

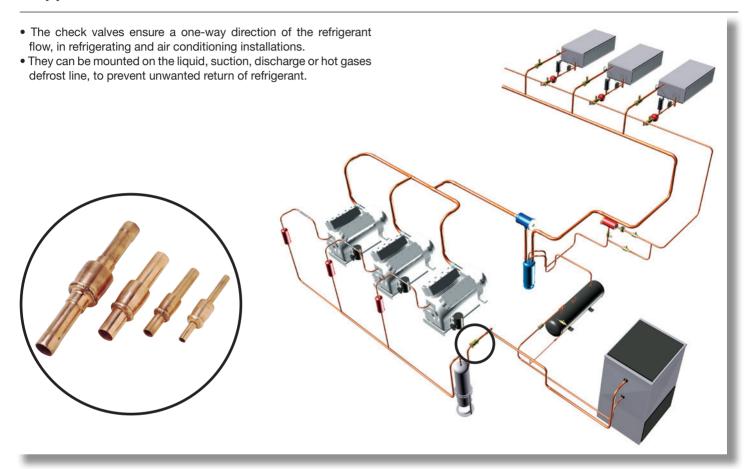
Carly

Check valves

CTCY-EN - 62.1-3 / 09-2014

→ CRCY

■ Applications



■ Functional features

- Products are compatible with CFCs, HCFCs, HFCs, CO₂s, as well as with their associated oils and additives. Products are designed for use of non-hazardous refrigerants from group 2 of PED 97/23/EC. To use CARLY components with fluids of the hydrocarbon group 1 Propane R290, Butane R600, Isobutane R600a, Propylene R1270 with HFOs and transcritical CO₂ and for a RANKINE organic cycle application, contact CARLY technical department.
- Product classification in CE categories is performed using the PED 97/23/EC table, corresponding to a nominal diameter-based selection.
- The brass body of the valves ensures perfect resistance to corrosion.
- An arrow indicating the refrigerant flow direction is engraved on the brass body of the valve.
- 11 models with connections to braze (from 1/4" to 7/8" and from 6 to 22 mm).
- The long copper sleeves allow quick and safe brazing of connections.

■ CARLY advantages

- Maximum working pressure 46 bar.
- The check valves can be installed in all positions.
- They are equipped with an internal pulse absorber piston, with PTFE gasket.
- Pressure drops are negligible.
- Perfect air tightness ensured by a TIG brass weld of the body.
- Thanks to their reduced weight, the check valves CRCY requires no specific fixing.
- GOST certified products.



Check valves



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Warning

Before selecting or installing any component, please refer to the chapter 0 - WARNING.

■ General assembly precautions

The installation of a component in a refrigeration system by a skilled professional, requires some precautions:

• Some are specific to each component, and in this case, they are specified in the **RECOMMENDATIONS SPECIFIC** part defined hereafter:

- Other are general to all CARLY components, they are presented in the chapter 115 -GENERAL ASSEMBLY PRECAUTIONS.
- The recommendations relating to the CARLY components for the subcritical CO₂ applications are also developed in chapter 115 - GENERAL ASSEMBLY PRECAUTIONS.

■ Recommendations specific to the check valves CRCY

- The check valves are to be mounted in any position on the suction, discharge and liquid lines of the installation.
- The fluid flow direction is indicated by an arrow engraved on the brass body of the valve. It must imperatively be respected.
- In order to avoid any phenomenon of internal beat, never over-size a check valve compared to the diameter of piping concerned.
- Always cool the valve body when brazing the copper sleeves with a damp cloth,

or by using the calories discharger CARLYCOOL (refer to chapter 95). Indeed, excessive overheating of the valve may damage the internal PTFE gasket and make it inoperative.

