

The H-J Family of Companies

Dehydrating Breather

in Accordance with DIN 42560, 42562, 42567

EN 50216-5/A2



The H-J Family of Companies
3010 High Ridge Blvd.
High Ridge, Mo. 63049 USA
+1-636-677-3421
info@h-j.com
www.h-j.com



**The H-J Family
of Companies**

The H-J Family of Companies

Table of Contents

Introduction	3
Benefits at a Glance	3
Dehydrating Breather Type LHD	4
Dehydrating Breather Type LND	6
Dehydrating Breather Type DT	8
Dehydrating Breather Type DTWMF	9
Dehydrating Breather Type DTPMF	10
Dehydrating Breather Type DTPMT	11
Dehydrating Breather Type S	12
Dehydrating Breather Type SPMTW	13
Dehydrating Breather Type SPMTS	14

Dehydrating Breather

Introduction

Dehydrating breathers are utilized in liquid cooled transformers, reactors and on-load tap changers to remove moisture from the air during the cooling process. Decreasing the moisture inflow preserves the insulation's dielectric strength and integrity by preventing the ambient air moisture ingress. Dehydrating breathers enhance the equipment's operational integrity and service life.

If the temperature of the insulating liquid in the tank falls, its volume also reduces and this causes a corresponding quantity of air to be drawn-in through the breathing holes at the bottom of the breather. On its way to the tank, the air passes through the oil trap and subsequently through the drying crystals (silica gel) which remove the moisture from the air. If the temperature rises, air is expelled from the tank and flows out through the oil trap on the dehydrating breather. The oil trap prevents the drying crystals from being permanently in contact with the damp atmosphere and also sets the minimum required pressure value in the tank to allow for air flowing in or out.

The drying crystals are made of pure aluminum silicate which has exceptional absorption properties. In the activated condition they have an orange crystalline appearance, but as they absorb moisture the color becomes transparent, beginning at the bottom and spreading progressively to the top. It should be replaced when the layer of active orange crystals is approximately 5 cm from the top.

Benefits at a Glance

- » Available alternatives for aggressive environments with best corrosion protection and UV-resistant C5-M powder-coating, aluminum materials and stainless steel grade A4 hardware.
- » 40% lighter as a result of the lightweight aluminum design.
- » Premium orange silica gel for longer intervals between replacements.
- » Cylinder and oil container made of glass or acrylic.

The suggested application of our dehydrating breather standard types are shown below:

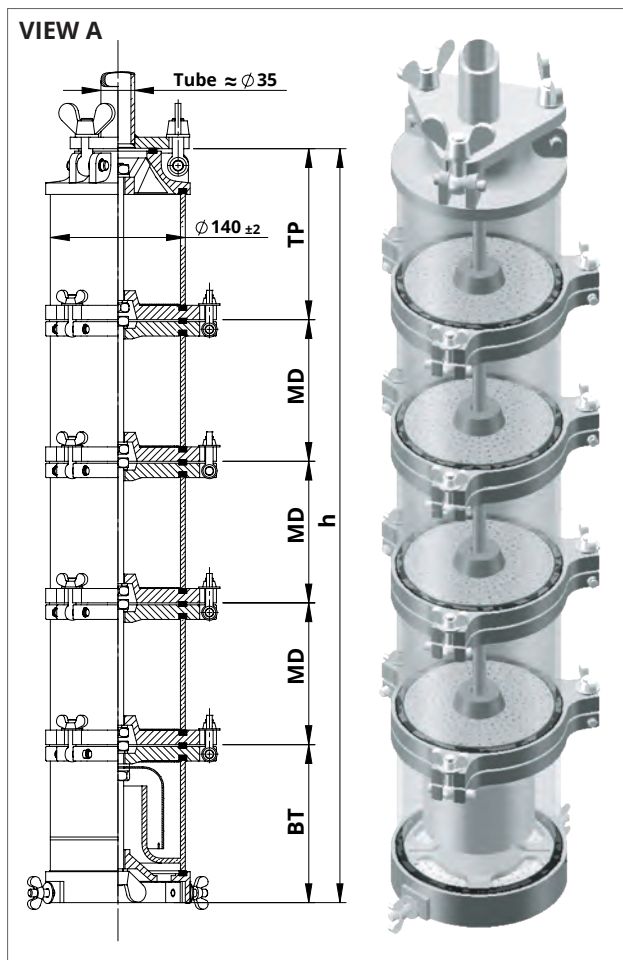
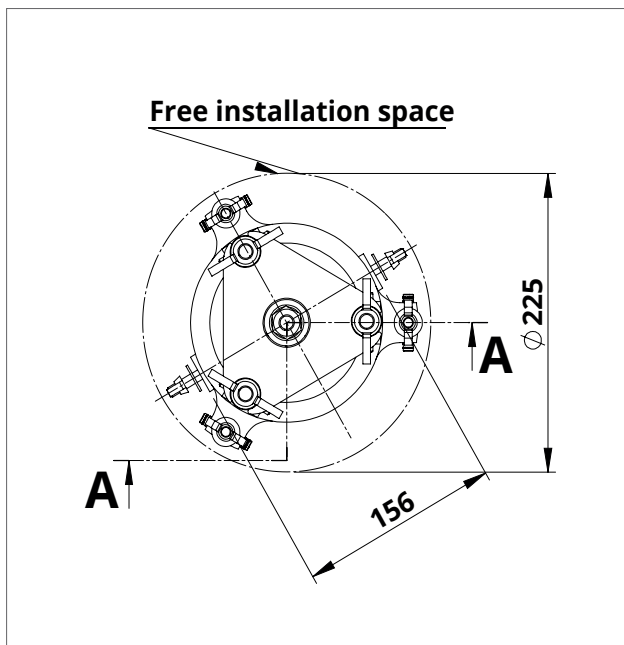
Type	DIN	Capacity	Suggested Application	
			Approx Oil Level [kg]	Approx Oil Volume [gal]
HJDBDT	42567	0.5 kg	2000	600
HJDBDT	42567	1.0 kg	4000	1200
HJDBLHD1- HJDBLND1	42562	1.2 kg	5000	1500
HJDBLHD2- HJDBLND2	42562	2.4 kg	10000	3000
HJDBLHD3- HJDBLND3	42562	3.6 kg	15000	4500
HJDBLHD4- HJDBLND4	42562	4.8 kg	20000	6000

