



# SKF LADB

Desiccant breather



LADB 2S



LADB 2L



LADB 3M

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## Safety recommendations

Read this instruction for use fully. Follow all safety precautions to avoid personal injury or property damage during equipment operation. SKF cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect equipment operation. In case of any uncertainties as regards the use of the equipment contact SKF.

Failure to comply with the following could cause equipment damage and personal injury.

- Do ensure that the product is only handled by trained personnel.
- Do wear proper personal protective gear, such as eye protection and protective gloves, when handling the product.
- Do inspect the product and all accessories carefully before use.
- Do not use damaged components or modify the product.

## 1. Application

The SKF LADB Desiccant Breathers are high-performance adsorption units engineered to prevent ingress of moisture and particulate contaminants into fluid reservoirs, gearboxes, and hydraulic systems. Designed for demanding industrial environments, these breathers utilize a multi-stage filtration and adsorption process to maintain optimal fluid cleanliness and prevent degradation due to humidity and airborne pollutants.



## 2. Description

The desiccant breather features a cylindrical housing filled with hygroscopic drying media that exhibits a colorimetric change to indicate saturation status. Integrated within the assembly are a high-efficiency particulate filter and an activated carbon layer. The filter element ensures effective retention of airborne solid contaminants, while the carbon bed adsorbs oil vapor molecules expelled from the reservoir, preventing external contamination.

## 3. Functional Overview

- **Adsorption Mechanism:**  
Utilizes high-capacity desiccant media to adsorb water vapor from incoming and outgoing air during pressure equalization cycles.
- **Particulate Filtration:**  
Integrated pre-filter and fine filter elements (rated down to  $\leq 3 \mu\text{m}$ ) remove solid contaminants from ambient air, helping to maintain ISO 4406 cleanliness targets.
- **Bidirectional Protection:**  
Operates effectively during both suction and exhaust phases, maintaining low relative humidity within the protected system.
- **Saturation Indicator:**  
Visual color-change desiccant provides real-time indication of adsorbent exhaustion, enabling predictive maintenance and minimizing unplanned downtime.

## 4. Technical data

| Item                        | LADB 2S/OPDX                                        | LADB 2L/GPDX                    | LADB 3M/GPDX                    |
|-----------------------------|-----------------------------------------------------|---------------------------------|---------------------------------|
| <b>Description</b>          | Desiccant breather, model 2S<br>(to be used in OSS) | Desiccant breather, model 2L    | Desiccant breather, model 3M    |
| Recommended to tank volumes | OSS<br>(Oil Storage Station)                        | 10-100 lt.                      | 100 to 1.000 lt.                |
| Operating temperature range | -40 to 80 °C<br>(-40 to 176 °F)                     | -40 to 80 °C<br>(-40 to 176 °F) | -40 to 80 °C<br>(-40 to 176 °F) |
|                             |                                                     |                                 |                                 |
| Drying material             | 0.2 kg (0.44 lb)                                    | 0.5 kg (1.1 lb)                 | 0.8 kg (1.76 lb)                |
| Filter element pore size    | 3 microns                                           | 3 microns                       | 3 microns                       |
| Activated carbon layer      | Yes                                                 | Yes                             | Yes                             |
| Thread (connection) (*)     | 1/2" G(f)                                           | 1" G(m)                         | 1" G(m)                         |
| Dimensions:                 |                                                     |                                 |                                 |
| Diameter mm (inches)        | 90/94 mm<br>(3.54/3.70 in)                          | 90/94 mm<br>(3.54/3.7 in)       | 110/114 mm<br>(4.33/4.48 in)    |
| Height (**)                 | 97 mm (3.8 in)                                      | 212.33 mm (8.36 in)             | 228.33 mm (8.99 in)             |
| Materials:                  |                                                     |                                 |                                 |
| Housing                     | PA6, PC                                             | PA6, PC                         | PA6, PC                         |
| Adapter                     | PP                                                  | PA6                             | PA6                             |
| Weight                      | 0.43 kg (0.94 lb)                                   | 0.9 kg (1.98 lb)                | 1.31 kg (2.89 lb)               |

(\*) As per standard thread adaptor provided with product. LADB desiccant breather internal thread is ¾" BSP(f).

