



# DES-CASE Breathers & Power Energy Applications

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# Typical Applications

- Gear units: Cooling towers and wind turbines



- Electrical transformers: Desiccant dryers =>



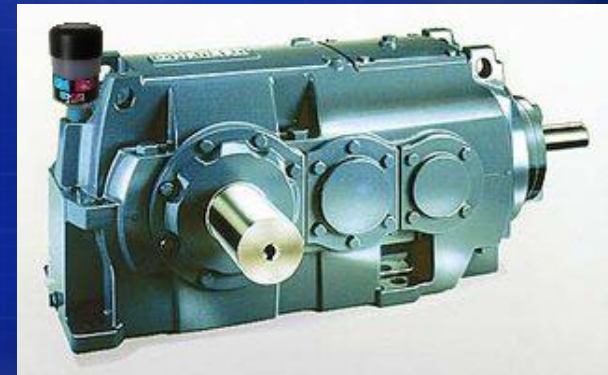
- Hydraulic systems: Wind turbines & solar energy



# Gearboxes: Cooling Towers



DESCASE breathers are used worldwide and standardized to protect gearboxes in cooling tower applications. DESCASE breathers are used by Siemens-Flender, Hansen Transmissions, Eickhoff, SEW, and others for this type of application.



# Gear Units: Wind Turbines



DESCASE breathers are used worldwide and standardized to protect gear units in wind turbine applications. A well known consultant in this field, M. Robert Errichello, recommends installing breathers on wind turbine gear units – “The breather should have a filter and desiccant to prevent ingress of dust and water”

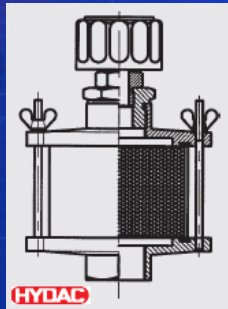
DESCASE is used by Acciona, Eickhoff, Gamessa, GE, Made Tecnologias, Moventas, Mtorres, Nordex, Repower, Suzlon, Vestas, Winergy, and many others....



# Electrical Transformers

Most electrical transformers use refillable desiccant breathers. After December 1<sup>st</sup>, 2008, end users must have documentation proving the chemicals substances in their refillable breathers are pre-registered with the ECHA (European Chemical Agency). If not, companies could face prosecution as they could be found to expose employees to chemical substances forbidden in the European market (by REACH regulations).

Examples of breathers that are of concern: =>



# Electrical Transformers

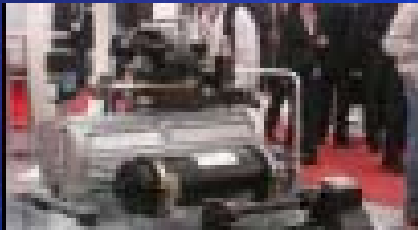
- DESCASE Europe's desiccant breathers prevent exposure of internal chemical substances to humans or the environment during normal or reasonably foreseeable conditions of use, including disposal.
- Paragraph N°3, article 7, of REACH regulation N°1907/2008 states that pre-registration shall not apply to chemical substances present inside DESCASE Europe breathers.
- Due to this, DESCASE breathers are in conformity with REACH regulations.
- Another advantage: On electrical transformers, it takes 2 min. to replace a DESCASE units instead of 20 to 40 min., with 1 or 2 employees, for all types refillable desiccant breathers.
- For more details see the page [Electrical transformers](#)



# Hydraulic Systems: Wind Turbines

DESCASE breathers are used worldwide and standardized to protect hydraulic systems in wind turbine applications.

DESCASE is used by Acciona,, Gamessa, GE, Hawe Hydraulic, Made Tecnologias, Mtorres, Nordex, Repower, Suzlon, Vestas, and many others....



# Hydraulic Systems: Solar Energy

DESCASE breathers have performed well in these new applications, and this represents a huge potential market for our products.



# Flender:

This company has used Des-Case desiccant breathers since 1998. The main use is on cooling tower gearboxes (power generation plants).



Werknorm Seite 1 von 1

<b>FLENDER</b> Bocholt	Naßluftfilter Typ DC 3-FL	Ausgabe: Oktober 1998 <b>W 5124 DE</b>
Bezeichnungsbispiel: Naßluftfilter Typ DC 3-FL nach W 5124, mit Adapter 1 NPT, Werkstoff: Kunststoff, Waren-Nr. 389 049		
EDV-Eintragung	389049	FILTER-LUFT NASS 1 NPT W 5124 KUNSTST
Verwendete Norm	Datum	