The H-J Family of Companies

Dehydrating Breather Type LHD - Large Heavy Duty

In Accordance with EN 50216-5/A2

The aluminum housing parts are covered with UV-resistant C4 powder-coating (C5-M available on request), available in color RAL 7038 (others available on request).



Dimensions in millimeters [mm]

Type	Silica Gel Capacity [kg]	Height (h) [mm]	Assembly Groups		
			TP	MD	BT
HJDBLHD1-1.2-340	1.2	340	1	0	1
HJDBLHD2-2.4-487	2.4	487	1	1	1
HJDBLHD3-3.6-634	3.6	634	1	2	1
HJDBLHD4-4.8-781	4.8	781	1	3	1

Dehydrating Breather Type LHD - Large Heavy Duty

In Accordance with EN 50216-5/A2

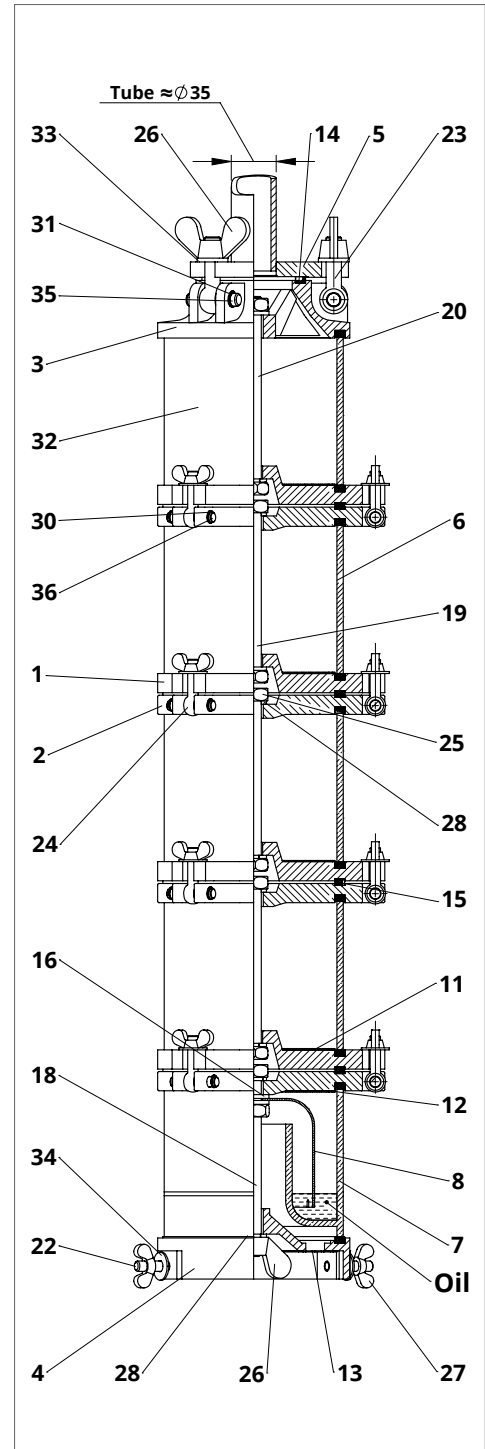
Parts List					
Item	TP	MD	BT	Descriptions	Remarks
1	1	1	-	Partition plate	Material: AISi12(Cu)
2	-	1	1	Partition plate	Material: AISi12(Cu)
3	1	-	-	Top section	Material: AISi12(Cu)
4	-	-	1	Bottom ring	Material: AISi12(Cu)
5	-	-	-	Flange	Material: Steel S235JR (1.0037)
6	1	1	1	Cylinder	Material: UV-resistant Acrylic Glass
7	-	-	1	Oil container	Material: UV-resistant Acrylic Glass
8	-	-	1	Dome	Material: X5CrNi18-10 (1.4301) / AISI 304 (SS)
11	1	1	-	Perforated plate	Material: Aluminum 99.5 AW1050
12	-	-	1	Perforated plate	Material: Aluminum 99.5 AW1050
13	-	-	1	Perforated plate	Material: Aluminum 99.5 AW1050
14	1	-	-	Gasket	Material: NBR 70 / EPDM**
15	2	3	3	Gasket	Material: NBR 70 / EPDM**
16	-	-	2	Gasket	Material: PA 6 (Nylon)
18	-	-	1	Threaded bolt	Dim: M12 x 150 / Material: A2-70 (SS)
19	-	1	-	Hex screw	Dim: M12 x 130 / Material: A2-70 (SS)
20	1	-	-	Hex screw	Dim: M12 x 140 / Material: A2-70 (SS)
22	-	-	2	Stud bolt	Dim: M8 x 30 / Material: A2-70 (SS)
23	3	-	-	Eyebolt	Dim: M12 x 55 / Material: A2-70 (SS)
24	-	3	3	Eyebolt	Dim: M8 x 40 / Material: A2-70 (SS)
25	1	1	2	Hex nut	Dim: M12 / Material: A2 (SS)
26	3	-	1	Wing nut	Dim: M12 / Material: A2 (SS)
27	-	3	5	Wing nut	Dim: M8 / Material: A2 (SS)
28	1	1	2	Spring washer	Material: A2 (SS)
30	-	6	6	Lock Clip	Dim: 8 x 0.8 / Material: fIZnnc ***
31	6	-	-	Lock Clip	Dim: 10 x 1 / Material: fIZnnc ***
32	****	****	-	Silica gel ****	Capacity: 1.2 kg per section
33	3	-	-	Washer	Material: A2 (SS AISI 316)
34	-	3	5	Washer	Material: A2 (SS AISI 316)
35	3	-	-	Pin	Material: A2 (SS AISI 316)
36	-	3	3	Pin	Material: A2 (SS AISI 316)

