



Operating Manual Point-of-use Dryer FCA

Version: 02/2020/EN

Point-of-use Dryer..... **FCA 90 - 130**
Moisture indicator.....FAI01HI



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General information

1. General information

1.1 Manufacturer



FST GmbH

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Sales office: Im Teelbruch 106 – D-45219 Essen

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✉ info@fstweb.de

! For any questions about the product, please contact the sales office!

In case of questions about the product, please specify the following:

- Dryer type: e.g. FCA 90 CMSM
- Trockenmittelkartuschen-Typ: z.B. EFST 90 CMS
- Manufacturing number: e.g. 10/12/24

This information can be found on the type plate of the dryer. (→Page 9)

1.2 Warranty notes

For warranty information, please refer to our „General Terms of Sale and Delivery“.

(→ www.fstweb.de)

In the following cases the warranty shall be void:

- If the safety notes and instructions of this operating manual and additional documents are not observed.
- If the dryer is operated or maintained by personnel who do not have the required qualifications (→ see „Target group“: page 5)
- If the dryer is used for anything other than its intended use. (→ Page 7)
- If aggressive substances in the compressed air or ambient air cause damage to the dryer.
- If parts other than genuine parts of the manufacturer have been used for maintenance and repair.
- If the dryer is operated although defects are evident.

1.3 About this operating manual

This operating manual contains all the technical information required for installation, operation, maintenance and disposal of the dryer.

Target group

This operating manual is directed to all persons working on and with the dryer. We point out that these persons have to be qualified personnel who, because of their qualifications and experience, are familiar with handling pressure equipment and compressed air systems. If you are not experienced in using these systems, please ask the relevant experts for help. We recommend that installation, commissioning, and maintenance be carried out by a compressed air specialist company.

Using the operating manual

Please read the operating manual and the additional documents carefully prior to installation and follow the notes and instructions. Safe and proper operation of the filter can only be guaranteed if the instructions and notes are observed. The safety notes must be observed in particular.

The operating manual must be kept in the vicinity of the dryer and must be easily accessible.

When selling or hiring out the dryer, also provide this operating manual and all the additional documents to the new user.

The manufacturer accepts no liability for damages resulting from disregard of the operating manual.

All the information in this operating manual is valid at the time the manual is published. Due to component or workflow modifications at any time affecting filter maintenance, the latest information should be available prior to maintenance work.

General information

Signs and symbols used

- Boxes are used for bulleted lists.
- 1) Enumerated lists point out that the working steps are to be carried out in a specified order.
- Cross references refer to information on a different page or a different document.



Note!

This symbol refers to matters that should be given special attention. Observing the notes helps to ensure the safe handling of the product.



Tips and hints!

This symbol refers to matters that should be given special attention. Observing the advisory notes helps to ensure the particular efficient operation of the product.



CAUTION !

This symbol indicates a possible harmful situation. When not avoiding this situation, there is a danger of injury to persons or damage to the product or to adjacent system components.



WARNING !

This symbol indicates a possible dangerous situation. When not avoiding this situation, there is a danger of serious injury or death.



DANGER !

This symbol indicates an immediate impending danger. Not avoiding this danger results in serious injury or death.

2. Description of application

The dryer is used to remove moisture from the compressed air, nitrogen and another uncritical fluid group 2 gases (group 2 fluids: see Pressure Equipment Directive 2014/68/EU)

Typically, the dryer is used for the decentralised drying process of small quantities, only occasionally required compressed air at pressure dew points of up to -40°C.

The specifications on dryer performance in this operating manual and in the product data sheets exclusively refer to compressed air and nitrogen. For specifications with regard to other gases please contact the manufacturer or one of the authorised service partners.

2.1 Intended use

The dryer is exclusively designed for cleaning compressed air and nitrogen!

Using the dryer for cleaning other gases (e.g. carbon dioxide) must be agreed on with the manufacturer. It may be necessary to observe special safety directives.



DANGER! Caused by fire and explosion when used for oxygen

When oxygen comes into contact with grease in the dryer and accessories there is a danger of violent fire and dryer bursting.

Never use this dryer for oxygen or gases rich in oxygen.

For filtration of oxygen please ask the manufacturer for advice.

