Multi-surface detergent - grease remover:

Cooling and refrigeration, air conditioning, kitchens...

CTCY-EN – 82.1-5 / 08-2016

→ CARLYCLEAN - CARLYCLEAN-F

Flexible extension tube for aerosol

Cooling and refrigeration, air conditioning :

Refrigerating and air conditioning systems' heat exchangers are environments that are subject to heat transfer. Any cleaning, grease, dust, corrosion and even bacterium and other micro-organisms act as isolation barriers and contribute to disturbing the exchangers' efficiency.

The air condenser installed outside is directly exposed to these undesirable soils.

In an air conditioning system, all particles (dust, greases, fumes) that are sufficiently small to go through the evaporator filter, accumulate on the fins which are generally wet and make up an ideal environment for bacteria and micro-organism development.

An efficient and harmless cleaning of exchangers is hence a priority in order to preserve their efficiency, increase their service life and maintain a healthy environment for the users.

Cold rooms, refrigerated warehouses and commercial kitchens...:

Cleaning surfaces in contact with food is permitted, in indirect contact.

InS A1
InS Registered No: 1795799

■ Applications

- **CARLYCLEAN** is a multi-surface concentrated alkaline degreasing agent, used in particular for the external cleaning of cooling systems and air conditioning systems (heat exchangers, fans, finned batteries), as well as cleaning surfaces in contact with food.
- Regular use of **CARLYCLEAN** optimises the thermal transfer of heat exchangers, maximises efficiency of the system, and extends the life of the facility equipment, as well as increasing energy savings and gains with regard to maintenance costs.
- **CARLYCLEAN-F** is a multi-surface foam cleaner (for metal, plastic, etc.), packaged in aerosol casing.
- Intended for professional use, **CARLYCLEAN** and **CARLYCLEAN-F** eliminate fats, sticky residues, dust...

■ Functional features

- **CARLYCLEAN** associates the most detergent surface-active agent with the most emulsifying surface active agent. Thus its wetting and sequestering power makes it possible to easily reach, remove and eliminate the soils encountered.
- It is compatible with all materials used in the manufacture of heat exchangers (aluminium, copper, etc.) and protective compounds of fins (varnish, tin plating, etc.)
- **Economical**: The product is concentrated (packaged in sprayers and containers), and can be diluted. Rinsing is not required if the product is used in diluted form.
- **Environmentally friendly**: Biodegradable (>70%), low content of VOC (Volatil Organic Compounds): 4,12%, non-dangerous for the environment.
- Created in an **eco-friendly way**: Well-controlled energy levels, water consumption, and waste reprocessing.
- **CARLYCLEAN-F** is a foam cleaner, validated for fortuitous contact with food (homologation InS n°1795799):
- Compatible with all surfaces (plastics, metals...).
- **Environmentally friendly:** Biodegradable (>95%, OCDE 301E), low content of VOC: 19,70%, non-dangerous for the environment
- Non-flammable propellant ; Green Tea perfume.

■ CARLY advantages

- Strong multi-surface degreasing capacity (aluminium, steel...)
- Can be used for cleaning materials and articles intended for contact with food (Order dated 19/12/2013). Cleaned surfaces must be rinsed with drinkable water.
- Biodegradable >70% ; low content of VOC.
- Non-corrosive, non-dangerous for the environment.
- Deodorising product.
- Can be diluted (concentrated product): **CARLYCLEAN 500 / 5000 / 25000**.
- Also available as a foam: **CARLYCLEAN-F** (aerosol)
- Available in four content forms: 500ml spray-can, 5 and 25 litre containers, 400 ml aerosol.
- Once the fins are perfectly cleaned-up, further antimicrobial treatment with **CARLYBIO** is recommended for the evaporators: **CARLYBIO** is efficient against bacteria (EN 1276), fungicides (EN 1650) and Legionella (NFT 72.301). Efficiency reports are available upon request.

Multi-surface detergent-grease remover:

Cooling and refrigeration, air conditioning, kitchens...

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➔ CARLYCLEAN - CARLYCLEAN-F

■ Directions for use

CARLYCLEAN 500 / 5000 / 25000: Its concentration may vary widely: It can be used either in pure or diluted form (dilution up to 10%: 9 volumes of water for a volume of **CARLYCLEAN**).

➔ For heavily soiled surfaces (condensers): for maximum efficiency, it is recommended to perform a pulverisation on the soiled parts, to let the product act for at least 5 minutes, then to rinse with water. Repeat the treatment if necessary.

➔ For moderately to slightly soiled surfaces (evaporators): **CARLYCLEAN** can be diluted in 5 to 9 volumes of water. Rinsing is not mandatory (Defrosting is sufficient to rinse the fins).

CARLYCLEAN-F: Shake the can. Spray 20 cm away from the surfaces to be cleaned. Leave the treatment to work. Wipe off and repeat if necessary.

■ Legislation features

- The product complies with EC Regulation No. 648/2004 on cleaning agents: Compliance with the biodegradability criteria (>60%, 28 days), containing less than 5 % phosphates and anionic surfactants.
- In conformity with the Ministerial Order of 19 December 2013 on cleaning materials and articles intended to come into contact with foodstuffs.
- **CARLYCLEAN-F** is validated for fortuitous contact with food (homologation InS n°1795799)
- The judicious association of **CARLYCLEAN's** chemical components allows the elimination of soils by emulsion. This process is an efficient technique that only acts on the soils, without altering the fragile surfaces, such as aluminium fins or other nearby materials.
- Cleaning greasy deposits by emulsion is also healthier for the user and for the environment than some acid and caustic detergents, based on strong chemical interaction formations on the exchangers to degrease them or to remove the microbic flora.
- Contains Orange terpenes (8008-57-9): May produce an allergic reaction.

■ Precautions for use

Precautions of use - see the Safety Data Sheet

- Do not spray onto energized electrical equipment.
- In case of contact with skin or eyes, rinse copiously with water.
- Do not swallow.
- Do not breathe vapour. Use only in well-ventilated areas.
- Aerosol: Pressure container.

Storage conditions

- Keep the product at temperatures between + 5°C and + 40°C.

Frequency of use

- In order to obtain an efficient heat exchange, it is recommended to clean-up the exchangers on a monthly basis.

Regulation

- For surfaces in contact with foodstuff, a rinse with drinkable water is required.

Waste treatment

- Do not dispose of this product and its packaging without taking the necessary precautions.

Application (CARLYCLEAN 500/5000/25000)

- To make the **CARLYCLEAN** use even easier, CARLY proposes a pump with a pressure of 5 L (refer to chapter 100).

■ Technical features

CARLY references	Volume Litre	Packaging
CARLYCLEAN 500	0,50	Atomiser
CARLYCLEAN 5000	5,00	Can
CARLYCLEAN 25000	25,00	Can
CARLYCLEAN-F	0,40	Aerosol

Multi-surface detergent-grease remover:

Cooling and refrigeration, air conditioning, kitchens...

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→ CARLYCLEAN - CARLYCLEAN-F

■ Spare parts

CARLY references	Spare parts	Description
CARLYCLEAN-F	**CY 10207090**	Flexible extension tube for aerosol L=60cm
CARLYCLEAN-F	**CY 10207095**	25 flexible extension tubes for aerosol L=60cm
CARLYCLEAN 500	**CY 44800200**	Empty spray bottle, volume = 500 mL

■ Weights and packaging

CARLY references	Unit weight kg	Packaging unit
CARLYCLEAN 500	0,58	15
CARLYCLEAN 5000	5,18	2
CARLYCLEAN 25000	26,00	1
CARLYCLEAN-F	0,51	12

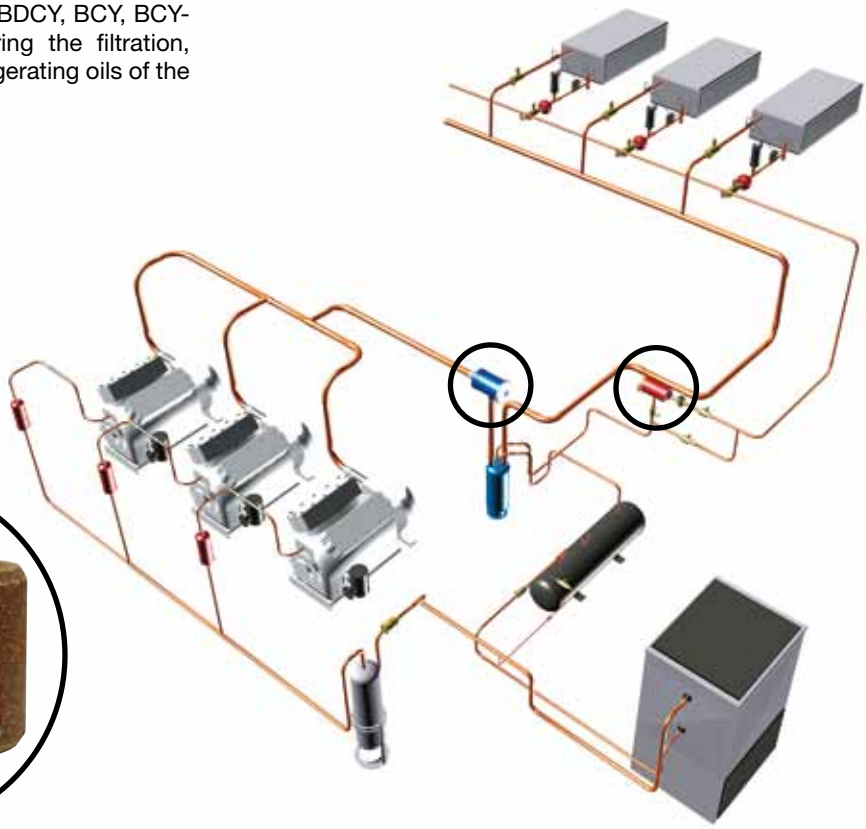
CTCY-EN – 8.1-4 / 07-2016

Drying, filtering and cleaning cores

➔ CCY / PLATINIUM 48

■ Applications

- Interchangeable elements for the filter shells (BDCY, BCY, BCY-HP, BBCY, ACY, BACY and HCYBF) ensuring the filtration, drying, or cleaning of the refrigerants and refrigerating oils of the air conditioning and refrigeration installations.



