DELTAFLUID®

FLUID CARE

OIL PURIFIER
OPD

DELTAFLUID OPD purifier systems are designed for use in a wide range of viscosities, from transformer oils to lubrication oils. They remove water in the system in the three conditions: free and emulsified (100%) and dissolved (up to 90% of the saturation point); they remove dissolved gases and solid contamination up to a cleanliness level of ≤ ISO 4406 16/13/10.

The level of cleanliness depends on type of filter element (removal power) used.

https://www.deltafluid.com/fluidcare/en/prodotti/mobile-and-fixed-filtration-units/

DELTAFLUID FLORENCE MOBILE FILTRATION UNITS

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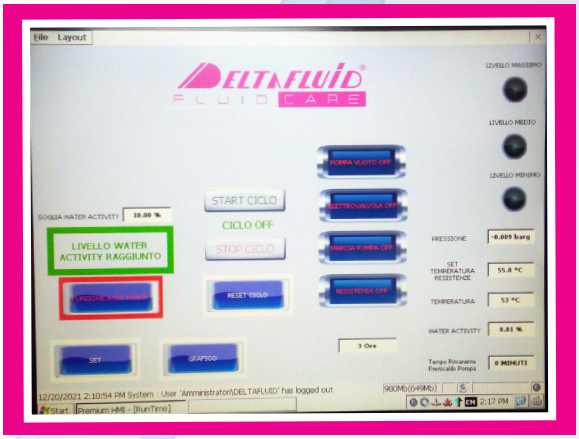
SIZE AND TECHNOLOGY PRINCIPLE

SIZES

The OPD series purifier is available in three standard sizes

- **OPD 15** · Q=15L/min.
- **OPD 30** · Q=30L/min.
- **OPD 70** · Q=70L/min.

The indicated flow rates refer to mineral oil ISOVG32 @ 50°C



TECHNOLOGY PRINCIPLE

- The OPD series purifiers are fully automatic systems, controlled by PLC; the units are compact in their construction to make them easy to use even in the most restricted conditions.

- The humidity sensor permanently monitors the activity of the water within the oil saturation point.

- The purifier can be set for two working modes: continuous; or upon achievement of the desired threshold measured in% RH of water in saturation, e.g .: The machine is put into operation when the presence of water in the oil exceeds 100% of oil saturation (e.9.: 300ppm) the purifier it will deactivate when a set value of is reached % RH of reference, e.g. 10% of water in saturation)

- The screen control mode constantly monitors the operation of the machine and the performance graph displays the three working parameters in real time: Temperature in °C, presence of water in the oil as% RH and vacuum pump working pressure in bar.

- The filter drier adsorbs the humidity entering the vacuum chamber, significantly increasing the separation efficiency of the purifier even in very humid environments.

- Silica Gel adsorbs the humidity of the air entering the vacuum tower dehydrating it up to 97o/o ol the inlet value, the air entering the vacuum tower undergoes a subsequent expansion which further decreases its moisture content and consequently it increases its ability to extract moisture from the counter-current oil flow.

- Once its adsorbing capacity (from orange to green) has been exhausted, the silica gel can be easily removed and replaced by the new charge while the temperature regeneration of the exhausted charge is carried out.

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DESCRIPTION OF THE FILTRATION UNIT AND OPERATING PRINCIPLE

The purification unit consist in the following components:

- ***N° 1 Support frame with wheels***
- ***N° 1 vacuum pump***
- ***N° 1 heater***
- ***N° 1 motor pump unit including a maximum pressure valve for releasing the oil.***
- ***One or more oil filters consisting of housing and filtering element***
- ***N° 1 electrical command and control panel of the unit with interface touch panel***
- ***Suction and delivery pipes for connecting the filtration unit to the circuit to be purified.***
- ***A series of tools for pressure control and oil cleaning that may vary depending on the model.***

Attention: the filter elements are not included in the filtration unit, as they must be identified from time to time based on the specific characteristics of the system to be purified.

OPERATING PRINCIPLE

The vacuum pump, driven by an alternating current motor, generates the vacuum in the boiling chamber. The oil, thanks to the vacuum, flows from the INLET connection into the boiling chamber passing through the heater. In the boiling chamber, due to the particular vacuum and temperature conditions, the water contained in the oil, both in free and dissolved form, evaporates and is extracted through the pipeline leading to the vacuum pump. Before reaching the exhaust, the humid air extracted from the vacuum chamber is passed through some special filters that trap any oil mist and bad smells. Upon reaching the maximum level inside the boiling chamber, the oil is sent to the OUTLET connection for re-entry into the original hydraulic circuit, after passing through a filter for fine cleaning. The unit is equipped with a man-machine interface created via a touch screen through which it is possible to start and stop the purification cycle, choose whether to let the machine work continuously or whether to switch it off when a water dissolved in oil threshold is reached. Can be set as desired by the user; moreover, through a graph, it is possible to view the trend of pressure, temperature and percentage of water activity over time. It is possible to download the data on a USB stick through a special USB port on the front panel under the touch screen.

DESIGN DATA OF THE FILTRATION UNIT, DIMENSIONS AND WEIGHT

- ***Type of installation: internal***
- ***Atmosphere: industrial***
- ***Ambient temperature (min/max): -10 / +40° C***
- ***Humidity: 90%***
- ***Altitude: <1000 above sea level***
- ***Installation area classification:***
  Safe area: the filtration unit cannot be used in a potentially explosive atmosphere.
- ***Volume of oil for filling the circuit: about 40 liters***
- ***Viscosity range: 12 - 320 mm2 / sec***
- ***Nominal flow rate: from 600 to 1200 l / h based on the viscosity conditions of the treated oil***
- ***Design pressure PS min / max: -1 / 5 barg***
- ***Min / max design temperature TS: (0 / +80)° C***
- ***Power supply: 400 - 460V 50/60Hz 3Ph 16A***
- ***Vacuum purification unit weight: 450 Kg***
- ***Filtration unit dimensions: LxHxP 1000x1800x1250 mm***
- ***Options : INDUSTRIAL (Pulp&Paper , Primary metals), OIL & GAS, MARINE , special products available.***

DELTAFLUID reserves the right to change details without prior notice

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