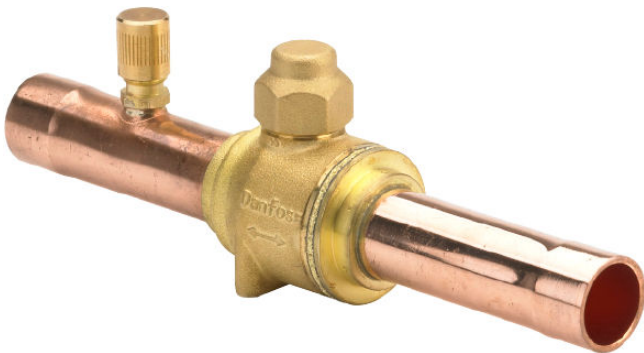


Data Sheet

# Shut-off ball valve Type **GBC** and **GBC E**

Version 2



Danfoss shut-off ball valves, type GBC, are manually operated shut-off valves for refrigeration systems, in order to open and to shut off inner flow path by operating the valve spindle.

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

The GBC bi-directional ball valves can be delivered with or without external access port.

The valves have one-piece wire seal cap to prevent unintentional cap removal or tampering between services.

**Features:**

- ¼ turn from fully open to fully closed
- Rotation stops at fully open and fully closed positions
- Ball status indicator on spindle top indicating open or closed position
- Double O-ring stem seal design
- Customized brass material ensures consistent performance under aggressive environment
- Rupture proof, internally-loaded spindle design ensures safe operation under extreme pressures
- Bi-directional flow, valve orientation is unimportant
- Full port construction to match line size
- Drilled and tapped for panel mounting
- Versions with access port helps in reducing cost if service of the system is necessary
- One-piece seal cap for safety purpose complies with European Safety Directive EN 378 (Safety and environmental requirements)

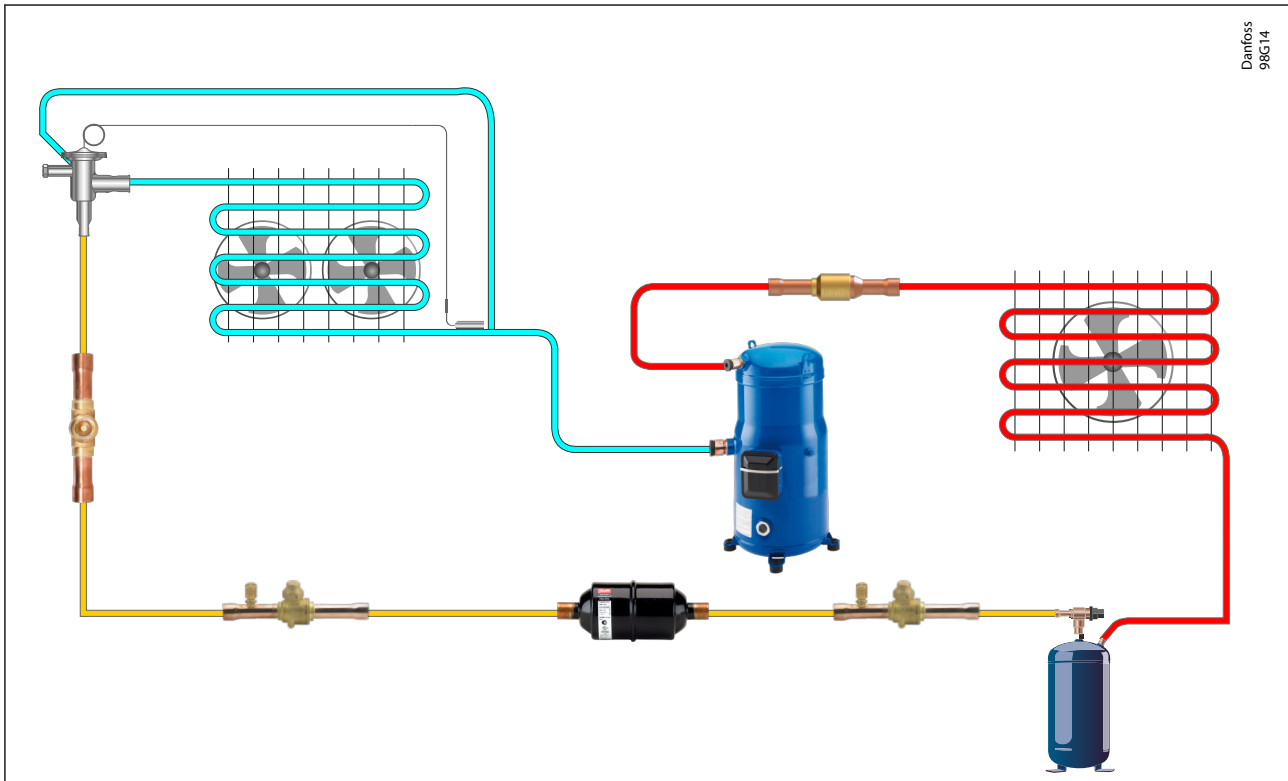
## Applications

### Application

Typical applications for GBC valves are:

- Cold room
- Chiller
- Heat pump
- Transport refrigeration

Figure 1: Application Diagram



## Media

**Table 1: Refrigerants**

Valve type	Refrigerants	Approval	Max. working pressure (PS/ MWP)	Media temperature range
GBC 6s-28s	R134a, R22/R407C, R290, R32, R404A/R507, R407A, R407F, R407H, R410A, R448A, R449A, R449B, R450A, R452A, R452B, R454A, R454B, R454C, R455A, R463A, R513A, R515B, R516A, R1234ze(E), R1234yf	PED, UL 207, EAC, UA, CRN	45 bar / 650 psig	-40 – 100 °C / -40 – 212 °F
GBC 35s-79s	R134a, R22/R407C, R404A/R507, R407A, R407F, R407H, R410A, R448A, R449A, R449B, R450A, R452A, R463A, R513A, R515B, R1234ze(E)			
GBC 35s-42s	R290, R32, R452B, R454A, R454B, R454C, R455A, R516A, R1234yf	UL 207, EAC, UA, CRN (Not PED approved)		
GBC 54s-79s	R32, R452B, R454A, R454B, R454C, R455A, R516A, R1234yf			
GBC 6s E-42s E	R134a, R22/R407C, R290, R32, R404A/R507, R407A, R407F, R407H, R410A, R448A, R449A, R449B, R450A, R452A, R452B, R454A, R454B, R454C, R455A, R463A, R513A, R515B, R516A, R1234ze(E), R1234yf	PED, UL 207, EAC, UA	49 bar / 710 psig	-40 – 150 °C / -40 – 300 °F
GBC 54s E-79s E	R134a, R22/R407C, R32, R404A/R507, R407A, R407F, R407H, R410A, R448A, R449A, R449B, R450A, R452A, R452B, R454A, R454B, R454C, R455A, R463A, R513A, R515B, R516A, R1234ze(E), R1234yf			

**NOTE:**

-For GBC 42s/GBC 42s E, only the version of without access port can be used for R290.

-GBC 35s to 79s for flammable refrigerants are not PED approved.

**Table 2: Refrigerant oil**

Valve type	Refrigerant oil
GBC	POE,PVE,PAG,PAO;Mineral oils
GBC E	POE,PVE,PAG(Not compatible for Mineral oil and PAO)

**NOTE:**

1. For a complete list of approved refrigerants, visit <http://store.danfoss.com/> and search for individual code numbers, where refrigerants are listed as part of product details.
2. This product is approved for R290, R32, R452B, R454A, R454B, R454C, R455A, R516A, R1234ze(E), R1234yf by ignition source assessment in accordance to standard EN ISO 80079-36.
3. GBC is only can be used in the temperature below 80 °C/176 °F for oil free application. For higher temperature for oil free application, please use GBC E.
4. If the application covered by UL 60335-2-89/40, please contact Danfoss for UL approval.

**Product specification**

**Technical data**

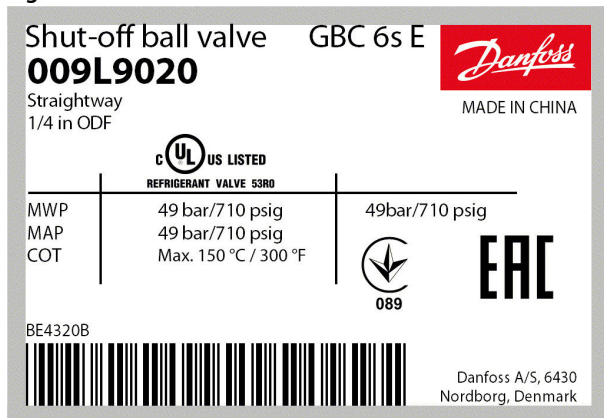
**Table 3: Technical data**

Technical data	GBC	GBC E
Max. working pressure	45 bar / 650 psig	49 bar / 710 psig
Media temperature range	-40 °C ~ +100°C / -40 °F ~ +212°F	-40 °C ~ +150°C / -40 °F ~ +300°F
Environmental transport/storage temperature and humidity	-40 – 65 °C / -40 – 150 °F Air humidity: RH≤95%	
Flow direction	Bi flow	

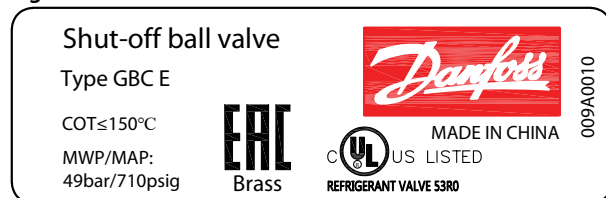
**Identification**

Relevant product data is available on the product and box label. An example of a box label and product label are shown, including an explanation of the content.

**Figure 2: Box label**



**Figure 3: Product label**



**Table 4: Product and label text**

Position	Inscription	Explanation
Box label; Product label	Shut-off ball valve	Product name
Box label	GBC 6s E	Product type
Box label	009L9020	Code number for ordering
Box label	Straightway	Direction
Box label	1/4 in ODF	Connection size and type
Box label; Product label	MWP/MAP: 49 bar/710 psig	Max. working pressure in bar and psig
Box label	BE4320B	Code for production place and time (BE = Wuqing, week 43, year 2020, weekday B = Tuesday)
Box label; Product label	COT Max.150 °C/300 °F	Max. temperature
Box label; Product label	MADE IN CHINA	Manufacturing site acc. to EN standards
Box label	EAN code	Barcode for individual code no. identification according to EAN standard
Box label; Product label	Additional information: Relevant approval authority logos	

**Design and materials**

The shut off valves with ball are bi flow manual valves capable of ensuring a minimum internal loss when closed and a low pressure drop when open. The GBC valves can be installed in liquid, suction and hot gas lines in refrigeration and air conditioning systems. The design of the ball valves guarantees the pressure balance with the valve closed, it allows two directions fluid flow and prevents the danger of explosion and rejection of the operating spindle.

Direct flow gives maximum through-flow with minimum pressure drop across valve. The combination of laser-welded valve body (2) and valve tail (4), ball seat/seal (3), double O-ring seal in spindle (6), and cap seal (7) provides the best tightness.