The dryer is designed to be set at a site that complies with the following requirements:

- Frost-free (for dry compressed air see also → a table on page 8.)
- Dry
- No vibration via brackets or connected piping
- Free from dangers due to explosive atmospheres inside and outside the dryer. (The standard dryer version does not comply with ATEX.)

The dryer must only be operated with compressed air or nitrogen within the maximum allowable operating conditions.

The maximum allowable operating conditions are defined on the type plate (→ see on page 9).

Modifications to the dryer or use of non-genuine parts may cause unpredictable danger and damage. These measures must only be carried out after the previous inspection and approval of the manufacturer. Only use genuine spare parts of the manufacturer.

Any other use is considered improper and therefore not permissible. The manufacturer accepts no liability caused by improper use.

For the nominal operating conditions please refer to the following table. (→ see page 8)

For a dryer designed to your individual operating conditions and for other gases, please refer to your contract documents or contact the manufacturer.

Drying performance may be reduced considerably if the filter is not operated within these operating conditions.

Description of application

The supplied compressed air must comply with the following requirements:

Free from aggressive and corrosive substances	The dryer might be damaged by aggressive and corrosive contaminants. Such damages might result in dangerous situations.
pre-dried, fine filtered	The dryer can only remove moisture (water vapour) carried in the compressed air. Flowing liquids, coarse solid impurities or residual oil contents may lead to overloading or blocking of the dryer. Compressed air saturated with moisture reduces the life of the used desiccant. In particular, the dryer must be protected against water hammer and splash water. We highly recommend fine filtration using a fine filter in front of the dryer and pre-drying using a refrigeration dryer.

2.2 Technical data

Dryer	Nominal volume flow rate	Compressed air connection	Weight	Height	Width	Depth	Matching filter insert
	V [m³/h]*	Zoll	[kg]	[mm]	[mm]	[mm]	
FCA90	0,5	G 1/2	4,0	321	130	122	EFST90CMS**
FCA110	1,5	G 1/2	4,5	421	130	122	EFST110CMS**
FCA120	2,5	G 1/2	5,0	521	130	122	EFST120CMS**
FCA130	4,0	G 1/2	6,5	721	130	122	EFST130CMS**

Classification acc. to PED 2014/68/EU	<ul style="list-style-type: none"> ■ FCA90 bis FCA120: Article .4 Abs.3 ■ FCA130: Category I
Fluid group	2
Max. allowable pressure (PS)	16 bar
Max. allowable temperature (TS)	<ul style="list-style-type: none"> ■ Dryer housing without desiccant cartridge: 120 °C ■ Dryer with desiccant cartridge: 45 °C
Min. allowable temperature (TS)	+1 °C
Achievable pressure dew points	Up to -40°C

* = Standardised to 1 bar(a) and 20°C as well as to operating conditions of 7 bar operating overpressure.

** = For detailed information on the desiccant cartridges performance and for other details, please refer to the relevant product data-sheet. The product data sheets can be found on the Internet at:

→ www.fstweb.de → Download

3. Safety notes



The dryer has been built according to state-of-the-art technology and recognised safety rules. However, there is a risk of danger that every person working with the dryer must be aware of. In particular, improper handling of compressed air may result in serious injury or death. If you are not experienced in using pressure equipment, please ask the relevant experts for help.



Note!

- In order to prevent personal injury or damage to the equipment, the safety notes must be observed when using this dryer.
- Observe the specific safety notes in the relevant chapters.
- Observe the legal guidelines and accident prevention regulations.
- Observe the safety notes of the local site regulations.