■ Functional features

- Products are compatible with CFCs, HCFCs, HFCs, CO_2s, 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 CO_2 and for a RANKINE organic cycle application, contact CARLY technical department.
- The cartridges CCY HP, PLATINIUM 48 and N:
  - ➔ can be used with all the filter shells that can be found on the market.
  - ➔ are supplied with a complete set of flange gaskets corresponding to most of the filter shells that can be found on the market.
  - ➔ are designed and manufactured to trap with a low pressure drop the humidity and impurities conveyed by the refrigerant and resist against vibrations and the circuit's pressure cyclings.
- The cleaning and drying cores CCY HP and N have a high acid adsorption power.
- The filtering cartridge CCY 48 HU can be used for all types of refrigerating oils with or without additives.

■ CARLY advantages

- The cores CCY HP, PLATINIUM 48 and N are oven-dried in order to be perfectly dehydrated before being packed in an easy-to-open sealed box. These cores have high humidity adsorption capacities at high and low condensation temperatures.
- The CCY I and F cores are efficient whichever the refrigerant flow direction.
- Efficient solutions for refrigerating circuit decontamination thanks to a complete range of cores.
- Presence of a date sticker to be filled in after the maintenance operations (core change).

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Drying, filtering and cleaning cores

➔ CCY / PLATINIUM 48

■ 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 CO_2 applications are also developed in chapter 115 – **GENERAL ASSEMBLY PRECAUTIONS**.

■ Specific recommendations for drying, filtering and cleaning cores CCY HP, N, F, I, HU and PLATINIUM 48

- Refer to assembly precautions for replaceable core filter drier shells and recommendations for liquid line: BDCY, BCY, BCY-HP, BBCY, for suction replaceable core filter shells: BDCY, ACY, BACY, and for HCYBF replaceable core oil filter shells.
- Remove cores from their sealed can at the very last moment before putting them in the shells.
- The cartridges CCY 48 HP, 48 N and PLATINIUM 48 must be positioned in various cartridge holders with their funnel shape at the larger end (see chapter " technical features of cores " , Ø 4 on drawing N°2) on the box outlet union side.
- It is imperative to use CCY A adapters with chemical cores (CCY N, CCY HP and PLATINIUM 48) in the suction filter shells. Do not forget to remove them before installing CCY F and CCY I cores.
- Important : The CCY cores must be changed very regularly and particularly the CCY HP and PLATINIUM 48 cartridges must be absolutely replaced :
  - ➔ after each intervention on the installation requiring the opening of the circuit
  - ➔ when the liquid indicator (VCYL or VCYLS) indicates an abnormal humidity content
  - ➔ when the pressure loss measured in the filter drier shell is too great
  - ➔ at least once a year as a measure of precaution.
- It is important to regularly monitor the refrigerant's moisture content and condition using sight glasses with CARLY VCYL or VCYLS moisture indicator (refer to chapter 9 or 10).
- For use of various CCY core types in the pollution control and circuit cleaning process after compressor burnout, closely follow the recommendations given to chapter 7.

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Drying, filtering and cleaning cores

→ CCY / PLATINIUM 48

■ Functional features

CARLY References	To be used with						Use			Filtration microns	Composition	Features
	BDCY	BCY-HP	BBCY	ACY	BACY	HCYBF	On suction line	On liquid line	On oil line			
Felt cores												
CCY 42 F	X						Temporary a few days			10	Felt	For CFC, HCFC, HFC, CO_2 Reinforced filtration
CCY 48 F				X								
CCY 100 F					X							
Stainless steel cores												
CCY 42 I	X						Permanent			140	Stainless steel mesh cloth and screen	For CFC, HCFC, HFC, CO_2 Filtering
CCY 48 I				X								
CCY 100 I					X							
High efficiency drying cores												
CCY 42 HP	X						Temporary a few days	Permanent until saturation		50	Chemical agents	For CFC, HCFC, HFC, CO_2 Reinforced drying acid neutralization
CCY 48 HP		X		X								
CCY 100 HP			X		X							
Very hich efficiency drying cores												
PLATINIUM 48		X		X			Temporary a few days	Permanent until saturation		50	Chemical agents	For CFC, HCFC, HFC, CO_2 Optimum drying
Cleaning cores												
CCY 42 N	X						Temporary a few days	Temporary a few days		50	Chemical agents	For CFC, HCFC, HFC, CO_2 Burnout decontamination, reinforced drying, reinforced acid neutralization, wax and resin binding
CCY 48 N		X		X								
CCY 100 N			X		X							
Oil cores												
CCY 48 HU						X			Permanent until saturation	30	Filtrating cellulose, glued, pleated	For refrigerating oil filtering

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Drying, filtering and cleaning cores

→ CCY HP / PLATINIUM 48 / CCY N

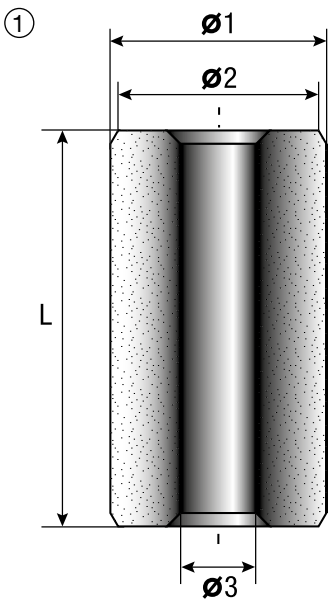
■ Selection table of drying and cleaning cores

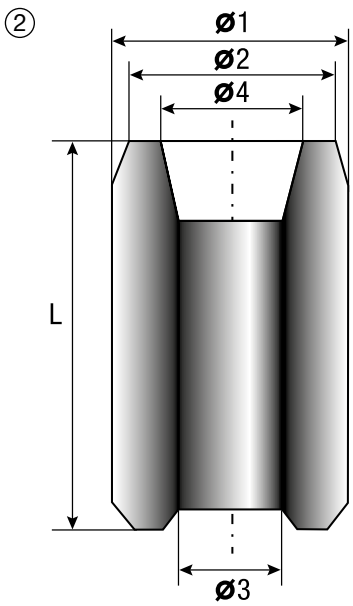
CARLY References	Filtering surface	Volume of desiccation products	Dehydratable refrigerant capacity kg of refrigerant (1)						
			R22 R407C R407F		R134a R410A		R404A R507		R744 CO_2
	cm^2	cm^3	24 °C	52 °C	24 °C	52 °C	24 °C	52 °C	24 °C
CCY 42 HP	374	645	47	40	53	43	50	41	29
CCY 48 HP	420	704	55	48	64	51	60	49	34
CCY 100 HP	630	1495	110	95	126	101	120	97	67
PLATINIUM 48	420	704	72	62	83	66	78	64	44
CCY 42 N	374	645	47	40	53	43	50	41	29
CCY 48 N	420	704	55	48	64	51	60	49	34
CCY 100 N	630	1495	110	95	126	101	120	97	67

(1) Dehydratable refrigerant capacities according to Standard ARI 710-86.

■ Technical features of drying and cleaning cores

CARLY References	Drawing Nb	Dimensions mm				
		Ø1	Ø2	Ø3	Ø4	L
CCY 42 HP	1	80	74	29	/	148
CCY 48 HP	2	94	82	45	60	139
CCY 100 HP	1	121	108	53	/	164
PLATINIUM 48	2	94	82	45	60	139
CCY 42 N	1	80	74	29	/	148
CCY 48 N	2	94	82	45	60	139
CCY 100 N	1	121	108	53	/	164





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Drying, filtering and cleaning cores

→ CCY F / CCY I / CCY HU

■ Selection table and technical features of filtering cores

CARLY References	Drawing Nb	Surface de filtration cm²	Dimensions mm			
			Ø1	Ø2	Ø3	L
CCY 42 F	3	329	81	62	42	155
CCY 48 F	5	420	93	/	75	140
CCY 100 F	5	630	122	/	105	166
CCY 42 I	4	348	81	62	/	155
CCY 48 I	5	420	93	/	/	140
CCY 100 I	5	630	122	/	/	166
CCY 48 HU	6	5790	101	/	27	150

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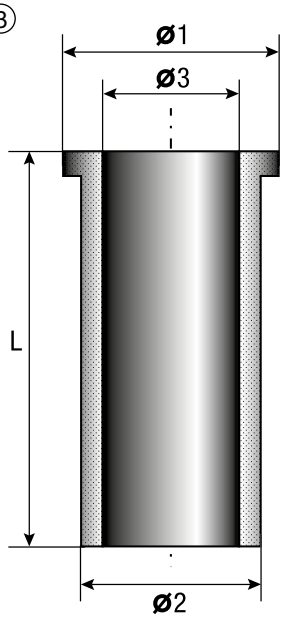