## Shut-off ball valve, Type GBC and GBC E

Figure 4: Design and materials

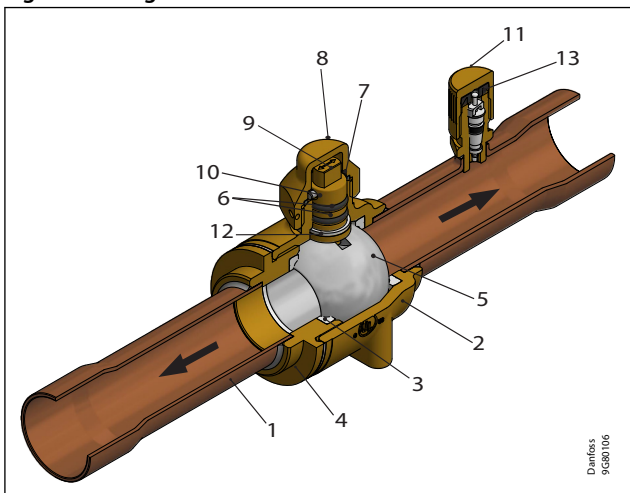


Table 5: Design and materials

Position	Description	Material
1	Connection tube	Copper
2	Valve body	Brass
3	Ball seat	PTFE
4	Valve tail	Brass
5	Ball	Stainless steel
6	Double O-ring seal in spindle	CR rubber/EPDM
7	Cap seal	PTFE
8	Seal cap	Brass
9	Spindle	Brass
10	Pin	Stainless steel
11	Access port cap	Brass
12	Guide ring	PTFE
13	Schrader valve	Stainless steel

## Dimensions

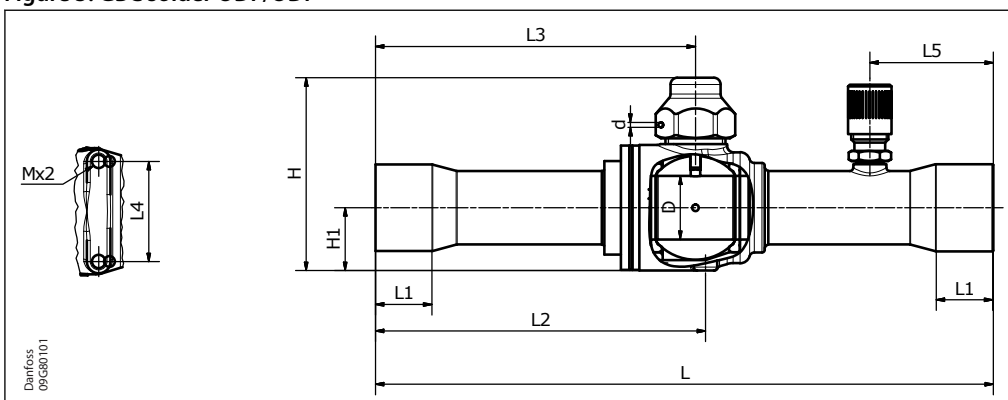
We have chosen to show dimensions of the major versions.

You will find downloadable dimension drawings for individual code numbers on Danfoss store as part of the Visuals tab for individual code numbers.

Weights also differ depending on the design of the individual code numbers. Weights are available as part of the technical data for individual code numbers on Danfoss store.