*Standard delivery without flange (item 5), available on request.

**For low temperature application up to -40°C

***Cr-VI- free

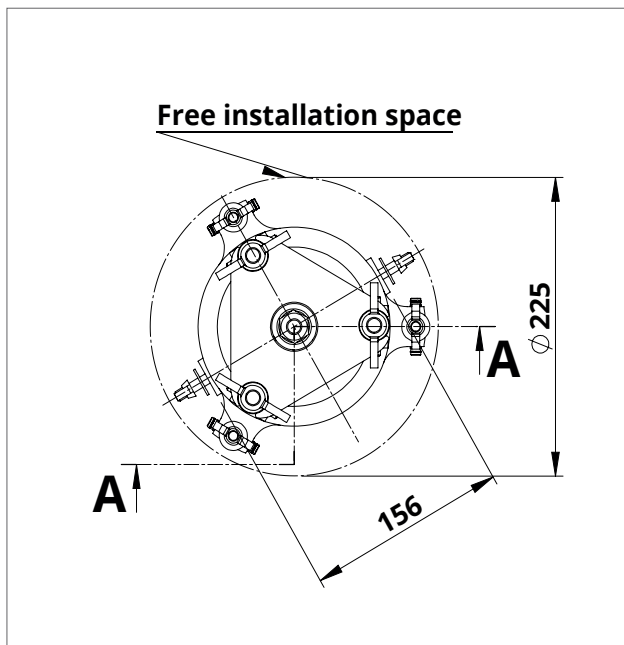
****Standard delivery without silica gel, available on request.



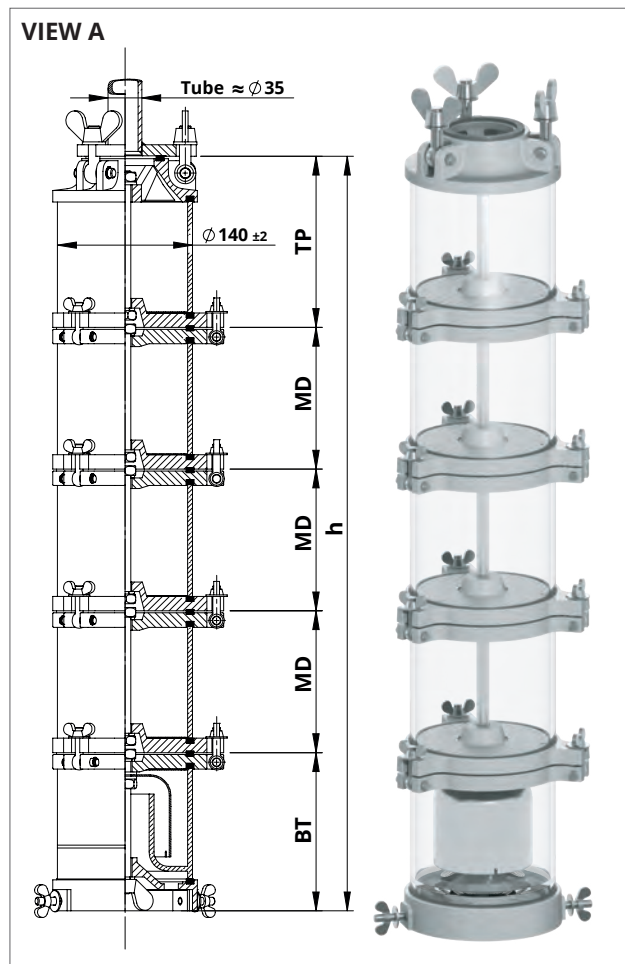
The H-J Family of Companies

Dehydrating Breather Type LND - Large Normal Duty

In Accordance with EN 50216-5/A2



Type	Silica Gel Capacity [kg]	Height (h) [mm]	Assembly Groups		
			TP	MD	BT
HJDBLND1-1.2-340	1.2	340	1	0	1
HJDBLND2-2.4-487	2.4	487	1	1	1
HJDBLND3-3.6-634	3.6	634	1	2	1
HJDBLND4-4.8-781	4.8	781	1	3	1



