



MINERAL INSULATING OIL TREATMENT

VEX Built for field operation.

Multi-stage filtration, controlled heating, vacuum dehydration and degassing for transformer mineral insulating oil.



VEX v1 - actual field operation. Photographs are from the existing equipment.

12,000 L/h

Nominal single-pass oil flow

180 m³/h

Vacuum pump catalogue speed

2 versions

Shared treatment platform

VEX v1

Approximately 15 years of field operation, with regular upgrades and systematic maintenance.



VEX v2

Newly built using V1 experience. Internally QC-tested and ready for deployment or sale.

Equipment supply, custom configurations and transformer maintenance services. Treatment normally involves repeated passes until the agreed oil-quality criteria are met.

PRELIMINARY TECHNICAL INFORMATION

Final scope and acceptance criteria are agreed for each supplied configuration.



SHARED PLATFORM

Nominal specifications

Oil-treatment flow	12,000 L/h through the full treatment system, bypass closed
Vacuum pump	ULVAC PKS-030, installed in both versions
Catalogue pumping speed	180 m ³ /h (3,000 L/min); pump rating, not chamber pressure
Oil-pump motors	2 x MOTOGEN 132M4A; 5.5 kW mechanical output each
Oil-pump connections	2 inches; declared oil flow 12,000 L/h
Installed heating	12 x 11 kW = 132 kW; independently controlled heaters
Electrical supply	Three phases + neutral; 380 V line-to-line, approx. 220 V phase-to-neutral
Operating temperature	Up to 70°C, with controlled heating
Filtration	Washable metal mesh and 7-micron paper filter; 5- or 3-micron options
Dimensions / weight	Approx. L 220 x W 160 x H 220 cm / 3 tonnes
Base controls	Industrial control panel; manual/automatic heater control; critical-temperature heater shutdown
Custom options	HMI, IoT/IloT, application-specific configuration and operator training

Installed capacity and power draw. The 132 kW heater total is installed capacity, not a stated simultaneous electrical demand. Fewer heaters may be used when site power is limited; treatment time depends on operating conditions.

Configuration confirmation. Working chamber pressure, simultaneous electrical demand, supply protection, oil-pump head/curve, filter-grade basis, transport weight and lifting arrangements are confirmed for the delivered configuration.



PROJECT EVIDENCE AND DELIVERY

Engineering with traceable context

Selected VEX v1 post-treatment laboratory results

8-13 mg/kg

Water content

60-67 kV

Breakdown voltage

Eight supplied post-treatment samples were assessed as Good for water content and breakdown voltage by the reporting laboratory. These are selected V1 project results; no paired pre-treatment results are included. Gas analysis is separate: one sample was classified IEEE Status 2, with six-month follow-up recommended.

Results are not universal performance guarantees. VEX v2 has internal QC testing; the supplied field laboratory reports relate to VEX v1.

Transformer and substation services

Oil treatment and circulation; transformer inspection, maintenance and overhaul; project quality control, equipment inspection, safety review and final testing.

Declared service scope includes 20 / 63 / 132 / 230 / 400 kV and transformer ratings up to 500 MVA, subject to project-specific assessment. This service scope is not a documented 500 MVA reference project in the supplied records.

Online treatment is assessed for the individual transformer and site. Transformer-tank evacuation requires a separate review of mechanical capability and operating conditions. Treatment-chamber vacuum does not establish tank operating pressure.

Discuss equipment supply or a field project

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Source basis: owner-confirmed equipment information, motor nameplate, ULVAC PKS catalogue and eight selected V1 laboratory samples. Project-specific delivery and acceptance documentation accompanies the agreed scope.

[Vacuum pump manufacturer reference](#)