



## Grinding Systems

Product Overview, Technology and Application Areas

# Grinding Systems protect your installation

## Universal Use

Grinding systems are used to effectively protect your complete installation including the pumping equipment. They ensure that over-size solids are reliably reduced to a pumpable size therefore safely avoiding the danger of blockages.

Conditioners and macerators are designed for the most arduous of industrial applications to prevent pipe blockage and damage to downstream equipment by reliably reducing the size of solid matter in pumped media. The extensive selection of macerating systems provides an ideal solution for many industries and processes. The robust design of the grinding systems from NETZSCH ensures a high performance coupled with trouble free operation.

### Primary Applications

- Waste water treatment
- Agriculture
- Slaughterhouses and recycling plants
- Canning/tinning factories
- Industrial kitchens
- Sugar factories

### Advantages

- Low running costs through high operating efficiency
- High operational reliability
- Simple maintenance
- Comprehensive range of accessories available for almost every application
- Worldwide service network and weekend emergency support



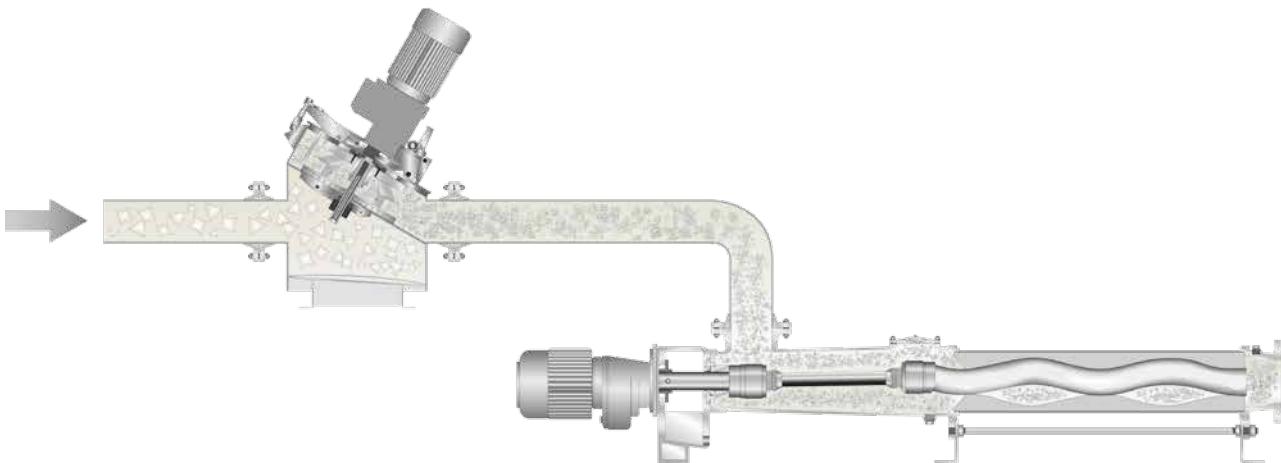
## The Right Model for Every Application

### NETZSCH Cutting Plate Macerator M-Ovas®

The special shape of the housing directs solid particles in the waste water towards the cutting plate, where they are held and chopped by the rotating blades.

### Taskmaster® Twin Shaft Macerator\*

The twin shaft macerators has been designed for applications where the medium contains large solid objects. Dependent on the size reduction requirements there is a choice of different tooth and spacer plate combinations.



NEMO® BY progressing cavity pump with  
a cutting plate macerator M-Ovas®



# M-Ovas<sup>®</sup>

## CUTTING PLATE MACERATOR

The NETZSCH M-Ovas<sup>®</sup> macerator for coarse materials is ideally suited for use in biogas plants where impurities in the medium reduce process reliability. The solids in the medium are reliably macerated or separated from the medium (e.g. stones), to prevent pipes getting blocked or damage to downstream equipment.

### Broad range of applications

The NETZSCH M-Ovas<sup>®</sup> should preferably be used to macerate the following media:

- Fermented, renewable raw materials
- Slurry
- Bio waste
- Slaughter waste
- Manure

### High flow rates

- Throughput rates of up to 70 m<sup>3</sup>/h for substrates of up to 12 % dry solid content

### 1 Housing

A hydrodynamic design with integrated stone trap for solids, and a clean-out port. The sediment can easily be removed by opening the cover plate. The housing is galvanized to ensure corrosion resistance. Available in stainless steel (optional).

### 2 Housing Cover

Cutting unit integrated into housing cover. A gas strut is fitted to the cover to assist opening. This allows for easy cleaning of solids in the stone trap. comprise of six cutters and six spacing rings. To reach the required particle size, a selection of different blades is available.

### 3 Cutting Unit

Cutting plate of wear resistant, hardened steel. Optimum cutting performance through a cutting unit by a fixed cutting mechanism. Blades made from wear resistant hardened steel. The flywheel effect of the cutter head reduces the installed power. Easy exchange of cutting plate and cutting blades without the necessity to disassemble the pipework.

### 4 Shaft Seal

Hard metal faced mechanical seal with oil quench to prevent product leakage.

