Adsorber MS-R

Section 1: Information on the manufacturer

Giebel FilTec GmbH
Carl-Zeiss-Str. 5
74626 Bretzfeld
Germany

Tel. +49 79 46 94 44 01 0
E-Mail info@gf-dry.com

GIEBEL ADSORBER®
DESIGNED AND
PRODUCED
IN GERMANY

Section 2: Product overview

Sizes	
Size 35	**MS-R 35L**
Size 50	**MS-R 50L**

Materials used

Stainless steel, acrylic glass, FKM, GIEBEL Xdry®

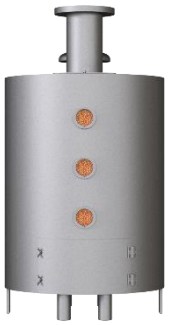
REACH Note

No ingredients requiring disclosure under Regulation (EU) 2020/878

Section 3: Construction and materials

Use	Reusable
Housing material	Stainless steel 316L
Adsorption agent	GIEBEL Xdry®
Particle filters	Wire mesh
Seal material	FKM
Operating temperature	-40°C - +80°C
Connection	BSP G2“ male, flange

Section 4: Technical data



	MS-R 35L	MS-R 50L
Total weight [kg]	94,8	250,6
Adsorbent [kg]	50,0	150
Color change capacity (L)	17,5	52,5
Height [mm]	1078	1260
Housing diameter [mm]	356	580
Total diameter [mm]	403	597
Connection	BSP G2“ male	Flange
Valves [IN-OUT]	0 – 0	0 - 0

Section 5: Assembly and commissioning

1. Place Adsorber near the system to connect it on

2. Remove protection from the connection and connect it onto the system. In case of an MS-R 35L, screw either the ventilation hood or valve onto the thread

3. Make sure the Adsorbers lids are closed, to ensure full functionality.

Section 6: Maintenance

Once the desiccant is completely saturated, it must be changed.

0% → 100%

Once the color of the desiccant has completely changed according to the color indicator used, it must be replaced. At the same time, it is recommended to use a spare parts kit (giebel-adsorber.com/shop) to replace all wearing parts and ensure optimal usage.

Instructions

according to regulation DIN 82079 v.06.23

1. Unscrew the connection to your system
2. Place something in front of the Adsorber to catch the saturated desiccant and open the front lid.
3. The grid at the bottom of the central tube can be cleaned
   with pressurized air if needed.
4. Change all sight glasses and gaskets according to the picture. The sight glasses can be removed by loosening the circlips.
5. Once everything has been put together, the front lid must be closed.
6. Open the top lid and pour fresh GIEBEL Xdry® in.
7. Close the lid and connect the Adsorber back onto the system.

GIEBEL FilTec GmbH
www.giebel-adsorber.com
info@gf-dry.com

Section 7: Spare parts and storage

Adsorber	Spare parts kit*	Desiccant
MS-R 35L	ET MS-R 35L	Spare Filling Xdry 25 kg (2x)
MS-R 50L	ET MS-R 50L	Spare Filling Xdry 25 kg (6x)

*** also as EPDM version**

Exemplary representation of the spare parts set

Spare parts kit

- Seal kit

Desiccant

- GIEBEL Xdry®

Airtight packaging

Order of spare parts

For a constant operational readiness of the adsorber and thus the plant, make sure that a spare parts kit + GIEBEL Xdry® or spare adsorber is always in stock.

The time until the complete color change and thus the service life of the adsorber depends on various factors:

- Number and duration of flow and loading intervals.
- Air flow volume and flow velocity, relative humidity of ambient air.
- Temperature of the ambient air and the medium to be ventilated.

Storage of adsorbers

This product can be stored for up to **two years** in dark and dry environments. The temperatures for storage should be between -10° and 30°C.

Section 8: Disposal

At the end of its useful life, the device must be disposed of in accordance with the relevant legal regulations. Metal and plastic parts should be separated and disposed of separately.

