

## Crude Oil Dewatering CWD-OTS

Flow capacity: 10 m<sup>3</sup>/h to 100 m<sup>3</sup>/h

### 1. Brief description

**Safe, fully automatic separation of waters and salts from crude oils**

- Used upstream, midstream and downstream
- Fully automatic operation possible
- Mature technology and sturdy design
- High operational safety
- Little space required thanks to compact design
- Residual water content down to less than 0.1 %
- Low operating costs
- No chemicals
- Low maintenance requirement
- Service-friendly and easy to use
- Global sales and service network in place

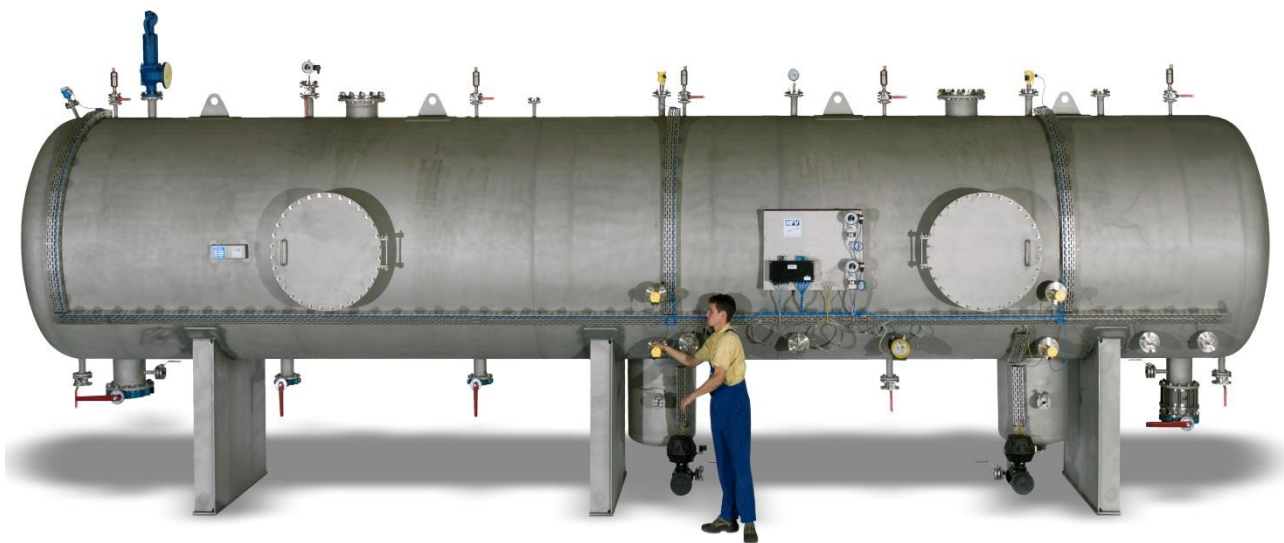


Illustration shows:  
CWD-OTS-S3-100 three-stage

## 2. Function

The patented crude oil dewatering system CWD-OTS is used to separate water from different types of crude oils. CWD dewatering systems can be adapted to different areas of application and requirements by combining individual separation elements. This separation is achieved gradually in up to three pressure tanks set up separately.

### 1st stage: Multi-Phase Separation MPS

The “multi-phases” (oil, water, solids) are separated in the first stage: the oil is pumped through the MPS profiles. As it passes through the inlet, the oil is swirled onto the MPS profiles and the small water droplets merge to form larger droplets. These are bound by the gravitational and adhesion forces of the profiles and directed downwards into the water collecting area. The solids slide down the profiles into the sludge holding tank.

### 2nd stage: Mechanical Emulsion and Foam Breaker MESB

The fine water droplets are separated in the second stage: the oil flows through a micro-fibre bed where small water droplets merge to form large drops which flow downwards into the water collecting area.

### 3rd stage: Membrane Filtration

In the third stage the oil flows through a water-repellent membrane which dependably retains the last remaining water droplets.