### Advantages

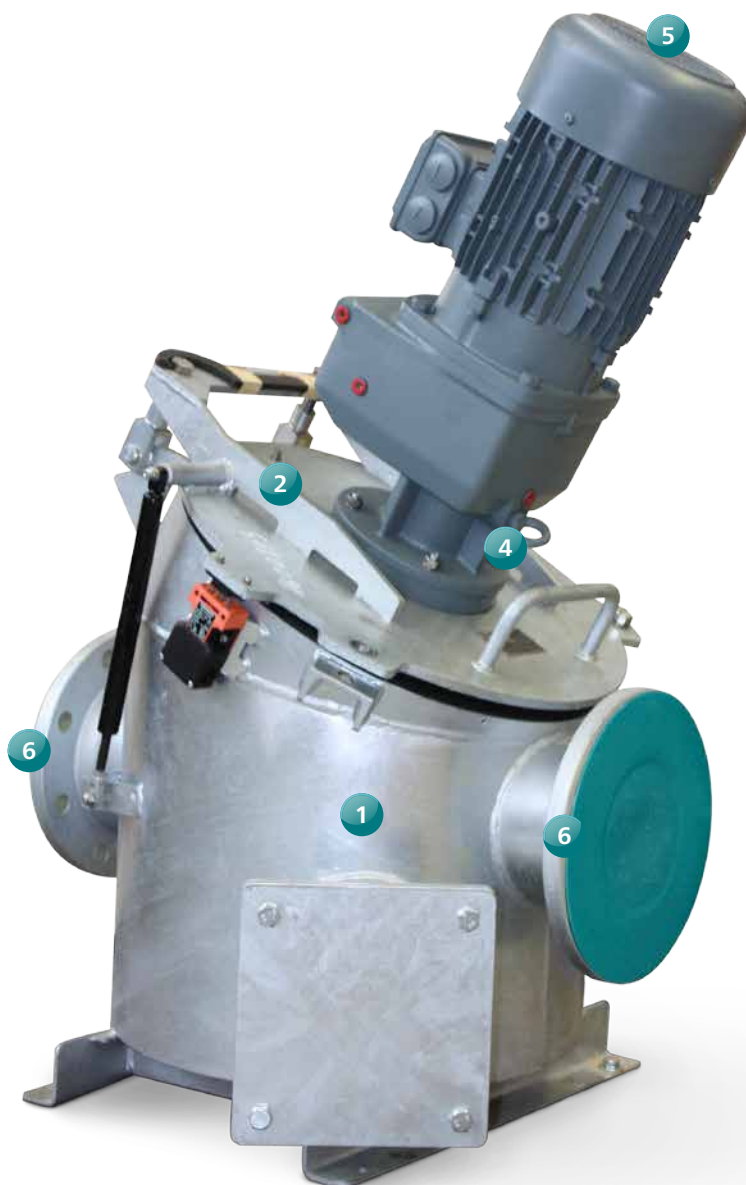
- Compact design with high throughput rate
- Simple, easy disassembly of the cutting plate
- Low energy requirement with high throughput rate
- Integrated separator vessel with separate cleaning and drainage aperture
- Effortless disposal of the sedimented materials through easy access
- Shaft sealing using mechanical seal with lubrication
- Particularly maintenance friendly
- Cutting plate usable on both sides
- Different perforated plates depending on the application

### 5 Drive

The standard drive unit has reinforced bearings.

### 6 In-line Version

Product inlet and outlet are positioned on the same level. The NETZSCH M-Ovas® can be directly connected to a horizontal pipeline or to a NEMO® pump inlet where the flange is set at 90°.



# Taskmaster®

## TWIN SHAFT MACERATOR\*

The twin shaft macerator is used for applications with particularly coarse and solid substrates. The twin shaft macerators impress with their robust design, simple operation and high performance. They offer the optimum performance, even in the most extreme conditions.

The twin shaft macerators ensure free flow and so preserve or protect the downstream pump units and system parts.

Depending on the application, five different Taskmaster® twin shaft macerators\* can be used in various designs. The very slow, variable speed of the shafts means the twin shaft macerators offers the option of self cleaning. The low drive power with particularly high flow rate enables cost-effective use.

### Broad range of applications

The twin shaft macerators should preferably be used with media in the following industries:

- Biogas plants
- Agriculture
- Slaughterhouses and recycling plants
- Canning factories
- Industrial kitchens
- Sugar factories

### High flow rates

Flow rates up to 300 m<sup>3</sup>/h with a solid content of up to 10 %.

### 1 Housing

A robust hydrodynamic inline housing which can be directly connected into a pipeline. Also available as channel unit.

### 2 Cutting unit

High quality blades made of special steel reliably macerate the solids in the medium. The cartridge units comprise of six cutters and six spacing rings. To reach the required particle size, a selection of different blades is available.

### 3 Shaft Seal

The shaft is sealed with a cartridge type mechanical seal.

### Advantages

- Robust design, simple operation and high performance
- High operational reliability thanks to simple maintenance due to the knife-cartridge technology
- Very low operating costs due to optimum efficiency level
- Optimised price-performance ratio

#### 4 Bearing

Robust bearings on both ends of the shafts ensure smooth running and prevent the shafts from spreading when especially hard solids are encountered.

#### 5 Lantern

Via an elastic coupling with flange every IEC motor or drive can be accommodated.

#### 6 In-line Version

Product inlet and outlet are positioned on the same level. The twin shaft macerators can be directly connected into a horizontal pipeline or to a pump inlet of a NEMO® pump or a TORNADO® industrial rotary lobe pump, where the flange is set at 90°.

