

# HIGH PRESSURE COOLING WITH ADDED FILTER

## VCH50/10

For cooling of tools when cutting metals, with outer rinsing and inner centric flushing.  
 It serves as filtration of working fluids, size of dirt  $\leq 40 \mu\text{m}$ .  
 Possible application when cutting steel, aluminium, titanium and copper.

### PHOTO OF MACHINERY:



### ENGINEERING CHARACTERISTICS:

- Automatic generator sets make possible working without supervision.
- Outer cooling with rinsing of the tool 1,5 kW:  
 $Q_{\text{max}}=60 \text{ l/min}$ , 40 l/min – pressure  $p=10 \text{ bar}$ .
- Internal cooling through the centre of the tool 7,5 kW:  
 $Q_{\text{max}}=60 \text{ l/min}$ , 40 l/min – pressure  $p=47 \text{ bar}$ .
- Stainless automatic candle filter for separation of suspended solids from working fluids, flow rate to 100 l/min at 8 bar, filtration  $\leq 40 \mu\text{m}$ . It is useful first for the filtration of water mixed liquids or cutting oils with a viscosity up to 13 mm<sup>2</sup>/s at 20°C.
- Full automatic working of the equipment, electronic scanning of fluid levels.
- Air operated electric controlled exit servo valves that control exit cooling under the pressure as much 50 bar as well.
- Communication interface with working machine, commands to pumps, alarm, breakdown of machinery.

STANDARD ENGINEERING SPECIFICATION	EMULSION LIQUID	CUTTING OIL 13 mm <sup>2</sup> /s
INPUT OF STANDARD MACHINERY	13 kVA / 415 V, 50 Hz	13 kVA / 415 V, 50 Hz
SIZE OF MACHINERY (width/depth/height)	1,8 m / 0,65 m / 1,25 m	1,8 m / 0,65 m / 1,75 m
WEIGHT OF MACHINERY (empty/with filling)	400 kg / 750 kg	400 kg / 800 kg
AUTOMATIC CANDLE FILTER $\leq 40 \mu\text{m}$	to 100 l/min at 8 bar	to 65 l/min at 6 bar
OUTER COOLING PUMP 1,5 kW: $Q_{\text{max}}=60 \text{ l/min}$	40 l/min, pressure $p=10 \text{ bar}$	30 l/min, pressure $p=10 \text{ bar}$
INNER COOLING PUMP 7,5 kW: $Q_{\text{max}}=60 \text{ l/min}$	40 l/min, pressure $p=47 \text{ bar}$	30 l/min, pressure $p=37 \text{ bar}$
TANK FOR CONTAMINATED FLUID	$V=\text{max.}100 \text{ l}$	$V=\text{max.}100 \text{ l}$
TANK FOR REFILTERED FLUID	$V=\text{max.}150 \text{ l}$	$V=\text{max.}150 \text{ l}$
SERVO VALVES (4 pcs)	10 bar / 50 bar / 50 bar / 50 bar	10 bar / 40 bar / 40 bar / 40 bar

## ENGINEERING CHARACTERISTICS OF MACHINERY:

- Electric input of standard machinery 13 kVA, 400 V, 50 Hz.
- Pressure air connection 5-8 bar.
- Outer cooling pump of the tool 1,5 kW:  $Q_{max}=60$  l/min, 40 l/min, pressure  $p=10$  bar.
- Inner cooling pump of the tool 7,5 kW:  $Q_{max}=60$  l/min, 40 l/min, pressure  $p=47$  bar.
- Automatic candle filter for separation of suspended solids from working fluids, flow rate up to 100 l/min at 8 bar.

## SIZE OF MACHINERY:

- The machinery is adjusted for pallet truck transport.
- Size of machinery width 1 800 mm, depth 650 mm, height 1 250 mm.
- Tank for contaminated fluid volume  $V=100$  l.
- Tank for refiltrated fluid volume  $V=150$  l.

## MACHINERY DESCRIPTION:

- The contaminated fluid comes owing to gravity flow from the working machine or it is repumped by means of the pump into the tank for contaminated fluid with added filter. The added filter is located behind the machine, in case of repumping it can be located as far as 8 meter from the working machine.
- From here the contaminated fluid is repumped by means of the filter pump into the automatic filter where the fluid is filtered at  $40\ \mu\text{m}$ . The automatic candle filter is for the separation of suspended solids from working fluids with possible filtration of light and nonmagnetic metals.
- From here the refiltered fluid is transported into the tank with clear fluid. The dirt is automatically flushed from the filter into the sedimentation sludge tank with down flow.
- From the clear fluid tank the high pressure pumps transport the necessary quantity and pressure to the working machine for outer cooling of the tool by means of rinsing and for inner cooling through the centre of the tool. The pumps are controlled by servo valves. They are equipped with controlling interface for the working machine.

## MACHINERY ADVANTAGES:

- Filtration of mineral oils and synthetic fluids.
- High pressure pump with frequency converter and stress gauge of gained pressure.
- Volume and form of the tank can be solved on demand of the customer.
- The colour version can be delivered in RAL colour shades on demand. The standard version is in the shade in according to RAL 7043.
- Possible filtration of light and non magnetic metals.
- Automatic operating with minimal demands on the maintenance. The stable filtration ability is reached by means of an automatic filter with its regeneration.
- Minimal oil separation from emulsion.