

# ***MAINTENANCE AND OPERATING MANUAL***

## ***Cyclone condensate separator***

### ***Type FCA-CKL***

**EN**



## **Purpose and appropriate use**

*Dear Customer,*

*thank you for choosing our product. In order to get the best performances in the use of this product, please read this manual carefully. To avoid incorrect operations of the equipment and possible physical risks to the operator, please read and strictly follow the instructions contained in this manual. Note, these instructions are in addition to the safety rules that apply in the country where the filter is installed. This manual must be maintained available in any moment for future references and it has to be intended as inherent part of the relevant filter.*

*Due to the continuous technical evolution, we reserve the right to introduce any necessary change without giving previous notice.*

*In case of any troubles, or for further information, please do not hesitate to contact us.*

### **INTENDED USE**

*Condensate separators FCA-CKL are designed for first stage - basic condensate separation from compressed air in industry applications. Condensate separator FCA-CKL efficiently removes the most of condensate. However, at exit from FCA-CKL, compressed air still contains some wet. Extra provisions for complete condensate removal are necessary, such as: coalescent filters, compressed air dryers...*

*Efficient condensate removal from compressed air system has a lot of benefits:*

- protection of compressed air dryers against clogging, sediments and corrosion,*
- protection of filter media against decay,*
- protection of pipe system against corrosion and sediments,*
- protection of compressed air tools and devices against mechanical faults,*
- protection of complete compressed air system against freezing .*

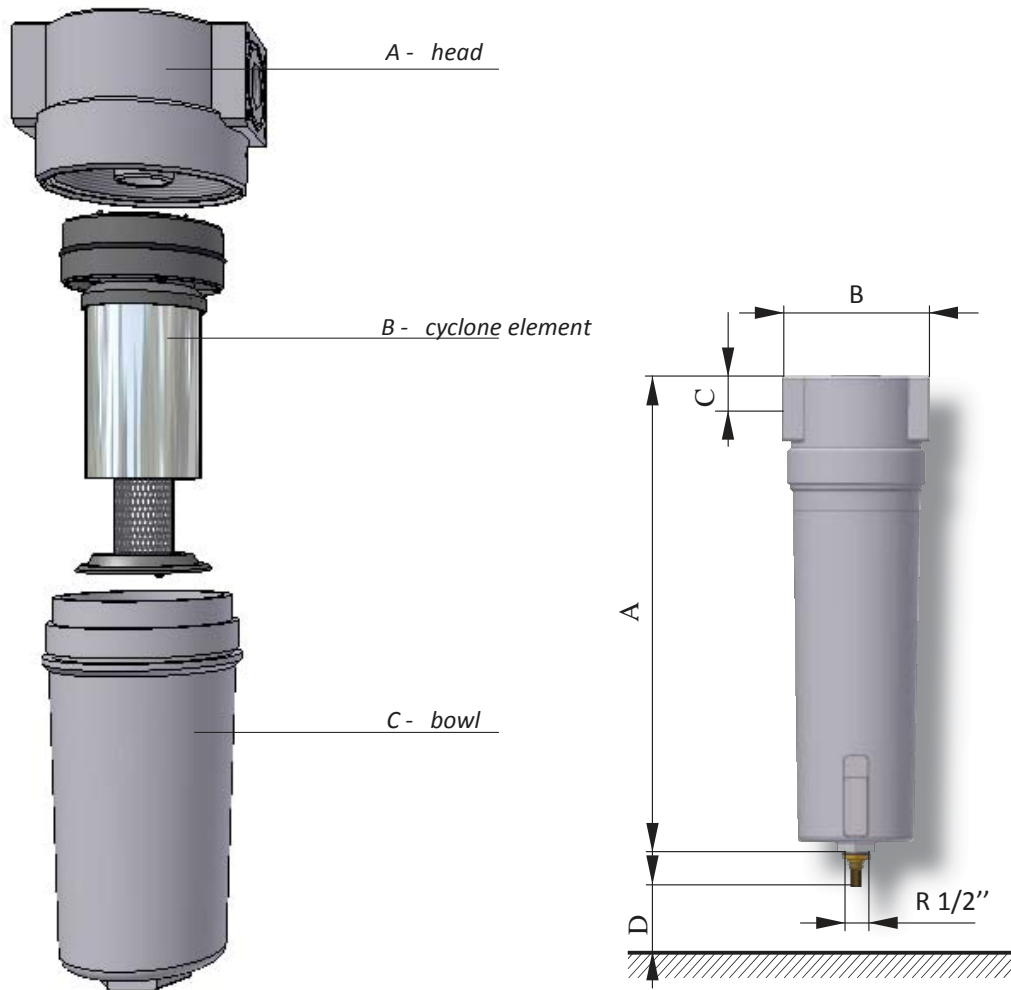
*Cyclone condensate separator use the cyclone effect and has no moving parts, that's why there's no mechanical wear of construction elements.*