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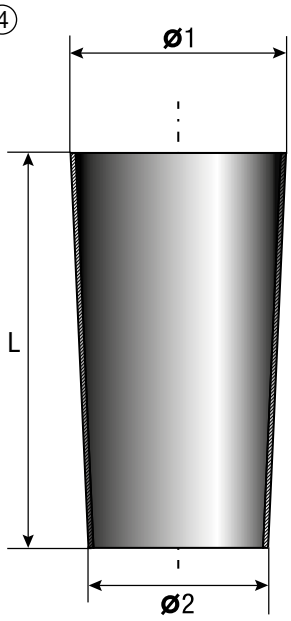

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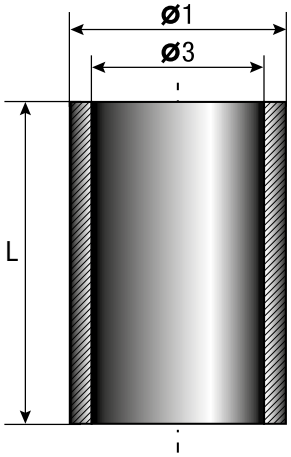

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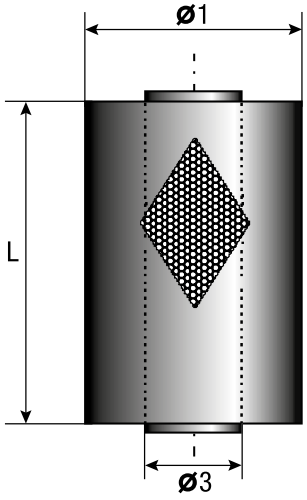

■ Spare parts

CARLY References	Description	Types	Quantity
CY 15555211	End plate gasket	BDCY	1
CY 15555601	End plate gasket	ACY - BCY	1
CY 15555701	End plate gasket	BACY - BBCY	1

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Drying, filtering and cleaning cores

→ CCY / PLATINIUM

■ Weights and packaging

CARLY references	Unit weight kg		Packaging number of pieces
	With packaging	Without packaging	
CCY 42 HP	0,77	0,68	15
CCY 48 HP	0,90	0,79	15
CCY 100 HP	1,75	1,52	6
PLATINIUM 48	0,90	0,79	15
CCY 42 N	0,62	0,53	15
CCY 48 N	0,81	0,70	15
CCY 100 N	1,58	1,36	6

CARLY references	Unit weight kg		Packaging number of pieces
	With packaging	Without packaging	
CCY 42 F	0,13	0,12	6
CCY 48 F	0,26	0,15	15
CCY 100 F	0,24	0,19	6
CCY 42 I	0,11	0,10	6
CCY 48 I	0,21	0,10	15
CCY 100 I	0,24	0,16	6
CCY 48 HU	0,31	0,30	15

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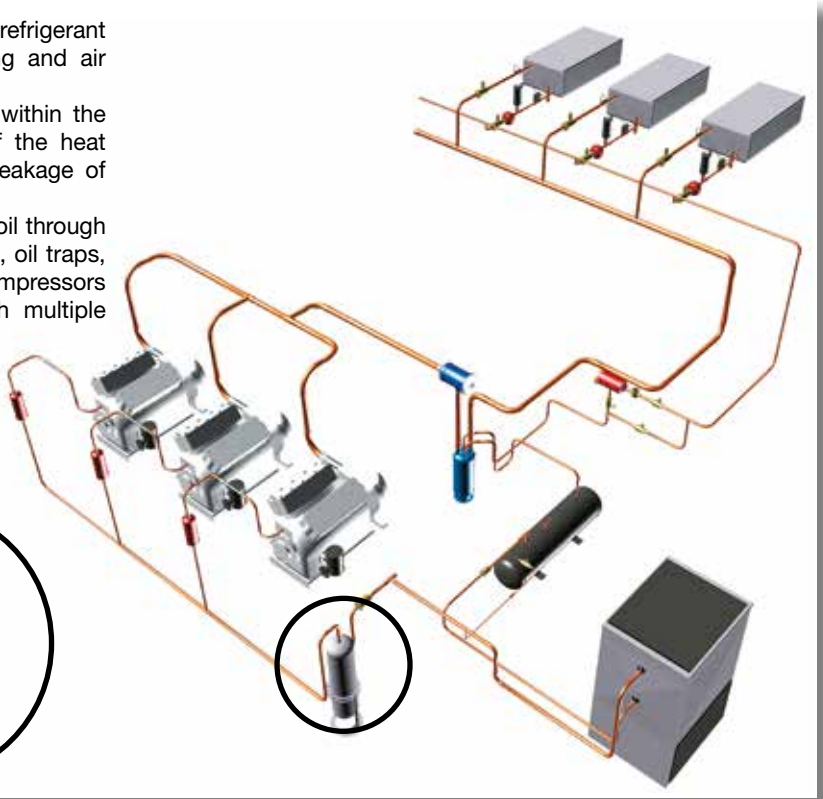
Oil separators

➔ TURBOIL® *(welded)* / TURBOIL-F® *(flanged)*

■ Applications

- Separation and recovery of the oil carried by the refrigerant in vapour phase at compressor outlet of refrigerating and air conditioning installations.
- The TURBOIL® oil separators limit the amount of oil within the circuit, thus allowing increasing the performances of the heat exchangers and prevent abnormal wear, even the breakage of compressors by lack of oil.
- They must be used in applications where the return of oil through the suction is not guaranteed: facilities with long pipes, oil traps, with evaporation temperatures lower than - 5 °C, with compressors in parallel, or with variable speed, for systems with multiple compressor stages in cascade, Flood, Booster...
- They ensure a regulated oil return to the compressor crankcases and participate by their position on the circuit, in the reduction of the vibrations generated by the compressors and sound level of the discharge gas.



■ Functional features

- Products are compatible with CFCs, HCFCs, HFCs, CO_2s, 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 CO_2 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.
- Two models are offered:
  - ➔ a welded version: TURBOIL®; these models have built-in fastening means
  - ➔ a flanged version: TURBOIL-F®, allowing cleaning the float/needle oil return system; these models are not fitted with built-in fastening, means: appropriate support legs are available as an option.
- The automatic regulation of the oil return directly to the compressor crankcases or through an oil receiver is ensured by a robust, accurate and protected unit (float, valve, and needle)
- Several maximum operating differential pressure: ΔPf = discharge pressure - pressure of oil return circuit.

Possible customization on demand:

- Separator with oil return by capillary (onboard refrigeration)
- Centrifugal separator

■ CARLY advantages

- Maximum working pressure up to 46 bar.
- Reliability and efficiency of the TURBOIL® oil separators are ensured thanks to a CARLY patented process, simultaneously associating several oil separation techniques:
  - ➔ centrifugation by helical motion generated by one or several spirals
  - ➔ coalescence thanks to the needled material of these spirals
  - ➔ sudden modification of speed by increase of the flow area located at the separator's inlet
  - ➔ sudden change of direction: inlet of the mixture by the top, outlet of the refrigerant from the higher lateral part and outlet of the oil from the lower part.
- Low pressure drop compare to a separator using coalescent cores
- Do not need specific maintenance operations, because there is no cores to be replace periodically.
- The presence of an internal baffle eliminates a new risk of the oil being carried by the refrigerant.
- Presence of a 1/4" NPT drain plug in the lower part from model TURBOIL® F-7011 S/MMS to model TURBOIL 9017 S/MMS and from model TURBOIL-F 2505 S/MMS to model TURBOIL-F 30025 S/MMS.
- GOST certified products.

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Oil separators

→ TURBOIL® *(welded)* / TURBOIL-F® *(flanged)*

■ Warning

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

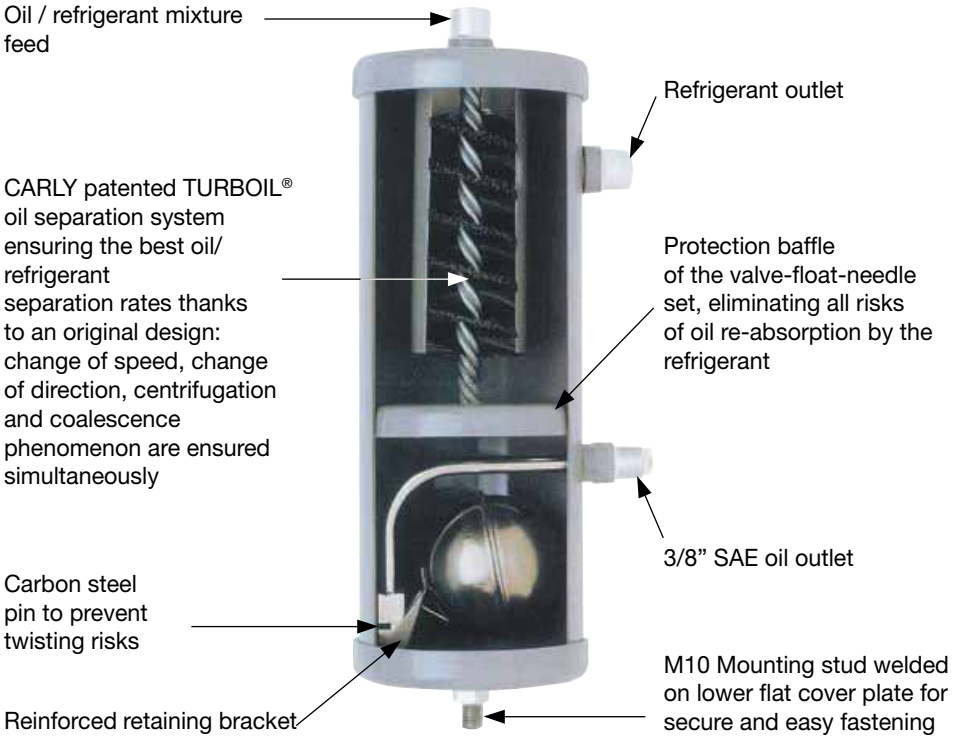
■ General assembly precautions

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 CO_2 applications are also developed in chapter 115 – **GENERAL ASSEMBLY PRECAUTIONS**.