### GBC solder ODF/ODF, copper connections

Figure 5: GBC solder ODF/ODF



## Shut-off ball valve, Type GBC and GBC E

**Table 6: GBC solder ODF/ODF, copper connections**

Type	Size	Con- nec- tion	Con- nection tolerance	H	H1	L	L1	L2	L3	L4	L5	M	D	d	Weigh	Code no.				
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]	without access port	with ac- cess port		
GBC 6s	1/4 in.	6.35	+0.065/+0.155	43	12	139	7	73	73	17	31	M3 × 0.5	11.1	1.5	0.1	009L7020	009L7050			
	M4 × 0.7											009L9020				009L9050				
	M3 × 0.5	009L7030										009L7060								
	M4 × 0.7	009L9030										009L9060								
GBC 10s	3/8 in.	9.52		43	12	139	9	73	73	17	31	M3 × 0.5				11.1	1.5	0.1	009L7021	009L7051
	M4 × 0.7	009L9021										009L9051								
	M3 × 0.5	009L7031										009L7061								
	M4 × 0.7	009L9031										009L9061								
10 mm	10.00	43	12	161	10	84	84	17	31	M3 × 0.5	11.1	1.5	0.1	009L7022	009L7052					
	M4 × 0.7									009L9022				009L9052						
M3 × 0.5	009L7032									009L7062										
M4 × 0.7	009L9032									009L9062										
GBC 12s	1/2 in.	12.70	50	15	161	12	86	84	22	31	M3 × 0.5	14.0	1.5	0.2	009L7023	009L7053				
	M4 × 0.7	009L9023									009L9053									
12 mm	12.00	58	19	185	14	99	96	30	37	M4 × 0.7	19.0	1.5	0.4	009L7024	009L7054					
	M4 × 0.7									009L9024				009L9054						
GBC 16s	5/8 in.	16.00	58	19	185	17	99	96	30	37	M4 × 0.7	19.0	1.5	0.4	009L7025	009L7055				
	M4 × 0.7										009L9025				009L9055					
16 mm	16.00	80	25	208	20	112	108	38	44	M4 × 0.7	25.5	1.5	0.9	009L7026	009L7056					
	M4 × 0.7									009L9026				009L9056						
GBC 18s	3/4 in.	19.05	89	30	251	25	136	130	48	44	M6 × 1.0	32.0	1.5	1.4	009L7027	009L7057				
	M6 × 1.0	009L9027									009L9057									
18 mm	18.00	110	35	281	29	151	145	55	56	M6 × 1.0	38.0	1.5	2.2	009L7028	009L7058					
	M6 × 1.0									009L9028				009L9058						
GBC 22s	7/8 in.	22.22	131	46	305	34	167	157	74	56	M6 × 1.0	50.0	1.5	4.2	009L7029	009L7059				
	M6 × 1.0	009L9029									009L9059									
22 mm	22.22	149	55	343	38	188	172	84	72	M6 × 1.0	60.5	1.5	5.8	009L7959	009L7960					
	M6 × 1.0									009L9959				009L9960						
GBC 28s	1 1/8 in.	28.58	169	65	416	38	230	214	86	80	M6 × 1.0	73.5	1.5	9.1	009L7980	009L7981				
	M6 × 1.0	009L9980									009L9981									
28 mm	28.00	131	46	305	37	167	157	74	56	M6 × 1.0	50.0	1.5	4.4	009L7036	009L7066					
	M6 × 1.0									009L9036				009L9066						
GBC 35s	1 3/8 in.	35.00	131	46	305	42	167	157	74	56	M6 × 1.0	50.0	1.5	4.5	009L7037	009L7067				
	M6 × 1.0	009L9037									009L9067									
35 mm	35.00	110	35	281	29	151	145	55	56	M6 × 1.0	38.0	1.5	2.2	009L7034	009L7064					
	M6 × 1.0									009L9034				009L9064						
GBC 42s	1 5/8 in.	41.28	131	46	305	34	167	157	74	56	M6 × 1.0	50.0	1.5	4.2	009L7029	009L7059				
	M6 × 1.0	009L9029									009L9059									
42 mm	42.00	149	55	343	38	188	172	84	72	M6 × 1.0	60.5	1.5	5.8	009L7959	009L7960					
	M6 × 1.0									009L9959				009L9960						
GBC 54s	2 1/8 in.	54.00	169	65	416	38	230	214	86	80	M6 × 1.0	73.5	1.5	9.1	009L7980	009L7981				
	M6 × 1.0	009L9980									009L9981									
54 mm	54.00	131	46	305	37	167	157	74	56	M6 × 1.0	50.0	1.5	4.4	009L7036	009L7066					
	M6 × 1.0									009L9036				009L9066						
GBC 67s	2 5/8 in.	66.70	131	46	305	42	167	157	74	56	M6 × 1.0	50.0	1.5	4.5	009L7037	009L7067				
	M6 × 1.0	009L9037									009L9067									
67 mm	66.68	110	35	281	29	151	145	55	56	M6 × 1.0	38.0	1.5	2.2	009L7034	009L7064					
	M6 × 1.0									009L9034				009L9064						
GBC 79s	3 1/8 in.	79.38	131	46	305	42	167	157	74	56	M6 × 1.0	50.0	1.5	4.5	009L7037	009L7067				
	M6 × 1.0	009L9037									009L9067									
79 mm	79.38	131	46	305	42	167	157	74	56	M6 × 1.0	50.0	1.5	4.5	009L7037	009L7067					
	M6 × 1.0									009L9037				009L9067						
GBC 79s RP	2 5/8 in.	66.68	131	46	305	37	167	157	74	56	M6 × 1.0	50.0	1.5	4.4	009L7036	009L7066				
	M6 × 1.0	009L9036									009L9066									
GBC 79s RP	3 1/8 in.	79.38	131	46	305	42	167	157	74	56	M6 × 1.0	50.0	1.5	4.5	009L7037	009L7067				
	M6 × 1.0	009L9037									009L9067									