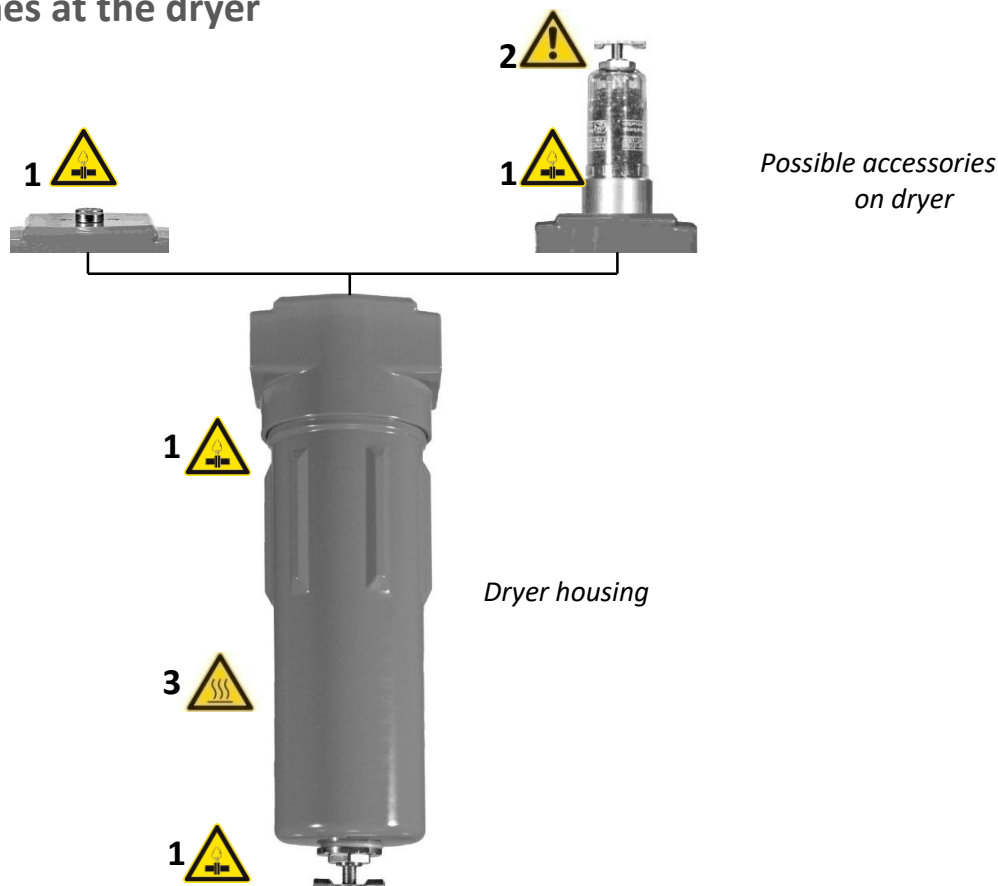
3.1 Signs and instructions

Office / Service Im Teelbruch 106 45219 Essen GERMANY	Registered Office Weiherdamm 17 57250 Netphen GERMANY	FST GmbH Filtrations-Separations-Technik
Modell <i>Model</i>	FCA90CMSM B15-000-01	
Filterelement <i>Filter Element</i>	EFST90CMS	
Max. zulässige Druck (PS) <i>Max. allowable Pressure (PS)</i>	16 bar	
Min./Max. zul. Temperatur (TS) <i>Min./Max. a. Temperature (TS)</i>	+2°C - +45°C	
Medium <i>Fluid</i>	Druckluft <i>Compressed Air</i>	
Herstellnummer <i>Manufacturing Number</i>	10/12/24	
		

The type plate of the dryer
on the dryer housing
(example: FCA90CMSM)

The type plates show important information
Make sure that the type plates are always clearly readable.

3.2 Danger zones at the dryer



- 1 Danger from pressure-bearing parts
- 2 Danger from loose Indicator fill
- 3 Danger from hot surfaces



DANGER ! – Overpressure (1)

The dryer is pressurised.

Suddenly escaping compressed air may result in serious injury.

Do not carry out mechanical work on the dryer as long as the dryer is pressurised.



WARNING ! – loose Indicator bed (2) (option)

When opening the valve at the indicator, the pressure may cause the broken parts of the indicator bed to be expelled. The sight glass can come loose from the indicator bowl due to unintentional rotation or pressure surges.

This may lead to a serious eye injury.

Open the valve carefully and turn away from the indicator.

Wear eye protection when working on the indicator





WARNING ! – Hot surfaces (3)

Depending on the temperature of the compressed air the dryer surfaces may be very hot. Unprotected touching of these surfaces may cause burns.



Avoid direct contact with these surfaces. Restrict access to the surfaces, if necessary, or install thermal insulation on the hot components.

Never exceed the maximum allowable temperature of the filter. (→ Page 8).

3.3 General safety notes



DANGER ! – Overload

The dryer must only be operated with compressed air within the maximum allowable operating conditions. The operating conditions are defined on the type plate (→ page 9).

