**Solid grinder up to 800 m³/h**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_solid grinder

The Rotorrake is a solid grinder for chopping long fibrous materials, such as typical “pig-tails” and rags from the digestion tower circulation. It is installed as tough material grinder with integrated solid separator in a robust and compact design. The casing is delivered as one-piece block casing made from grey cast iron GG 25, to be installed on suction or pressure side. There should always be a simple and quick access to the cutting unit and solid separator, for example via the quick-release cover. The mechanical seal with oil quench can easily be replaced through the pipe connection, without having to dismantle the Rotorrake. The rotating shear plate as well as the firmly mounted counter blades have to work without touching each other, to avoid abrasion. The oil filling for initial commissioning should be part of the scope of delivery.

**Fluidic data:**

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

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

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

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

Inlet pressure: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bar

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

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

Reversible, for any operating direction

**Solid grinder data:**

Make: BÖRGER Rotorrake

 Phone (+49) 2862 9103-122 - Fax 9103-46,

 info@boerger.de, [www.boerger.com](http://www.boerger.com)

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

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

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

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

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

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

**Design and materials:**

Casing: pressure resistant, one-piece block casing made from

 EN-GJL-250 (GG25) for installation on suction or pressure side

Cover: steel, coated

Knife blades: 1.7218

Counter blades: 1.7218

Cutting unit: 18 rotating knifes, 9 counter blades stored against rotation, each knife blade and counter blade is multiply applicable by truning; easy opening of the quick-release-cover; tool fastening by one central screw; with drain and cleaning opening

O-ring: NBR

Shaft sealing: mechanical seal Duronit V with quench

Corrosion protection: Chopper: 2-components PUR lacquer, **RAL 5021, water blue** Drive: manufacturer’s standard, RAL 7031

Pipe connections: 1.0038; galvanized steel

Maintenance: MIP© = Maintenance in Place

 Through the quick release cover opening with 4 rings nuts and O-ring seal, all medium-wetted parts can easily be controlled and replaced, without dismantling the solid grinder or the pipe connections.

**Selected materials / execution:**

Casing: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Cutting wheels: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Counter blades: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Shaft sealing: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

Touch-free run of

rotating knife blades

and counter blades? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Yes / No)

**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

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

**Deliver solid grinder as described before:**

**Stückzahl: \_\_\_\_\_\_\_\_\_\_\_\_\_**

**Einzelpreis: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**

**Gesamtpreis: \_\_\_\_\_\_\_\_\_\_\_\_\_ €**

***Options:***

**Control technique – alternative 1:**

A controller with display as well as preinstalled control software is the control technique for the

solid grinder. It is ready installed in a steel sheet control cabinet IP 54

Functions: - load-depending reverse in case of overload to avoid

 blockages

 - changing the direction of rotation with every restart

 - malfunction message when reaching a predefined number of

 load- depending changes of direction of rotation

 - all operating parameters can be set by the operator

 - Control of the corresponding pump

 (start/stop/change direction of rotation)

 - interpretation of PTC resistor in motor winding

 - Determination and interpretation of the proximity switch when

 reaching the wear limit

 - All operating and malfunction messages should be put

 isolated

 onto a separate connecting terminal plate

Steel sheet control cabinet: - protection category: IP 54

 - pre-mounted ready for installation including all necessary

 guards, relays and switches

 - main switch

 - emergency/stop switch

 - changeover switch hand-0-automatic

 - luminous indicator for operation and malfunction

 - luminous press button for clockwise and counter clockwise

 rotation

 - PTC resistor trigger box

 - overload relay

 - Siemens SPS

 - supplier voltage: 230 VAC

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

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

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

**Control technique – alternative 2**

Controller with a display and a pre-installed control software are the control techniques for the

solid grinder. It is pre-assembled on a carrier rail for the installation in the control panel by the

customer.

Functions: - load-depending reverse in case of overload to avoid

 blockages

 - changing the direction of rotation with every restart

 - malfunction message when reaching a predefined number of

load- depending changes of direction of rotation

 - all operating parameters can be set by the operator

 - control of the corresponding pump (start/stop/change direction

of rotation)

 - interpretation of PTC resistor in motor winding

Scope of delivery: - protection category: IP 20

 - overload relay

 - Siemens SPS

 - supplier voltage: 230 VAC

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

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

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