**RP: Reduced Port**

The thread of access port: 7/16-20UNF

## Shut-off ball valve, Type GBC and GBC E

The thread of schrader valve: 5 V1 DIN7756/DIN7757

### GBC solder ODF/ODM, copper connections

Figure 6: GBC solder ODF/ODM

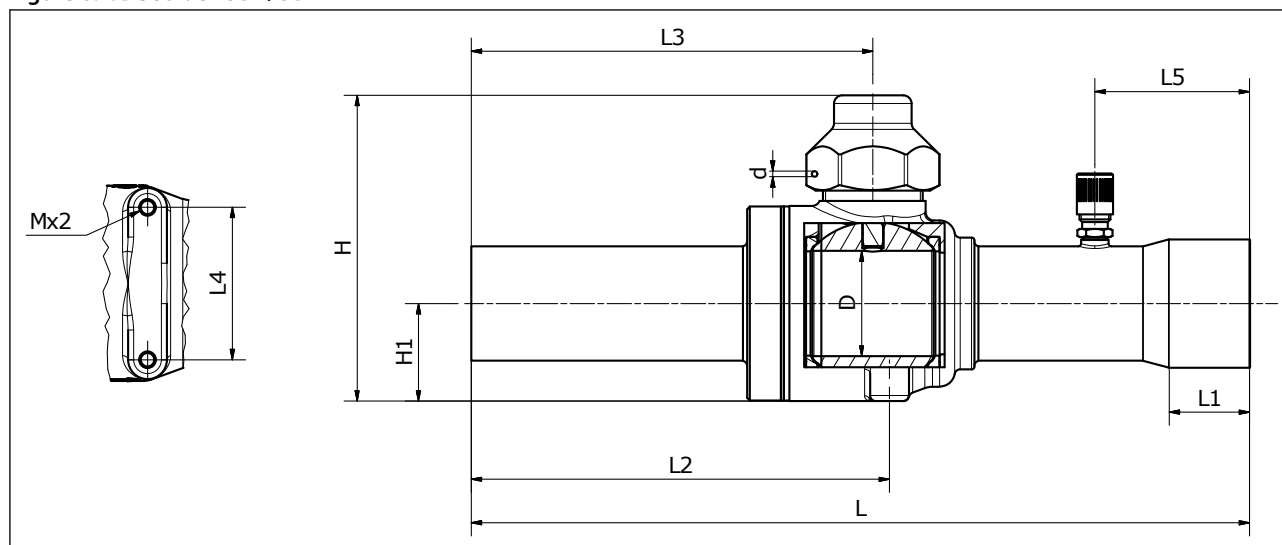


Table 7: GBC solder ODF/ODM, copper connections

Type	Size	Con- nec- tion [mm]	Connection tolerance [mm]	H [mm]	H1 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	M [mm]	D [mm]	d [mm]	Weight [kg]	Code no.	
																without access port	with access port
GBC 16s	5/8 in.	ODF: 16	ODF: +0.065/+0.155	50	15	161	12	86	84	22	31	M4 × 0.7	14.0	1.5	0	009L7043	009L7084
	16 mm	ODM: 15.88	ODM: -0.04/+0.04														
GBC 22s	7/8 in.	ODF: 22.22	ODF: +0.075/+0.185	58	19	201	17	86	83	30	-	M4 × 0.7	19	2	0	009L7000	-
	22 mm	ODM: 22	ODM: -0.08/+0.08														
GBC 28s	1 1/8 in.	28.58	ODF: +0.075/+0.185	79	25	228	20	112	108	38	-	M4 × 0.7	25.5	1.5	0.9	009L7001	-
	1 1/8 in.		ODM: -0.12/+0.12	80	25	208	20	112	108	38	44	M4 × 0.7	25.5	1.5	0.9	-	009L7097
GBC 35s	1 3/8 in.	35.00	ODF: +0.09/+0.23 ODM: -0.15/+0.15	89	30	280	25	136	130	48	-	M6 × 1.0	32.0	1.5	1	009L7002	-
	1 3/8 in. 35 mm			89	30	251	25	136	130	48	44	M6 × 1.0	32.0	1.5	1	-	009L7098
GBC 42s	1 5/8 in.	41.28	ODF: +0.09/+0.23 ODM: -0.15/+0.15	110	35	295	29	151	145	55	-	M6 × 1.0	38.0	1.5	2.2	009L7003	-
				110	35	281	29	151	145	55	56	M6 × 1.0	38.0	1.5	2.2	-	009L7099
GBC 54s	2 1/8 in. 54 mm	54.00	ODF: +0.09/+0.23 ODM: -0.1/+0.1	131	46	305	34	167	157	74	56	M6 × 1.0	50.0	1.5	4	-	009L7069
GBC 67s	2 5/8 in.	66.70	ODF: +0.1/+0.33 ODM: -0.16/+0.07	149	55	346	38	191	175	84	72	M6 × 1.0	60.5	1.5	5.8	-	009L7958
GBC 79s	3 1/8 in.	79.38	ODF: +0.1/+0.33 ODM: -0.16/+0.07	168	65	406	38	220	204	86	80	M6 × 1.0	73.5	1.5	9.1	009L7969	009L7970

The thread of access port: 7/16-20UNF

The thread of schrader valve: 5 V1 DIN7756/DIN7757

GBC solder ODM/ODM, copper connections

Figure 7: GBC solder ODM/ODM, copper connections

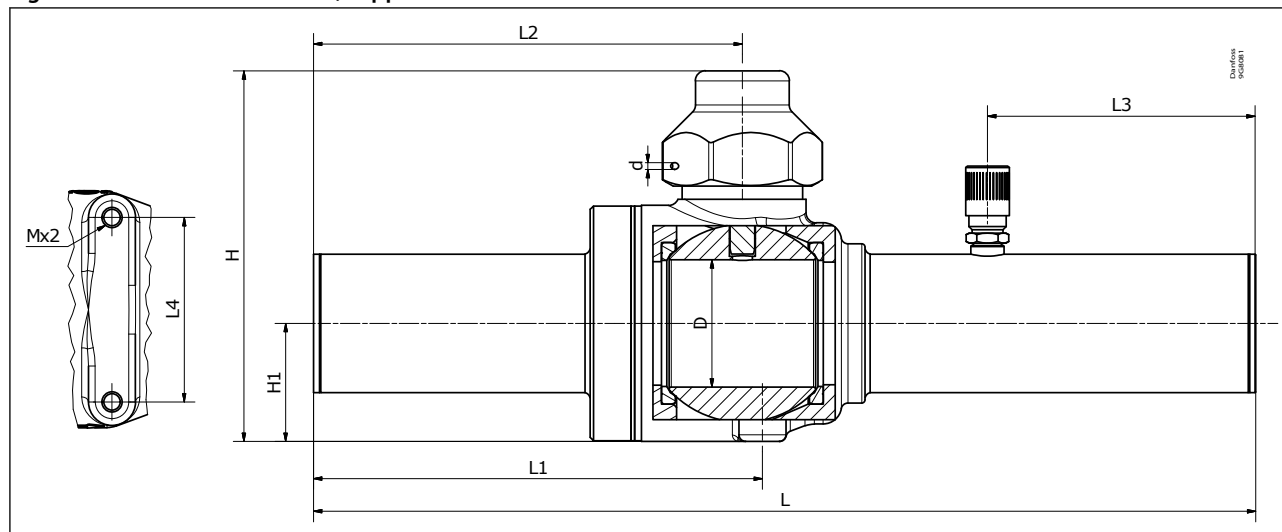


Table 8: GBC solder ODM/ODM, copper connections

Type	Size	Con- nec- tion [mm]	Connection tolerance [mm]	H [mm]	H1 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	M [mm]	D [mm]	d [mm]	Weight [kg]	Code no.	
															without access port	with access port
GBC 28s	1 1/8	28.58	-0.12/+0.05	79	25	208	104	100	56	38	M4x0.7	25.5	1.5	0.9	-	009L7100
GBC 42s	1 5/8	41.28	-0.15/+0.06	110	35	281	134	128	80	55	M6x1.0	38.0	1.5	2.4	-	009L7101
GBC 54s	2 1/8	54.00		131	46	305	151	141	81	74	M6x1.0	50.0	1.5	4.3	-	009L7102
GBC 67s	2 5/8	66.70	-0.16/+0.07	149	55	305	153	137	78	84	M6x1.0	60.5	1.5	5.6	-	009L7103
GBC 79s	3 1/8	79.38		168	65	410	220	204	106	86	M6x1.0	73.5	1.5	9.0	-	009L7104

The thread of access port: 7/16-20UNF

The thread of schrader valve: 5 V1 DIN7756/DIN7757

**Connections**

Standard GBC, GBC E versions can be provided with straightway, connection types solder ODF/ODF or ODF/ODM or ODM/ODM in a wide variety of connection sizes. Solder versions are with extended ends copper connections.