Exceeding the maximum allowable operating conditions may result in serious injury or death.

It is the duty of the operator to ensure that the connected pressure source is safeguarded such that the maximum allowable operating pressure (PS) and the minimum and maximum allowable temperatures (TS) are not exceeded.

Please also refer to the section "Intended use". (→ page 7)



DANGER ! – Unauthorised modifications

Modifications to the dryer may result in dangerous operating states. Violations may cause serious injury or death.

Never modify the dryer function by means of conversions.

Never carry out welding work on pressure-bearing parts.

Any modifications of the dryer must be agreed on with the manufacturer and confirmed in writing



DANGER ! – Suspected misuse

Using the dryer for unintended purposes may result in dangerous situations. Violations may cause serious injury or death.

Using the dryer for unintended purposes may result in dangerous situations. Violations may cause serious injury or death.

Never use the dryer as a support for external weight loads.

Never use dryer components for unintended application purposes.

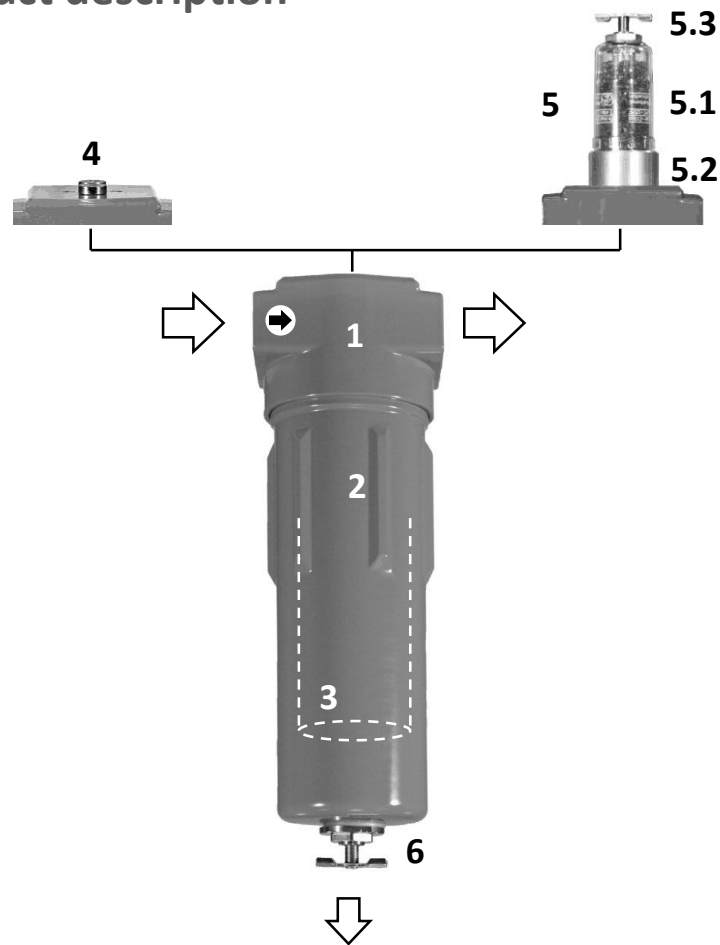
Please also refer to the section "Intended use". (→ page 7)



Additional safety notes

Additional safety notes can be found in the relevant chapters and operating manuals for different accessories.

4. Technical product description



- 1** Upper dryer part with compressed air inlet and outlet
(one O-ring for sealing the dryer housing parts is inside the upper dryer part)
- 2** Dryer bowl
- 3** Desiccant cartridge (inside)
- 4** Plug screw for Indicator connection
- 5** Humidity indicator (option)
 - 5.1** Sight glass
 - 5.2** Indicator bowl
 - 5.3** Manual valve
- 6** Manual condensate drain

4.1 Function description

The dryer is installed in the compressed air piping. (1) The compressed air is flowing through the dryer. In the dryer, the compressed air is led through a desiccant cartridge (3).

The compressed air can flow freely through the desiccant cartridge. The cartridge's desiccant extracts moisture from the compressed air and dries the compressed air (increases the degree of drying or reduces the pressure dew point of the compressed air). A filter fleece is integrated into the desiccant cartridge, which forms a dense fabric consisting of the finest fibers. Dust particles and the desiccant abrasion get stuck in the mesh of the fibers and are thus separated from the compressed air flow in this way. The dust particles remain in the filter fleece.