Schl.-Nr. der Benennung 0133 Maße in mm

- 1. Geltungsbereich**  
Diese Werknorm ist verbindlich für alle Naßluftfilter, die auf speziellen Kundenwunsch oder aus konstruktiven Gründen (hohe Luftfeuchtigkeit) zum Einsatz gebracht werden müssen.
- 2. Anwendung**  
Vor Inbetriebnahme müssen 2 der 8 Bohrungen (mit Klebefolie verschlossen) an der Unterseite geöffnet werden. Für unsere Einsatzfälle ist dies völlig ausreichend und erhöht die Lebensdauer der Filter.
- 3. Funktion**  
Durch die im Boden des Naßluftfilters befindlichen Bohrungen strömt Luft ein und wird durch einen Schaumgummi- und einen Polyesterfilter mit einer absoluten Filterfeinheit von 3 µm gefiltert. Die gefilterte Luft durchströmt den mit "Silicatgel" gefüllten Behälter. Das "Silicatgel" entzieht der Luft die Feuchtigkeit. Die vom "Silicatgel" absorbierte Luftfeuchtigkeit ändert die Farbe des Gels von "blau" nach "rosa" (sichtbar durch das transparente Gehäuse). Erst bei komplett rosafarbenem "Silicatgel" ist ein Wechsel des kompletten Filters notwendig. Die Filtration erfolgt in beiden Richtungen (ein- und ausatmen).
- 4. Vorteile durch den Einsatz des Naßluftfilters**
  - Hält Wasser und Verunreinigungen vom Öl fern

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PE-Ring dient als Spritzschutz

SOCIÉTÉ NATIONALE DES INGENIEURS PROFESSIONNELS DE FRANCE  
INGENIEUR PROFESSIONNEL  
Licence n° 23.130  
I.P.F.

O.k. *[Signature]* 10/10/1998

Bild 1: Naßluftfilter mit PE-Ring und 1 NPT-Adapter

**Technische Daten:**  
**Temperaturbeständigkeit:** -20 C bis +120 C  
**Werkstoff:** Polypropylen, Polyethylen und PVC  
**Gewicht:** 0,75 kg  
**Zulässiges Anlagenvolumen (z. B. Getriebe)** 1500 l (bei Volumen > 1500 l sind zwei Filter einzusetzen).

Änderung	Träger NOFL	Gaz. 07.10.98	Steggmann-Meier Gepr. Friedrich
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Inter technische Unterlage laut geneizlichen Schauer ( DNS 34 )

# Hansen Transmission:

This company has used Des-Case desiccant breathers since 2004. Prior to this, they used RMF products. They were not satisfied, so they changed to Des-Case products (which they tested in 1999 and 2002).



**BREATHERS DC2-DC3-DC4**

101,6mm

**CAP**

FOAM  
FILTER MEDIA

DES-CASE UNIT

FIELD ADAPTOR

DC12

HYGROSCOPIC AGENT

**BODY**

STAND PIPE

FILTER MEDIA

FOAM SUPPORT

CUT FOR AIR INTAKE

DIRTY WET AIR

DIRTY WET AIR

33,3mm

DES-CASE UNIT

HOSE

CLAMP

ADAPTOR

DC11

DES-CASE UNIT

THREADED ADAPTOR 1" BSP

DC10

DES-CASE ORDER NUMBER	DESCRIPTION	HANSEN NUMBER
DC10	THREADED ADAPTOR 1BSP THREADED ADAPTOR 1NPT	145-DC10BSP 145-DC10NPT
DC11	CLAMP ADAPTOR	145-DC11000
DC12	FIELD ADAPTOR	145-DC12000

BREATHER			
DES-CASE ORDER NUMBER	DC2	DC3	DC4
HANSEN NUMBER	145-DC02000	145-DC03000	145-DC04000
A (mm)	133,5	185,5	236,2
RECIPIENT VOLUME	0-190 L	190-1500 L	1500-3800 L
ADSORPTION VOLUME	0,13 L	0,23 L	0,32 L
WEIGHT	0,53 kg	0,75 kg	0,98 kg
CAP	BLACK	BLUE	WHITE

FOR ALL DC FILTERS				
AIR FLOW (l/min)	0-150	150-300	300-450	450-600
PRESSURE LOSS	0,02 bars	0,035 bars	0,04 bars	0,07 bars

**Unique Filtration Process**

Moisture and particulate accumulation are major factors of oil contamination in industrial equipment. Neglected, these detractors restrict equipment efficiency, causing machine downtime and significant expense in replacement oil, parts and repair labor.

DES-CASE breathers incorporate a proven, field-tested design. They prevent water and contaminants from entering fluid reservoirs as differential pressures occur through thermal expansion and contraction of the fluid, or during the filling or emptying process.

Manufactured with a hygroscopic agent, DES-CASE breathers utilize the entire filter area, and have the capability of extracting water vapor from the air as it is drawn through the unit. Accompanying solid particulate is then removed by a patented polyester fabric filter, allowing only clean, dry air to enter the system.