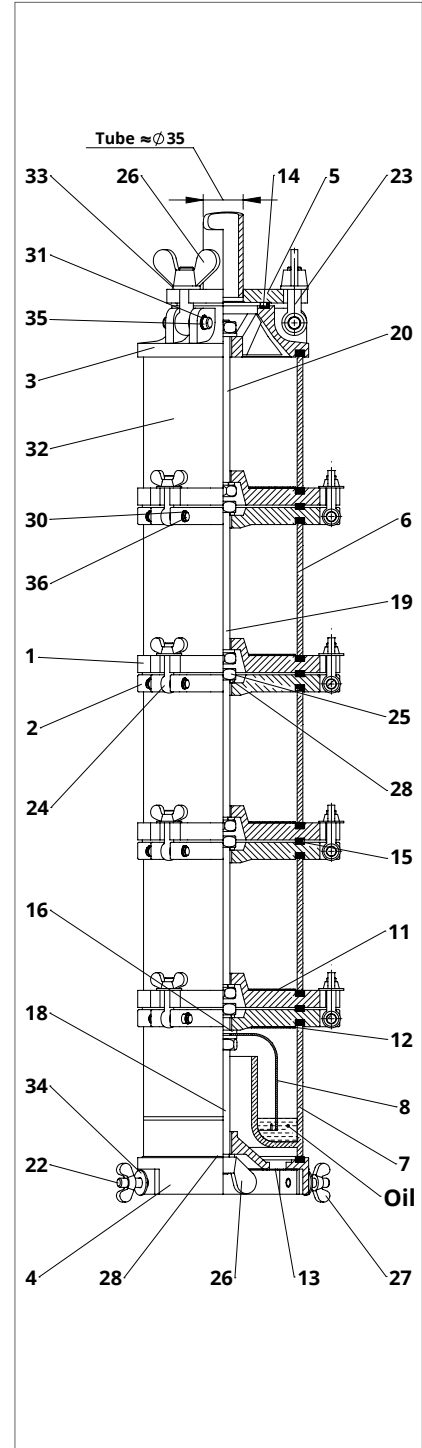
Dimensions in millimeters [mm]

Dehydrating Breather Type LND

In Accordance with EN 50216-5 / A2

The aluminum housing parts are covered with UV-resistant C4 powder-coating (C5-M available on request), available in color RAL 7038 (others available on request).

Parts List					
Item	TP	MD	BT	Descriptions	Remarks
1	1	1	-	Partition plate	Material: EN-GJL-200 / galv. Zn. (Cr-VI-free)
2	-	1	1	Partition plate	Material: EN-GJL-200 / galv. Zn. (Cr-VI-free)
3	1	-	-	Top section	Material: EN-GJL-200 / galv. Zn. (Cr-VI-free)
4	-	-	1	Bottom ring	Material: EN-GJL-200 / galv. Zn. (Cr-VI-free)
5*	-	-	-	Flange	Material: Steel S235JR (1.0037)
6	1	1	1	Cylinder	Material: UV-resistant Acrylic glass
7	-	-	1	Oil container	Material: UV-resistant Acrylic glass
8	-	-	1	Dome	Material: X5CrNi18-10 (1.4301) / AISI 304 (SS)
11	1	1	-	Perforated plate	Material: Aluminum 99.5 AW1050
12	-	-	1	Perforated plate	Material: Aluminum 99.5 AW1050
13	-	-	1	Perforated plate	Material: Aluminum 99.5 AW1050
14	1	-	-	Gasket	Material: NBR 70 / EPDM**
15	2	3	3	Gasket	Material: NBR 70 / EPDM**
16	-	-	2	Gasket	Material: PA 6 (Nylon)
18	-	-	1	Threaded bolt	Dim: M12 x 150 / Material: A2-70 (SS)
19	-	1	-	Hex screw	Dim: M12 x 130 / Material: A2-70 (SS)
20	1	-	-	Hex screw	Dim: M12 x 140 / Material: A2-70 (SS)
22	-	-	2	Stud bolt	Dim: M8 x 30 / Material: A2-70 (SS)
23	3	-	-	Eyebolt	Dim: M12 x 55 / Material: A2-70 (SS)
24	-	3	3	Eyebolt	Dim: M8 x 40 / Material: A2-70 (SS)
25	1	1	2	Hex nut	Dim: M12 / Material: A2 (SS)
26	3	-	1	Wing nut	Dim: M12 / Material: A2 (SS)
27	-	3	5	Wing nut	Dim: M8 / Material: A2 (SS)
28	1	1	2	Spring washer	Material: A2 (SS)
30	-	6	6	Circlip	Dim: 8 x 0.8 / Material: fIZnnc ***
31	6	-	-	Circlip	Dim: 10 x 1 / Material: fIZnnc ***
32	****	****	-	Silica gel	Capacity: 1.2 kg per section
33	3	-	-	Washer	Material: A2 (SS AISI 304)
34	-	3	5	Washer	Material: A2 (SS AISI 304)
35	3	-	-	Pin	Material: A2 (SS AISI 304)
36	-	3	3	Pin	Material: A2 (SS AISI 304)



*Standard delivery without flange (item 5), available on request.

