

FRL MEMBRANE DRYER

Dear Customer,

Thank you for your confidence in our product.

In the following pages you will find the technical data required for the trouble-free installation and maintenance of these pneumatic components. Please read and observe the instructions fully to ensure that the product will give you long, trouble-free service.

Warning: Servicing and repair work must only be carried out by a qualified technician.



1. TECHNICAL DATA

<i>Parameters</i>			(Pressures are gauge pressures)					
System			Drying by highly selective water vapour-permeable membrane (hollow fibres), using the partial pressure differential between the inside and the outside of the membrane					
Port size			G1/2					
Overall length	l	mm	540					
Installation			in any position					
Medium and ambient temperature range	ϑ_{\min}	°C	+2					
	ϑ_{\max}	°C	+60					
Medium			Filtered air ^②					
Weight (mass)		kg	3,3		4,2			
<i>Pneumatic Parameters</i>								
Working pressure range Inlet	$p_{1\min}$	bar	5					
	$p_{1\max}$		16					
Flow rate ^① (Inlet)	Q_{in}	l/min m ³ /h	166 10	250 15	333 20	416 25	583 35	833 50
Maximum flow rate (Inlet)	Q_{in-max}	l/min m ³ /h	560 33,6	840 50,4	1120 67,2	1400 84,0	1960 117,5	2800 168
Pressure dew point reduction		K	20 ^①					
Purge air consumption		%	ca. 10					
Pressure drop	Δp	bar	0,02 - 0,05		0,06 0,12			

① Inlet conditions to DIN ISO 7183: $p_1 = 7\text{bar}$; $T_1 = 35^\circ\text{C}$; $DTP_1 = 35^\circ\text{C}$

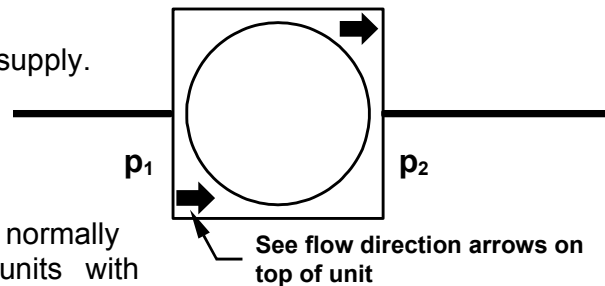
② to ISO 8573-1 Quality Classes 1-1

2. INSTALLATION INSTRUCTIONS

Warning: The unit must only be used in industrial applications for compressed air.
To avoid danger of injuries, the compressed air system must be fully depressurized while pneumatic components are being installed.

Note: Dirt can damage the dryer and must be kept out of it! Therefore a filter-water-separator with a 5 µm filter element and a submicrofilter must be installed in the line before the dryer. An oil mist lubricator must NOT be installed directly before the membrane dryer as this would affect dryer performance. If you wish to couple several membrane dryers together, please contact your local representation.

1. Clean any rust particles or other dirt out of the air line.
2. Fit the mounting bracket, if applicable (recommended by manufacturer).
3. Connect the air lines to the membrane dryer (check the flow direction arrows on top of the unit!)
4. Turn on the compressed air supply.



3. ADJUSTMENT

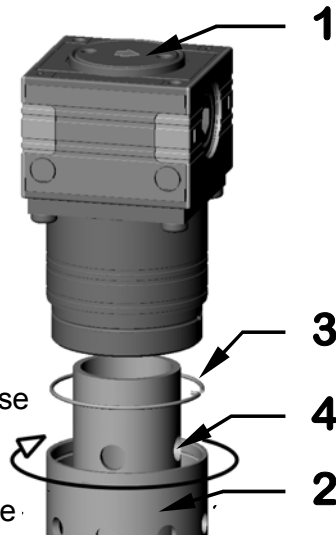
The membrane dryer does not normally require any adjustment. For units with purge air regulation, please see the instructions provided.

4. MAINTENANCE

The membrane dryer itself is maintenance-free. However it is important that the whole compressed air system is correctly maintained (air filtered and dewatered).

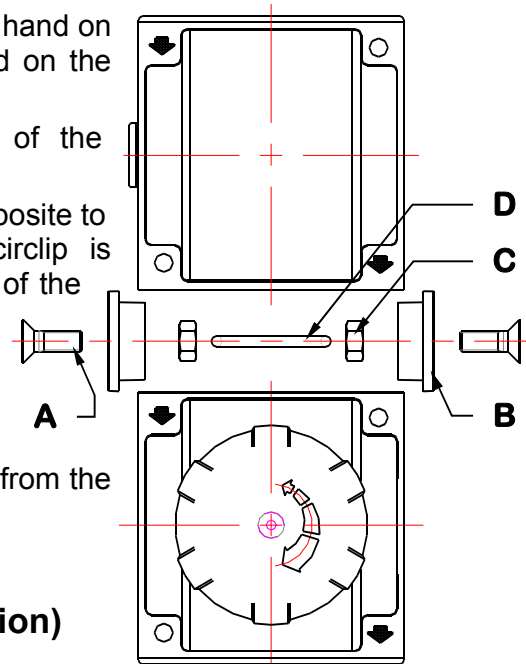
5. DISMANTLING

Warning: To avoid danger of injuries, the unit must only be dismantled with the pneumatic system completely depressurized!



