

Data sheet

Shut-off diaphragm valve

Types BML and BMT



BML are manual shut-off diaphragm valve designed for installation in the liquid, suction and hot gas lines of refrigeration plants. BML valves can be delivered with flare, ODF solder or ODF solder with extended ends.

In the same product category, BMT 6 is a three-way manual shut-off valve with similar characteristics.

Features

- Fitted with three stainless steel diaphragms that prevent leakage throughout the operating life of the valve.
- Valve plate of polyamide nylon to give complete shut-off with minimum torque.
- Valve cover with counter-seat to prevent the ingress of moisture.

Technical data

Refrigerants	R134a, R22/R407C, R290, R404A/R507, R407H, R449B, R450A, R513A, R515B, R516A, R600, R600a, R1234ze, R1234yf, R1270 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.
Media Temperature range	-55 – 100 °C / -67 – 212 °F
Working range	$\Delta p = -1 - 21 \text{ bar} / -14 - 304 \text{ psig}$
Max. working pressure	PS/MWP = 28 bar / 406 psig

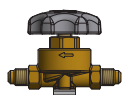


Note: Only solder versions are allowed for flammable refrigerant.
This product is approved for R290, R516A, R600, R600a, R1234yf and R1270 by ignition source assessment in accordance to standard EN13463-1.

Approvals

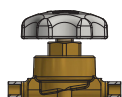
Ordering
Straightway version with hand wheel

Type	Connection size		K _v value (calculate)	C _v value (calculate)	Code no.
	[in.]	[mm]	[m ³ /h]	[gal/min]	

BML with flare connections


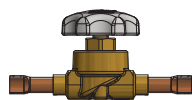
Flare

BML 6	1/4	-	0.3	0.35	009G0101
BML 10	3/8	-	0.84	0.98	009G0127
BML 12	1/2	-	1.5	1.75	009G0141
BML 15	5/8	-	2.2	2.57	009G0168
BML 18	3/4	-	2.9	3.38	009G0183

BML with ODF solder connections


ODF solder

BML 6s	1/4	-	0.3	0.35	009G0102
	-	6	0.3	0.35	009G0108
BML 10s	3/8	-	0.84	0.98	009G0122
	-	10	0.84	0.98	009G0128
BML 12s	1/2	-	1.5	1.75	009G0142
	-	12	1.5	1.75	009G0148
BML 15s	5/8	16	2.2	2.57	009G0170
BML 18s	3/4	-	2.9	3.38	009G0181
	-	18	2.9	3.38	009G0184
BML 22s	7/8	22	2.9	3.38	009G0191

BML with extended ODF solder connections


ODF extended ends

BML 6s	1/4	-	0.3	0.35	009G0202
	-	6	0.3	0.35	009G0208
BML 10s	3/8	-	0.84	0.98	009G0222
	-	10	0.84	0.98	009G0228
BML 12s	1/2	-	1.5	1.75	009G0242
	-	12	1.5	1.75	009G0248
BML 15s	5/8	16	2.2	2.57	009G0262
BML 22s	7/8	22	2.9	3.38	009G0291

Threeway version with hand wheel


Flare

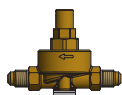
Type	Connection size		K _v value (calculate)	C _v value (calculate)	Code no.
	[in.]	[mm]	[m ³ /h]	[gal/min]	

BMT with flare connections

BMT 6	1/4	-	0.3	0.35	009G0105
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Ordering