When using a point-of-use dryer, the airflow direction through the desiccant cartridge always is from the inside to the outside. (i.e. from top to bottom)

4.2 Options

The dryer can be configured individually.

- With pre-filter or after-filter
- Several dryers can be installed to form dryer combinations. (max. 3 stages).
- The dryer can be equipped with a humidity indicator.
- Wall mounting kits are available.

For possible configurations, please refer to the appendix or the manufacturer's price list.

For a detailed description of the options, please refer to operating manuals and product datasheets provided separately

The product data sheets can be found on the Internet at: → www.fstweb.de → Download

5. Transportation and storage

5.1 Transportation

**DANGER ! – Damage**

Damages on the dryer may lead to unpredictable hazardous situations.
Operating a damaged dryer may result in serious injury or death.
Never start or operate a damaged dryer

Although great care is taken damages caused by transportation cannot be ruled out. Therefore, always check the dryer for possible damages after transportation and packaging removal.

The forwarder and the manufacturer or the sales partner must immediately be informed about any damage.

Please note the following for transport:

- Consider the size and weight of the dryer. (→ see page 8)
The use of auxiliary equipment might be necessary for carrying /transporting the dryer. Make sure to provide adequate lifting equipment when transporting and loading or unloading the dryer.
- Persons responsible for transportation must be appropriately qualified
- Do not remove the packaging material before reaching the final place of installation.
- The national regulations for accident prevention must be respected.

5.2 Storage

To maintain the dryer quality the dryer must be stored at a suitable location and properly prepared for storage.

Store the dryer in the supplied transport packaging. If necessary, the dryer should be protected against dust using an additional cover.

The place of storage has to fulfil the following requirements:

- Indoors
- Protected against weather impact
- Frost free
- Dry

6. Installation

6.1 Installation of the connecting pipelines



DANGER ! – Overpressure

The dryer is under pressure.
Suddenly escaping compressed air may result in serious injury.
Do not carry out mechanical work on the dryer as long as the dryer is under pressure.



DANGER ! – Overload

The dryer must only be operated with compressed air within the maximum allowable operating conditions. The operating conditions are defined on the type plate (→ see page 9).
Exceeding the maximum allowable operating conditions may result in serious injury or death.
It is the duty of the operator to ensure that the connected pressure source is safeguarded such that the maximum allowable operating pressure (PS) and the minimum and maximum allowable temperatures (TS) are not exceeded.
Please also refer to the section "Intended use" (→ see page 7).



DANGER ! – Bursting components due to external forces

The dryer components are not designed for externally applied forces and may burst due to additional load impact.
Bursting, pressure-bearing components may result in serious injury or death.
The support required for the connected pipelines has to be provided by the customer. The transmission of loads or stress into the connection points of the dryer is not permissible.

Proper installation is required for the safe and error-free operation of the dryer.

To avoid damages during transportation the accessories may be provided separately and need to be mounted to the dryer after the dryer has been installed at the place of installation.

Please observe the following steps when installing the compressed air pipeline:

- Make sure that the dryer and the compressed air system are free from pressure. If the compressed air system has to remain under pressure during installation, then shut-off valves have to be protected against unintentional opening.
- The compressed air source (e.g. compressor) must be safeguarded against exceeding of the maximum allowable operating pressure using safety equipment.
- The compressed air pipelines must be provided with shut-off valves used for disconnecting the dryer from the piping system. We recommend using shut-off valves with continuous opening behaviour. This behaviour avoids sudden pressure equalisation between the piping sections.
- In the event that operation cannot be interrupted for maintenance purposes, we recommend installing a bypass line around the dryer.
- The pipelines must be suitable for use with the maximum possible operating pressure.
- The connection points have to be compatible with the dryer inlet and outlet with regard to nominal width, nominal pressure, and type. (→ See general arrangement drawing in the appendix)

