

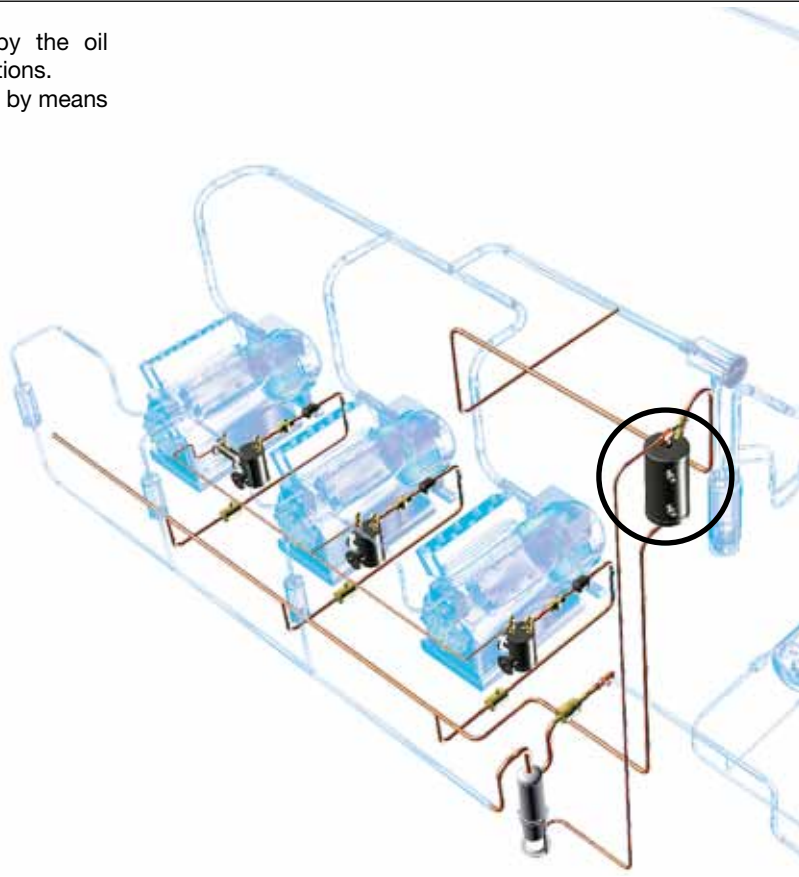


Oil receivers

→ HCYR

■ Applications

- Storage of the oil separated from the refrigerant by the oil separator(s) of refrigerating and air conditioning installations.
- This oil is then re-distributed to the compressor sumps, by means of LEVOIL mechanical or electronic oil level regulators.



■ 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 2014/68/EU. 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 2014/68/EU table, corresponding to a volume-based selection.
- Hermetically sealed outer steel enclosure with paint to ensure a high resistance to corrosion.
- The oil receivers constitute an intermediary expansion volume between the oil separator and the compressor crankcases; thus they eliminate all risks of major refrigerant “trapping” in the oil regulation system and allow immediate compensation of the compressor oil carry-over variations.
- High and low lateral fastenings by angle brackets with holes.

■ CARLY advantages

- Maximum working pressure: up to 46 bar.
- Oil return in high pressure possible.
- Inlet and outlet equipped with ROTALOCK valves, with pressure tap.
- Presence of a 3/8” SAE connection in the upper part, for recommended mounting of a differential relief valve type HCYCT or HCYCTR.
- Presence of two sight glasses with colourful level ball, allowing visualization of the quantity of oil stored in the receiver and detection of any malfunction within the oil circuit.
- Very large range of oil receivers: from 4 to 30 litres.
- GOST certified products.



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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 oil receivers HCYR

- The oil receivers are to be mounted in vertical position, between the oil separators and the oil level regulators connected to the compressor crankcases.
- An overpressure between the oil receivers and the compressors crankcases facilitates oil return in the latter; this overpressure can be obtained:
 - by installing the oil receivers above the oil level regulators (minimum height of 2 m recommended) or
 - by connecting the oil receiver to the circuit's suction line, using the 3/8" SAE upper connection, equipped with a differential relief valve type HCYCT or HCYCTR.
- Upon commissioning of a new installation, fill the receiver with oil identical to the one used in the compressors, up to half the upper sight glass, corresponding to the

volume of oil V2 in the Technical features table (refer to next page).