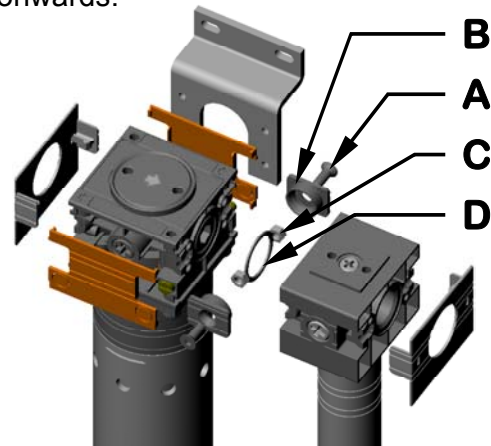
5.1. Units with Return Pipe

1. Unscrew the clamping screws **A** and remove these from the recesses together with the clamping cones **B**.
2. Separate the dryer from the return pipe. Leave the hexagon nuts **C** and the O-rings **D** on the return pipe.
3. Hold the membrane dryer with one hand on the housing ① and the other hand on the tube ②.
4. Turn the housing until the end of the circlip ③ springs out.
5. Turn the tube ② in the direction opposite to that in which the end of the circlip is pointing (the circlip is pressed out of the groove).
6. Pull the circlip out of the hole in the housing.
7. Pull the housing out of the tube.
8. Remove the membrane module ④ from the tube.



5.2. Units without Return Pipe (Option)

As described in Section 5.1 from point 3 onwards.



6. REASSEMBLY

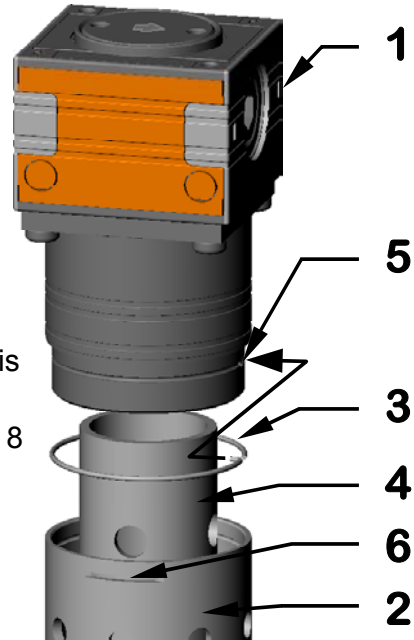
Reassembly of the unit is carried out in the reverse order.

Note: If new seals are fitted, grease them only lightly before fitting.



6.1. Units with Return Pipe

1. Push the membrane module ④ into the tube.
2. Push the tube ② onto the housing ①.
3. Turn the tube until the hole ⑤ in the groove ⑥ becomes visible.
4. Push the circlip ③ into the hole in the housing (using a tool if necessary).
5. Turn the housing until the circlip is completely inside the tube.
6. Fit the return pipe as described in Section 8 from point 2 onwards.



6.2. Units without Return Pipe (Option)

As described in points 1 to 5 of Section 6.1.

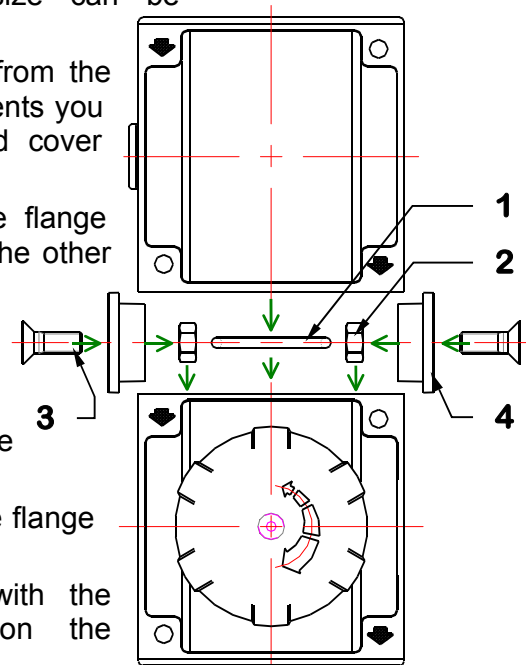
7. DISPOSAL

The method of disposal of packaging and discarded parts must comply with local regulations.

8. ASSEMBLY OF SEVERAL COMPONENTS

Only components of the same size can be assembled into combined units.

1. Remove the black cover plates from the inlets and outlets of the components you wish to assemble. The coloured cover plates remain on the units.
2. Turn the component so that the flange surface which is to be joined to the other component is on top.
3. Lay the O-ring ① from the coupling kit on the flange surface.
4. Place the hexagon nuts ② in the recesses on the component.
5. Place the other component on the flange surface.
6. Place the clamping cones ④ with the screws ③ in the recesses on the component.
7. Tighten the clamping screws.



9. FITTING THE MOUNTING BRACKET

1. Remove the prestamped parts which cover the through-holes on both sides of the unit.
2. Fit the mounting bracket and secure it with the screws provided. Tighten the screws with a screwdriver.