■ Recommendations specific to the oil separators TURBOIL

- To select the TURBOIL® oil separators, it is necessary to refer to the selection tables in the following pages, taking into account:
  - ➜ the refrigerating capacity
  - ➜ the type of refrigerant used
  - ➜ the evaporation and condensation temperatures.
  - ➜ the maximum operating differential pressure: ΔPf
- Oil separators should be installed vertically on the discharge line, as close as possible to the compressor.
- Refrigerant flow direction with inlet from the top is imperative and identified on the upper cover plate with the letters “IN”.
- Connection diameter of the oil separators should be higher than or equal to the diameter of the discharge line.
- In the case of a multi-compressor installation mounted in parallel, it is recommended to use one oil separator by compressor, in order to keep an optimal efficiency at all operating rates; otherwise, the separator should be selected based on the sum of each compressor’s maximum capacity.
- The oil separation performances will depend directly on the flow rate of the oil/refrigerant mixture at the inlet of the separators.
- The oil return connection is done either at the filling plug on the compressor crankcase, or in the case of multi-compressor installations, at the oil receiver.
- In order to prevent all risks of refrigerant condensation, it is recommended to not install the oil separators in the air flow produced by the fans; in a cold environment, it may be necessary to provide for the installation of an heat insulation or a heating element around the separators.
- Before connecting the oil separator, it is necessary to introduce, by the higher connection, an oil load corresponding to the load in litre indicated in the oil separator technical features tables. Use the same oil as the compressor.
- In case of implantation of a TURBOIL® oil separator after installation commissioning, it is necessary to monitor the oil level in the compressor crankcase, in order to collect a possible oil surplus caused by a return of the lubricant accumulated in the refrigerating circuit.
- An efficient oil return system design requires that all the components (TURBOIL®, HCYR, HCYCT, HCYF, LEVOIL, HYDROIL and HCYVP) are correctly selected according to the installation’s refrigerating capacity and operating rates.
- The efficiency of the oil separation is never 100 %, especially with variable operating regimes. The implementation of an oil separator does not exempt to avoid any trap oil and slopes in the direction of the fluid during the design and the construction of the pipes of the unit.
- A check valve can be installed on the pipe at the gas outlet of the oil separator, in order to avoid any return of liquid refrigerant from the condenser.



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Oil separators

→ TURBOIL® *(welded)* / TURBOIL-F® *(flanged)*

■ Example of selection

The sizing of a product implies for the buyer to take into account the conditions under which the product will be used (temperature - pressure - refrigerant - oil - external environment). The values of the selection tables proposed in the CARLY catalogue match accurate test conditions.
We recommend that you convert your operating data into data matching the CARLY selection table so that you can perform a rigorous and correct sizing.

For a condensation temperature different from 38 °C, it is recommended to convert the installation's refrigerating capacity using the following formula:

$$Q_O^{Tk\ 38} = Q_O^{Tk\ x} / \{(Tkx - 38) \times 0{,}0143 + 1\}$$

(1) $Q_O^{Tk\ x}$ = installation's refrigerating capacity at initial condensation temperature (kW)
Tk x = initial condensation temperature (°C)
$Q_O^{Tk\ 38}$ = installation's refrigerating capacity at a condensation temperature of 38 °C (kW)

SELECTION OF A TURBOIL® MODEL CORRESPONDING TO THE CORRECTED REFRIGERATING CAPACITY.

• Installation operating with R404A under the following conditions:
- **→ T_O = – 10 °C**
- **→ Tk = 30 °C**
- **→ $Q_O^{Tk\ x}$ = 75 kW**
- **→ Compressor discharge = 1" 5/8**

• Which TURBOIL® to choose?

Application of the formula

$$Q_O^{Tk\ 38} = Q_O^{Tk\ x} / \{(Tkx - 38) \times 0{,}0143 + 1\}$$

75 / { (30 – 38) x 0.0143 + 1} = **85 kW**
Refer to the selection table page 41.4

Result:
TURBOIL 8013 S

Make sure that the TURBOIL® oil separator connection diameter is at least equal to the compressor discharge line diameter. The selected oil separator has a connection diameter identical to the piping diameter.

Make sure that the actual differential pressure of operation ΔPf is lower than that of the selected separator (see «technical features» table).

(1) *Chapter «Abbreviations and units» (refer to chapter 113).*

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Oil separators

→ TURBOIL® *(welded)*

■ Selection table

CARLY references	Connections To solder ODF inch	CARLY references	Connections To solder ODF mm	Refrigerating capacity kW (1)												
				R22 R407F			R134a			R404A R507			R407C R410A			R744 (2)
				-40 °C	-10 °C	+5 °C	-40 °C	-10 °C	+5 °C	-40 °C	-10 °C	+5 °C	-40 °C	-10 °C	+5 °C	-40 °C
TURBOIL 1503 S	3/8	**TURBOIL 1503 MMS**	10	5,0	6,0	7,0	3,5	4,5	5,0	5,0	6,0	7,0	5,0	6,0	7,0	10,0
TURBOIL 1504 S	1/2	**TURBOIL 1504 MMS**	12	6,0	7,0	8,0	4,0	5,0	5,5	6,0	7,0	8,0	6,0	7,0	8,0	12,0
TURBOIL 2505 S/MMS	5/8	**TURBOIL 2505 S/MMS**	16	17,0	22,0	24,0	12,0	15,0	17,0	17,0	22,0	25,0	16,0	21,0	24,0	27,0
TURBOIL 3006 S	3/4	**TURBOIL 3006 MMS**	18	20,0	25,0	28,0	16,0	21,0	23,0	22,0	27,0	30,0	21,0	26,0	28,5	42,0
TURBOIL 3007 S/MMS	7/8	**TURBOIL 3007 S/MMS**	22	24,0	27,0	30,0	18,0	23,0	25,0	26,0	30,0	32,0	25,0	28,5	30,5	54,0
TURBOIL 3009 S	1 1/8	**TURBOIL 3009 MMS**	28	28,0	32,0	36,0	19,0	25,0	28,0	29,0	36,0	40,0	27,5	34,0	38,0	95,0
TURBOIL 3011 S/MMS	1 3/8	**TURBOIL 3011 S/MMS**	35	32,0	40,0	45,0	21,0	27,0	31,0	32,0	40,0	47,0	31,0	39,0	43,5	124,0
TURBOIL 6009 S	1 1/8	**TURBOIL 6009 MMS**	28	42,0	50,0	55,0	34,0	37,0	42,0	42,0	54,0	60,0	41,0	48,0	54,0	95,0
TURBOIL 6011 S/MMS	1 3/8	**TURBOIL 6011 S/MMS**	35	48,0	55,0	60,0	38,0	46,0	50,0	48,0	60,0	70,0	46,0	57,0	66,5	149,0
TURBOIL 7011 S/MMS	1 3/8	**TURBOIL 7011 S/MMS**	35	48,0	55,0	60,0	38,0	46,0	50,0	48,0	60,0	70,0	46,0	57,0	66,5	149,0
TURBOIL 8013 S	1 5/8	**TURBOIL 8013 MMS**	42	65,0	80,0	90,0	45,0	60,0	70,0	65,0	85,0	94,0	62,0	81,0	89,5	210,0
TURBOIL 9017 S/MMS	2 1/8	**TURBOIL 9017 S/MMS**	54	85,0	100,0	110,0	58,0	70,0	80,0	87,0	105,0	120,0	83,0	100,0	114,0	288,0

(1) The indicated refrigerating capacities take into account a condensation temperature of + 38 °C, a 5 °C sub-refrigeration, and an aspirated gas temperature of + 18 °C.

(2) Refrigerating capacity Qn for Tk = + 0 °C For Tk = – 10 °C Qo = Qn – 22 %, For Tk = – 20 °C Q0 = Qn – 41 %.

Refer to selection example page 41.3.