**For low temperature application up to -40°C

***Cr-VI free

****Standard delivery without silica gel, available on request.

The H-J Family of Companies

Dehydrating Breather Type DT

Distribution Transformers

- 2 sizes with silica gel capacity of 0.5 or 1 kg
- Premium UV and corrosion-resistant powder coating
- Oil bowl made of UV-resistant acrylic glass
- Color RAL 7038, others available upon request
- Standard delivery without silica gel available upon request
- Housing parts are covered with UV-resistant C4 powder-coating, C5-M available upon request

WMF



For wall mounting.
With oval flange and filling plug.

PMF



For vertical pipe mounting.
With straight oval flange.

PMT

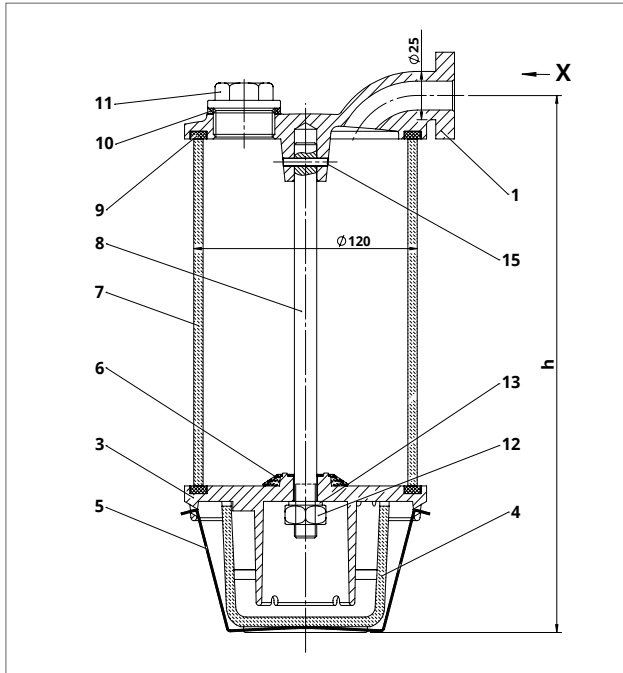


For vertical pipe mounting.
With G 1/2", G 3/4", or G 1" internal threaded connection.

Part Number	Silica Gel Capacity [kg]	Height (h) [mm]	Connection Type
HJDBDT-WMF-0.5-195	0.5	195	Flange
HJDBDT-WMF-1.0-275	1	275	Flange
HJDBDT-PMF-0.5-220	0.5	220	Flange
HJDBDT-PMF-1.0-300	1	300	Flange
HJDBDT-PMT0.5-0.5-220	0.5	220	G 1/2"
HJDBDT-PMT0.5-1.0-300	1	300	G 1/2"
HJDBDT-PMT0.7-0.5-220	0.5	220	G 3/4"
HJDBDT-PMT0.7-1.0-300	1	300	G 3/4"
HJDBDT-PMT1.0-0.5-220	0.5	220	G 1"
HJDBDT-PMT1.0-1.0-300	1	300	G 1"

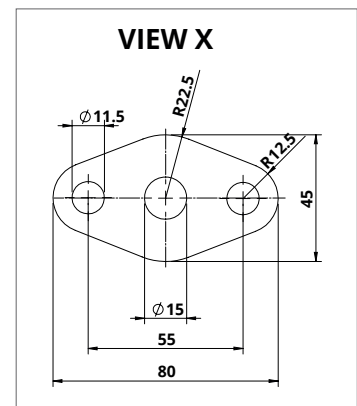
Dehydrating Breather Type DTWMMF

Distribution Transformer, Wall Mounting, Flange
In Accordance with EN 50216-5/A2 / DIN 42567 A



Dimensions in millimeters [mm]