## 3. Purpose

Medium:	Dewatering of crude oil
Viscosity:	max.332 cST (at 20 °C)
API:	≥ 22
Water content inlet:	max. 20 % – 50 %
Water content outlet:	Down to ≤ 0.1 %
Salt content outlet:	Dependent on the salts suspended in the crude oil

## 4. Operating parameters

CWD-OTS-type	CWD-OTS-10	CWD-OTS-20	CWD-OTS-50	CWD-OTS-100
Flow capacity <sup>1</sup> [m³/h]	10	20	50	100
Ambient temperature <sup>2</sup> [°C]	min. 2 - max. 50			
Operating temperature <sup>3</sup> [°C]	min. 10 - max. 60			
Operating pressure [bar]	min. 0.7 - max. 6.0			
Pressure loss [bar]	max. 2.2			

## 5. Technical data – tank

Design pressure [bar]	6
Design temperature [°C]	80
Design code	PED – AD2000
Fluid group	1
Material	Steel
Corrosion allowance [mm]	1

5.2 Steel structure finishing	
Outside of tank:	Sand-blasted SA 2½, coated – EN ISO 12944-5 C3-m
Inside of tank:	Sand-blasted SA 2½, coated according to customer requirements
Colour:	RAL 5019

<sup>1</sup> Flow capacities can be adapted

<sup>2</sup> System heating available as an option

<sup>3</sup> Depending on crude oil viscosity

## 6. Dimensions and main connections

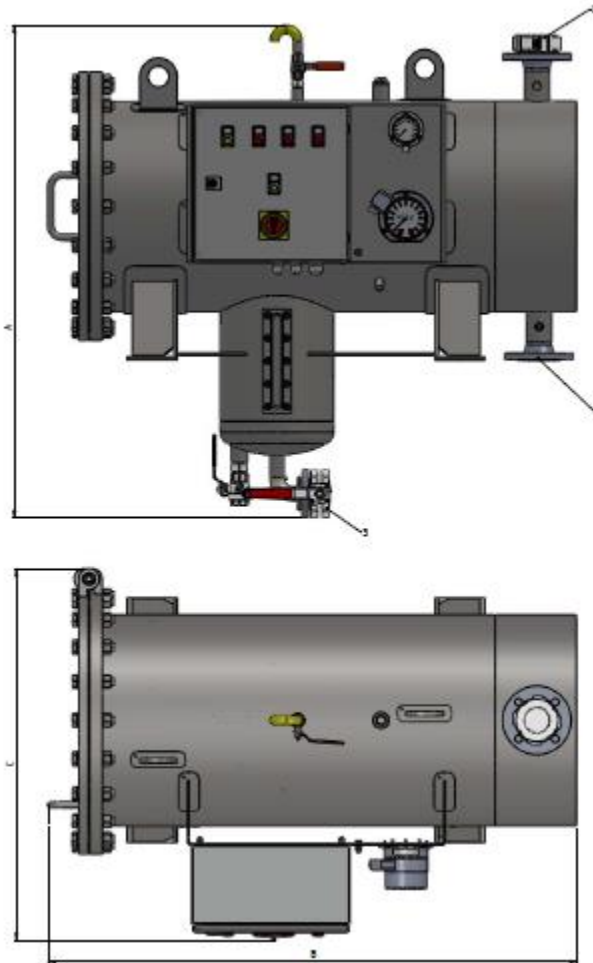


Illustration shows:  
CWD-OTS-10 one-stage

	Height A [mm]	Length B [mm]	Width C [mm]	1 [Inlet]	2 [Outlet]	3 [Water outlet]
Single stage design						
<b>CWD-OTS-10</b>	3000	3500	1000	DN 50	DN 50	DN 20
<b>CWD-OTS-20</b>	3000	4000	1300	DN 80	DN 80	DN 50
<b>CWD-OTS-50</b>	3500	5000	1800	DN 100	DN 100	DN 50
<b>CWD-OTS-100</b>	4000	7500	2400	DN 150	DN 150	DN 80

## 7. Features

CWD-OTS-type	CWD-OTS-10	CWD-OTS-20	CWD-OTS-50	CWD-OTS-100
Pressure tank	X	X	X	X
1 x set valve fittings	Option	Option	Option	Option
1 x set MSR	Option	Option	Option	Option
Pump	Option	Option	Option	Option
Switch cabinet	Option	Option	Option	Option
Heaters	Option	Option	Option	Option

X = Standard

Option = Optionally available

## 8. Documentation

- Installation instructions
- Operating manual
- Maintenance instructions
- Spare parts list
- Declaration of conformity

## 9. Additional options

Deviating design, materials (NACE MR-0175, 1.4571), design code (ASME), special coatings, special inner coating, switch cabinet design, EX protection and many other options available on request.

We recommend Filtration Group MESB separators for the subsequent deoiling of the separated water.