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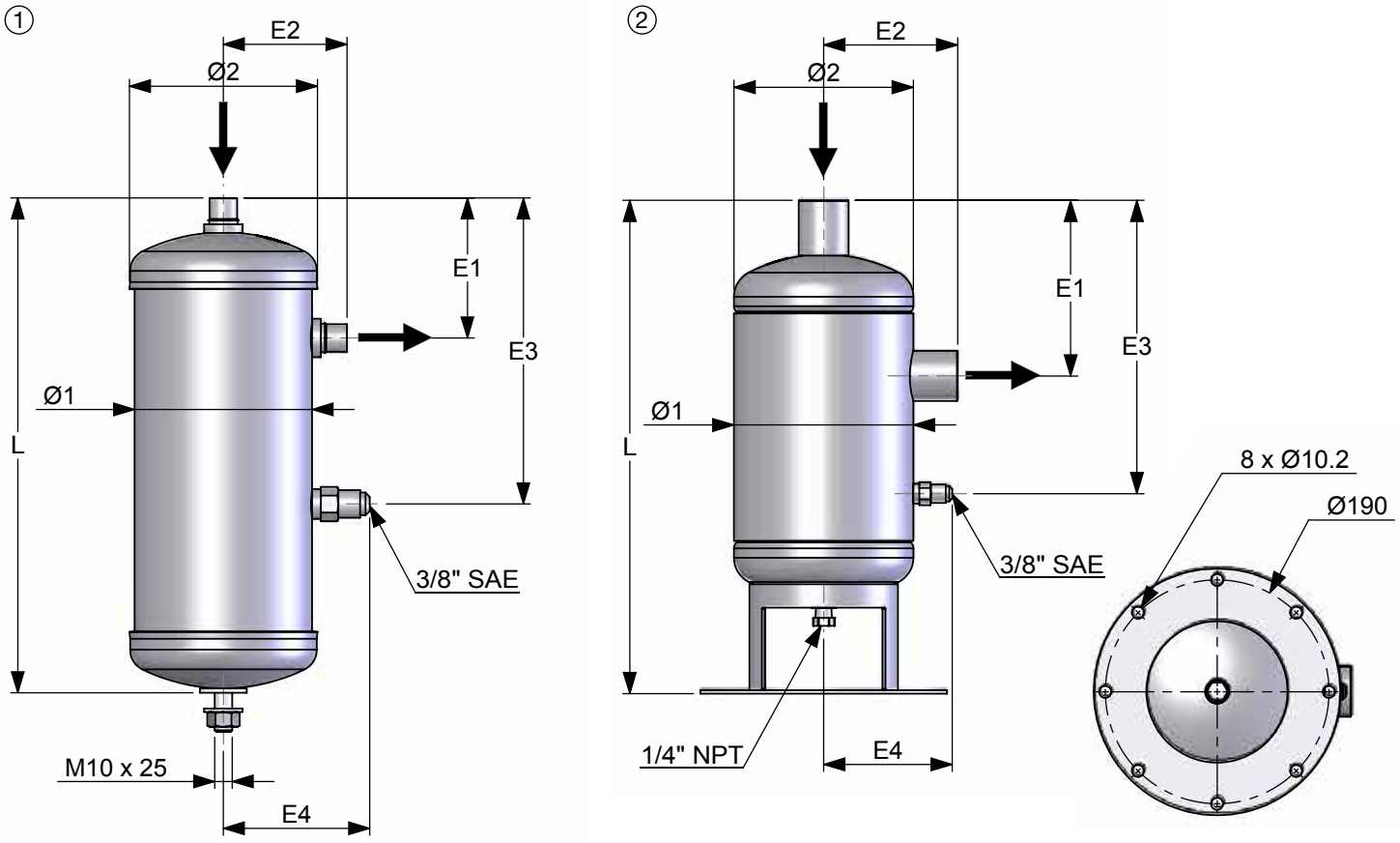
Oil separators

→ TURBOIL® *(welded)*

■ Technical features

CARLY references		Connections types (1)	Drawing No	Dimensions mm						
				Ø1	Ø2	L	E1	E2	E3	E4
TURBOIL 1503 S	TURBOIL 1503 MMS	2	1	101,6	109,0	283	80	71	175	84
TURBOIL 1504 S	TURBOIL 1504 MMS	2	1	101,6	109,0	283	80	71	175	84
TURBOIL 2505 S/MMS		2	1	101,6	109,0	305	82	73	197	84
TURBOIL 3006 S	TURBOIL 3006 MMS	2	1	101,6	109,0	308	85	76	200	84
TURBOIL 3007 S/MMS		2	1	101,6	109,0	358	97	83	250	84
TURBOIL 3009 S	TURBOIL 3009 MMS	3	1	101,6	109,0	390	107	80	282	84
TURBOIL 3011 S/MMS		3	1	101,6	109,0	487	116	90	379	84
TURBOIL 6009 S	TURBOIL 6009 MMS	3	1	101,6	109,0	434	107	80	327	84
TURBOIL 6011 S/MMS		3	1	101,6	109,0	549	116	90	441	84
TURBOIL 7011 S/MMS		3	2	152,4	156,0	419	149	114	249	109
TURBOIL 8013 S	TURBOIL 8013 MMS	3	2	152,4	156,0	498	149	114	329	109
TURBOIL 9017 S/MMS		3	2	152,4	156,0	512	162	127	342	109

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



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Oil separators

→ TURBOIL® *(welded)*

■ Technical features

CARLY references		Volume	Oil volume	Maximal working pressure	Working pressure (1)	Differencial pressure (3)	Maximal working temperature	Minimal working temperature	Working temperature (1)	CE Category (2)
		V L	V L	PS bar	PS BT bar	ΔPf bar	TS maxi °C	TS mini °C	TS BT °C	
TURBOIL 1503 S	**TURBOIL 1503 MMS**	1,72	0,30	46	15	29	120	-40	-30	I
TURBOIL 1504 S	**TURBOIL 1504 MMS**	1,86	0,30	46	15	29	120	-40	-30	I
TURBOIL 2505 S/MMS		1,97	0,30	46	15	29	120	-40	-30	I
TURBOIL 3006 S	**TURBOIL 3006 MMS**	2,12	0,30	46	15	29	120	-40	-30	I
TURBOIL 3007 S/MMS		2,33	0,30	46	15	29	120	-40	-30	I
TURBOIL 3009 S	**TURBOIL 3009 MMS**	2,54	0,30	46	15	29	120	-40	-30	I
TURBOIL 3011 S/MMS		3,28	0,30	46	15	29	120	-40	-30	I
TURBOIL 6009 S	**TURBOIL 6009 MMS**	2,87	0,30	46	15	29	120	-40	-30	I
TURBOIL 6011 S/MMS		3,64	0,30	46	15	29	120	-40	-30	I
TURBOIL 7011 S/MMS		4,16	1,00	46	15	29	120	-40	-30	I
TURBOIL 8013 S	**TURBOIL 8013 MMS**	5,77	1,00	46	15	19	120	-40	-30	II
TURBOIL 9017 S/MMS		5,83	1,00	46	15	19	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).

(3) Maximum operating differential pressure ΔPf = Discharge pressure - oil return circuit pressure.

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Oil separators

➔ TURBOIL-F® *(flanged)*

■ Selection table

CARLY references	Connections To solder ODF pouce	CARLY references	Connections To solder ODF mm	Refrigerating capacity kW (1)												
				R22 R407F			R134a			R404A R507			R407C R410A			R744 (2)
				-40 °C	-10 °C	+5 °C	-40 °C	-10 °C	+5 °C	-40 °C	-10 °C	+5 °C	-40 °C	-10 °C	+5 °C	-40 °C
TURBOIL-F 2505 S/MMS	5/8	TURBOIL-F 2505 S/MMS	16	17,0	22,0	24,0	12,0	15,0	17,0	17,0	22,0	25,0	16,0	21,0	24,0	27,0
TURBOIL-F 3007 S/MMS	7/8	TURBOIL-F 3007 S/MMS	22	24,0	27,0	30,0	18,0	23,0	25,0	25,0	30,0	32,0	25,0	28,5	30,5	54,0
TURBOIL-F 3009 S	1 1/8	TURBOIL-F 3009 MMS	28	28,0	32,0	36,0	19,0	25,0	28,0	29,0	36,0	40,0	27,5	34,0	38,0	95,0
TURBOIL-F 3011 S/MMS	1 3/8	TURBOIL-F 3011 S/MMS	35	32,0	40,0	45,0	21,0	27,0	31,0	32,0	40,0	47,0	31,0	39,0	43,5	124,0
TURBOIL-F 7011 S/MMS	1 3/8	TURBOIL-F 7011 S/MMS	35	48,0	55,0	60,0	38,0	46,0	50,0	48,0	60,0	70,0	46,0	57,0	66,5	149,0
TURBOIL-F 8013 S	1 5/8	TURBOIL-F 8013 MMS	42	65,0	80,0	90,0	45,0	60,0	70,0	65,0	85,0	94,0	62,0	81,0	89,5	210,0
TURBOIL-F 9017 S/MMS	2 1/8	TURBOIL-F 9017 S/MMS	54	85,0	100,0	110,0	58,0	70,0	80,0	87,0	105,0	120,0	83,0	100,0	114,0	288,0
TURBOIL-F 15013 S	1 5/8	TURBOIL-F 15013 MMS	42	104,0	128,0	145,0	78,0	96,0	109,0	105,0	130,0	148,0	100,0	124,0	141,0	328,0
TURBOIL-F 15017 S/MMS	2 1/8	TURBOIL-F 15017 S/MMS	54	121,0	149,0	170,0	91,0	112,0	127,0	125,0	154,0	175,0	119,0	146,5	166,5	367,0
TURBOIL-F 15021 S	2 5/8	TURBOIL-F 15021 MMS	67	138,0	170,0	194,0	104,0	128,0	146,0	142,0	175,0	200,0	135,0	166,5	190,0	565,0
TURBOIL-F 30025 S	3 1/8	TURBOIL-F 30025 MMS	80	303,0	372,0	424,0	228,0	280,0	318,0	310,0	380,0	430,0	295,0	362,0	409,5	643,0

(1) The indicated refrigerating capacities take into account a condensation temperature of + 38 °C, a 5 °C sub-refrigeration, and an aspirated gas temperature of + 18 °C.

(2) Refrigerating capacity Qn for Tk = + 0 °C For Tk = – 10 °C Qo = Qn – 22 %, For Tk = – 20 °C Q0 = Qn – 41 %.

Refer to selection example page 41.3.

■ Float set internal cleaning or replacement procedure

1 • Isolate the **TURBOIL-F®** (or the **TURBOIL-RF®**)

2 • Purge the isolated circuit until atmospheric pressure is reached in the oil separator.

