



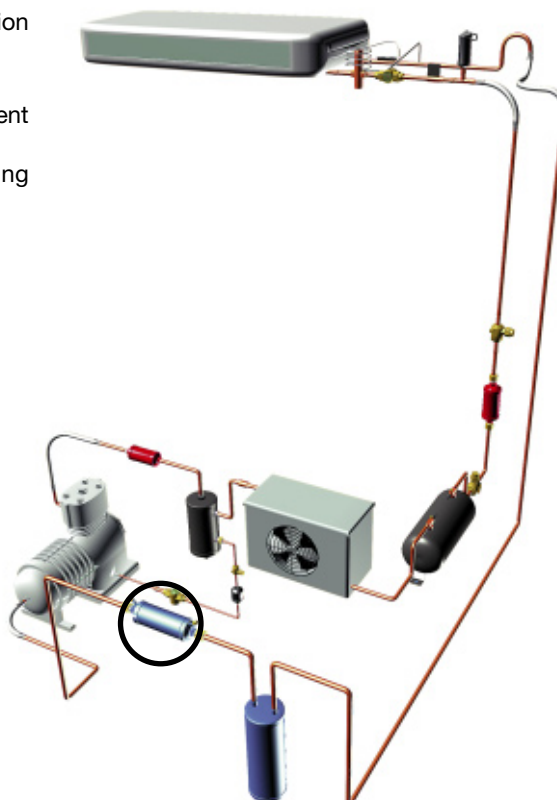
## Cleaning filter driers (suction line)

### → FNCY (temporary use - special "burnout")

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#### ■ Applications

- Reinforced refrigerant circuits cleaning and decontamination in refrigerating and air conditioning installations.
- Temporary use for:
  - new installations during start-up period for a very efficient protection of compressors against all types of dirt.
  - existing installations for an efficient refrigerant cleaning 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.
- Filtering at outlet preventing the propagation within the circuit of particles bigger than 10 microns.
- No desorption, even at high temperatures.
- They integrate all DCY anti-acid filter drier functions plus:
  - a permanent magnet located at the intake that traps the steel particles.
  - two access valves for checking pressure, which facilitates the monitoring of filter blocking.
- FNCYs are different from NCYs in that there is a felt core that guarantees optimal filtering performances.

#### ■ CARLY advantages

- 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 grains for increased performance and elimination of the risk of polluting the circuit with solid particles, consecutive to desiccant core break-up.
- Important retention capacity, without blocking risk and with minimum pressure drop.
- Very economical cleaning process without 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.
- Connections to solder are made of copper-plated steel up to connections diameter 3/4" included and allow the use of filler metals with a low silver content; their resistance to pressure is much higher than that of full copper connections.
- GOST certified products.



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### ■ Recommendations

- \* The cleaning filter driers are to be mounted on the suction line between the evaporator outlet and the compressor.
- \* The refrigerant flow direction, indicated by an arrow on the filter tag should be respected.
- \* 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 two access valves, in order to prevent shortage of the refrigerant vapour required to cool the compressor engine.
- \* After compressor burnout:
  - refer to instructions given by the manufacturer, for circuit cleaning operations and compressor replacement and apply the CARLY
- decontamination procedure described hereinafter
  - 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 FNCY cleaning filter driers