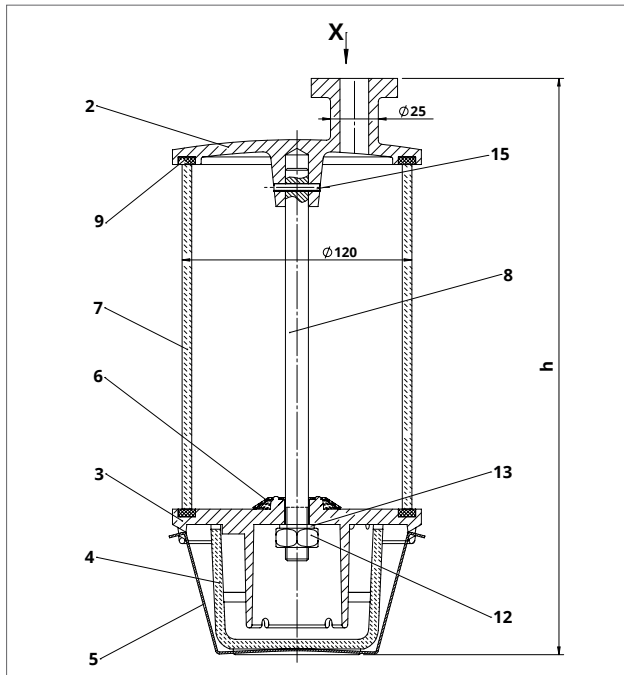
Item	Qty	Descriptions	Remarks
1	1	Upper part	Material: AISi12(Cu)
3	1	Bottom section	Material: AISi12(Cu)
4	1	Oil bowl	Material: SAN (Styrene Acrylonitrile) - Use only mineral oil
5	1	Holder	Material: X10CrNi18-8 (1.4310) / AISI 301 (SS)
6	1	Perforated plate	Material: Aluminum 99.5
7	1	Cylinder	Material: UV-resistant Acrylic glass
8	1	Bolt	Capacity 0.5 kg = Dim: M12 x 125 Capacity 1 kg = Dim: M12 x 205 Material: X8CrNiS18-9 (1.4305) / AISI 303 (SS) / galv. Zn. (Cr-VI free)
9	2	Gasket	Dim: 124 x 106 x 4 / Material: NBR 70
10	1	Gasket / Sealing sheet	33 x 39 x 3 / Material: WS 3820
11	1	Stop screw	Dim: 1" / Material: AISi12(Cu)
12	1	Hex nut	Dim: M12 / Material: A2-70
13	1	Spring washer	Dim: 12 / Type: B / Material: A2
15	1	Dowel pin	Dim: 4 x 24 / Material: A2



The H-J Family of Companies

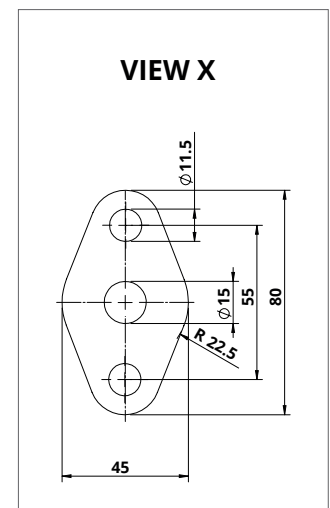
Dehydrating Breather Type DTPMF

Distribution Transformer, Pipe Mounting, Flange
In Accordance with EN 50216-5/A2 / DIN 42567 B



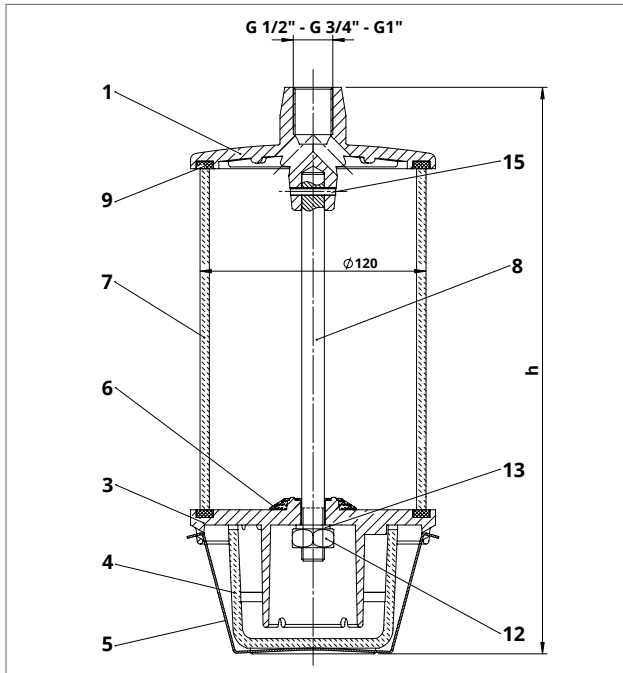
Dimensions in millimeters [mm]

Item	Qty	Descriptions	Remarks
1	1	Top section	Material: AlSi12(Cu)
3	1	Bottom section	Material: AlSi12(Cu)
4	1	Oil bowl	Material: SAN (Styrene Acrylonitrile) - Use only mineral oil
5	1	Holder	Material: X10CrNi18-8 (1.4310) / AISI 301 (SS)
6	1	Perforated plate	Material: Aluminum 99.5
7	1	Cylinder	Material: UV-resistant Acrylic glass
8	1	Bolt	Capacity 0.5 kg = Dim: M12 x 125
			Capacity 1 kg = Dim: M12 x 205
			Material: X8CrNiS18-9 (1.4305) / AISI 303 (SS) / galv. Zn. (Cr-VI free)
9	2	Gasket	Dim: 124 x 106 x 4 / Material: NBR 70
12	1	Hex nut	Dim: M12 / Material: A2-70
13	1	Spring washer	Dim: 12 / Type: B / Material: A2
15	1	Dowel pin	Dim: 4 x 24 / Material: A2