3 • Empty the oil present in the separator, using the 1/4" NPT drain plug located in the lower part of the **TURBOIL-F®**.

4 • Remove the bolts and remove the lower part of the **TURBOIL-F®**.

5 • Proceed to the cleaning or replacement, if necessary, of this lower part of the separator.

6 • Replace systematically the fastening gasket on the lower part of the separator (gasket references on page 41.10) (To select the right reference of the gasket, refer to paragraph spare parts, at the end of the chapter).

7 • Put back the lower part of the separator, uniformly and progressively tightening the fastening bolts. (refer to chapter 115 - GENERAL MOUNTING PRECAUTIONS - Criss-cross tightening).

The recommended tightening torques are:
➔ 30 N.m for TURBOIL-F 2505 S/MMS to 3011 S/MMS
➔ 55 N.m for TURBOIL-F 7011 S/MMS to 9017 S/MMS
➔ 30 N.m for TURBOIL-F 15013 S/MMS to 30025 S/MMS

8 • Screw back the 1/4" NPT drain plug on the lower part of the separator and make sure it is properly sealed.

9 • Evacuate the system and check the tightness of the installation before loading the separator with oil and putting back under pressure.

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Oil separators

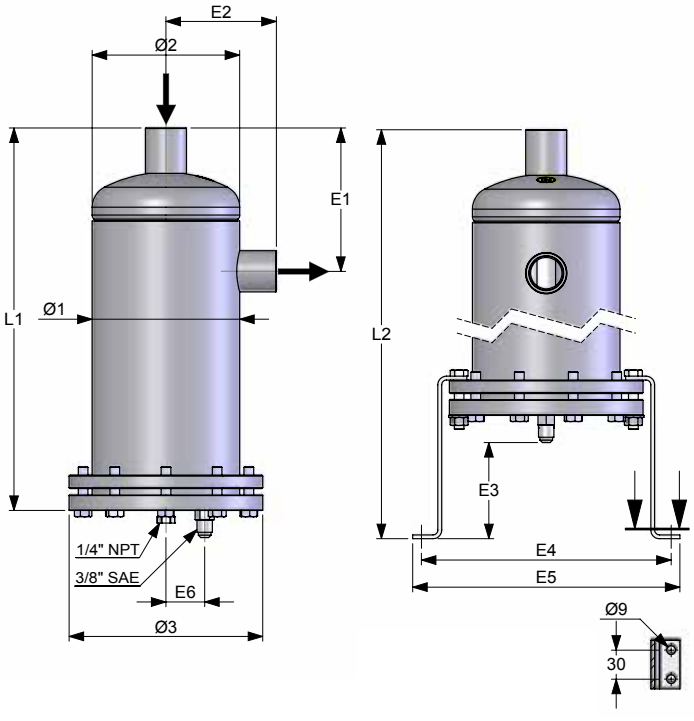
→ TURBOIL-F® *(flanged)*

■ Technical features

CARLY references		Connections types (1)	Drawing N°	Dimensions mm										
				Ø1	Ø2	Ø3	L1	L2	E1	E2	E3	E4	E5	E6
TURBOIL-F 2505 S/MMS		2	1	101,6	109	140	303	441	82	73	111	204	222	35
TURBOIL-F 3007 S/MMS		2	1	101,6	109	140	355	494	102	83	111	204	222	35
TURBOIL-F 3009 S	TURBOIL-F 3009 MMS	3	1	101,6	109	140	387	526	107	88	111	204	222	35
TURBOIL-F 3011 S/MMS		3	1	101,6	109	140	485	623	116	90	111	204	222	35
TURBOIL-F 7011 S/MMS		3	1	152,4	156	200	395	523	148	114	104	258	276	40
TURBOIL-F 8013 S	TURBOIL-F 8013 MMS	3	1	152,4	156	200	428	555	148	114	104	258	276	40
TURBOIL-F 9017 S/MMS		3	1	152,4	156	200	441	569	161	127	104	258	276	40
TURBOIL-F 15013 S	TURBOIL-F 15013 MMS	3	2	219,1	224	150	492	821	174	149	305	126	249	35
TURBOIL-F 15017 S/MMS		3	2	219,1	224	150	550	879	195	171	305	126	249	35
TURBOIL-F 15021 S	TURBOIL-F 15021 MMS	3	2	219,1	224	150	565	894	215	184	305	126	249	35
TURBOIL-F 30025 S	TURBOIL-F 30025 MMS	3	2	219,1	224	150	577	906	234	185	305	126	249	35

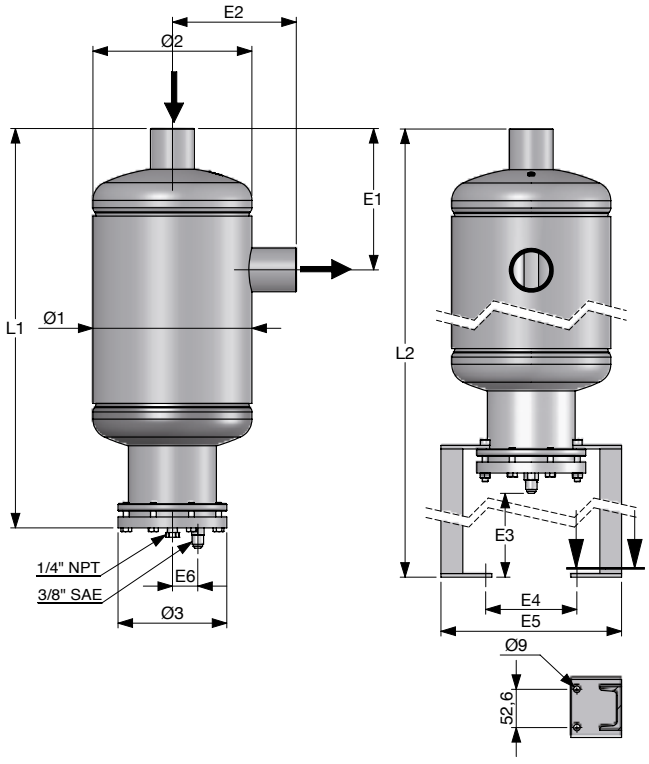
(1) Chapter «Connection features and drawings» (refer to chapter 114).

①



1 set of 2 supporting feet on option ref. CARLY: CY 37100260

②



1 set of 2 supporting feet on option ref. CARLY: CY 38600220

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Oil separators

→ TURBOIL-F® *(flanged)*

■ Technical features

CARLY references		Volume	Oil volume	Maximal working pressure	Working pressure (1)	Differencial pressure (3)	Maximal working temperature	Minimal working temperature	Working temperature (1)	CE Category (2)
		V L	V L	PS bar	PS BT bar	ΔPf bar	TS maxi °C	TS mini °C	TS BT °C	
TURBOIL-F 2505 S/MMS		2,29	0,3	46	15	29	120	-40	-30	I
TURBOIL-F 3007 S/MMS		2,62	0,3	46	15	29	120	-40	-30	I
TURBOIL-F 3009 S	TURBOIL-F 3009 MMS	2,82	0,3	46	15	29	120	-40	-30	I
TURBOIL-F 3011 S/MMS		3,56	0,3	46	15	29	120	-40	-30	I
TURBOIL-F 7011 S/MMS		5,00	1,0	33	15	29	120	-40	-30	I
TURBOIL-F 8013 S	TURBOIL-F 8013 MMS	6,00	1,0	33	15	29	120	-40	-30	I
TURBOIL-F 9017 S/MMS		6,00	1,0	33	15	29	120	-40	-30	I
TURBOIL-F 15013 S	TURBOIL-F 15013 MMS	11,50	0,4	45	15	29	120	-40	-30	II
TURBOIL-F 15017 S/MMS		13,20	0,4	45	15	29	120	-40	-30	II
TURBOIL-F 15021 S	TURBOIL-F 15021 MMS	13,40	0,4	45	15	19	120	-40	-30	II
TURBOIL-F 30025 S	TURBOIL-F 30025 MMS	13,50	0,4	45	15	19	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).

(3) Maximum operating differential pressure ΔPf = Discharge pressure - oil return circuit pressure

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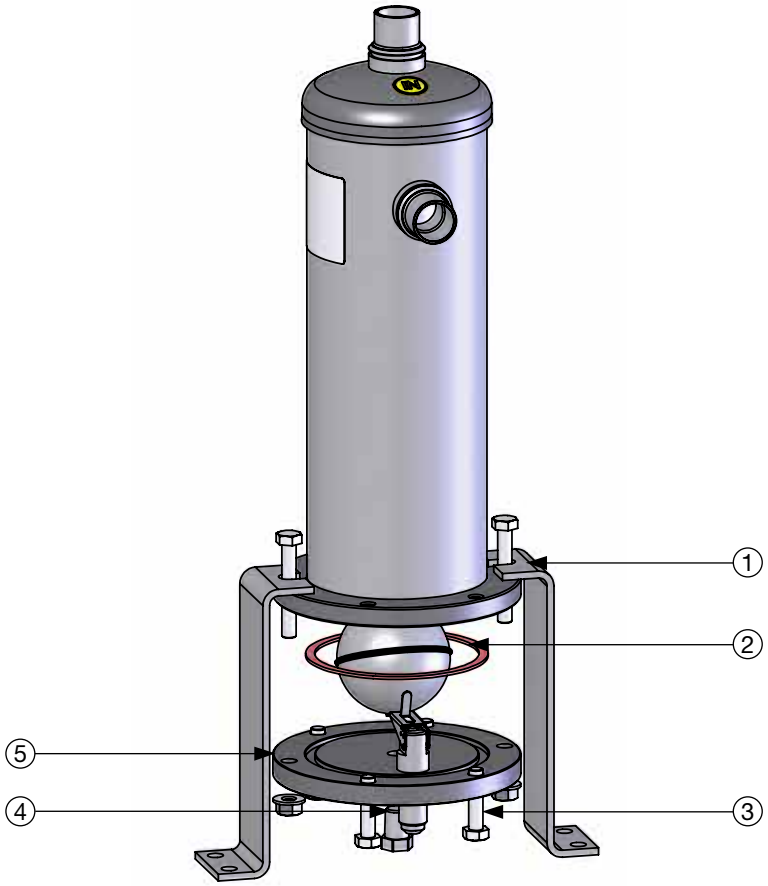
Oil separators