- 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 • Make sure that the part of the suction line immediately upstream of the compressor is clean.
- 4 • Replace all filters on the liquid line by **NCY** sealed decontamination filter of a greater capacity than that required by the new installation.
- 5 • Install special **FNCY** "burnout" filter drier, selected according to the installation capacity, on the suction line as close as possible to the compressor
- 6 • For reverse cycle systems, FNCY should be installed between the inversion valve and the compressor.
- 7 • Check circuit air-tightness according to the art.
- 8 • Make vacuum in the installation.
- 9 • Put circuit back under pressure.
- 10 • Power up the installation.  
Monitor **FNCY** pressure drop evolution using the valves provided to that effect.
- 11 • Replace filter if pressure drop becomes too important.  
The acceptable values are:
  - 0.15 bar** for a low temperature application
  - 0.25 bar** for a positive refrigeration application
  - 0.50 bar** for an air conditioning application
 Increase of pressure drop indicates that the **FNCY** is performing its decontamination role.
- 12 • Monitor system operation during the first four hours (this monitoring must be increased when the compressor is hermetic or hermetic accessible). Replace **FNCY** as often as necessary until pressure drop in **FNCY** remains acceptable.
- 13 • After 48 hours of operation in decontamination phase, proceed to an oil sampling; visually inspect the sampling's condition and check the oil acidity level using **TESTOIL** oil acidity tests: **TESTOIL-POE** for polyol-ester oils or **TESTOIL-MAS** for synthetic alkylbenzene mineral oils (refer to chapter 91). If this sampling shows a non-satisfactory quality, drain oil, replace oil filter **HCYF** or **HYDROIL** and **FNCY**. Repeat the operation starting from phase 10.
- 14 • After about 15 days, proceed to a new oil analysis by repeating phase 14 operation. If it is satisfactory, repeat the operation starting from phase 1.
- 15 • When the procedure is finished, replace the cleanig filter **FNCY** by an equivalent filter **FACY** and the cleaning filter **NCY** by an equivalent filter drier **DCY**.

▲ **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	Connections		CARLY references	Connections To solder ODF mm	Refrigerating capacity (kW) <sup>(1)</sup>				Dehydratable refrigerant capacity (kg of refrigerant) <sup>(2)</sup>						Acid neutralization capacity (g) <sup>(3)</sup>
	To screw SAE inch	To solder ODF inch			R22	R134a	R404A R507	R407C R410A	R22 R407C		R134a R410A		R404A R507		
									24°C	52°C	24°C	52°C	24°C	52°C	
<b>FNCY 283</b>	3/8				1,50	1,37	0,98	1,49	38,5	32,5	40	38,5	61	34	9,21
<b>FNCY 284</b>	1/2				4,32	3,93	2,81	4,28	38,5	32,5	40	38,5	61	34	9,21
<b>FNCY 285</b>	5/8				7,24	6,59	4,70	7,17	38,5	32,5	40	38,5	61	34	9,21
<b>FNCY 285 S/MMS</b>		5/8	<b>FNCY 285 S/MMS</b>	16	7,24	6,59	4,70	7,17	38,5	32,5	40	38,5	61	34	9,21
<b>FNCY 286 S</b>		3/4	<b>FNCY 286 MMS</b>	18	12,14	11,05	7,90	12,02	38,5	32,5	40	38,5	61	34	9,21
<b>FNCY 287 S</b>		7/8	<b>FNCY 287 MMS</b>	22	18,71	17,02	12,16	18,52	38,5	32,5	40	38,5	61	34	9,21
<b>FNCY 489 S</b>		1 1/8	<b>FNCY 489 MMS</b>	28	23,69	21,56	15,40	23,45	68,5	57,0	71	68,5	111	61	17,50
<b>FNCY 4811 S/MMS</b>		1 3/8	<b>FNCY 4811 S/MMS</b>	35	46,06	41,91	29,94	45,60	68,5	57,0	71	68,5	111	61	17,50
<b>FNCY 4813 S</b>		1 5/8	<b>FNCY 4813 MMS</b>	42	50,38	45,85	32,75	49,88	68,5	57,0	71	68,5	111	61	17,50

<sup>(1)</sup> Refrigerating capacities according to Standard ARI 730-2001 for To = 4.4°C, Tk = 32°C.

If different conditions, refer to correction factors in chapter 112.