### **WARNING**

*The Manufacturer cannot be held responsible for any damage resulting from improper, incorrect or unreasonable use.*

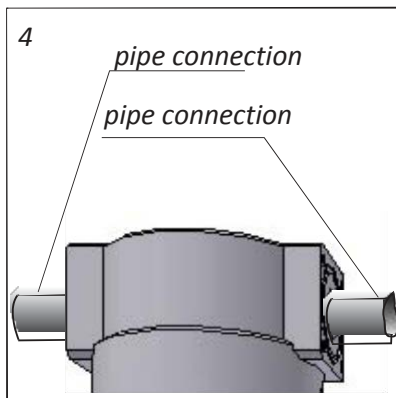
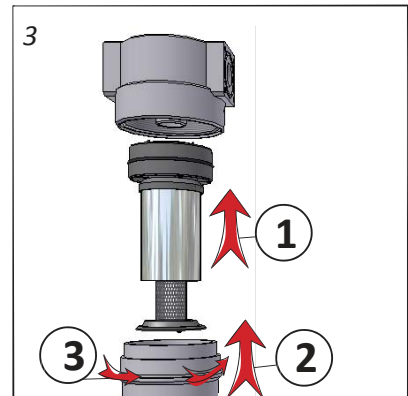
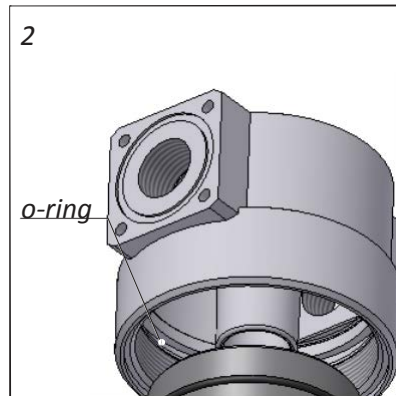
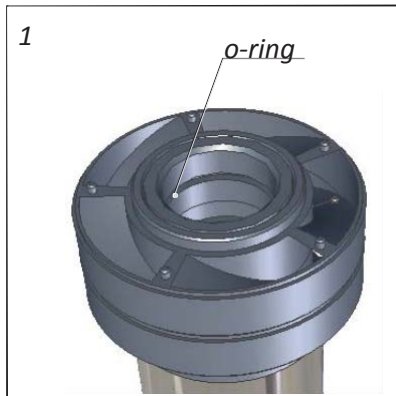
*This appliance must be used only for the purpose for which it was specifically designed. All other uses are to be considered incorrect and therefore unreasonable.*

