GlobeCore

™ Transformer oil purification systems

Manufacturing facility at Poltava, Ukraine

Globecore company was established in 1995 and now is one of the the leading manufacturers of equipment for transformer oil purification and reclamation.

With Germany Head office and Ukraine manufacturing facilities, Globecore has expanded its subsidiaries and dealer network throughout the world.

Our quality managements system has been certified in compliance with ISO9001. The company has numerous operating facilities and keeps over 200 highly qualified workers, engineers and employees on its payroll.

The equipment produced by the company boasts up-to-date design and high performance due to recent developments of the experienced engineering staff.

Our primary business areas are:

- Design and production of equipment for transformer oil purification and reclamation on a worldwide basis.
- Design and production of equipment for industrial oil filtration (diesel oil, turbine oil, lubrication oil).
- Servicing of existing equipment and sale of spare parts worldwide.
- Development and efficiency improvement of purification and reclamation equipment for the energy industry and related industries.

BENEFITS OF GLOBECORE OIL PURIFICATION SYSTEM

Reduced Down Time For Maintenance of Electrical Equipment

Extends The Life of Oil and Transformer by Rejuvenation of Insulation Oil.

Highly Cost Effective

Superior Quality

Advanced Design

TRANSFORMER OIL

All high capacity transformers in use today have to cope with voltage in excess of 400 kV. Therefore it becomes imperative to maintain optimal insulation properties of the transformer oil by rigid control over moisture, dissolved gases and particulate contamination. Transformer oil is in an environment that leads to degradation in its desired properties and even in a proactive maintenance program, transformer oil will lose its insulation and cooling properties over a period of time. The rating requirements and drive to tighter tolerances of modern transformers and electrical apparatus results in greater electrical stress in insulating material and fluids. To handle these stresses, oils are required to have better dielectric strength, and also lower residual water content must be maintained to reduce the speed of oil ageing. The periodic and proper treatment of these insulating fluids will result in the improvement of properties of the entire insulating system of power transformers and will extend the effective lifetime of the asset.

FUNCTION OF OIL IN ELECTRICAL EQUIPMENT

- Used as cooling media
- Used as dielectric media
- To isolate winding from atmosphere
- To quench the arc

CONTAMINANTS OF OIL

- Solid particles like rust, scale, dust and fibers
- Generation of carbon particles due to ageing in switchgears
- Oil absorbs moisture resulting in free and dissolved water
- Absorption of air
- Absorption of gases
- Sludge formation
- Increase in acidity level

EFFECTS OF CONTAMINANTS IN OIL

PHYSICAL	CHEMICAL	ELECTRICAL
• Colour not clear, turbid, hazy • Low interfacial tension • Decrease in flash point • Change in density	• Increase in neutralization value	• Low dielectric strength • Low resistivity • Increase in ταη Δ value.

STANDARD MACHINES

CMM-0.16

CMM-1.0

CMM-2.2

The *GlobeCore*™ oil purification plants type CMM are especially designed for the processing (degassing, dehydration, filtration) of transformer insulating and switch oil.

Technical Data of Standard Purification Plants:

Product type	CMM-0.16	CMM-0.6	CMM-1.0	CMM-2.2	CMM-4.0
Flow capacity (LPH)	160	600	1000	2200	4000
Operation vacuum (mbar)	≤120				
Nominal suction capacity of Vacuum pump (m^3/h)	15	24	25	72	100
Output pressure (bar)	2.5	2.5	2.5	2.5	2.5
Heating capacity (kW)	4.6	15	24	36	54
Total power (kW)	5.8	18	29	42	63
Supply Voltage	as required				
Electric equipment	as per IEC standards				
Dimensions (mm)	980x650x1150	1400x700x1700	1360x800x1800	1500x1050x1700	1650x1250x1600
Weight (kg)	230	330	520	750	900

Filtration finesse: **1µm, 2µm or 5µm**
Oil temperature: **50-70°C**

Guaranteed Data of Processed Oil:

Initial Value of insulating oil:

- Residual water content: **≤50ppm**
- Residual gas content: **≤12 Vol.%**

After 1 pass:

- Residual water content: **≤10ppm**
- Residual gas content: **≤1.5 Vol.%**

After 3 passes:

- Residual water content: **≤5ppm**
- Residual gas content: **≤1.0 Vol.%**

HIGH-EFFICIENCY MACHINES

CMM-4.0A

CMM-6.0

CMM-10.0

Flow Capacity: 4 000 – 10 000 l/h

Technical Data of High-Efficiency Oil Purification Plants:

Product type	CMM-4A	CMM-6.0	CMM-10.0
Flow capacity (LPH)	4 000	6 000	10 000
Operation vacuum (mbar)	≤1		
Nominal suction capacity of Vacuum pump (m³/h)	280	1800	2000
Output pressure (bar)	3	3	4
Heating capacity (kW)	50	125	150
Total power (kW)	58	175	180
Supply Voltage	as required		
Electric equipment	as per IEC standards		
Dimensions (mm)	1500x1500x2000	2600x2100x2150	3500x2250x2250
Weight (kg)	1000	2500	2700

Filtration finesse: **1µm, 2µm or 5µm**
Operating oil temperature: **50-80°C**

Guaranteed Data of Processed Oil:

Initial Value of insulating oil:

- Residual water content: **≤50ppm**
- Residual gas content: **≤12 Vol.%**

After 1 pass:

- Residual water content: **≤5ppm**
- Residual gas content: **≤0.1 Vol.%**

Transformer evacuation:

- Suction capacity: **280-2000 m³/h**
- Ultimate vacuum: **5x10⁻² mbar**

Purification of oil in transformers can be carried out off-load or on-load depending on customer's preference. For purification of oil in the field, a mobile type purification plant, mounted on a roadworthy trailer is recommended.

OIL RECLAMATION SYSTEMS CMM-R series

200 l/h Regeneration Plant

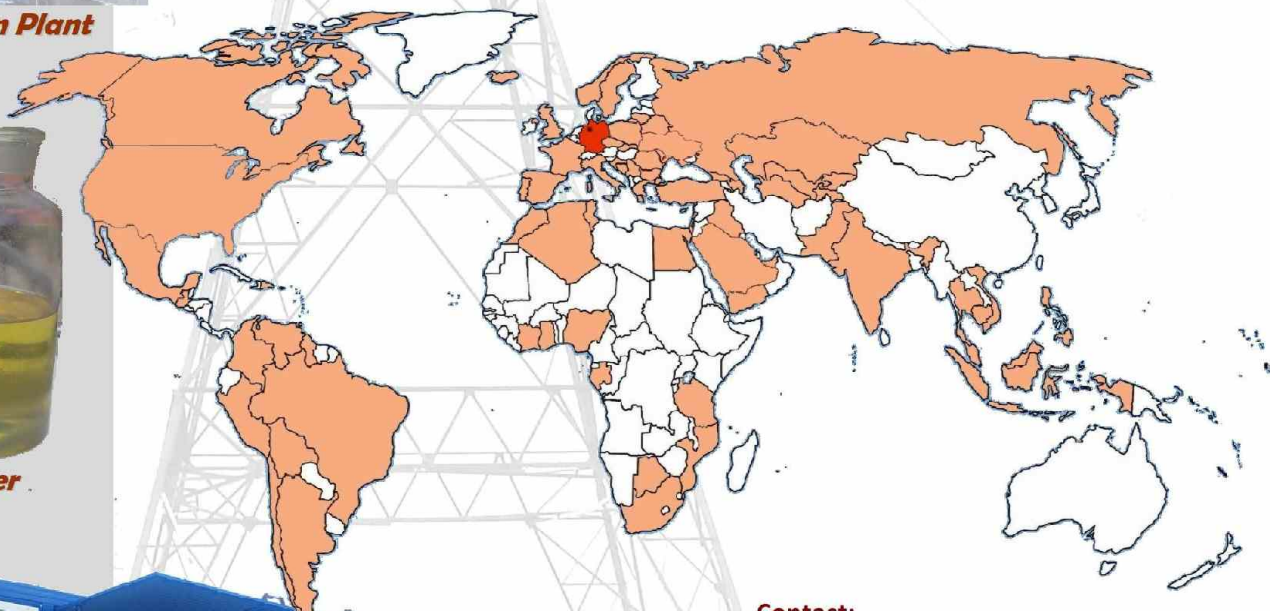
Comparing to older technology where Fuller's Earth is used only once and then must be disposed together with oil and harmful contaminants, **Globecore CMM-R** plants utilize the principle of sorbent (Fullers Earth) reactivation and have a number of unique features:.

- The moisture in the oil is reduced to below 10 ppm.
- The acidity is reduced to less than 0,01 mg KOH/g oil.
- The dielectric strength is improved to better than 70 kV.
- The Tan Delta (loss tangent) of the oil is improved to equal or less than 0,001.
- Sludges dissolved or in suspension in the oil as well as sludge deposits are removed.
- Extend transformers lifecycle by 25 to 30 years
- The oxidation stability of the oil is restored to equal that of new oil.
- The colour of the oil is restored.
- The dielectric strength of the solid insulation is improved.
- Degradation of the solid insulation has been halted

4000 l/h Regeneration Plant

Before After

Globecore worldwide sales (2014)



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