- During the first two days of operation of the installation, carefully monitor the oil level in the receiver and keep it at half the higher sight glass; the addition of oil is possible through the oil receiver's upper valve. **Then, no extra oil shall be added, as long as the level does not go below half the lower sight glass.**
- In the case of an installation that is already operating, the oil should be added very carefully. Reintegration of the oil distributed until then in the installation must, after the first day of operation, be sufficient to fill the receiver and reach the upper sight glass. If the oil level has not reached the upper sight glass, then the necessary quantity of oil should be

added. But, if the oil level is higher than the upper sight glass, it is imperative to empty the surplus; this operation is possible via the oil receiver's lower valve.

- Systematically use oil identical to that in the compressor.
- The O-ring should be replaced after each removal of the sight glass; screw it back complying with the recommended 25 N.m tightening torque.
- In order to avoid migration and condensation of the refrigerant which may be present inside the oil receiver, it is advisable to provide a heat supply in the lower part of the oil receiver (heating collar, immersion tube heater, hot fluid coil, etc ...).



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■ Selection table

CARLY references											
HCYR 40 3,9 L		HCYR 80 - 81 7,4 L		HCYR 120 - 121 12 L		HCYR 150 15 L		HCYR 200 20 L		HCYR 300 30 L	
Nc ⁽¹⁾	Vmb ⁽²⁾	Nc	Vmb	Nc	Vmb	Nc	Vmb	Nc	Vmb	Nc	Vmb
2	4 - 30	2	30 - 60	2	60 - 140	2	100 - 190	2	140 - 240	2	240 - 340
3	4 - 20	3	20 - 40	3	40 - 95	3	65 - 125	3	95 - 160	3	160 - 230
		4	15 - 30	4	30 - 70	4	50 - 95	4	70 - 120	4	120 - 170
				6	20 - 45	6	35 - 60	6	45 - 80	6	80 - 125
				8	15 - 35	8	25 - 45	8	35 - 60	8	60 - 85

⁽¹⁾ Nc: Number of compressors.

⁽²⁾ Vmb: Average volume processed by each compressor; $Vmb = (Vmb1 + Vmb2 + \dots + VmbN) / Nc$ in m³/hr.

■ Example of selection

Exemple

For a single stage installation with 3 compressors mounted in parallel, which have the following theoretical swept volumes (Vmb):

- Vmb1 = 24 m³/h
- Vmb2 = 24 m³/h
- Vmb3 = 18 m³/h
- Number of compressors: Nc = 3

- Average swept volume = $(24 + 24 + 18) / 3 = 22$ m³/h
- Refer to the selection table above, which gives a
HCYR 80 (7,4 litres) or HCYR 81 (7,7 litres)

In the case of bi-stage systems, for the selection of the oil receiver HCYR, only take into account the swept volume of the first stage compressors.

In the case of an application with long pipes or with several machines, do not hesitate to over-size the receiver and, if any doubt, contact the CARLY technical service.



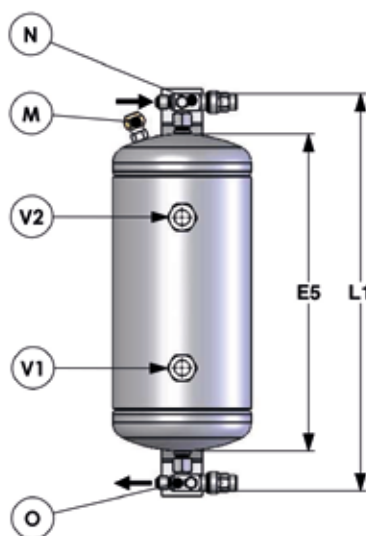
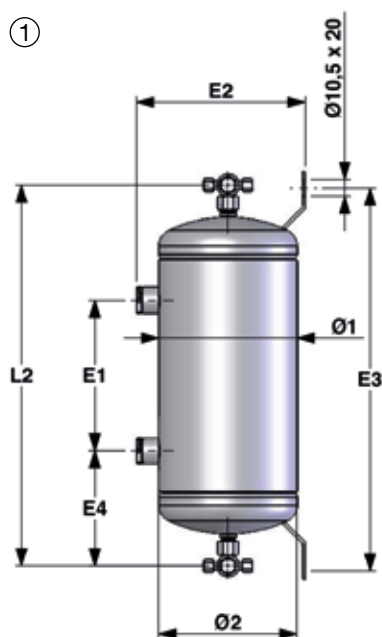
Oil receivers