GIEBEL Xdry® is not classified as a hazardous substance under European Union legislation (Regulation EC No 1272/2008). It is not subject to compulsory labelling according to EC Directive (67/548/EEC or 1999/45/EC). GIEBEL Xdry® is not classified as a substance hazardous to health or the environment.

Section 9: Risk and hazard analysis

1. Moist air flows into the system

Porous seals

Moist air can flow into the adsorber or into the plant at the porous points. This means that complete drying is not possible and moist air enters the system.

Flat gaskets do not sit properly on the adsorber part

If the flat gaskets at the sight glass, top lid or bottom lid of the adsorber part are not seated correctly, moist air can enter the system at the leaking points.

Connection not sealed

If there is no extra seal at the connections (e.g. Teflon band, gasket), moist air might flow into the system.

Saturated drying agent

When the desiccant is saturated, it can no longer absorb moisture. This allows moist air to enter the system.

Air flow rate too high

If the air flow rate is too high, the contact time between moist air and desiccant is too short. This allows moist air to flow into the system.

Oil on the drying agent

If too many oil particles enter the adsorber, the oil particles close the pores of the desiccant and thus prevent adsorption.

Ambient temperature too high

If the ambient temperature exceeds 80°C, the binding forces in the desiccant decrease. This means that the incoming ambient air is only dried to a limited extent.

2. Positive or negative pressure builds up in the system

Air flow rate too high

Too high an air flow rate can cause over- or underpressure in the system.

Clogged filter grid

The filter grid can be clogged by dirt particles and can therefore build up pressure in the system.

Oil on the drying agent

If oil particles get into the adsorber, the spaces in the fill can be filled with oil and the fill will stick together. This can cause pressure to build up in the system.

3. Adsorber is damaged

Material resistance

When selecting the adsorber, the ambient and operating conditions should be considered. An aggressive environment or liquid in the container can damage the adsorber.

Temperature range

The ambient and operating temperatures should not exceed or fall below the specified range, otherwise the adsorber may be damaged.

Improper handling

Incorrect or improper handling can damage the adsorber. The recommended installation must be observed.

Strong vibrations

Strong vibrations of the plant can damage the adsorber.

Pressure range of the system

The adsorber should not be exposed to over- or underpressure above 1.0 bar, otherwise the housing can be damaged.

Thread of the adsorber and accessories is damaged

When mounting the adsorber on the system, the threads must be slightly moistened with oil. If the threads are not oiled, this can lead to the thread rubbing off or getting stuck.

Section 10: Maintenance plan

1. Check seals for wear

Check	The flat gaskets installed on the adsorber must be checked for perfect condition. For this purpose, the seals on the lids, sight glass and on the connection should be checked for brittleness.
Cycle	Half-yearly
Measures	In case of existing damage, a new spare parts kit or a new adsorber should be used.

2. Check grid for impurities

Check	Open the back lid and empty the desiccant. The filter grid is welded onto the bottom of the central tube. It should be checked for impurities and should be free of dirt for smooth operation.
Cycle	Half-yearly
Measures	The filter element can be cleaned with pressurized air if there's too much dirt.

3. Visual inspection of the desiccant

Check	The loading condition of the desiccant must be determined by visual inspection of the adsorber. The color orange indicates that the desiccant can still adsorb water and air is dehumidified. If the desiccant is completely saturated, the color changes to green or colorless. If there are oil particles on the desiccant, these close the pores and the adsorption capacity is reduced. This causes the desiccant to discolor more slowly and unevenly.
Cycle	Half-yearly
Measures	If the desiccant is loaded or damaged by oil, a new adsorber, or fresh desiccant should be used.

4. Visual inspection of the adsorber

Check	The adsorber, including the connection, must be visually checked for damage. Damage can occur due to various environmental or operating conditions.
Cycle	Yearly
Measures	If the adsorber is damaged, it must be replaced completely to ensure full functionality.

5. Replacing the wearing parts

Check	The wearing parts, in particular the seals, the desiccant as well as the adsorber housing, must be checked with regard to their condition.
Cycle	Every two years
Measures	Regardless of the result of the test, it is recommended to replace the wearing parts by using the spare parts kit or a new adsorber to ensure smooth operation.