Straightway version without hand wheel



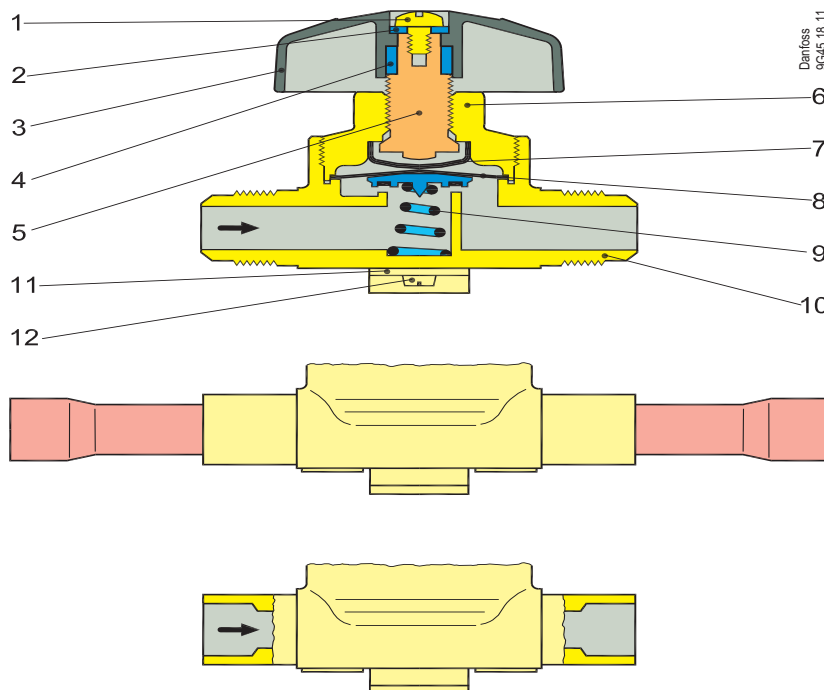
Flare



ODF extended ends

Type	Connection size		K _v value (calculate) [m ³ /h]	C _v value (calculate) [gal/min]	Code no.
	[in.]	[mm]			
BML with flare connections					
BML 6	1/4	-	0.3	0.35	009G0115
BML 10	3/8	-	0.84	0.98	009G0134
BML with extended ODF solder connections					
BML 6s	-	6	0.3	0.35	009G0209
BML 10s	-	10	0.84	0.98	009G0230
BML 12s	-	12	1.5	1.75	009G0249

Design / Function

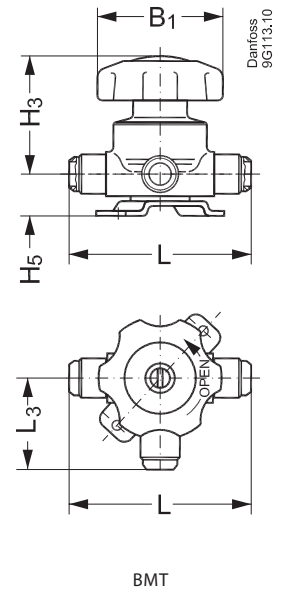
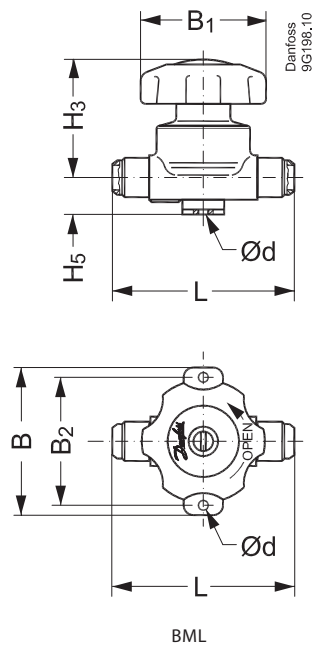


- 1. Screw
- 2. Washer
- 3. Handwheel
- 4. Driver
- 5. Spindle
- 6. Cover
- 7. Thrust pad
- 8. Diaphragm with valve plate
- 9. Spring
- 10. Valve body
- 11. Bracket
- 12. Screw

The shut-off diaphragm valves are fitted with three diaphragms of stainless steel which ensure long operating life. BM valves are available in straightway, and three-way versions (BMT). The side connection of the three-way BMT can be shut off, but the end connections will always remain open. The BM can be fitted with a mounting bracket. Valve body, cover and spindle are made of brass, the handwheel (3) of coloured plastic. BM valves have a triple diaphragm seal (8) which is designed in such a way that the tension in the diaphragms lift the valve plate from the seat when the valve is opened.