For details on availability, see [Ordering](#).



### Connection diagrams

Type	Inlet	Outlet	connections	Inch connections
GBC	Solder ODF	Solder ODF	6 mm x 6 mm 10 mm x 10 mm 12 mm x 12 mm 16 mm x 16 mm 18 mm x 18 mm 22 mm x 22 mm 28 mm x 28 mm 35 mm x 35 mm 42 mm x 42 mm 54 mm x 54 mm	¼ x ¼ in ⅜ x ⅜ in ½ x ½ in ⅝ x ⅝ in ¾ x ¾ in ⅞ x ⅞ in 1 ⅛ x 1 ⅛ in 1 ⅜ x 1 ⅜ in 1 ⅝ x 1 ⅝ in 2 ⅛ x 2 ⅛ in 2 ⅝ x 2 ⅝ in 3 ⅛ x 3 ⅛ in
GBC	Solder ODF	Solder ODM	16 mm x 16 mm 22 mm x 22 mm 35 mm x 35 mm 54 mm x 54 mm	⅝ in x ⅝ in ⅞ x ⅞ in 1 ⅛ x 1 ⅛ in 1 ⅜ x 1 ⅜ in 1 ⅝ x 1 ⅝ in 2 ⅛ x 2 ⅛ in 2 ⅝ x 2 ⅝ in 3 ⅛ x 3 ⅛ in
GBC	Solder ODM	Solder ODM	54 mm x 54 mm	1 ⅛ x 1 ⅛ in 1 ⅝ x 1 ⅝ in 2 ⅛ x 2 ⅛ in 2 ⅝ x 2 ⅝ in 3 ⅛ x 3 ⅛ in
GBC E	Solder ODF	Solder ODF	6 x 6 mm 10 x 10 mm 12 x 12 mm 16 x 16 mm 18 x 18 mm 22 x 22 mm 28 x 28 mm 35 x 35 mm 42 x 42 mm 54 x 54 mm	¼ x ¼ in ⅜ x ⅜ in ½ x ½ in ⅝ x ⅝ in ¾ x ¾ in ⅞ x ⅞ in 1 ⅛ x 1 ⅛ in 1 ⅜ x 1 ⅜ in 1 ⅝ x 1 ⅝ in 2 ⅛ x 2 ⅛ in 2 ⅝ x 2 ⅝ in 3 ⅛ x 3 ⅛ in

### Ordering

GBC/GBC E code numbers described in this data sheet are standard code numbers, i.e. made to stock. Besides code numbers made to stock GBC/GBC E is also made to order.

Make to order options include:

- Mechanical connection type
- Mechanical connection size
- Access port size

Multipack contains several items, individually packed, so that customers can purchase 1 item and receive all relevant documentation.

### GBC solder ODF/ODF, copper connections

Figure 8: GBC without access port, solder ODF/ODF

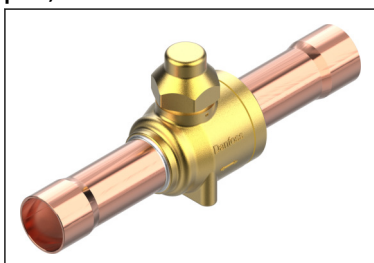


Figure 9: GBC with access port, solder ODF/ODF

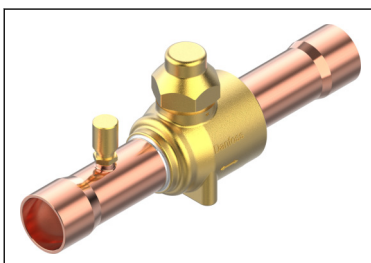


Table 9: GBC solder ODF/ODF, copper connections

Type	Code no.		Connection		Kv <sup>(1)</sup> [m <sup>3</sup> /h]	Cv <sup>(1)</sup> [gal/min]	Multi pack Qty/ pack	PED category		Max. working pressure: PS/MWP	Media temperature range
	without access port	with access port	[in.]	[mm]				Fluid Group 1 <sup>(2)</sup>	Fluid Group 2 <sup>(3)</sup>		
GBC 6s	009L7020	009L7050	1/4	-	1.83	2.12	30	Art. 4.3	Art. 4.3	45 bar / 650 psig	-40 °C ~ +100 °C / -40 °F ~ +212 °F
	009L7030	009L7060	-	6	1.83	2.12	30				
GBC 10s	009L7021	009L7051	3/8	-	8.04	9.29	30				
	009L7031	009L7061	-	10	8.04	9.29	30				
GBC 12s	009L7022	009L7052	1/2	-	13.17	15.22	30				
	009L7032	009L7062	-	12	13.17	15.22	30				
GBC 16s	009L7023	009L7053	5/8	16	15.66	18.10	25				
GBC 18s	009L7024	009L7054	3/4	-	21.93	25.35	25				
	009L7035	009L7065	-	18	21.93	25.35	25				
GBC 22s	009L7025	009L7055	7/8	22	33.34	38.54	25				
GBC 28s	009L7026	009L7056	1 1/8	-	62.25	71.96	5				
	009L7033	009L7063	-	28	62.25	71.96	5				
GBC 35s	009L7027	009L7057	1 3/8	35	92.76	107.23	5				
GBC 42s	009L7028	009L7058	1 5/8	-	134.76	155.78	4				
	009L7034	009L7064	-	42	134.76	155.78	4				
GBC 54s	009L7029	009L7059	2 1/8	54	240.11	277.57	2				
GBC 67s	009L7959	009L7960	2 5/8	-	367.38	424.69	1	-	Cat. I		
GBC 67s RP	009L7036	009L7066	2 5/8	-	203.12	234.81	2				
GBC 79s	009L7980	009L7981	3 1/8	-	528.87	611.37	1				
GBC 79s RP	009L7037	009L7067	3 1/8	-	171.89	198.70	2				

