.5	4.4
GBC 79s	3 1/8		132	46	305	42	167	157	74	56	M6 × 1.0	50.0	1.5	4.5

\* Calculated value