The valve plate itself is made of nylon and gives complete shut-off when the handwheel is lightly tightened. The thrust pad (7) prevents direct contact between spindle (5) and diaphragms (8). This also contributes to increased valve life. The spring (9) is able to hold the valve open at operating pressures down to -1 bar (pe). The counter-seat in the cover (6) prevents the ingress of moisture in fully open position. When the valve is opened, the pressure on the outlet side must not exceed the pressure on the inlet side by more than 1 bar.

Dimensions and weights



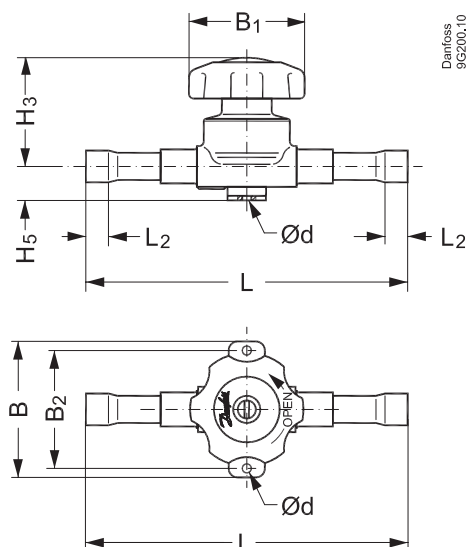
Flare version - SI Units

Type	Hand Wheel	H ₃ [mm]	H ₅ [mm]	L [mm]	L ₃ [mm]	B [mm]	B ₁ [mm]	B ₂ [mm]	Ød [mm]	Net weight [kg]
BML 6	Yes	46	15	77	–	62	50	50	5	0.3
BML 10	Yes	49	15	85	–	62	50	50	5	0.3
BML 6	No	47	15	77	–	62	–	50	5	0.3
BML 10	No	50	15	85	–	62	–	50	5	0.3
BML 12	Yes	56	18	102	–	70	60	56	6	0.6
BML 15	Yes	66	19	118	–	83	71	69	6	0.8
BML 18	Yes	66	24	130	–	83	71	69	6	1.3
BMT 6	Yes	46	19	65	32.5	62	50	50	5	0.3

Flare version - US Units

Type	Hand Wheel	H ₃ [in.]	H ₅ [in.]	L [in.]	L ₃ [in.]	B [in.]	B ₁ [in.]	B ₂ [in.]	Ød [in.]	Net weight [lb]
BML 6	Yes	1.81	0.59	–	–	2.44	1.97	1.97	0.20	0.6
BML 10	Yes	1.93	0.59	–	–	2.44	1.97	1.97	0.20	0.7
BML 6	No	1.85	0.59	3.03	–	2.44	–	1.97	0.20	0.6
BML 10	No	1.97	0.59	3.35	–	2.44	–	1.97	0.20	0.7
BML 12	Yes	2.20	0.71	4.02	–	2.76	2.36	2.20	0.24	1.3
BML 15	Yes	2.60	0.75	4.65	–	3.27	2.80	2.72	0.24	1.9
BML 18	Yes	2.60	0.94	5.12	–	3.27	2.80	2.72	0.24	2.9
BMT 6	Yes	1.81	0.75	2.56	1.28	2.44	1.97	1.97	0.20	0.6