■ Selection table CRCY

	Connections To solder ODF		Refrigerating capacity kW ⁽¹⁾																
CARLY references			Liquid				Suction compressor				Compressor discharge line				Δ P ⁽²⁾	kv (3)			
	inch	mm	R22	R134a	R404A R507 R407F	R407C R410A		R22 R407F	R134a	R404A R507	R407C R410A	R744 ⁽⁴⁾	R22 R407F	R134a	R404A R507	R407C R410A		bar	m³/h
CRCY 2 S	1/4		12,5	11,6	8,2	11,5	14,9	1,9	1,5	1,5	1,8	6,6	8,2	6,0	6,9	8,8	10,2	0,06	0,69
CRCY 2 MMS		6	12,5	11,6	8,2	11,5	14,9	1,9	1,5	1,5	1,8	6,6	8,2	6,0	6,9	8,8	10,2	0,06	0,69
CRCY 3 S	3/8		31,7	29,3	20,8	29,2	37,7	4,7	3,8	3,8	4,5	16,8	20,8	15,1	17,5	22,2	25,8	0,06	1,75
CRCY 3 MMS		10	31,7	29,3	20,8	29,2	37,7	4,7	3,8	3,8	4,5	16,8	20,8	15,1	17,5	22,2	25,8	0,06	1,75
CRCY 4 S	1/2		59,2	54,8	38,9	54,6	70,4	8,8	7,1	7,1	8,4	31,5	38,0	28,3	32,7	40,6	47,1	0,05	3,27
CRCY 4 MMS		12	59,2	54,8	38,9	54,6	70,4	8,8	7,1	7,1	8,4	31,5	38,0	28,3	32,7	40,6	47,1	0,05	3,27
CRCY 5 S/MMS	5/8	16	65,9	61,0	43,3	60,7	78,4	9,8	7,9	7,9	9,3	35,1	43,3	31,5	36,4	46,3	53,7	0,05	3,64
CRCY 6 S	3/4		125,5	116,1	82,4	115,7	149,3	18,7	15,0	15,0	17,8	66,9	82,4	59,9	69,3	88,0	102,2	0,03	6,93
CRCY 6 MMS		18	125,5	116,1	82,4	115,7	149,3	18,7	15,0	15,0	17,8	66,9	82,4	59,9	69,3	88,0	102,2	0,03	6,93
CRCY 7 S/MMS	7/8	22	136,4	126,4	89,8	125,7	162,3	20,5	16,3	17,0	19,5	73,4	87,5	63,8	75,0	93,5	108,5	0,03	7,50

⁽¹⁾ Warning:

Liquid/Compressor discharge: refrigerating capacity calculated with a flow rate corresponding to a pressure drop of 0.15 bar for To = 4°C and Tk = 38°C. Compressor suction line: refrigerating capacity according to Standard ARI 730-2001. Flow rate corresponding to a pressure drop of 1 bar suction temperature = 18°C.

For Tk = 0 °C Qo = Qn + 12 %, For $Tk = -20 \, ^{\circ}C$ $Qo = Qn - 10 \, ^{\circ}$. For To = -30 °C Qo = Qn - 2 %, For To = -20 °C Qo = Qn - 6 %.

⁽²⁾ i.e. the minimum pressure difference for which the check valve remains fully open.

⁽⁹⁾ i.e. the flow rate in m3/hr for a pressure drop in the check valve of 1 bar (refrigerant used: water with per volume ratio = 1.000 kg/m3).

⁽⁴⁾ Refrigerating capacity Qn for Tk = -10°C and To = -40°C





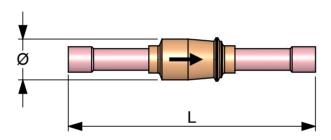
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■ Technical features

CARLY	Connections To solder	CARLY	Connections To solder	Dimensions mm		
references	ODF inch	references	ODF	Ø	L	
CRCY 2 S	1/4	CRCY 2 MMS	6	18	92	
CRCY 3 S	3/8	CRCY 3 MMS	10	18	109	
CRCY 4 S	1/2	CRCY 4 MMS	12	27	131	
CRCY 5 S/MMS	5/8	CRCY 5 S/MMS	16	27	138	
CRCY 6 S	3/4	CRCY 6 MMS	18	36	158	
CRCY 7 S/MMS	7/8	CRCY 7 S/MMS	22	36	180	



CARLY references	Nominal diameter DN inch	CARLY references	Nominal diameter DN mm	Maximal working pressure PS bar	Working pressure (1) PS BT bar	Maximal working temperature TS maxi °C	Minimal working temperature TS mini °C	Working temperature (1) TS BT °C	CE Category
CRCY 2 S	1/4	CRCY 2 MMS	6	46	15	120	-40	-30	Art3§3
CRCY 3 S	3/8	CRCY 3 MMS	10	46	15	120	-40	-30	Art3§3
CRCY 4 S	1/2	CRCY 4 MMS	12	46	15	120	-40	-30	Art3§3
CRCY 5 S/MMS	5/8	CRCY 5 S/MMS	16	46	15	120	-40	-30	Art3§3
CRCY 6 S	3/4	CRCY 6 MMS	18	46	15	120	-40	-30	Art3§3
CRCY 7 S/MMS	7/8	CRCY 7 S/MMS	22	46	15	120	-40	-30	Art3§3

⁽¹⁾ The working pressure is limited to the PS BT value when working temperature is lower than or equal to TS BT value.

⁽²⁾ Classification by diameter, according to PED 97/23/EC (refer to chapter 0).



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■ Weights and packaging

CARLY		veight g	Packaging		
references	With packaging	Without packaging	number of pieces		
CRCY 2 S & MMS	0,06	0,05	1		
CRCY 3 S & MMS	0,09	0,06	1		
CRCY 4 S & MMS	0,14	0,13	1		
CRCY 5 S/MMS	0,21	0,20	1		
CRCY 6 S & MMS	0,26	0,24	1		
CRCY 7 S/MMS	0,28	0,25	1		