



Cleaning bi-directional flow and anti-acid filter driers (liquid line)

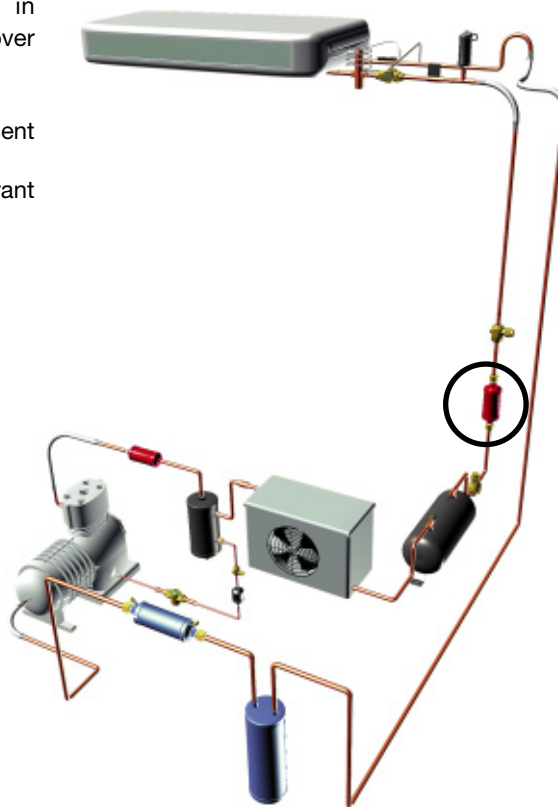
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→ DDNCY (Temporary use)

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■ Applications

- Cleaning and decontamination of refrigerant circuits in refrigerating and air conditioning installations with change over in flow direction, including heat pumps.
- Temporary uses:
 - new installations during start-up period for a very efficient protection of compressors against all types of dirt.
 - existing installations for an efficient cleaning of the refrigerant after compressor burnout.



■ Functional features

- Products are compatible with HFCs, HCFCs, CFCs, 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.
- Product classification in CE categories is performed using the PED 97/23/EC table, corresponding to a volume-based selection.
- Refrigerant flow is possible in both directions, and filtering is ensured whichever the direction.
- Filtering at outlet preventing propagation within the circuit of particles bigger than 12 microns.
- Two Shraeder valves for checking pressure drop, which facilitates the monitoring of filter saturation (except for model DDNCY 083).
- No desorption, even at high temperatures.
- Easy installation, in the liquid line between the condensing unit and terminal units (evaporators or air conditioning indoor units).

■ CARLY advantages

- Bi-flow cleaning filter driers with very low pressure drop, thanks to an innovative CARLY patented system, in terms of flow circuiting.
- Great efficiency for acid, wax binding and oily sludge neutralization at all temperatures, thanks to a fair distribution of chemical agents present in the filters: molecular sieves, activated alumina, active charcoal.
- Chemical agents in the form of free grain, for increased performance and elimination of the risk of polluting the circuit with solid particles, consecutive to drying core break-up.
- No risk of discharge of the pollutants trapped inside the filter driers, during change over in flow directions.
- Very economical cleaning process with no loss of time, because the installation is still running during the operation.
- Environmental protection and savings of refrigerant, because using these cleaning filters allows re-use of the refrigerant after pollution control.
- GOST certified products.



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■ Recommendations

- * Cleaning filter driers are to be mounted on the liquid line, upstream from the expansion valve.
- * Be careful to properly select the solenoid valves located downstream of the filter driers; their oversizing could cause liquid hammer phenomena hindering the filter driers mechanical behaviour; protection of the regulation elements upstream of the evaporator should be performed with FILTRY dirt filters (refer to chapter 8); these liquid hammer phenomena can come from other sources, in long-piping installations.
- * Never install filter driers in an area of the circuit that can be isolated.
- * Never trap refrigerant in its liquid state (between a check valve and a solenoid valve, for instance).
- * These filters are products intended for temporary use only; they should not be left permanently on the circuit.
- * Closely monitor the pressure drop thanks to the Schraeder valves, (except model DDNCY 083).
- * After compressor burnout:
 - refer to the instructions given by the manufacturer, for circuit cleaning operations and compressor replacement
 - apply the CARLY decontamination procedure described hereafter
 - visually monitor the oil condition and acidity level with TESTOIL-MAS and TESTOIL-POE acidity tests (refer to chapter 91).
- * General assembly precautions: refer to chapter 115.