GENERAL TOL. - ALGEMEEN TOL.	MATERIAL	MACHINED SURF. BENEWIKTE O.P.F. ✓ ISO 1302
SCALE - SCHAL. 1:1 mm	DES-CASE	TOLERANCE PRINCIPLE DIN 7167
OTHER - ANDERE	TREATMENT	TOLERANCE PRINCIPLE DIN 7167
ISO 2768-MS	BEHANDLELING	ISO 2768-MS
DIN 8570-BF		

EDT	DAT.	PIJ-NR.	MODIFICATIE	WAZIGING	DAT.	NAAM/NAAMDEPT	VER.	GERUIM	TITEL	BENAMING
A	199-08-11	HP3758	ISSUECT			199-08-11 VW	SB		HYGROSCOPIC BREATHER	
						199-08-11 VW	SB			
						199-08-11 VW	SB			

**Hansen** Hansen Transmissies International  
TRANSMISSIONS

DDGW - BELGIUM

DRWG. No. 145-DC00000

PAG. 1 / 1

SIZE A3

EDT

HAN9733

# Eickhoff:

This company has used Des-Case desiccant breathers since 2000.

on.



INSTALLATION PROCEDURE

1. Remove closing screw from gearbox
2. Remove air tight cap from 1" Standpipe
3. Cut off air intake nipples
4. Mount threaded adaptor G 040788 using the copper ring N 006375

AIR FLOW THRU BREATHER	OR LIQUID FLOW IN/OUT OF TANK	NUMBER OF NIPPLES TO OPEN
0-5 CFM	0-35 GPM	2

5. Plastic bag cover can be left on unit when utilized in extremely dirty or outdoor applications.

MANUFACTURER: DES-CASE, USA

Material:	Remark: CH=20	NA: 24.336led	Drawn: 22.07.95
Div:		FEV:	Checked: GRYCZ
Scale: 1 : 1.5			Checked: GRYCZ Jpp
	Designation:		
Copyright DIN 34	HYGROSCOPIC BREATHER	Part No.:	(e)
Weight kg:	MODEL DC-2	G 040789	
Type: BSULG-075	Register word No.: 1954 /		
Erz.-Gr.-Nr.: 343	Replacement for:	Similar No.:	

SEW ID No.: P0009906



Proactive exclusion of contaminants improves system performance, helps extend the life of lubricants and seals

**ATTENTION!**

REPLACEMENT OF AIR FILTER.  
REPLACE WHEN COLOUR CHANGE INDICATES (CHANGED FROM BLUE TO PINK OR IS NOT ANY MORE BLUE).

BLUE = ACTIVE  
PINK OR NOT BLUE = REPLACE

Foam pad stops oil mist during expansion to ensure air is evenly dispersed through the filters and desiccant, providing maximum efficiency for "backflushing" and silica gel regeneration.

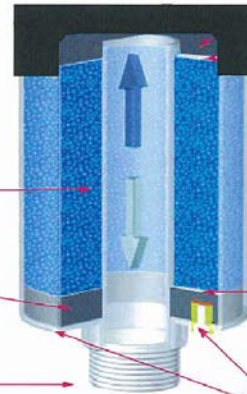
Second polyester filter element protects against any migration of desiccant dust.

Color indicating silica gel, adsorbs water from incoming air. During exhalation, dry system air is passed back through the silica gel bed partially regenerating the desiccant.

Replace bottom breather body when color changes from blue to pink.

Foam pad disperses incoming air evenly over filtration and drying areas.

3/8" NPT port allows for easy replacement of standard vent cap.



\* Patent pending.

Patented polyester filter element provides 3-micron absolute filtration. Unique loops allow particles to release during system exhalation, increasing breather life.

Dual check valves provide slight system pressurization (0.43 psi) which allows for controlled breathing without excessive temperature build-up.

**TECH SPECS**

**General Data**

Element model . . . . . DCVG-1  
 Standard size . . . . . 127 \* 64 mm  
 Max. permissible flow . . . . . 28 l/min  
 Micron rating . . . . . 3-micron absolute  
 Beta rating . . . . . >200 at 3-micron  
 Direction of flow . . . . . Out In&in out  
 Max. operating temp . . . . . -94 C  
 Amount of silica gel . . . . . 0.14 kg

**Hygroscopic Agent**

Type & quantity . . . . . Silica gel  
 Apparent bulk density . . . . . 784 kg/ m3  
 Avg. particle diameter . . . . . 3.7 mm  
 Avg. surface area . . . . . 0.66 sq. m/gm  
 Pore volume . . . . . 0.38 cc/gm  
 Avg. pore diameter . . . . . 21 A  
 Specific heat . . . . . 0.25 BTU/lb. °F  
 Nominal mesh range . . . . . 4 x 8  
 Crush strength avg. . . . . 35 kg

**Filter Media**

Material . . . . . Patented polyester  
 Porosity . . . . . 100-130 cmf @ 1/2 in. w.g.  
 Unit Material Data  
 Body & Cap \* . . . . . Polycarbonate  
 Melting point . . . . . 176 C  
 Tensile strength . . . . . 540 MPa  
 Diaphragm \* . . . . . NBR (Nitrile)  
 Tear strength . . . . . 710 kPa

\* Resistant to acids, alkalides, solvents, all mineral & synthetic lubricants

SEW:

This company has used Des-Case desiccant breathers for many years.