→ TURBOIL-F® *(flanged)*

■ Spare parts

CARLY references	Part Nb	Description	TURBOIL-F® Types	Quantity
CY 37100250	1	1 set of 2 supporting feet	2505 S/MMS to 3011 S/MMS (Before 2010)	1
CY 37100260	1	1 set of 2 supporting feet	2505 S/MMS to 9017 S/MMS	1
CY 37100300	1	1 set of 2 supporting feet	7011 S/MMS to 9017 S/MMS (Before 2010)	1
CY 38600220	1	1 set of 2 supporting feet	15013 S/MMS to 30025 S/MMS	1
CY 15555301	2	Flat gasket for flange closure	2505 S/MMS to 3011 S/MMS	1
CY 15555304	2	Flat gasket for flange closure	7011 S/MMS to 9017 S/MMS	1
CY 15555303	2	Flat gasket for flange closure	15013 S/MMS to 30025 S/MMS	1
CY 19900420	3	Set of 8 screws for flange closure	15013 S/MMS to 30025 S/MMS	1
CY 19900425	3	Set of 6 screws for flange closure	2505 S/MMS to 3011 S/MMS	1
CY 19900520	3	Set of 10 screws for flange closure	7011 S/MMS to 9017 S/MMS	1
CY 10810010	4	1/4" NPT drain plug	2505 S/MMS to 3011 S/MMS 7011 S/MMS to 30025 S/MMS	1
CY 33402000	5	Lower part of separator with gasket and float set	2505 S/MMS to 3011 S/MMS (Before 2010)	1
CY 33403000	5	Lower part of separator with gasket and float set	7011 S/MMS to 9017 S/MMS (Before 2010)	1
CY 33800516	5	Flange with gasket and float set $\Delta Pf = 29$ bar	2505 S/MMS to 3011 S/MMS	1
CY 33801706	5	Flange with gasket and float set $\Delta Pf = 29$ bar	7011 S/MMS to 9017 S/MMS	1
CY 33800456	5	Flange with gasket and float set $\Delta Pf = 29$ bar	15013 S/MMS to 15017 S/MMS	1
CY 33303450	5	Flange with gasket and float set $\Delta Pf = 19$ bar	15021 S/MMS to 30025 S/MMS	1



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Oil separators

→ TURBOIL® *(welded)* / TURBOIL-F® *(flanged)*

■ Weights and packaging

CARLY references	Unit weight kg		Packaging number of pieces
	With packaging	Without packaging	
TURBOIL 1503 S & MMS	2,90	2,65	1
TURBOIL 1504 S & MMS	3,35	3,10	1
TURBOIL 2505 S/MMS	3,55	3,25	1
TURBOIL 3006 S & MMS	3,75	3,45	1
TURBOIL 3007 S/MMS	4,20	3,90	1
TURBOIL 3009 S & MMS	4,25	3,95	1
TURBOIL 3011 S/MMS	5,55	5,20	1
TURBOIL 6009 S & MMS	4,90	4,55	1
TURBOIL 6011 S/MMS	6,25	5,90	1
TURBOIL 7011 S/MMS	8,50	8,10	1
TURBOIL 8013 S & MMS	10,80	10,40	1
TURBOIL 9017 S/MMS	11,35	10,95	1

CARLY references	Unit weight kg		Packaging number of pieces
	With packaging	Without packaging	
TURBOIL-F 2505 S/MMS	5,25	4,95	1
TURBOIL-F 3007 S/MMS	5,60	5,30	1
TURBOIL-F 3009 S & MMS	6,10	5,75	1
TURBOIL-F 3011 S/MMS	7,20	6,85	1
TURBOIL-F 7011 S/MMS	12,10	11,70	1
TURBOIL-F 8013 S & MMS	14,35	13,95	1
TURBOIL-F 9017 S/MMS	15,90	15,50	1
TURBOIL-F 15013 S & MMS	19,05	17,85	1
TURBOIL-F 15017 S/MMS	22,15	20,95	1
TURBOIL-F 15021 S & MMS	22,85	21,65	1
TURBOIL-F 30025 S & MMS	23,95	22,75	1

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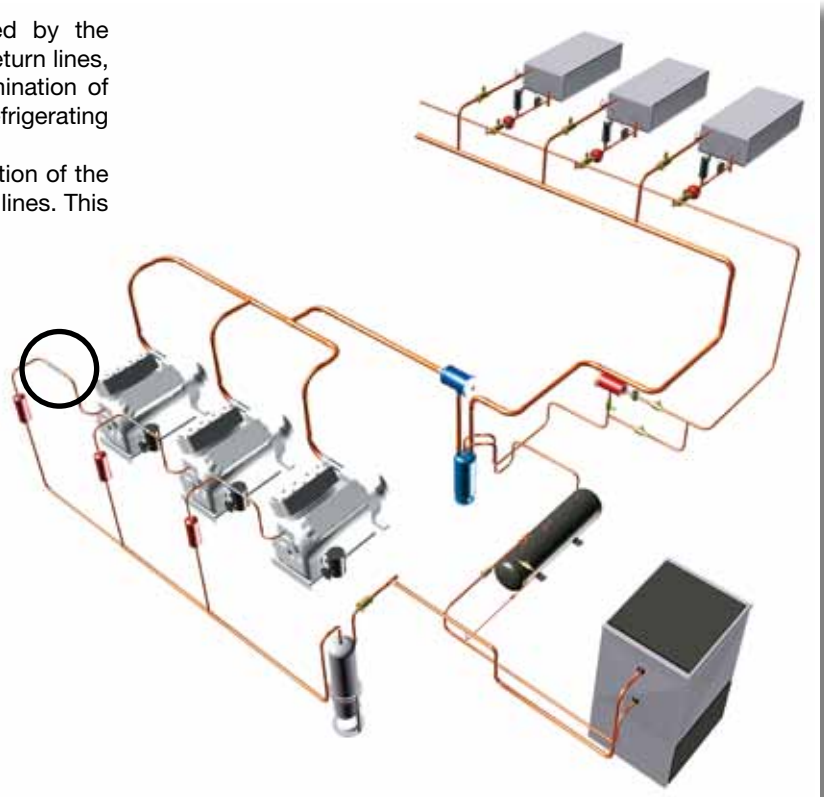
Stainless steel vibration eliminators, nickel-plated connections

→ EVCYAC

■ Applications

- Reduction of the mechanical vibrations transmitted by the compressor to the discharge, liquid, suction and oil return lines, and indirectly, of the noises they generate, and elimination of stresses linked with piping thermal expansion in refrigerating and air conditioning installations.
- The vibration eliminators have no effect on the reduction of the noises caused by the gas pulsations in the discharge lines. This is the role of the mufflers SCY.



■ Functional features

- Products are compatible with CFCs, HCFCs, HFCs, CO_2s, 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 CO_2 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 nominal diameter-based selection.
- Flexible wavy stainless steel metallic hoses constituted of parallel waves from a tube welded end to end and covered with a stainless steel wire braid (see sketch n° 2).
- Nickel-plated steel connections, for the standards models.
- Vibration eliminators are cleaned and dried before individual packaging under heat-sealed plastic tubular film.

Possible customization on request, even for unit needs :

- Specific lengths
- Stainless steel connections, for better resistance to corrosive environments (e.g. railway and maritime application, ...)
- Specific flanges or connections

■ CARLY advantages

- Maximal working pressure: until 46 bar.
- Specifically designed in order to resist frost and major temperature shifts, from - 40 °C to + 140 °C.
- Principle for connecting the components together (stainless steel hose + ait-tightness ring + braid + connection) by stainless steel TIG weld. Contrary to a braze, this weld eliminates all risks of deteriorating the vibration eliminator by heat transfer during connection to the installation's piping.
- Very high mechanical resistance to corrosion.
- Long brazed or welded connections, in order to facilitate connection to installation.
- Unity helium air-tightness inspection.
- Marking meets perfectly the requirements of PED 2014/68/EU.
- GOST certified products.