<sup>(1)</sup> Calculated based on fluid dynamic equations. RP: Reduced Port

<sup>(2)</sup> Fluid group 1 (flammable or toxic refrigerants)

<sup>(3)</sup> Fluid group 2 (non-toxic and non-flammable refrigerants)

### GBC solder ODF/ODM, copper connections

Figure 10: GBC without access port, solder ODF/ODM

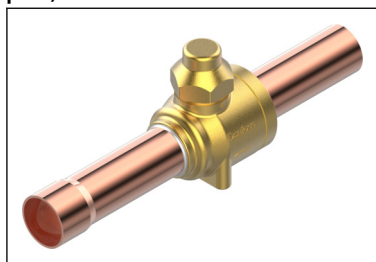


Figure 11: GBC with access port, solder ODF/ODM

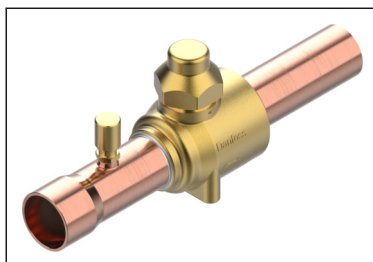


Table 10: GBC solder ODF/ODM, copper connections

Type	Code no.		Connection		Kv <sup>(1)</sup>	Cv <sup>(1)</sup>	Multi pack Qty/ pack	PED category		Max. working pressure: PS/MWP	Media temperature range
	without access port	with access port	[in.]	[mm]	[m <sup>3</sup> /h]	[gal/min]		Fluid Group 1 <sup>(2)</sup>	Fluid Group 2 <sup>(3)</sup>		
GBC 16s	009L7043	009L7084	5/8	16	15.66	18.10	25	Art. 4.3	Art. 4.3	45 bar / 650 psig	-40 °C ~ +100°C / -40 °F ~ +212°F
GBC 22s	009L7000	-	7/8	22	33.34	38.54	5				
GBC 28s	009L7001	009L7097	1 1/8	-	62.25	71.96	5				
GBC 35s	009L7002	009L7098	1 3/8	35	92.76	107.23	7002: 4 7098: 5				
GBC 42s	009L7003	009L7099	1 5/8	-	134.76	155.78	4	-	Cat. I	45 bar / 650 psig	-40 °C ~ +100°C / -40 °F ~ +212°F
GBC 54s	-	009L7069	2 1/8	54	240.11	277.57	2				
GBC 67s	-	009L7958	2 5/8	-	367.38	424.69	1				
GBC 79s	009L7969	009L7970	3 1/8	-	528.87	611.37	1				

<sup>(1)</sup> Calculated based on fluid dynamic equations.

<sup>(2)</sup> Fluid group 1 (flammable or toxic refrigerants)

<sup>(3)</sup> Fluid group 2 (non-toxic and non-flammable refrigerants)

### GBC solder ODM/ODM, copper connections

Figure 12: GBC with access port, solder ODM/ODM

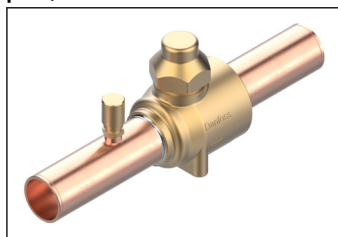


Table 11: GBC solder ODM/ODM, copper connections

Type	Code no.		Connection		Kv <sup>(1)</sup>	Cv <sup>(1)</sup>	Multi pack Qty/ pack	PED category		Max. working pressure: PS/MWP	Media temperature range
	without access port	with access port	[in.]	[mm]	[m <sup>3</sup> /h]	[gal/min]		Fluid Group 1 <sup>(2)</sup>	Fluid Group 2 <sup>(3)</sup>		
GBC 28s	-	009L7100	1 1/8	-	62.25	71.96	5	Art. 4.3	Art. 4.3	45 bar / 650 psig	-40 °C ~ +100°C / -40 °F ~ +212°F
GBC 42s	-	009L7101	1 5/8	-	134.76	155.78	4	-	Cat. I		
GBC 54s	-	009L7102	2 1/8	54	240.11	277.57	2				
GBC 67s	-	009L7103	2 5/8	-	367.38	424.69	1				
GBC 79s	-	009L7104	3 1/8	-	528.87	611.37	1				

<sup>(1)</sup> Calculated based on fluid dynamic equations.

