**Rotary Lobe Pumps 60 – 250 m³/h**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_pump

Horizontally positioned rotary lobe pump, which is not sensitive against dry running. A sufficiently dimensioned electrical geared motor should be used as drive. Pump and drive are fitted on a common twist free baseframe made from galvanised steel. The drive has to be mounted on a steplessly adjustable gear motor plate. Elastic coupling including coupling guard and the oil filling for initial commissioning should be included in the scope of delivery.

**Fluidic data:**

Fluid: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solid content: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ % TS

Operating temperature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ °C

Capacity: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m3/h

Adjustment range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ m3/h

Suction pressure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mWs

Discharge pressure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bar

Differential pressure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bar

Pipe connections: suction side: DN \_\_\_\_\_\_\_\_\_ PN 10/16

 pressure side: DN \_\_\_\_\_\_\_\_\_ PN 10/16

Reversible, for any operating direction

**Pump data:**

Make: BÖRGER – Productline Classic

 Phone (+49) 2862 9103-20 - Fax 9103-46,

 info@boerger.de, www.boerger.com

Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Make selected: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Type selected: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Operating pressure selected: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bar

Shaft speed: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rpm

Required power: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kW

Selected power: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kW

Free ball entrance: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mm (min. diam. 75 mm)

Number of rotors per shaft: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ piece (max. 1 piece)

**Pump design and Materials:**

Pump casing: one-piece block casing form EN-GJL-250 (GG25)

Axial casing protection: casing protection plates from Hardox XAR 400 and 1.7225

Rotors: tri lobe, with pushed-on tips, NBR-coated, ready mounted on a rotor body made from EN-GJS-400-15. The tips can be replaced individually in case of damage.

Rotor-form: screwed rotor for almost pulsation-free conveyance

Bearings: one side double bearings, oil bath in block casing with lateral drain plug

Shafts: not wetted by pumped fluid, but oil lubricated

Shaft sealing: maintenance free single acting mechanical seals with huge dimensioned oil quench

 Content: 3.8 liters

 Material pairing: Duronit V / Duronit V

The mechanical seal is easily replaceable through the pump chamber, without dismantling the pump or the pipe connection.

Seal monitoring: oil-filled intermediate chamber, integrated in the pump casing, with lateral drain plug. Quench serves for monitoring the seals and lubricating the shaft-rotor-connection. There is no need of an external fluid reservoir or pressurization.

Corrosion protection: Pump: 2-component-PUR-coat, single-layer, **RAL 5021** Drive: manufacturers’ standard **water blue** Pipe connection and baseframe: galvanized steel

Maintenance: MIP® = Maintenance in Place

 Through the quick release cover with its 4 ring nuts and O-ring seals, all medium wetted parts can be controlled and replaced without dismantling the pump or pipes

Pipe connections: 1.0038, galvanized steel

**Selected materials / execution:**

Pump casing: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Axial casing protection: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Rotors: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Shaft seals: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Quench volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Pipe connections: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Drive:**

**Helical geared motor**

Make: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Drive power: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kW

Operating speed (shaft): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1/min

Operating speed (drive): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1/min

ISO-class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Protection category: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Voltage: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ V

Frequency: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hz

Winding protection: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Drive suitable for inverter control: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hz

Aggregate-weight: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kg

Dimensions (L x W x H): \_\_\_\_\_\_\_\_\_\_\_ x \_\_\_\_\_\_\_\_\_\_\_ x \_\_\_\_\_\_\_\_\_\_\_ mm

**Rotary lobe pump as described before:**

**Quantity: \_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit price: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**

**Total price: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**

***Options:***

**Radial casing protection**

Pump casing in MIP execution as one-piece block casing with radial casing protection liners made from XAR 400. The casing protection liners are fixed with clamp sets in the casing and can be replaced without dismantling the pump from the pipe connection.

Replacement of casing

protection liners possible

without demounting the pump: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Yes/No)

**Quantity: \_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit price: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**

**Total price: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**

**Dry-running protection**

The pump has to be delivered with a ready installed temperature sensor on the pump casing for monitoring the temperature. An appropriate temperature controller with digital LED display is included in the scope of delivery. For installing the control cabinet, the temperature controller has to be delivered loose on a DIN cap rail.

Measurement recorder: PT 100

Specifications: 230 V, 50 Hz

Measuring range: at the sensor -10 up to +100 °C

Sensor: stainless steel 1.4571

Make / Type PT 100: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Make / Type temperature sensor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Quantity: \_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit price: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**

**Total price: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**

**Pressure control – alternative 1:**

To protect the pump from overpressure, there has to be a glycerine-filled membrane contact gauge with magnetic spring contact in the pressure pipe behind the pump. This gauge gives an acoustic signal and automatically turns off the drive of the pump, if the maximum pressure is exceeded. The measuring range of the gauge is adapted to the operating pressure. The diameter of the gauge has to be 100 mm. A contact protection relay has to be in the scope of delivery. This has to be delivered loose with a DIN cap rail for installing a control cabinet.

Casing and

medium-wetted parts: 1.0037 galvanized

Specifications: 230 V, 50 Hz

Pressure display measurement area: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Process access: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Make /

Type membrane contact gauge: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Make /

Type contact protection relay: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Quantity: \_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit price: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**

**Total price: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**

**Pressure control – alternative 2:**

To protect the pump from overpressure, a pressure transmitter with an output signal of 4-10 mA has to be put into the pressure pipe behind the pump, which gives an acoustic signal, when exceeding the maximum acceptable pressure. The measuring range of the pressure switch has to be adapted to the operating pressure. To see the existing pressure at the pump, a device with digital display has to be offered.

Casing and

medium-wetted parts: Stainless steel 1.4404, AISI 316L

Output signal: PNP with 4 up to 20 mA

Helping energy: 12 up to 30 V

Pressure measure range: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Process access: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Make / Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Quantity: \_\_\_\_\_\_\_\_\_\_\_\_\_**

**Unit price: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**

**Total price: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**