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■ Technical features

CARLY references	Drawing Nb	Dimensions mm											
		Ø1	Ø2	L1	L2	E1	E2	E3	E4	E5	E6	E7	E8
HCYR 40	1	121,0	128	476	456	180	157	461	138	377	/	/	/
HCYR 80	1	152,4	156	584	564	280	190	557	142	485	/	/	/
HCYR 81	1	168,3	172	479	459	183	205	450	138	380	/	/	/
HCYR 120	1	152,4	156	824	804	435	190	798	185	726	/	/	/
HCYR 121	1	168,3	172	660	640	277	205	631	182	560	/	/	/
HCYR 150	1	152,4	156	1050	1030	558	190	1022	236	950	/	/	/
HCYR 200	2	219,1	224	689	649	360	257	350	/	574	212	252	150
HCYR 300	2	323,9	330	573	533	172	364	160	/	456	228	268	187

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Connections

M : 3/8" SAE connections
(pressure nozzle on suction line)

N : 3/8" SAE valve (oil inlet)
+ 1/4" SAE pressure nozzle

O : 3/8" SAE valve (oil outlet)
+ 1/4" SAE pressure nozzle

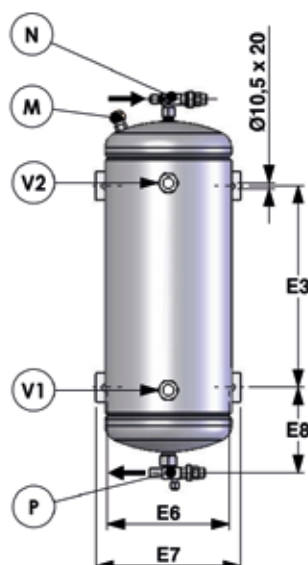
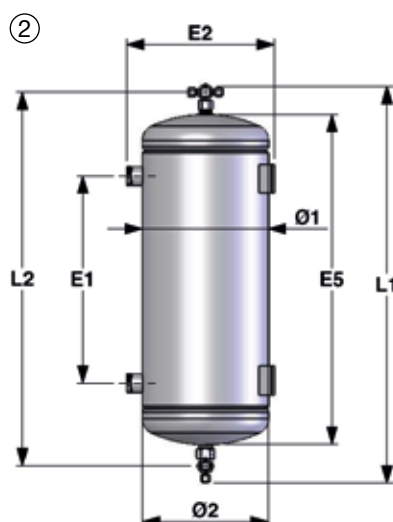
P : For HCYR 200 (oil outlet) :
1/2" ODF valve
+ 1/4" SAE pressure nozzle

P : For HCYR 300 (oil outlet) :
5/8" ODF valve
+ 1/4" SAE pressure nozzle

V1 : Lower oil level sight glass

V2 : Upper oil level sight glass

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■ Technical features

CARLY references	Volume	Volume		Maximal working pressure	Working pressure ⁽¹⁾	Maximal working temperature	Minimal working temperature	Working temperature ⁽¹⁾	CE Category ⁽²⁾
	V L	V1 L	V2 L	PS bar	PS BT bar	TS maxi °C	TS mini °C	TS BT °C	
HCYR 40	3,9	1,0	2,9	46	15	120	-40	-30	I
HCYR 80	7,7	1,5	6,0	46	15	120	-40	-30	II
HCYR 81	7,4	1,9	5,6	46	15	120	-40	-30	II
HCYR 120	12,0	2,5	9,5	46	15	120	-40	-30	II
HCYR 121	11,2	2,8	8,4	46	15	120	-40	-30	II
HCYR 150	15,0	3,0	12,0	46	15	120	-40	-30	II
HCYR 200	20,0	3,8	15,0	45	15	120	-40	-30	II
HCYR 300	30,0	8,2	21,8	33*	15	120	-40	-30	II

⁽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 volume, according to PED 2014/68/EU (refer to chapter 0).

