AWOS 01

ADT WASH OUT SYSTEM

OPERATING INSTRUCTIONS 2022

C:\MANUAL\AWOS

1. Technical data

Power supply voltage	3 phase 400 VAC (or on demand)
Power supply frequency	50 Hz (60 Hz)
Power consumption:	400W
Oil throughput	ca 10 m^3 per day maximum
Outlet filtering grade	1 µm (or on demand)
Filtering capacity for wash out	25 columns without replacement of internal filter cartridge
Installation options	permanently installed
Dry weight (without oil)	97,5 kg
Operating weight (oil filled)	145 kg, maximum
Dimensions	1250 x 500 x 1400 (mm)

Operational condition:

Max. surroundings temperature: 50^{o}C

2. Introduction

The flow diagram of AWOS is shown in Fig.1 .

The new filling of molecular sieve 3A of a column always contains a lot of dust which has to be removed to avoid a contamination of oil inventory of a transformer.

The repeated washing-out of the dust particles represents here a most effective solution.

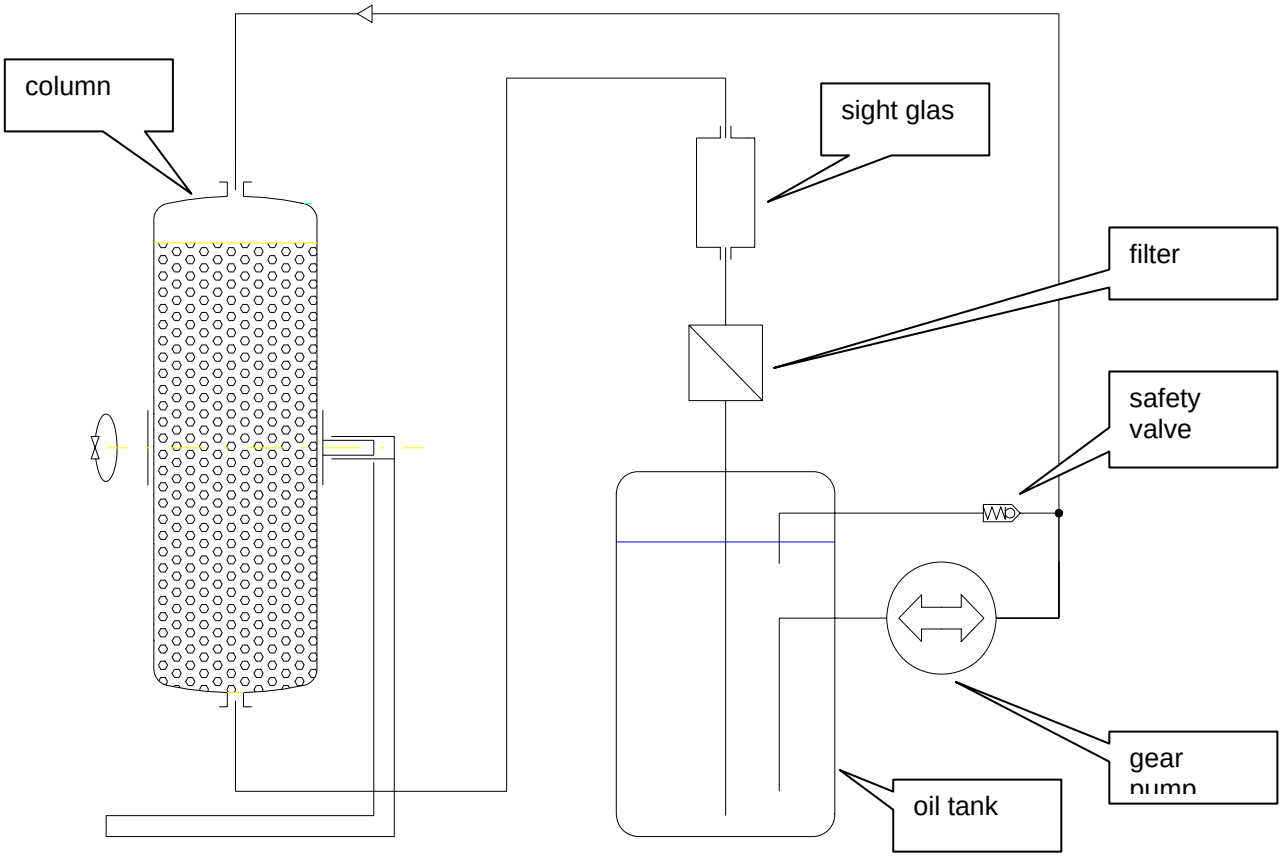

Fig.1. AWOS Flow Diagram

The column is fixed into revolvable holder and its upper and bottom part is connected to washing system via two flexible hoses enabling its 180 grad rotation of the column.

The washing oil is pumped via gear pump into upper part of the column and dust contaminated oil from its bottom flows via sight glas and filter back into oil tank. The oil pressure at gear pump output should not exceed ca 4 bar .

The effectivity of washing process can be visually followed. If intial opaque color of the oil disappears the gear pump is shut down, the column is 180 grad rotated, the pump is switched ON again.

This process should be repeated again and again till the oil remains clear. A sudden increase of oil pressure within washing process usually indicates a clogging of the filter: its replacement is then necessary.

The layout of AWOS basic parts is shown in Fig 2.