<sup>(2)</sup> Fluid group 1 (flammable or toxic refrigerants)

<sup>(3)</sup> Fluid group 2 (non-toxic and non-flammable refrigerants)

### GBC E solder ODF/ODF, copper connections

Figure 13: GBC E without access port, solder ODF/ODF

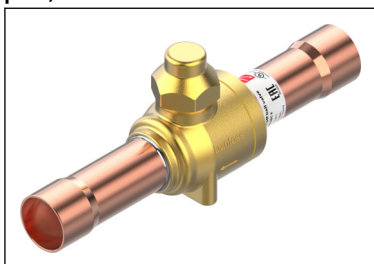


Figure 14: GBC E with access port, solder ODF/ODF

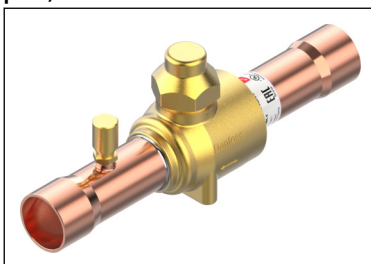


Table 12: GBC E solder ODF/ODF, copper connections

Type	Code no.		Connection		Kv <sup>(1)</sup>	Cv <sup>(1)</sup>	Multi pack Qty/ pack	PED category		Max. working pressure: PS/MWP	Media temperature range
	without access port	with access port	[in.]	[mm]	[m <sup>3</sup> /h]	[gal/min]		Fluid Group 1 <sup>(2)</sup>	Fluid Group 2 <sup>(3)</sup>		
GBC 6s E	009L9020	009L9050	1/4	-	1.83	2.12	25	Art. 4.3	Art. 4.3	49 bar / 710 psig	-40 °C ~ +150 °C / -40 °F ~ +300 °F
	009L9030	009L9060	-	6	1.83	2.12	25				
GBC 10s E	009L9021	009L9051	3/8	-	8.04	9.29	25				
	009L9031	009L9061	-	10	8.04	9.29	25				
GBC 12s E	009L9022	009L9052	1/2	-	13.17	15.22	25				
	009L9032	009L9062	-	12	13.17	15.22	25				
GBC 16s E	009L9023	009L9053	5/8	16	15.66	18.10	25				
GBC 18s E	009L9024	009L9054	3/4	-	21.93	25.35	25				
	009L9035	009L9065	-	18	21.93	25.35	25				
GBC 22s E	009L9025	009L9055	7/8	22	33.34	38.54	25				
GBC 28s E	009L9026	009L9056	1 1/8	-	62.25	71.96	5				
	009L9033	009L9063	-	28	62.25	71.96	5				
GBC 35s E	009L9027	009L9057	1 3/8	35	92.76	107.23	5	Cat. II	Cat. I		
GBC 42s E	009L9028	009L9058	1 5/8	-	134.76	155.78	4				
	009L9034	009L9064	-	42	134.76	155.78	4				
GBC 54s E	009L9029	009L9059	2 1/8	54	240.11	277.57	2				
GBC 67s E	009L9959	009L9960	2 5/8	-	367.38	424.69	1				
GBC 79s E	009L9980	009L9981	3 1/8	-	528.87	611.37	1				

<sup>(1)</sup> Calculated based on fluid dynamic equations.

<sup>(2)</sup> Fluid group 1 (flammable or toxic refrigerants)

<sup>(3)</sup> Fluid group 2 (non-toxic and non-flammable refrigerants)

### Spare parts

Figure 15: Seal cap kit



## Shut-off ball valve, Type GBC and GBC E

**Table 13: Seal cap kit**

Type	Valve connection size		Industrial pack (pcs)	Code no. for 009Gxxxx series	Code no. for 009Lxxxx 45 bar series	Code no. for 009Lxxxx 49 bar series
	[in]	[mm]				
GBC 6s - GBC 12s	¼ – ½	6 – 12	6	009G7210	009L7209	009L7210
GBC 16s - GBC 22s	⅝ – ⅞	16 – 22	6		009L7210	
GBC 28s - GBC 35s	1 ⅛ – 1 ⅜	28 – 35	4	009G7211	/	009L7211
			3	/		
GBC 42s - GBC 79s	1 ⅝ – 3 ⅛	42 – 79	4	009G7212	/	009L7212
			3	/		

**Figure 16: Bracket kit**



**Table 14: Bracket kit**

Type	Valve connection size		Industrial pack (pcs)	Code no. for 009Gxxxx series	Code no. for 009Lxxxx 45 bar series	Code no. for 009Lxxxx 49 bar series
	[in]	[mm]				
GBC 6s - GBC 12s	¼ – ½	6 – 12	12	009G7084	009G7089	009G7084
GBC 16s	⅝	16	12		009G7084	
GBC 18s - GBC 22s	¾ – ⅞	18 – 22	12		009G7085	
GBC 28s	1 ⅛	28	10		009G7086	
GBC 35s	1 ⅜	35	5		009G7087	
GBC 42s	1 ⅝	42	4		009G7088	

**Figure 17: Schrader valve**



**Table 15: Schrader valve**

Type	Industrial pack [pcs.]	Code no.
GBC, GBC E	10	009L7213

## Certificates, declarations, and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

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**Table 16: Certificates, declarations, and approvals**

File name	Document type	Document topic	Approval authority
EAC RU Д-DK.PA01.B.02567_19	EAC Declaration	EAC	EAC - Eurasian Customs Union
EAC RU Д-DK.БЛ108.B.02139_19	EAC Declaration	EAC	EAC - Eurasian Customs Union
033F4001	Manufacturers Declaration	PED RoHS	Danfoss
033F4002	EU Declaration UK Declaration	PED UKCA	Danfoss
033F4006	Manufacturers Declaration	China RoHS	Danfoss
033F4017	Manufacturers Declaration	EN ISO 14903	Danfoss
UA.TR.089.1015.04-22	Pressure - Safety Certificate	UA	LLC CDC EURO TYSK - Ukraine
UL SA7200	Mechanical - Safety Certificate	UL 207	UL
TSSA CRN 0C24058.5267890TNY	Pressure Safety Certificate	CRN(only for GBC 6s-67s)	TSSA-Canada

**NOTE:**

Type GBC E products don't have CRN approval.

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