Installation

- Any vibrations or pulsation must not be transmitted to the filter via the pipelines. This may damage the filter and the accessories. If required, install compensators or pulsation absorbers in the pipelines to be connected.
- Install a valve in the piping system which can be used for depressurising the dryer. Also, install a pressure gauge which indicates the pressure in the dryer.
- Install the filter in upright position.
- Consider the direction of flow! The direction of flow is indicated by means of an arrow on the housing. (→ see page 12)
- Keep an adequate distance to walls and other system parts around the dryer.
- Make sure to provide adequate space below the dryer in order to replace the filter element easily. (→ For details on the height that should be available for replacement, please refer to the appendix.)
- Prior to closing the connected pipelines, please check that there are no objects or contaminations left in the pipelines.
- The dryer is supported by the connecting pipelines. Provide adequate support for the incoming and outgoing pipelines to carry the weight of the dryer even when it is completely filled with liquid.
- When checking the installation for leaks the maximum allowable operating pressure of the dryer must not be exceeded. (→ see specification on the type plate, page 9)
- Check all the components for visible damages. If there are defective components, the commissioning of the dryer is not permitted.



Suitable place of installation

Often, the best location for installing the filter is directly upstream of the system part that is to be protected by the dryer.

7. Commissioning



DANGER ! – Overpressure

The dryer is under pressure.

Suddenly escaping compressed air may result in serious injury.

Do not carry out mechanical work on the dryer as long as the dryer is under pressure.



WARNING ! – Loose Indicator fill (2) (Option)

When opening the valve at the indicator, the pressure may cause the broken parts of the indicator fill to be expelled. The sight glass can come loose from the indicator bowl due to unintentional rotation or pressure surges.

This may lead to a serious eye injury.

Open the valve carefully and turn away from the indicator.

Wear eye protection when working on the indicator



Once installed the dryer is immediately ready to operate and may be pressurised.

If all conditions required for commissioning are fulfilled, the commissioning procedure can be started. Perform the following steps in the listed order.

7.1 Pressurisation of the dryer



CAUTION ! – Pressure blows and overload

Rapid opening of the valves may cause pressure blows and increased flow rates in the dryer. Pressure blows and increased flow rates may lead to damages of the dryer.

Open the valves **very slowly** and make sure that the flow noise does not become too loud. Pay special attention when opening valves that can be opened rapidly by means of a pivoting movement.



Pressurise the dryer as follows:

- 1) Make sure that the dryer is completely closed. There must be no gap between the upper dryer part (1) and the dryer bowl (2) when the dryer is closed.
- 2) Make sure that the accessories are securely installed.
- 3) Make sure that the compressed air system upstream or downstream of the dryer inlet is under pressure. If necessary, the compressor must be started.
- 4) Open the valves upstream and downstream of the dryer **very slowly** until hearing the first clear flow noise. Stop the procedure when the flow noise becomes louder.
- 5) Check the system for leaks during pressurisation. In the event of leaks, pressurisation must be stopped and the leaks must be repaired. To repair the leaks the dryer has to be depressurised again.. (→ page 18)
- 6) If flow noise and a pressure increase are no longer present when further opening the valves, they can be opened completely.
- 7) Air can now freely flow through the dryer.

8. Decommissioning



WARNING ! – Exhausting compressed air

Compressed air exhausting to the outside is very loud and may carry small particles. This may cause hearing damage as well as injuries of the eyes and of the skin.



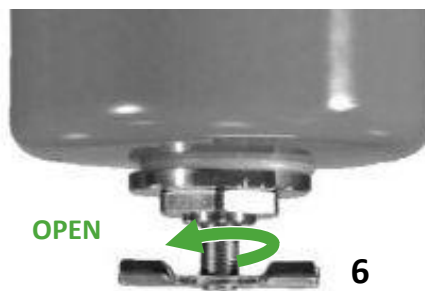
Close the openings used for releasing the pressure by means of a silencer suitable for the pressure, if necessary. Open the valves for releasing the pressure only **very slowly**.



Always wear eye and hearing protectors when working in the vicinity of the dryer.

- 1) Close the valves upstream and downstream of the dryer.
- 2) The dryer has now been shut down.
- 3) Prior to working on the dryer, it has to be depressurised. For this purpose, open a valve (customer scope) installed in the piping system and observe a pressure gauge (customer scope). Wait until the pressure on the pressure gauge has dropped to 0 bar.
Alternatively, the manual condensate drain valve of the dryer (6) can be opened.

Attention: The valves on the dryer are not suitable for depressurising large volumes. For this purpose, we recommend a valve to be installed in the piping system (customer scope).