### Cyclone condensate separator type FCA-CKL



Model	Conn. size	Flow rate		Dimensions [mm]				Dimensions [inch]				Mass			
	inch	Nm <sup>3</sup> /h	SCFM	A	B	C	D	A	B	C	D	kg	lb		
FCA-CKL 005	3/8	120	70	187	88	21	60	7 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>16</sub>	0,7	1,54		
FCA-CKL 007	1/2	155	91	187	88	21	60	7 <sup>3</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>16</sub>	2 <sup>5</sup> / <sub>16</sub>	0,7	1,54		
FCA-CKL 010	3/4	235	138	257	88	21	80	10 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>8</sub>	0,8	1,76		
FCA-CKL 018	1	365	215	262	125	33	100	10 <sup>5</sup> / <sub>16</sub>	4 <sup>15</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>16</sub>	3 <sup>15</sup> / <sub>16</sub>	1,9	4,19		
FCA-CKL 047	1 1/2	770	452	452	125	33	140	17 <sup>13</sup> / <sub>16</sub>	4 <sup>15</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>2</sub>	2,8	6,17		
FCA-CKL 094	2	1280	753	695	163	43	520	27 <sup>3</sup> / <sub>8</sub>	6 <sup>7</sup> / <sub>16</sub>	1 <sup>11</sup> / <sub>16</sub>	20 <sup>1</sup> / <sub>2</sub>	5,3	11,7		
FCA-CKL 150	2 1/2	2460	1447	695	163	43	520	27 <sup>3</sup> / <sub>8</sub>	6 <sup>7</sup> / <sub>16</sub>	1 <sup>11</sup> / <sub>16</sub>	20 <sup>1</sup> / <sub>2</sub>	9,2	20,3		
FCA-CKL 200	3	2850	1677	795	240	59	630	31 <sup>5</sup> / <sub>16</sub>	9 <sup>1</sup> / <sub>2</sub>	2 <sup>5</sup> / <sub>16</sub>	24 <sup>3</sup> / <sub>4</sub>	13,4	29,5		
CORRECTION FACTORS															
Operating pressure [bar]	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Operating pressure [psi]	29	44	58	72	87	100	115	130	145	160	174	189	203	218	232
Correction factor	0,53	0,65	0,76	0,84	0,92	1,00	1,07	1,13	1,19	1,25	1,31	1,36	1,41	1,46	1,51

## Installation and maintenance



Construction of aluminium cyclone separators assures high efficiency condensate separation with low pressure drop.

Cartridge inside Cyclone separator assures reliable operation for the life of the separator, with no possibility of clogging and increased operating costs. Condensate Cyclone separator FCA-CKL satisfies all needs of applications in a wide temperature range from 1,5 to 65 °C (35 to 149 °F) and in a pressure range up to 16 bar (232 psi). All aluminium separator bodies are coated with powder paint to eliminate corrosion. Threaded connections are BSP according to ISO7/1 or NPT to ANSI B2.1, if supplied in North America.



## Safety instructions



*The relevant safety at work and accident prevention regulations, plus the operating instructions, shall apply for operation the pressure vessel. The pressure vessel has been constructed in accordance with the generally recognized rules of engineering. It complies with the requirements of directive 97/23/EC concerning pressure vessels.*

*The relevant applicable national regulations in force at the place of installation concerning the operation and routine testing of pressure vessels must be complied with.*

*Operator/user of the unit should make himself familiar with the function, installation and start-up of the unit through these operating instructions. It is essential to follow these safety notes and this information in order to ensure trouble-free operation of the unit.*

*All the safety information is always intended to ensure your personal safety.*

- *The maximum working pressure and the maximum permissible working temperature of the pressure vessel is de- scribed on the type plate.*
- *The permissible working temperatures for ad-on parts and filter elements are given under Technical data in these instructions.*
- *It is necessary to ensure that the unit is equipped with the corresponding safety and test devices to prevent the permissible operating parameters from being exceeded.*
- *The pressure vessel has been designed for a primarily static pressure loading with a maximum of 1000 cycles to and from the full load. Rapid changes of load with more than 10% of the maximum working pressure are not allowed.*
- *Ensure that the pressure vessel is not subjected to vibrations that could cause fatigue fractures.*
- *The pressure vessel is not to be subjected to stresses arising from traffic, wind and earthquakes.*
- *The medium used may not have any corrosive components that could attack the materials of the pressure vessel in a way that is not permitted.*
- *All installation and maintenance work on the pressure vessel may only be carried out by trained and experienced specialists.*
- *It is forbidden to carry out any kind of work on the pressure vessel and piping, this covering welding and constructional changes, etc. Breaking this rule means extreme danger for you and other persons.*
- *Attention! When the pressure vessel is operated at temperatures over 60°C, suitable protection to prevent contact must be provided.*
- *A pressure gauge, which shows the operational pressure must be installed in the unit, respectively in the pipeline.*
- *Depressurize the system before carrying out any work on the pressure vessel.*
- *Clean the piping before carrying out the installation work.*
- *The unit must be installed vertically in the piping.*
- *Ensure that pressure vessel is installed without any stresses.*
- *Disconnect the power supply when carrying out electrical work.*

## Starting up

### Before initial commissioning

- All the screwed connections of the pressure vessel must be done up to the required and max. permissible tightening torque for the screws and bolts.
- Make a visual check! There must be no external damage visible.
- Your unit can be equipped with various components. Note the permissible working pressures and permissible temperatures for the components. You can find information in the relevant operating instructions and also from the type plate of your unit or its components.
- Make a check for leaks!

