



**Donaldson**  
*Filtration Solutions*



**Oil / Water Separators Ultrasep Superplus N  
and Ultraqua Autoclean**

# Condensate purification saves disposal costs

## Condensate purification with Ultrasep Superplus N

▶ With an oil content of 5% on average, condensate is too harmful to the environment and must not pass into the wastewater without purification. The specified critical value by legislation is at a maximum of 20 mg/l (measured according to DIN EN ISO 9377-2) – some local regulations of today are even more restrictive. Donaldson systems for oil/water separation fulfil these requirements, reduce disposal costs and protect the environment. All sizes are approved by the DIBT Z54.5-179 – Deutsches Institut für Bautechnik (Structural Engineering Institute).

## Features and advantages

- ▶ The optimum solution for each application: 7 sizes for compressor capacities ranging from 120 Nm<sup>3</sup>/h to 7.200 Nm<sup>3</sup>/h
- ▶ The highly sensitive special activated carbon is protected by a pre-adsorbent
- ▶ A bright yellow floater warns against critical operating conditions
- ▶ Service label with all maintenance instructions required arranged on the unit's cover
- ▶ Easy and quick filter exchange
- ▶ Wastewater test set included in the scope of supply



Oil drain, adjustable



## Automatic maintenance indication

The rising floater indicates the degree of contamination of the pre-filter and the adsorption filter. Preventative maintenance of the oil/water separator can thus be carried out and will help to save further costs.

## Test set for operational safety

With the test set the purity of the water can be tested. The test set – which is included in the system's cover is available at all times.

## Multi-connections for condensate supply

On the unit cover there are 4 connections with different connection diameters. This simplifies the connection of more than one condensate drain and increases the flexibility during linking up.

## New oil draining concept

The newly developed oil drain tray enables an uncomplicated adjustment of the oil draining level with a hand valve. The operator does not come into contact with the condensate.

## Conical activated carbon adsorber

The conical form of the container simplifies the exchange of activated carbon.

# Ultraaqua Autoclean

## Condensate separation for oil/water emulsions – Ultraaqua Autoclean

► Your expectations: long service intervals, an automatic unit constructed according to the strict quality demands of a company being certified according to DIN EN ISO 9001 since 1991, a separation technology with a filtrate quality guarantee of less than 5mg/l (according to DIN EN ISO 9377-2).

► Ultraaqua: Ultraaqua means ultrafiltration, a separation technology without adding chemicals; a virtually indestructible ceramic membrane, a membrane with a pH resistance from 1 to 14 and a temperature range up to 80°C, Ultraaqua is a synonym for a revolutionary adaptive performance control of the filtration process.

## Features and advantages

### Ultraaqua Autoclean

The comparison INPUT vs. OUTPUT extends the regeneration cycles for the membrane to the latest possible moment. Thus the running costs of the unit are optimised. Automatic regeneration of the membrane means extreme long service intervals.

### LC-display

Clear text messages make service and trouble shooting easy.

### Ceramic membrane

High thermal, mechanic and chemical resistance permits a one year service life guarantee on the membrane.