■ Decontamination procedure for a refrigerating circuit, after a compressor burnout, using cleaning bi-flow filter driers DDNCY

- 1 • Evaluate the importance of the circuit contamination. If the pollution present in the refrigerating circuit is not too high, it is economical to recover the refrigerant for re-use after treatment.
- 2 • Install replacement compressor and perform usual checks.
- 3 • Install special **FNCY** "burnout" filter drier, on the suction line between the 4 ways valves and the compressor, if it is possible (see procedure page 9.9)
- 4 • Install the cleaning bi-flow filter drier **DDNCY**, selected according to the installation capacity, on the liquid line, upstream from the expansion valve.
- 5 • Check circuit leak-tightness according to the art.
- 6 • Create vacuum in the installation.
- 7 • Fill the circuit.
- 8 • Power up the installation and monitor the **DDNCY** and **FNCY** pressure drop evolution using their checking valves (except model 083)
- 9 • Replace filter if pressure drop becomes too important (> 0.5 bar for **DDNCY** and **FNCY**); increase of pressure drop indicates that the **FNCY** is performing its decontamination role.
- 10 • Monitor system operation during the first four hours (this monitoring must be increased when the compressor is hermetic or hermetic accessible). Replace **DDNCY** and **FNCY** as often as necessary until pressure drop in **DDNCY** and **FNCY** remains acceptable.
- 11 • After 48 hours of operation in decontamination phase, proceed to an oil sampling; visually inspect the sampling condition and check the oil acidity level using **TESTOIL** oil acidity tests: **TESTOIL-POE** for polyol-ester oils or **TESTOIL-MAS** for synthetic alkylbenzene and mineral oils (refer to chapter 91). If this sampling shows a non-satisfactory quality, drain oil, replace oil filter **HCYF** or **HYDROIL**, **DDNCY** and **FNCY**. Repeat the operation starting from phase 8. If this sampling shows a satisfactory quality, replace the **DDNCY** by a bi-flow filter drier **DDCY** and replace **FNCY** by **FACY** suction cleaning filter bearing the same reference and perfectly interchangeable (refer to chapters 2 and 9)
- 12 • After about 15 days, proceed to a new oil analysis by repeating stage 11.

▲ **This process ensures complete circuit decontamination and pollution control, thus protecting the new compressor and all the other components of a refrigerating circuit after compressor burnout.**



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■ Selection table

CARLY references	SAE connections inch	Refrigerating capacity (kW) ⁽¹⁾				Drying capacity (kg of refrigerant) ⁽²⁾						Acid neutralization capacity (g) ⁽³⁾
		R22	R134a	R404A R507	R407C R410A	R22 R407C		R134a R410A		R404A R507		
						24°C	52°C	24°C	52°C	24°C	52°C	
DDNCY 083	3/8	24,0	23	17	24,5	8	7,5	9	8	8	7	2,83
DDNCY 164	1/2	41,5	40	32	43,0	22	18,0	28	20	21	16	8,08
DDNCY 305	5/8	70,0	68	51	72,0	40	34,0	44	38	39	31	11,40

⁽¹⁾ Refrigerating capacities according to Standard ARI 710-86 for $T_o = -15^{\circ}\text{C}$, $T_k = 30^{\circ}\text{C}$ and $\Delta p = 0.07$ bar. If different conditions, refer to correction factors in chapter 112.

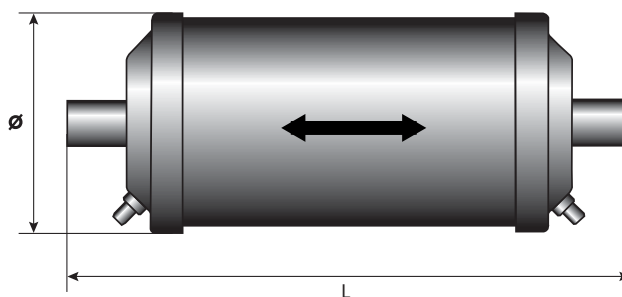
⁽²⁾ Dehydratable refrigerant capacity according to Standard ARI 710-86.

⁽³⁾ Acid neutralization capacity for a TAN of 0,05 (Total Acid Number).

■ Technical features

CARLY references	Schraeder valves	Connection types ⁽¹⁾	Filtering surface (cm ²)	Desiccants volume (cm ³)	Dimensions (mm)		Net weight (kg)
					Ø	L	
DDNCY 083	0	1	64	118,0	53	156,0	0,40
DDNCY 164	2	1	160	297,7	74	179,0	0,95
DDNCY 305	2	1	160	557,7	74	259,0	1,50

⁽¹⁾ Chapter "Connection features and drawings" (refer to chapter 114).



CARLY references	Volume	Maximum working pressure	Working pressure ⁽¹⁾	Maximum working temperature	Minimum working temperature	Working temperature ⁽¹⁾	CE Category ⁽²⁾
	V (L)	PS (bar)	PS BT (bar)	TS maxi (°C)	TS mini (°C)	TS BT (°C)	
DDNCY 083	0,17	42	10	80	-40	-20	Art3§3
DDNCY 164	0,41	42	10	80	-40	-20	Art3§3
DDNCY 305	0,66	42	10	80	-40	-20	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 volume, according to PED 97/23/EC (refer to Chapter 0 page 7).



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■ Weights and packaging

CARLY references	Unit weight (kg)		Packaging unit	
	With packaging	Without packaging	standard	OEM'S
DDNCY 083	0,43	0,40	24	/
DDNCY 164	0,99	0,95	24	/
DDNCY 305	1,57	1,50	24	/