

SPECIFICATION

Rotary vane pump

1. Scope

This Specification describes the requirements for a rotary vane pump (hereinafter referred as the “Pump”).

The Pump shall be supplied, under International Atomic Energy Agency’s (IAEA) Technical Cooperation project BUL0011, to the Institute of Organic Chemistry, Centre of Phytochemistry, Bulgarian Academy of Sciences, Sofia, Bulgaria (hereinafter referred as the “End-User”), which deals with the age determination of archaeological finds, based on radiocarbon method.

2. Requirements

2.1. Functional and Performance Requirements

The Pump shall meet the following functional and performance requirements:

- 2.1.1. The Pump shall be a two-stage pump;
 - 2.1.2. Max. pumping speed at 50/60 Hz: 2.3 / 2.8 m³/h respectively;
 - 2.1.3. Max. pumping speed at 50/60 Hz cfm: 1.4 / 1.6 respectively;
 - 2.1.4. Ultimate partial vacuum (abs.): 4 x 10⁻⁴ mbar;
 - 2.1.5. Ultimate vacuum (abs.): 2 x 10⁻³ / 1.5 x 10⁻³ mbar/torr;
 - 2.1.6. Ultimate vacuum (abs.) with gas ballast: 1 x 10⁻² / 0.75 x 10⁻² mbar/torr;
 - 2.1.7. Water vapor tolerance with gas ballast 40 mbar;
 - 2.1.8. Ambient temperature range (operation): 12 - 40°C;
 - 2.1.9. Ambient temperature range (storage): 10 - 60°C;
 - 2.1.10. Oil capacity (B-Oil) min./max. 10.1 / 0.28;
 - 2.1.11. Max. back pressure (abs.) 1.1 bar;
 - 2.1.12. Inlet connection Small flange KF DN 16 / hose nozzle DN 10 mm;
 - 2.1.13. Outlet connection Hose nozzle DN 8-10 mm;
 - 2.1.14. Rated motor power 0.18 kW;
 - 2.1.15. Rated motor speed at 50/60 Hz 1500/1800 min⁻¹;
 - 2.1.16. Degree of protection IP 40;
 - 2.1.17. Noise level at 50 Hz, typ. dBA 43; and
 - 2.1.18. The Pump shall be equipped with oil mist filter FO and isolation valve VS 16.
- After filling, the Pump shall be ready to use.

3. Marking

The Pump shall have all safety markings in English language.

4. Packing

The Pump, for the shipment by air to the End-User, shall be packed in accordance with international standards that are applicable for the shipment by air of this kind of equipment.

5. Quality Requirements

- 5.1. The Pump shall be manufactured, shipped and installed in accordance with the Contractor's ISO quality assurance system or an equivalent quality assurance system.
- 5.2. The Contractor shall document the compliance with this quality assurance system.

6. Testing and Acceptance

- 6.1. The Pump, prior to shipment, shall be tested for conformance of the Pump with manufacturer's performance specifications and the requirements specified herein.
- 6.2. The Pump, after shipment, shall be installed and tested by the End User. The Contractor shall provide contact information with responsible person for supporting the test process.

7. Warranty and Support

- 7.1. The Contractor shall clearly note the manufacturer's guarantee conditions, the routine or preventative maintenance required to ensure operation of the Pump.
- 7.2. At the request of the End-User, the Contractor shall provide an appropriate support plan, in accordance with the Contractor's proposal.

8. Deliverable Items

The Contractor shall submit the following deliverable items:

1. Two vacuum pumps;
2. Two sets of complete documentation in English; and
3. Manual
