

Adsorber TB-DV

Section 1: Information on the manufacturer

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Section 2: Product overview



Sizes

Size series 3	TB-DV 3M / TB-DV 3L
Size series 5	TB-DV 5M / TB-DV 5L / TB-DV 5XL

Materials used

Acrylic glass, polyamide (PA), stainless steel, aluminum, FKM, GIEBEL Xdry®, activated carbon

REACH Notice

No ingredients subject to mandatory naming according to Regulation (EC) No. 1907/2006.

Section 3: Structure and materials

Usage	Disposable
Housing material	Acrylic glass, PA, aluminum
Adsorbent	GIEBEL Xdry®, activated carbon
Particle filter	Filter element with 2 µm separation efficiency
Sealing material	FKM
Operating temperature	-40°C - +80°C
Connection	DIN42562 flange, DIN42567A/B flange, DIN42567C G3/4" / G1" female

Section 4: Technical data



	TB-DV 3M	TB-DV 3L	TB-DV 5M	TB-DV 5L	TB-DV 5XL
Total weight [kg]	2,6	3,3	4,6	6,0	7,5
Adsorbent [kg]	1,0	1,5	2,4	3,4	4,6
Color-change capacity [ml]	350	525	840	1190	1610
Height [mm]	274	375	311	412	511
Case diameter [mm]	110	110	150	150	150
Total diameter [mm]	150	150	181	181	181
Connection	DIN42562 DIN42567A DIN42567B DIN42567C	DIN42562	DIN42562	DIN42562 DIN42567C	DIN42562
Valves [IN-OUT]	2 – 2	2 – 2	3 – 3	3 – 3	3 – 3

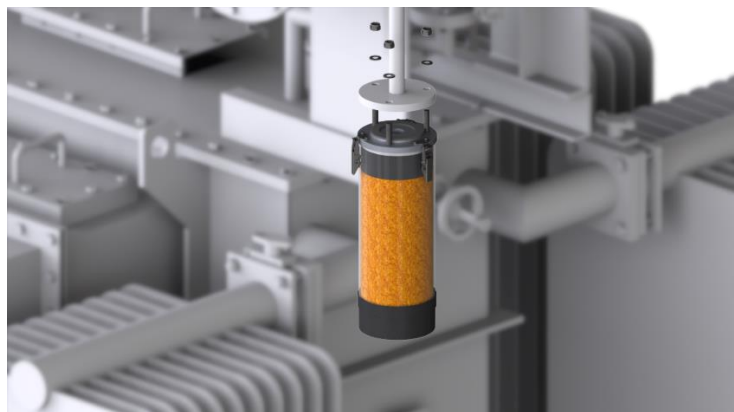
Section 5: Assembly and commissioning

1. Lightly oil the connection before screwing it in if it is the female threaded version.
2. Screw the adsorber together with the pre-installed valve part (ready for installation) to the system.

If the valve part has been unscrewed, make sure that the O-rings are in the correct position.

The outer O-ring must be in the groove of the valve part and the inner O-ring in the groove below the thread.

Screw well hand-tight.

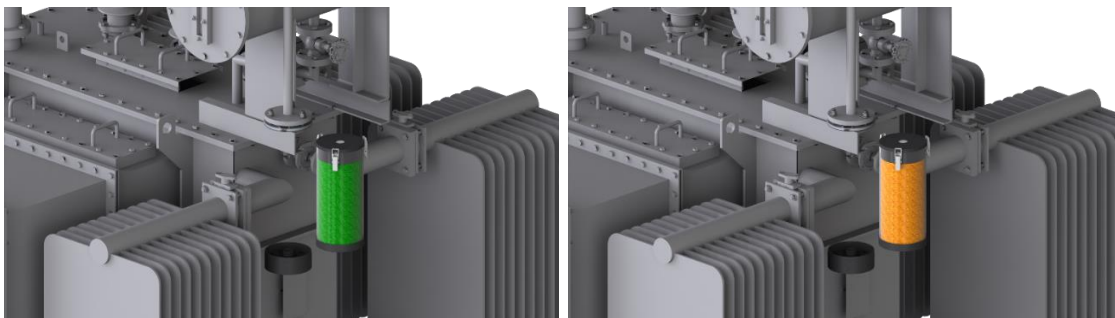


Section 6: Maintenance

Once the desiccant is completely saturated, the cartridge must be replaced.



0% → 100%



1. Securely grasp the adsorber part and detach it from the lid using the clamps.
2. Unscrew the Valve part (the bottom part)
3. Take the fresh cartridge and screw the valve part on it.
(Make sure that the o-rings are in place and remove the sticker at the top of the cartridge)
4. Attach the Adsorber back on the lid using the clamps.



Section 7: Spare parts and storage

Once the adsorber is fully saturated, the cartridge must be replaced.

Please visit our shop at giebel-adsorber.com/shop or contact us for further information about new cartridges or the ability to get them recycled/refreshed.

Ordering spare parts

For constant readiness of the adsorber and thus the system, make sure that a new cartridge or adsorber is always in stock.

The time required for a complete color change and thus the service life of the adsorber depend on various factors:

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

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 service life, the device must be disposed of in accordance with the relevant legal regulations. Metal and plastic parts should be separated and disposed of according to type.

The loaded desiccant GIEBEL Xdry® can be disposed of in household waste.

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

Section 9: Risk and hazard analysis

1. Humid air flows into the system

Porous seals

Moist air can flow into the adsorber or into the system at the porous points. As a result, complete drying is not possible and moist air enters the system.

Adsorber part, or O-ring is not seated correctly on the valve part

If the adsorber part is not tight enough (hand-tight) on the valve part, or the outer O-ring of the valve part is not seated in the groove, moist air may enter the system at the leaking points.

Saturated desiccant

If the desiccant is saturated, it can no longer absorb moisture. As a result, moist air enters 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. As a result, moist air can flow into the system.

Oil on the desiccant

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

Ambient temperature too high

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

2. Overpressure or underpressure builds up in the system

Air flow rate too high

Excessive air flow can cause overpressure or underpressure to build up in the system.

Filter element contaminated

The filter unit can become clogged with dirt particles and can thus build up pressure in the system.

Oil on the desiccant

If oil particles get into the adsorber, the gaps in the filling can be filled with oil and the filling can 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 vessel 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 system can damage the adsorber.

Pressure range of the system

The adsorber should not be exposed to overpressure or underpressure of more than 0.5 bar, otherwise the housing may be damaged.

Cleaning of the adsorber

For cleaning the adsorber, the use of a mild soap in combination with water is recommended. The use of brake cleaner will damage the adsorber.

Thread of 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 and getting stuck.



Section 10: Maintenance plan

1. Check seals for wear

<u>Check</u>	The O-rings installed on the adsorber must be checked for perfect condition. For this purpose, the seals on the valve part (2 in total) and in the lid should be checked for brittleness.
<u>Cycle</u>	Semi-annual
<u>Measures</u>	In case of existing damages, a new cartridge, or a new adsorber should be used.

2. Visual inspection of the desiccant

<u>Check</u>	Visually inspect the adsorber to determine the loading condition of the desiccant. 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, they close the pores and the adsorption capacity is reduced. This causes the desiccant to discolor more slowly and unevenly.
<u>Cycle</u>	Semi-annual
<u>Measures</u>	If the desiccant is loaded or damaged by oil, a new cartridge or a new adsorber with fresh desiccant should be used.

3. Visual inspection of the adsorber

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