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■ Warning

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

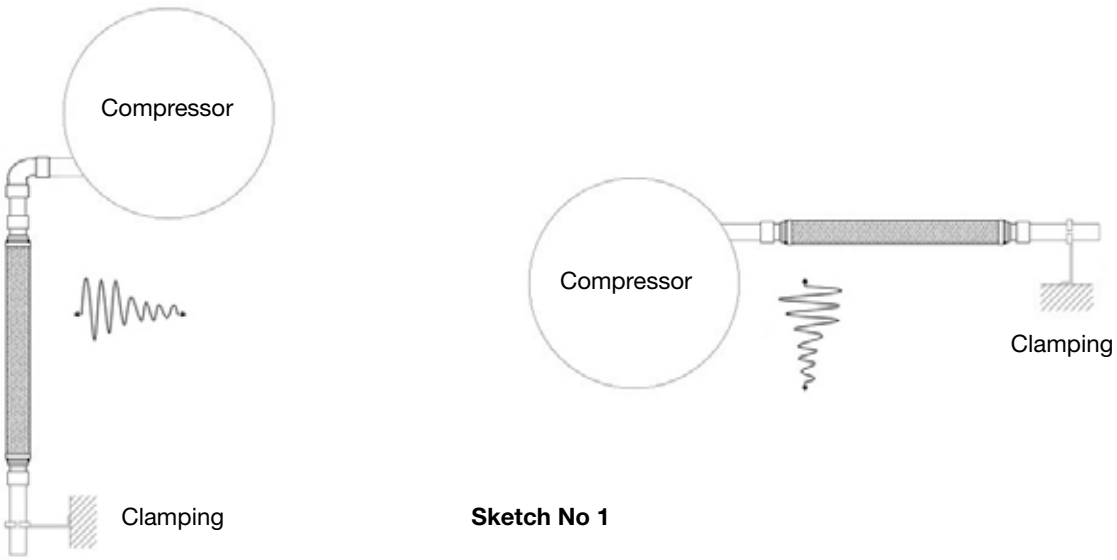
■ General assembly precautions

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 CO_2 applications are also developed in chapter 115 – **GENERAL ASSEMBLY PRECAUTIONS**.

■ Recommendations specific to EVCYAC vibration eliminators

- Mounting of vibration eliminators should be performed:
  - ➔ on a piping straight-up part
  - ➔ As close as possible of the vibration generator: compressor, evaporator, condenser, etc... imperatively in horizontal position at compressor's suction.
  - ➔ without twisting, extension or axial compression stress. The vibration eliminator must be perfectly straight.
  - ➔ preferably 90° in relation to vibration source (refer to sketch No1).
- Warning, when put under pressure, the vibration eliminators can present a slight extension (about 2 % of initial length); it is therefore necessary to take this into account during the assembly operation.
- For the brazing operation, we recommend the use of a filler metal with a high silver content (38 % minimum) and the use of a neutral gas inside the vibration eliminators in order to not trigger internal corrosion phenomena.
- During the brazing operation, be careful that the scouring flux used does not come in contact with the hose and its braid.
- The connections' nickel lining holds ready nicely during temperature increase; it is nevertheless recommended to protect the connections after brazing with an appropriate product, against corrosion risks.
- Provide for clamping of the vibration eliminator ends that are located opposite the vibration source (refer to sketch No1).
- All arrangements must be taken, in order to prevent water concentration that may freeze and then deteriorate the vibration eliminator.



Sketch No 1

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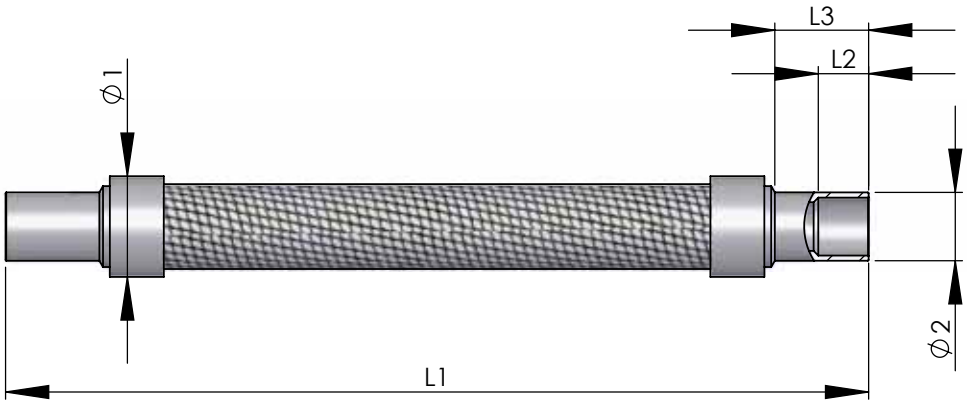
■ Technical features

CARLY references	Connections To solder ODF inch	CARLY references	Connections To solder ODF mm	Dimensions mm				
				Ø1	Ø2	L1	L2	L3
EVCYAC 2 S	1/4	EVCYAC 2 MMS	6,0	14	9	200	6	16
EVCYAC 3 S	3/8	EVCYAC 3 MMS	10,0	18	13	221	9	21
EVCYAC 4 S	1/2	EVCYAC 4 MMS	12,0	19	16	242	11	24
EVCYAC 5 S	5/8	EVCYAC 5 MMS	15,0	25	19	288	14	29
EVCYAC 6 S	3/4	EVCYAC 6 MMS	18,0	30	22	318	16	33
EVCYAC 7 S/MMS	7/8	EVCYAC 7 S/MMS	22,0	30	25	318	18	42
EVCYAC 9 S	1 1/8	EVCYAC 9 MMS	28,0	36	32	360	20	51
EVCYAC 11 S/MMS	1 3/8	EVCYAC 11 S/MMS	35,0	47	40	408	30	56
EVCYAC 13 S	1 5/8	EVCYAC 13 MMS	42,0	58	48	472	30	68
EVCYAC 17 S/MMS	2 1/8	EVCYAC 17 S/MMS	54,0	69	60	560	40	88
EVCYAC 21 S	2 5/8	EVCYAC 21 MMS	67,0	84	75	670	50	105
EVCYAC 25 S	3 1/8	EVCYAC 25 MMS	80,0	107	88	760	55	124
EVCYAC 29 S	3 5/8	EVCYAC 29 MMS	88,9	132	102	895	55	142
EVCYAC 33 S	4 1/8	EVCYAC 33 MMS	108,0	132	114	930	60	160



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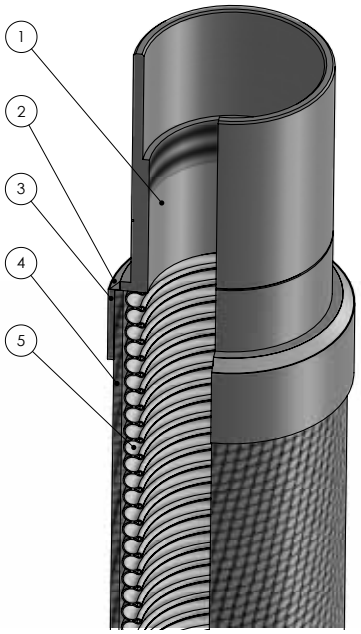
■ Technical features

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 (2)
EVCYAC 2 S	1/4	**EVCYAC 2 MMS**	6,0	46	15	140	-40	-30	Art4§3
EVCYAC 3 S	3/8	**EVCYAC 3 MMS**	10,0	46	15	140	-40	-30	Art4§3
EVCYAC 4 S	1/2	**EVCYAC 4 MMS**	12,0	46	15	140	-40	-30	Art4§3
EVCYAC 5 S	5/8	**EVCYAC 5 MMS**	15,0	46	15	140	-40	-30	Art4§3
EVCYAC 6 S	3/4	**EVCYAC 6 MMS**	18,0	42	15	100	-40	-30	Art4§3
EVCYAC 7 S/MMS	7/8	**EVCYAC 7 S/MMS**	22,0	42	15	100	-40	-30	Art4§3
EVCYAC 9 S	1 1/8	**EVCYAC 9 MMS**	28,0	42	15	100	-40	-30	Art4§3
EVCYAC 11 S/MMS	1 3/8	**EVCYAC 11 S/MMS**	35,0	35	15	120	-40	-30	I
EVCYAC 13 S	1 5/8	**EVCYAC 13 MMS**	42,0	35	15	120	-40	-30	I
EVCYAC 17 S/MMS	2 1/8	**EVCYAC 17 S/MMS**	54,0	34	15	120	-40	-30	I
EVCYAC 21 S	2 5/8	**EVCYAC 21 MMS**	67,0	25	15	120	-40	-30	I
EVCYAC 25 S	3 1/8	**EVCYAC 25 MMS**	80,0	20	15	120	-40	-30	I
EVCYAC 29 S	3 5/8	**EVCYAC 29 MMS**	88,9	20	15	120	-40	-30	I
EVCYAC 33 S	4 1/8	**EVCYAC 33 MMS**	108,0	20	15	120	-40	-30	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 diameter, according to PED 2014/68/EU (refer to chapter 0).

** Other WT (working temperatures) possible on demand.*



1 - Nickel plated steel connections (or, stainless steel, on request)

2 - TIG weld

3 - Stainless steel ring

4 - Stainless steel wire braid

5 - Flexible wavy stainless steel hose

Sketch No 2

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■ Weights and packaging

CARLY references	Unit weight kg		Packaging number of pieces
	With packaging	Without packaging	
EVCYAC 2 S et MMS	0,06	0,06	1
EVCYAC 3 S & MMS	0,07	0,07	1
EVCYAC 4 S et MMS	0,10	0,10	1
EVCYAC 5 S & MMS	0,15	0,15	1
EVCYAC 6 S et MMS	0,25	0,25	1
EVCYAC 7 S/MMS	0,25	0,25	1
EVCYAC 9 S et MMS	0,43	0,42	1

CARLY references	Unit weight kg		Packaging number of pieces
	With packaging	Without packaging	
EVCYAC 11 S/MMS	0,77	0,76	1
EVCYAC 13 S et MMS	1,36	1,35	1
EVCYAC 17 S/MMS	2,13	2,12	1
EVCYAC 21 S et MMS	3,90	3,85	1
EVCYAC 25 S & MMS	5,65	5,60	1
EVCYAC 29 S et MMS	8,60	8,55	1
EVCYAC 33 S & MMS	9,20	9,15	1