Manual condensate valve type CDM14N

9. Maintenance and repair



DANGER ! – Overpressure

The dryer is under pressure.

Suddenly escaping compressed air may result in serious injury.

Do not carry out mechanical work on the dryer as long as the dryer is under pressure.



WARNING ! – Exhausting compressed air

Compressed air exhausting to the outside is very loud and may carry small particles.

This may cause hearing damage as well as injuries of the eyes and of the skin.

Close the openings used for releasing the pressure by means of a silencer suitable for the pressure, if necessary. Open the valves for releasing the pressure only **very slowly**.

Always wear eye and hearing protectors when working in the vicinity of the dryer.



CAUTION ! – Qualification and experience required

Persons working on and with the dryer have to be qualified personnel who, because of their qualifications and experience, are familiar with handling compressed air systems. If you are not experienced in using these systems, please ask the relevant experts for help. We recommend that commissioning and maintenance be carried out by a compressed air specialist company.

Please observe the following requirements for maintenance:

- Observe the notes in section "Intended use". (→ page 7)
- Observe the "Safety notes" and the "General safety notes" in particular. (→ pages 9,11)
- Provide the required spare parts. Only use genuine spare parts of the manufacturer. The manufacture provides prepared spare part kits. (→ page 4)
- Maintenance must only be carried out if the dryer is depressurised. (→ page 18)

Please observe the following when completing maintenance work:

- Make sure that all the connections are tight and sealed.
- Make sure that the dryer is completely closed. There must be no gap between the upper dryer part (1) and the dryer bowl (2) when the dryer is closed.
- Carry out a leak test.
- Commission the filter as described on → (page 17).

9.1 Regular maintenance intervals

The following table provides an overview of the maintenance activities to be carried out routinely. The maintenance activities are described in detail on the following pages.

Component	Maintenance activity	Every day to every week	Every six months or if the moisture increases	Every 12 months or at the latest, if the break is visible	See page
humidity indicator (option)	determine moisture content of compressed air	■			20
desiccant cartridge	change desiccant cartridge		■ **		22
humidity indicator (option)	change Indicator fill			■	21

** = Significantly reduce the maintenance intervals at compressed air temperatures above 25°C

9.1.1 Humidity indicator (if available): to determine the moisture grade of the compressed air

The moisture grade of the compressed air can be approximately determined using an optionally available humidity indicator.

- 1) Check the humidity indicator for external damages
- 2) Check the humidity indicator for leaks.
- 3) Activate the manual valve so that a minimal amount of compressed air flows through the humidity indicator and a quiet flow noise can be heard. After a while, the color of the indicator bed adjusts to the moisture content of the compressed air.
 - ORANGE for pressure dew points below -15 ° C
 - YELLOW-BROWN for pressure dew points -15 ° C to 0 ° C
 - GREEN for pressure dew points greater than 0 ° C

9.1.2 Humidity indicator (if available): Replacing the indicator fill

Over time, the indicator fill becomes fatigued. A sudden change of the moisture content can even break the indicator beads. The indicator fill must be replaced at the latest after one year.

- 1) Check the humidity indicator for external damages.
- 2) Check the humidity indicator for leaks.
- 3) Take the dryer out of operation (→ page 18)
- 4) Open the manual valve on the humidity indicator (5.3). If compressed air flows out of the manual valve, close the manual valve again and depressurise the dryer.. (→ page 18)
- 5) Remove the complete humidity indicator from the pressureless dryer. If compressed air flows out of the thread, the removal must be stopped immediately and the dryer must be depressurized. (→ page 18)



- 6) Open the pressureless humidity indicator by unscrewing the lower part of the indicator (5.2) to the left from the sight glass (5.1).



- 7) Replace the indicator fill.
- 8) Mount the humidity indicator again by going by taking steps 7 to 1 respectively in the opposite direction.
- 9) Put the dryer back into operation as described on → page 17.

9.1.3 Replacing the desiccant cartridge

The desiccant in the cartridge is loaded with moisture (water vapour). Over time, the desiccant's absorption capacity decreases until it is completely saturated. To prevent malfunctions, the desiccant cartridge must be replaced in accordance with the specified maintenance intervals.