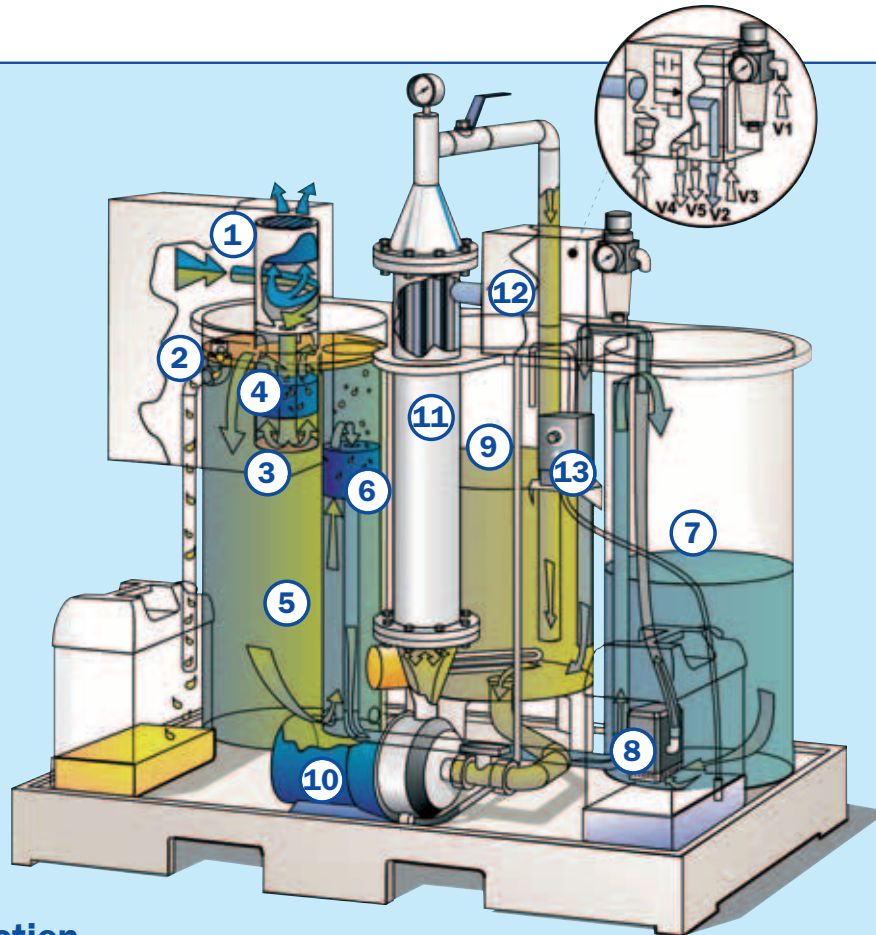


### All sealing from VITON

Maximum safety for chemicals and often unknown compounds of condensate.

### Frost protection for the membrane

The operating temperature is continuously monitored, the heater starts automatically to ensure a minimum process temperature to protect the membrane from freezing conditions.



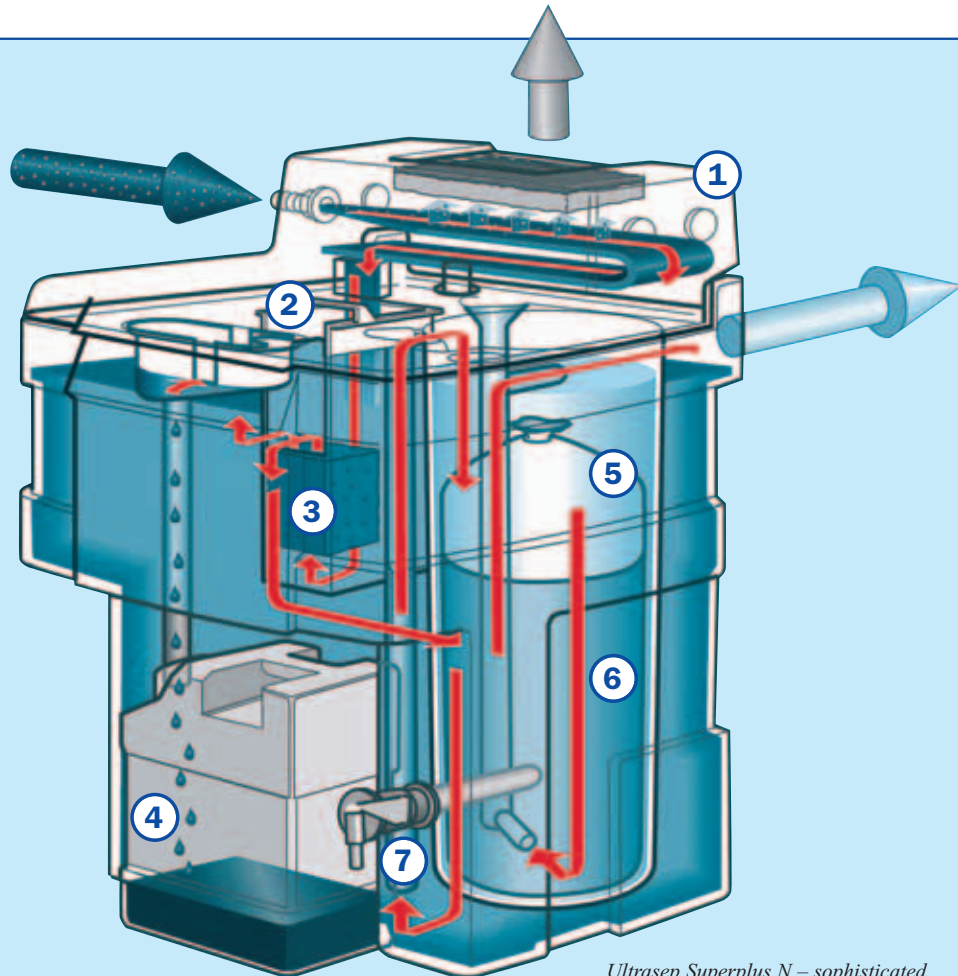
## The function

Condensate and expanding air are separated in the pressure relief section (1). The sedimentation phase (3) and the following coalescing filter (4) can easily be removed for cleaning. Free floating oil is removed by an overflow (2). Between gravity separation (5) and buffer tank (7) there is a second coalescing filter (6). The internal feed pump (8) pumps the pre-separated condensate into the process tank (9). The process pump (10) pumps the condensate through the membrane module (11). Filtrate passes through the membrane and leaves the unit at the valve (V2) in the valve block in the right quality. (V1) periodically pulses back filtrate through the membrane by means of compressed air. This repeated automatic back-flush significantly extends the cleaning intervals.