Dimensions and weights



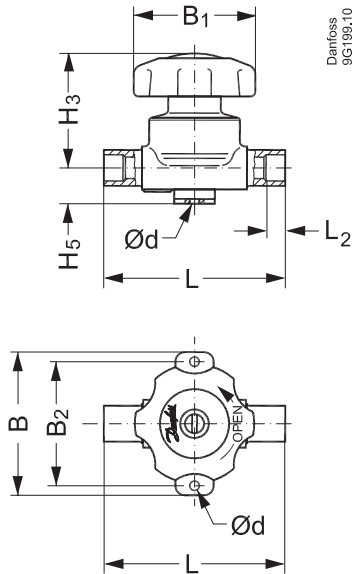
ODF solder extended ends version - SI Units

Type	Hand Wheel	H ₃ [mm]	H ₅ [mm]	L [mm]	L ₂ [mm]	B [mm]	B ₁ [mm]	B ₂ [mm]	Ød [mm]	Net weight [kg]
BML 6s	Yes	46	17	117	7	62	50	50	5	0.3
BML 10s	Yes	49	16	117	9	62	50	50	5	0.3
BML 12s	Yes	55	18	128	10	70	60	56	6	0.5
BML 6s	No	47	17	117	7	62	50	50	5	0.3
BML 10s	No	50	16	117	9	62	50	50	5	0.3
BML 12s	No	57	18	128	10	70	60	56	6	0.5
BML 15s	Yes	66	20	165	12	83	71	69	6	0.8
BML 22s	Yes	66	22	181	17	83	71	69	6	0.9

ODF solder extended ends version - US Units

Type	Hand Wheel	H ₃ [in.]	H ₅ [in.]	L [in.]	L ₂ [in.]	B [in.]	B ₁ [in.]	B ₂ [in.]	Ød [in.]	Net weight [lb]
BML 6s	Yes	1.81	0.67	4.61	0.28	2.44	1.97	1.97	0.20	0.6
BML 10s	Yes	1.93	0.63	4.61	0.35	2.44	1.97	1.97	0.20	0.7
BML 12s	Yes	2.17	0.71	5.04	0.39	2.76	2.36	2.20	0.24	1.2
BML 6s	No	1.85	0.67	4.61	0.28	2.44	–	1.97	0.20	0.6
BML 10s	No	1.97	0.63	4.61	0.35	2.44	–	1.97	0.20	0.7
BML 12s	No	2.24	0.71	5.04	0.39	2.76	–	2.20	0.24	1.2
BML 15s	Yes	2.60	0.79	6.50	0.47	3.27	2.80	2.72	0.24	1.8
BML 22s	Yes	2.60	0.87	7.13	0.67	3.27	2.80	2.72	0.24	2.0

Dimensions and weights



ODF solder version - SI Units

Type	H ₃ [mm]	H ₅ [mm]	L [mm]	L ₂ [mm]	B [mm]	B ₁ [mm]	B ₂ [mm]	Ød [mm]	Net weight [kg]
BML 6s	46	17	65	7	62	50	50	5	0.3
BML 10s	49	16	72	9	62	50	50	5	0.3
BML 12s	55	18	87	10	70	60	56	6	0.5
BML 15s	65	20	106	12	83	71	69	6	0.8
BML 18s	66	22	103	14	83	71	69	6	0.8
BML 22s	66	22	103	17	83	71	69	6	0.8

ODF solder version - US Units

Type	H ₃ [in.]	H ₅ [in.]	L [in.]	L ₂ [in.]	B [in.]	B ₁ [in.]	B ₂ [in.]	Ød [in.]	Net weight [lb]
BML 6s	1.81	0.67	2.56	0.28	2.44	1.97	1.97	0.20	0.6
BML 10s	1.93	0.63	2.83	0.35	2.44	1.97	1.97	0.20	0.7
BML 12s	2.17	0.71	3.43	0.39	2.76	2.36	2.20	0.24	1.1
BML 15s	2.56	0.79	4.17	0.47	3.27	2.80	2.72	0.24	1.7
BML 18s	2.60	0.87	4.06	0.55	3.27	2.80	2.72	0.24	1.8
BML 22s	2.60	0.87	4.06	0.67	3.27	2.80	2.72	0.24	1.8