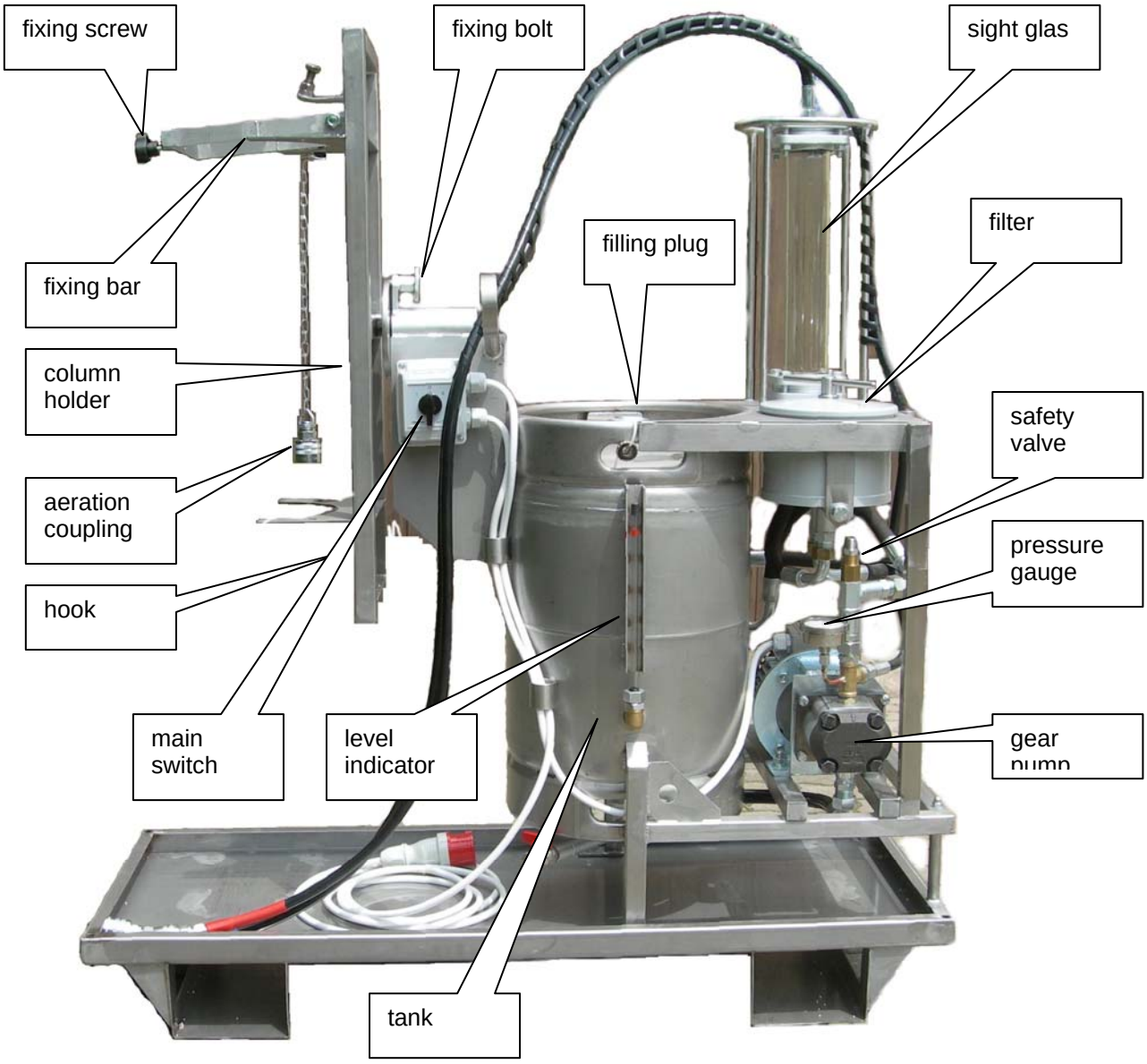

Fig. 2 Layout of AWOS components

3 . Installation & Commissioning

- situate „dirty“ column in proper position (the S/N number of column should be up) at the hook of the holder and fix it by fixing bar and fixing screw
- interconnect the upper part of the column via quick-coupling (marked by blue band at the end) with oil system of AWOS
- interconnect the bottom part of the column via quick-coupling (marked by red band at the end) with oil system of AWOS
- connect cable to power supply
- switch the main switch ON (position 1)

- check proper revolution direction of the gear pump (marked by arrow at the fan of motor)

- if the revolution direction is oposite, switch the main switch OFF and change the phase sequence in the supply connector

Never operate AWOS without hydraulically interconnected column

- screw off the plug situated in upper part of the tank and fulfill the tank with oil : the oil level should be over marked (red) position at level indicator .

- close the plug of the tank

Attention

both quick-couplings have to be properly tightened

to ensure hydraulical interconnection of the column with hydraulic system of AWOS

very necessary to avoid overpressure

4. Wash out procedure

- yellow milky colour of oil indicates the removal of particles from the column and their subsequent deposition into the filter cartridge

- wait till sight glas is fulffiled with oil and follow the colour of the oil in the sight glas ():