(\*\*) Till the sealing O-ring on the adapter.

## 5. Accessories

| Designation    | Description                                                                |
|----------------|----------------------------------------------------------------------------|
| LADB A FL G1   | Accessory adapter flange DIN24557 to thread G1 for Desiccant breather LADB |
| LADB A G3/4 N1 | Accessory thread adapter G3/4 to 1"NPT for Desiccant breather LADB         |
| LADB A G3/4 G1 | Spare (Accessory) thread adapter G3/4 to G 1 for Desiccant breather LADB   |

## 6. Installation

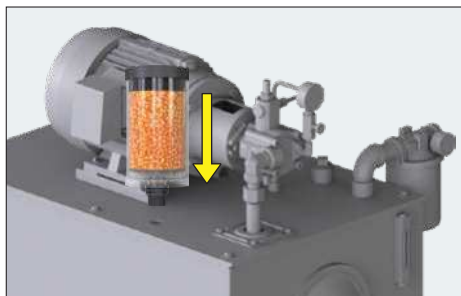
6.1 Remove the protective plug on the bottom of the desiccant breather.



6.2 If required, install the appropriate thread adapter in the desiccant breather.



6.3 Screw the desiccant breather onto the system. The torque should be 5Nm and not exceed 10Nm ("hand-tight").



## 7. Maintenance

Desiccant breathers of the LADB series are not serviced but completely replaced.

**ACTIVE**

0% → 100%

**REPLACE**



If the color of the drying material has completely changed according to the color indicator used, the desiccant breather must be replaced.

1. Unscrew the desiccant breather from the system and dispose of it.
2. Screw a new desiccant breather onto the system.

For a constant operational readiness of the desiccant breather and thus of the plant, make sure that a replacement desiccant breather is always in stock.

The time until the complete color change and thus the service life of the desiccant breather 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 desiccant breathers

This product can be stored for up to two years in dark and dry environments.

The protective plastic foil surrounding the desiccant breather prevents moisture from contacting the drying material during storage. This foil must remain intact and undamaged until the product is ready for installation. The temperatures for storage should be between -10° and 30°C (14° and 86°F).

## 8. Troubleshooting

### 8.1 Moist air still flows into the system

- **Porous seals**

Moist air can flow into the desiccant breather or into the plant at the porous points.

As a result, complete drying is not possible and moist air enters 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 desiccant breather, the oil particles close the pores of the desiccant and thus prevent adsorption.

- **Ambient temperature too high**

If the ambient temperature exceeds 80°C (176°F), the binding forces in the desiccant decrease. As a result, the incoming ambient air is only dried to a limited extent.

### 8.2 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.

- **Contaminated filter element**

The filter unit 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 desiccant breather, 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.

### 8.3 Desiccant breather is damaged

- **Material resistance**

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

- **Temperature range**

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

- **Improper handling**

Incorrect or improper handling can damage the desiccant breather. Please pay attention to the recommended installation.

- **Strong vibrations**

Strong vibrations of the plant can damage the desiccant breather.

- **Pressure range of the system**

The desiccant breather should not be exposed to a positive or negative pressure above 0.5 bar, otherwise the housing may be damaged.

- **Cleaning of the desiccant breather**

For external cleaning of the desiccant breather, the use of a mild soap in combination with water is recommended. The use of brake cleaner will damage the desiccant breather and is no reason for complaint.

## 9. Disposal

At the end of its service life, the device must be disposed of in accordance with the relevant legal regulations.

Drying material 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). Drying material is not classified as a substance hazardous to health or the environment.





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