Dehydrating Breather Type DTPMT

Distribution Transformer, Pipe Mounting, Threaded
In Accordance with EN 50216-5/A2



Dimensions in millimeters [mm]

Item	Qty	Descriptions	Remarks
1	1	Top Section	Material: AlSi12(Cu)
			Standard G 1/2" sim. DIN 42567 On request G 3/4" / G 1"
3	1	Bottom section	Material: AlSi12(Cu)
4	1	Oil bowl	Material: SAN (Styrene Acrylonitrile) - Use only mineral oil
5	1	Holder	Material: X10CrNi18-8 (1.4310) / AISI 301 (SS)
6	1	Perforated plate	Material: Aluminum 99.5
7	1	Cylinder	Material: UV-resistant Acrylic glass
8	1	Bolt	Capacity 0.5 kg = Dim: M12 x 125
			Capacity 1 kg = Dim: M12 x 205
			Material: X8CrNiS18-9 (1.4305) / AISI 303 (SS) / galv. Zn. (Cr-VI free)
9	2	Gasket	Dim: 124 x 106 x 4 / Material: NBR 70
12	1	Hex nut	Dim: M12 / Material: A2-70
13	1	Spring washer	Dim: 12 / Type: B / Material: A2
15	1	Dowel pin	Dim: 4 x 24 / Material: A2

The H-J Family of Companies

Dehydrating Breather Type S

Special Applications

- Silica gel capacity from 0.150 to 2.5 kg
- Premium UV and corrosion-resistant powder-coating
- Color RAL 7038, others available upon request
- Standard delivery without silica gel available upon request
- Housing parts are covered with UV-resistant C4 powder-coating, C5-M available upon request

PMTW



For vertical pipe mounting.
With G 1-1/2" and without oil stop.

PMTS

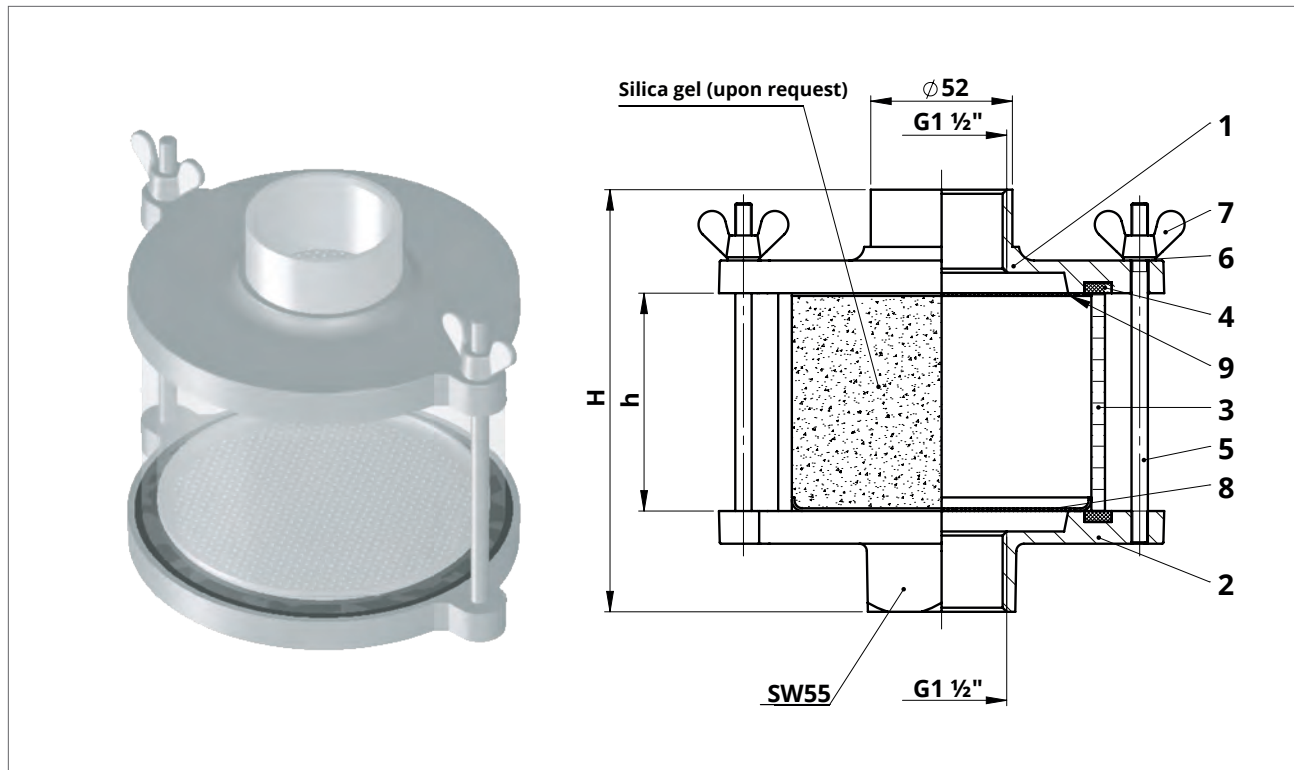


For vertical pipe mounting.
With G 3/8" and G 1/2" for 0.150 kg.