- yellow milky colour of oil indicates the removal of particles from the column and their subsequent deposition into the filter cartridge
- wait untill the oil becomes clear
- loose the fixing bolt of the holder and revolve the holder anticlockwise (180 deg left)
- fix the position of column via fixing bolt

- wait till the oil becomes clear
- loose the fixing bolt of the holder and revolve the holder clockwise (180 deg back)
- wait till the oil becomes clear
- repeat the whole procedure three times, minimum, untill all dirt from column is deposited into filter
- switch the main switch OFF (middle position)
- disconnect upper quick-coupling () and connect aeration coupling

- switch the main switch in Reverse (position 2), wait till the oil from the column is deposited back in the main tank - the pressure gauge () indicates this via substantial decrease of pressure
- switch the main switch OFF (position 0) and wait ca 5 minutes to enable the oil discharge via gravity into bottom part of the column
- switch the main switch in Reverse (position 2) and repeat this removal procedure three times, minimum
- check the oil level at the level indicator : if substantially under red mark, the oil inventory in main tank has to be replenished
- remove the clean column from the holder and install new „dirty“ column

4. Replacement of filter cartridge

- switch the main switch OFF (position 0)

- disconnect upper quick-coupling
- wait ca 3 minutes
- revolve lever of filter anticlockwise
- remove the lid of the filter and pull the filter cartridge out
- insert new cartridge and assemble the flilter in opposite sequence