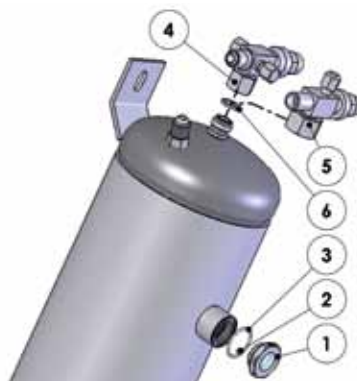
* PS 42 bar possible on request.



Oil receivers

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■ Spare parts



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CARLY references		Part Nb	Description
Oil receivers	Spare parts		
HCYR 40	CY 35012150	1	Glass without moisture indicator, gasket included
HCYR 80			
HCYR 81			
HCYR 120			
HCYR 121			
HCYR 150			
HCYR 200			
HCYR 300			



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CARLY references		Part Nb	Description
Oil receivers	Spare parts		
HCYR 40	CY 10501000	2	Colour ball for sight-glass (level visualization)
HCYR 80			
HCYR 81			
HCYR 120			
HCYR 121			
HCYR 150			
HCYR 200			
HCYR 300			



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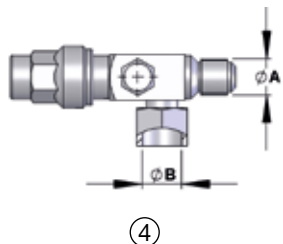
CARLY references		Part Nb	Description
Oil receivers	Spare parts		
HCYR 40	CY 15552180	3	PTFE o-ring gasket for glass
HCYR 80			
HCYR 81			
HCYR 120			
HCYR 121			
HCYR 150			
HCYR 200			
HCYR 300			



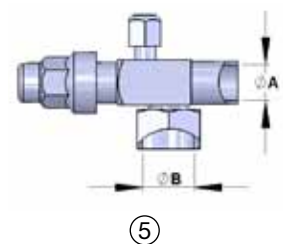
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■ Spare parts



CARLY references		Part Nb	ROTALOCK valve with connection to screw, gasket included	
Oil receivers	Spare parts		ØA output valve SAE inch	ØB valve fixation UNF inch
HCYR 40	CY 19700100	4	3/8	3/4
HCYR 80				
HCYR 81				
HCYR 120				
HCYR 121				
HCYR 150				
HCYR 200				
HCYR 300				



CARLY references		Part Nb	ROTALOCK valve with connection to braze, gasket included	
Inlet	Outlet		ØA output valve ODF inch	ØB valve fixation UNF inch
HCYR 200		5	1/2	1
HCYR 300		5	5/8	1



CARLY references		Part Nb	Gasket for ROTALOCK valves inch
Inlet	Outlet		
HCYR 40		6	3/4
HCYR 80	HCYR 40		
HCYR 81	HCYR 80		
HCYR 120	HCYR 81		
HCYR 121	HCYR 120		
HCYR 150	HCYR 121		
HCYR 200	HCYR 150		
HCYR 300			
	HCYR 200	6	1
	HCYR 300		

■ Weights and packaging

CARLY references	Unit weight kg		Packaging number of pieces
	With packaging	Without packaging	
HCYR 40	4,95	4,60	1
HCYR 80	9,70	9,10	1
HCYR 81	9,30	8,90	1
HCYR 120	13,40	12,80	1

CARLY references	Unit weight kg		Packaging number of pieces
	With packaging	Without packaging	
HCYR 121	13,00	12,40	1
HCYR 150	13,50	13,30	1
HCYR 200	21,70	20,90	1
HCYR 300	32,50	31,30	1