### Initial commissioning

- Slowly apply pressure to the system by first opening the downstream valve.

## Information concerning maintenance

- Before starting any maintenance work, ensure that the pressure vessel has been depressurized and has cooled down, and cannot be put back into operation during the maintenance work.

## Technical data

- Max. working pressure: 16 bar
- Design temperature of the housing: 1,5°C to +65°C
- Housing material: Aluminium

## Protection of the environment

- The packing material and the unit itself and its accessories are produced from recyclable materials
- Separating the remaining materials in an appropriate way helps in the recycling of materials.
- Keep the nature clean!

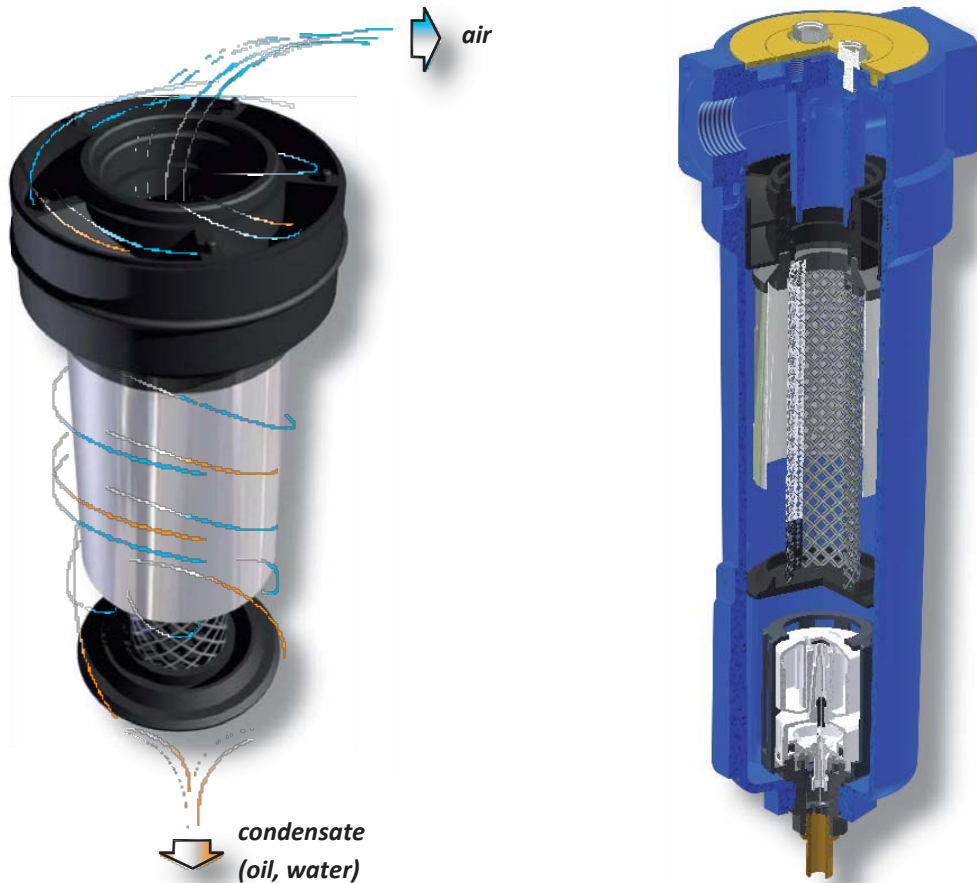
## Spare parts

- Housing O-ring
- Cyclone element O-rings
- Cyclone elements



**Please always quote the type designation on product when making orders for spare parts!**

## Operating principle



## Warranty exclusion

**The guarantee shall be void if:**

- The operating instructions were not followed with respect to initial commissioning and maintenance.
- The unit was not operated properly and appropriately.
- The unit was operated when it was clearly defective.
- Non-original spare parts or replacement parts were used.
- The unit was not operated within the permissible technical parameters.
- Unauthorised constructional changes were made to the unit or if parts of the unit that may not be opened were dismantled.