Oil and water is fed into the process tank (9) and only pure water is discharged. Consequently the oil concentration continuously rises thus reducing the filtrate flow. Therefore, the so called concentrate must be expelled by (V4) before the (automatic) cleaning cycle. Due to Ultraqua this is done at the latest possible and therefore most economic moment.

Then water (V3) and cleaning agent (with metering pump 13) are added into the empty process tank. After cleaning the agent may be expelled by (V5). The unit starts the next filtration cycles with a regenerated membrane.

# Ultrasep Superplus N



*Ultrasep Superplus N – sophisticated details which stand the test in application and pay off*

## The function

Under pressure the oil-bearing condensate flows into the pressure-relief chamber (1) of the Ultrasep. Here the overpressure is decomposed without creating a swirl in the separation vessel. In the removable and therefore easy to clean sedimentation phase (2) the solid particles, which have been carried along with the condensate are collected. A coalescence filter (3) with its oil separation effect contributes to the long activated carbon service life and therefore also to the reduced operation costs of the unit. By means of gravity separation oil is collected on the surface of the separation vessel and is drained off into the oil intercepting tank (4) over the height adjustable oil drain tray. The pre cleaned condensate now flows through a pre-filter (5) which retains the oil particles that might still be in the condensate. During the last phase the condensate flows through an activated carbon adsorber (6), which adsorbs mineral hydrocarbon which guarantees the mandatory discharging limit value.

## Technical Data Ultrasep Superplus N

Max. compressor performance for moderate climate				
UFS-SP	Screw- and rotation compressor with oil injection cooling		Piston compressor	
	Mineral oil	Synthetic oil	Mineral oil	Synthetic oil
5	2	2	2	2
10N	4	4	4	3
15N	4-8	3-6	3-6	2,5-5
30N	8-16	6-12	6-12	5-10
60N	16-32	12-24	12-24	10-20
120N	32-64	24-48	24-48	20-40
240N	64-128	48-96	48-96	40-80

Max. compressor performance for tropical climate				
UFS-SP	Screw- and rotation compressor with oil injection cooling		Piston compressor	
	Mineral oil	Synthetic oil	Mineral oil	Synthetic oil
5	0,5-1	0,5-1	0,5-1	0,5-1
10N	1,5-3	1-2	1-2	1-2
15N	2,5-5	2,5-5	1,5-3	1,5-3
30N	5,5-11	4-8	3,5-7	3,5-7
60N	10,5-21	7-14	7-14	6,5-13
120N	21,5-43	16-32	13,5-27	13,5-27
240N	42,5-85	32-64	27,5-55	26,5-53

All data: Nm<sup>3</sup>/min. **Example:** screw compressor, VDL-oil, total performance 20 Nm<sup>3</sup>/min.: select UFS-SP 60

## Technical Data Ultraaqua Autoclean

Performance data:		
Type	Compressor capacity	
UFA-Autoclean	Continental climate (kW)	Tropical climate (kW)
0008	90	45
0016	160	90
0032	315	160
0064	710	315
0096	1025	550
0128	1420	710
0192	2050	1100
0256	2840	1420

Technical alterations reserved (1/2005)

# Donaldson. And everything just got better.

### Total Filtration Management

► Donaldson offers a wide variety of solutions to reduce your energy costs, improve your productivity, guarantee production quality and help preserve the environment.

**Compressed Air Filtration, Sterile Filtration, Process Filtration, Refrigerant Drying, Adsorption Drying, Condensate Drains, Condensate Purification Systems, Water Chillers, Air / Oil Separation, Dust and Fume Removal, Process Air and Gas Processing, Oil Mist Separation, Industrial Hydraulics**

### Total Filtration Service

► A comprehensive range of services especially designed to keep your production at peak performance and at the lowest total cost of ownership.

#### Donaldson Europe B.V.B.A.

Research Park Zone • Interleuvenlaan 1  
B-3001 Leuven • Belgium  
Phone +32 (0)16 38 39 70 • Fax +32 (0)16 38 39 38  
IFS-europe@emea.donaldson.com