Part Number	Silica Gel Capacity [kg]	Height (h) [mm]	Connection Type
HJDBS-PMTW1.5-0.5-156	0.5	156	G 1-1/2"
HJDBS-PMTW1.5-1.0-236	1	236	G 1-1/2"
HJDBS-PMTW1.5-1.5-316	1.5	316	G 1-1/2"
HJDBS-PMTW1.5-2.5-476	2.5	476	G 1-1/2"
HJDBS-PMTS0.5-0.15-153	0.150	153	G 1/2"
HJDBS-PMTS0.3-0.15-153	0.150	153	G 3/8"

Dehydrating Breather Type SPMTW

Special Applications, Pipe Mounting, Threaded, without Oil-Stop



Dimensions in millimeters [mm]

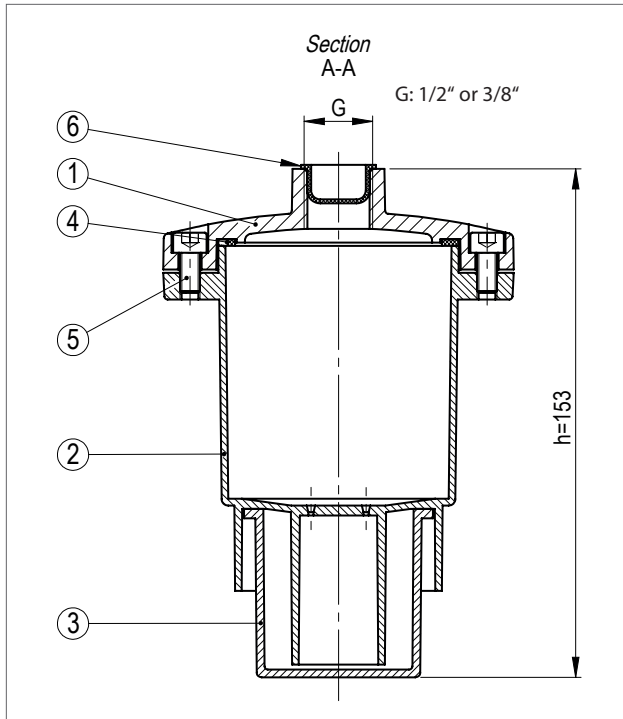
Item	Qty	Descriptions	Remarks
1	1	Top section	Material: AISi12(Cu)
2	1	Bottom section	Material: AISi12(Cu)
3	1	Cylinder	Material: UV-resistant Acrylic glass
4	2	Gasket	Material: NBR 70
5	2	Tension rod	Material: A2
6	2	Washer	Material: A2
7	2	Wing nut	Dim: M6 / Material: A2-70
8	1	Perforated plate	Material: Aluminum 99.5
9	1	Perforated plate	Material: Aluminum 99.5

Note: this dehydrating breather works without oil stop. Use only with air filter.

The H-J Family of Companies

Dehydrating Breather Type SPMTS

Special Applications, Pipe Mounting, Threaded, Small

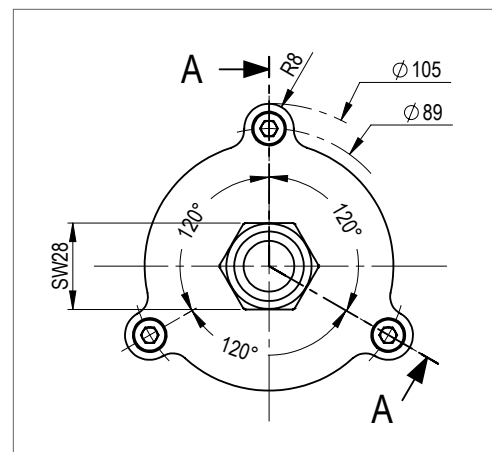


Silica gel capacity: 0.150kg



Dimensions in millimeters [mm]

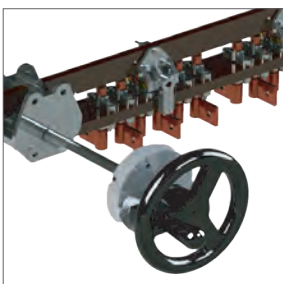
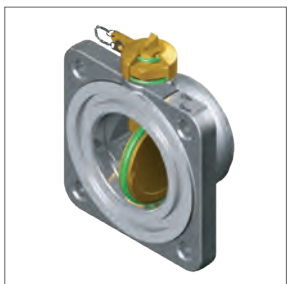
Item	Descriptions	Remarks	Qty
1	Top section	Material: Aluminium powder-coated	1
2	Cylinder	Material: Polycarbonate UV-resistant	1
3	Oil bowl	Material: Polycarbonate UV-resistant	1
4	Gasket	Material: NBR 70	1
5	Socket cap screw	Dim: M6x12 / Material: A2-70	3
6	Sealing plug	Material: Polyethylene	1



The H-J Family of Companies

See our full portfolio of
Transformer Components:

- Buchholz Relay
- Pressure Relief Device
- Transformer Protection Relay
- Oil Level Indicator
- Bimetal Thermometer
- Dehydrating Breather
- Linear Tap Changer
- Radiator Valve





The H-J Family of Companies