- 1) Have a suitable desiccant cartridge ready. The type of desiccant cartridge is noted on the type plate of the dryer. (→ page 9)
- 2) Do not take the desiccant cartridge out of the packaging until the desiccant cartridge is inserted. Ensure cleanliness and do not touch the desiccant cartridge with dirty hands or instruments.

Opening the dryer housing:

- 3) The dryer is to be depressurized (→ Seite 18)
- 4) Open the pressureless dryer housing by uncrewing the lower part of the dryer (2) to the left from the upper part of the dryer (1). If compressed air flows out of the thread, the opening must be stopped immediately and the dryer must be depressurized. (→ page 18)

Usually, the lower part of the dryer (2) can be released by turning by hand. In the event of larger dryers or dryers that have been operated for some time, it may be necessary to use a conventional spanner wrench. If the lower part of dryer cannot be opened by these means, please first check whether the dryer is still under pressure.



Note: The illustration shows a filter element instead of the desiccant cartridge.

Replacing of the desiccant cartridge:

- 1) Slightly turn and pull the old desiccant cartridge (3) to remove it from the upper dryer part (1).
- 2) Clean the cartridge holder and the threads of the housing parts.
- 3) Replace the O-ring of the dryer housing, if necessary. Undamaged O-rings can be used again.
- 4) Lubricate the cartridge holder and the threads of the housing parts.
- 5) Take the new desiccant cartridge out of its packaging. Insert the cartridge by slightly turning and pushing it into the cartridge holder.

Closing the dryer housing:

- 6) Close the dryer housing by screwing the lower dryer part (2) clockwise into the upper dryer part (1). Make sure that the desiccant cartridge (3) remains securely fixed in the cartridge holder.
- 7) Only turn until the two housing parts block noticeably when running onto the end stop. There should be no gap between the two housing parts through which you would be able to see the thread of the lower dryer part (2).
Only turn until reaching the end stop position. Further turning does not increase the tightness of the housing.
- 8) Mount all the parts that have been removed before.
- 9) Check if all the connections are securely fixed.
- 10) Recommission the dryer as described on → page 17



Disposal

A clean desiccant cartridge can be disposed of with domestic waste.

However, if the desiccant cartridge is contaminated with hazardous substances, the type of disposal has to be determined by the owner of the equipment with regard to the type of contamination.

10. Errors and measures



CAUTION ! – Qualification and experience required

Persons working on and with the dryer have to be qualified personnel who, because of their qualifications and experience, are familiar with handling compressed air systems. If you are not experienced in using these systems, please ask the relevant experts for help. We recommend that commissioning and maintenance be carried out by a compressed air specialist company

The following table explains the possible reasons for the errors and provides the recommended measures for remedy.

Error	Reason	Recommended measure
Pressure dew point is too low	<ul style="list-style-type: none"> ■ Desiccant cartridge exhausted ■ Volume flow rate in the dryer too high ■ Operating pressure too low ■ Temperature too high ■ Inlet temperature strongly changing ■ Open bypass line ■ Aging indicator fill ■ Predrying failed ■ Oil loading of the desiccant cartridge 	<ul style="list-style-type: none"> ■ Check desiccant cartridge and replace, if necessary ■ Compare the operating conditions with the specified values and correct the operating conditions, if necessary. (→ page 8) ■ Make sure bypass line closed. Protect it against unintentional opening. ■ Check indicator bed and exchange it, if necessary ■ Check predrying ■ Monitor the oil consumption on the compressor and correct any malfunctions, if necessary
High pressure fall in the dryer	<ul style="list-style-type: none"> ■ Closed shut-off valves ■ High differential pressure in the desiccant cartridge ■ Large amounts of dust and encrustations block the pipelines 	<ul style="list-style-type: none"> ■ Check valves and open, if necessary ■ Check desiccant cartridge and replace it, if necessary



Monitoring the compressor

With oil-lubricated compressors, the main source of the oil is in the compressor. Compressors that are insufficiently cooled and maintained lead to a particular high oil load on the dryer. Regularly check the oil consumption and monitor the oil consumption over a longer period. The compressor must be maintained at regular intervals.

11. Appendix and technical documents

11.1 Manufacturer's declaration

→ see separate document

11.2 EU-declaration of conformity

→ see separate document

11.3 Dryer combinations and wall brackets

The product data sheets can be found on the Internet at: → www.fstweb.de → Download

