

## **Description of the Stream-Line** **Model C2000 – Fully Mobile Version**

The Vokes Stream-line C range type of filter plant is the most advanced of the Stream-line range of insulating oil treatment plant available. Utilising increased efficiency vacuum enclosures to improve the dehydration of the insulating oil and to remove virtually all contaminants from the oil, including solid impurities and dissolved gases, in one pass through the filter unit.

With a filter cartridge performance of 98.7% of particles larger than 1 micron, and a considerable proportion of those smaller, the disposable cartridge can be viewed as a high efficiency filter.

Heated and filtered oil enters the high efficiency vacuum enclosure, where uniform distribution of fine droplets, allows maximum effect of the vacuum system to dehydrate the oil. Moisture content reducing from 50ppm down to 5ppm and the gas content from 10% down to 0.25% by volume on a single pass through the oil treatment plant. A window is sited in the vacuum chamber wall to allow visual inspection of the spray. Optical level sensors are positioned in the upper section of the chamber to sense high and emergency high levels of foam and oil.

Successful treatment of the insulating oil is dependent on the temperature of the oil. The 'C' range Stream-line has electric heating rated at 50kW to give a 50°C temperature rise. Control of the temperature is through a digital controller with set point adjustable by the operator at the operating position.

The control and indication equipment is mounted in a cabinet at the rear of the plant, positioned for ease of operation. Mains power is supplied via an isolator to the heaters, pumps and 110 volt transformer. The transformer supplies the running lights and control circuits for the motor starters.

## Stream-Line C2000 Specification

Flow rate (nominal)	2000 litre/hour
Model type	Fully Mobile
Electrical specification	415 Volts / 3 Phase / 50Hz
Total power requirement	54.5 kW
Oil inlet & outlet Connection	1" BSP male
Cartridge type filtration	98.7% efficiency @ 1 micron
Vacuum performance	0.4 torr in vacuum chamber
Vacuum capacity	100 m <sup>3</sup> /hr Vacuum pump
Heater	50 kW

<b>Dimensions (mm)</b>	<b>Length</b>	<b>Width</b>	<b>Height</b>
	2050 over canopy 3300 to hitch	1350 over canopy 1750 over wheels	2100 ground to canopy

**Weight** to be advised

<b>Performance</b>	<b>Single pass</b>	<b>Triple pass</b>
Moisture : 50ppm inlet	5ppm	3ppm
Gas : 10% by vol. inlet	0.25% by vol.	0.1% by vol.

### **Features Included**

- Easy to use mimic diagram.
- Cartridge differential pressure alarm
- Over temperature alarm
- Inspection window in vacuum vessel
- Dirty & clean oil sampling points
- Failsafe devices:
  - Flow switch for low flow shut down
  - Emergency high level sensor for foam & liquid level sensing

**Trailer system** : EEC overrun inertia brake system, rubber type suspension, mechanical park brake, jockey wheel to drawbar, and 50mm tow ball set. Complete with lighting to UK road regulations. Suitable for speeds up to 80km/h on normal paved roads.

**Weatherproof canopy** : Steel construction with hinged & removable panels for operational & maintenance access. Top corner lifting points allow easy lifting of the gross weight.

**Coarse inlet strainer** ; to protect the dirty oil inlet pump.

**Dirty oil inlet pump** : for maintaining constant oil delivery to the system.

**Heater** : Rated at 50 kW and switched in two stages. Providing even heating of the oil at 0.38 watts/cm<sup>2</sup>. Elements can be removed for servicing without draining the unit.

**Flow switch** : to action a safe shut down of the plant, during a low or zero flow event.

**Filter vessel** : containing the disposable filter cartridges.

**Filter vessel air vent** : for use during a filter change.

**Filter vessel drain** : for draining filter prior to a filter change.

**Vacuum vessel** : fitted with a series of spray nozzles on a central manifold. Uniform distribution of fine droplets allows maximum effect of the vacuum system to dehydrate the oil and remove gases.

**Air admittance valves** : will normally open to break system vacuum when vacuum pumps stop. Can be opened during operation by the operator to change the vacuum/heat effect on the oil when severe foaming of the oil occurs.

**High level sensor** : an optical level sensor which in the event of high foam or oil levels will initiate opening of the air admittance valves.

**Emergency high level sensor** : an optical level sensor which in the event of high foam or oil levels will initiate safe shut down of the filter plant.

**Vacuum pump set** : a pump set comprising a oil flooded rotary vane vacuum pump 100m<sup>3</sup>/h generally providing 0.5 torr in the vacuum chamber.

**Clean oil pump** : is a low nett positive suction head centrifugal type pump, delivering a 22m (70ft) head, (30 psig) at the outlet point of the plant.

**Re-circulating valve** : for adjustment between re-circulation of oil to full flow condition when oil is at the required temperature.

**Non return valves** : to avoid oil flowing back into the plant after shut down occurs.

**Electrical controls** : complete set of motor and heater contained in an enclosure close to the operation valves for operator ease. A set of operating instructions is set alongside a mimic diagram of the plant on the enclosure.

**Gauge panel** : comprising vacuum gauge, differential pressure gauge & switch.