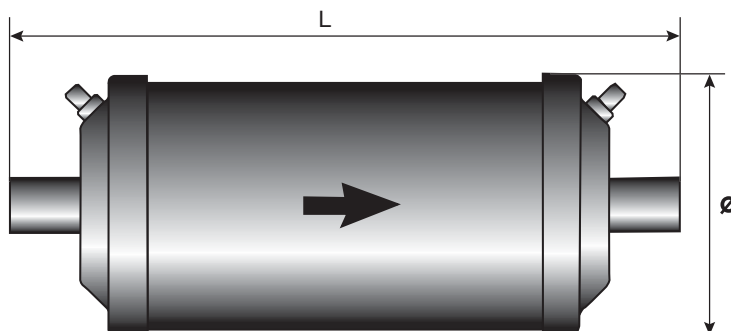
<sup>(2)</sup> Dehydratable refrigerant capacity according to Standard ARI 710-86.

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

#### ■ Technical features

CARLY references	Connection types <sup>(1)</sup>	Filtering surface (cm <sup>2</sup> )	Volume of desiccation products (cm <sup>3</sup> )	Dimensions (mm)		Net weight (kg)	
				Ø	L		
<b>FNCY 283</b>	1	150	290	74	224,5	1,05	
<b>FNCY 284</b>	1	150	290	74	228,5	1,10	
<b>FNCY 285</b>	1	150	290	74	232,5	1,15	
<b>FNCY 285 S/MMS</b>	2	150	290	74	212,5	1,15	
<b>FNCY 286 S</b>	<b>FNCY 286 MMS</b>	2	150	290	74	218,5	1,17
<b>FNCY 287 S</b>	<b>FNCY 287 MMS</b>	2	150	290	74	232,5	1,20
<b>FNCY 489 S</b>	<b>FNCY 489 MMS</b>	3	356	550	93	316,0	2,15
<b>FNCY 4811 S/MMS</b>		3	356	550	93	336,0	2,35
<b>FNCY 4813 S</b>	<b>FNCY 4813 MMS</b>	3	356	550	93	336,0	2,40

<sup>(1)</sup> Chapter "Connection features and drawings" (refer to chapter 114).





# Cleaning filter driers (suction line)

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### ■ Technical features

CARLY references		Volume	Maximal working pressure	Working pressure (1)	Maximal working temperature	Minimal working temperature	Working temperature (1)	CE Category (2)
		V (L)	PS (bar)	PS BT (bar)	TS maxi (°C)	TS mini (°C)	TS BT (°C)	
<b>FNCY 283</b>		0,58	42	10	80	-40	-20	Art3§3
<b>FNCY 284</b>		0,58	42	10	80	-40	-20	Art3§3
<b>FNCY 285</b>		0,58	42	10	80	-40	-20	Art3§3
<b>FNCY 285 S/MMS</b>		0,58	42	10	80	-40	-20	Art3§3
<b>FNCY 286 S</b>	<b>FNCY 286 MMS</b>	0,59	42	10	80	-40	-20	Art3§3
<b>FNCY 287 S</b>	<b>FNCY 287 MMS</b>	0,59	42	10	80	-40	-20	Art3§3
<b>FNCY 489 S</b>	<b>FNCY 489 MMS</b>	1,39	42	10	80	-40	-20	I
<b>FNCY 4811 S/MMS</b>		1,40	42	10	80	-40	-20	I
<b>FNCY 4813 S</b>	<b>FNCY 4813 MMS</b>	1,42	42	10	80	-40	-20	I

(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).

### ■ Weights and packaging

CARLY references	Unit weight (kg)		Packaging unit	
	With packaging	Without packaging	standard	OEM'S
<b>FNCY 283</b>	1,09	1,05	12	/
<b>FNCY 284</b>	1,14	1,10	12	/
<b>FNCY 285</b>	1,19	1,15	12	/
<b>FNCY 285 S/MMS</b>	1,19	1,15	12	/
<b>FNCY 286 S &amp; MMS</b>	1,22	1,17	12	/
<b>FNCY 287 S &amp; MMS</b>	1,24	1,20	12	/
<b>FNCY 489 S &amp; MMS</b>	2,22	2,15	6	/
<b>FNCY 4811 S/MMS</b>	2,42	2,35	6	/
<b>FNCY 4813 S &amp; MMS</b>	2,47	2,40	6	/