

## TORNADO® Rotary Lobe Pumps

The new benchmark for Rotary Lobe Pumps



# TORNADO® – High performance, reliability, ease of service

High-performance Rotary Lobe Pumps maximise operational reliability

**NETZSCH TORNADO® self-priming, valveless, positive displacement pumps can be optimally customised to meet specific process and application requirements. They can be used for almost any media on intermittent, continuous or dosing applications.**

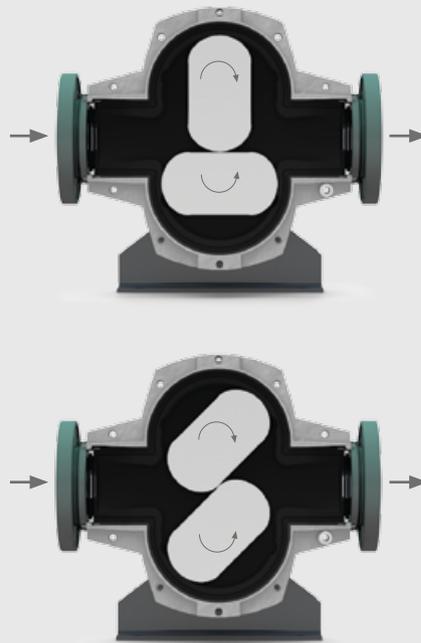
TORNADO® advantages are small space requirements due to their compact design, high performance and maximised operational reliability, and the physical separation between the pump head and bearing housing. TORNADO® pumps are particularly service and maintenance friendly; all parts that come into contact with the media are directly accessible without dismantling the pipework or disconnecting the drive.



Pulsation free  
pumping

## Functioning principle

The TORNADO® rotary lobe pump is a positive displacement pump. The pumping action is generated by the contra-rotation of two rotors within the pump chamber which are synchronised externally. The media enters the pump chamber through the inlet port and is carried around the chamber by the rotors to the outlet port where it is discharged.



## Characteristics

- Valve free construction
- Self priming
- Suitable for any kind of liquid including media containing gas, solids or fibrous matter
- Suitable for lubricating and non lubricating media
- Pumping media with high or low viscosity
- Handling shear sensitive fluids
- Operating at temperature up to 100°C
- Reversible operation
- Can be serviced without disconnecting pipework
- Tolerance of dry running



# The newly developed TORNADO® T2 – Revolutionary in design and customer benefit

## Stability

### The best maintenance is no maintenance

We have perfected the rotary lobe pump concept by incorporating the tried, tested and proven NETZSCH core competence in the design and manufacture of engineered rubber solutions for the new TORNADO® T2. During the entire pumping cycle only elastomer and metal component surfaces interface within the pump; elastomer to elastomer component surface interfaces, which suffer from excess wear and generate heat, are completely eliminated. Having these dissimilar materials for the static and dynamic pump head components, the elastomeric surfaces are subjected to a lower dynamic loading resulting in less plastic deformation and stress which in turn reduces wear and extends operational life. The use of high quality sealed for life bearings, selected for their load carrying characteristics and long life, combined with the tooth belt drive result in a drive train that can be considered maintenance-free.

## Ease of service

### “Full Service In Place” instead of “Maintenance In Place”

The innovative design of the TORNADO® T2 provides quick and easy access to the pump chamber, including the inlet and outlet ports, by simply removing the cover plate. This provides improved access for inspection, cleaning, service and replacing parts. The service-friendly design of the tooth belt drive means that, should it be necessary, the belt is easy and quick to replace. Benefits of the tooth belt drive system are accuracy of synchronization, elimination of timing gears and oil lubrication, less heat generation and quieter operation.

## Compactness

### Efficiency in the smallest space

Smaller overall dimensions and the innovative design concept of incorporating a timing tooth belt to both synchronise and drive means reduced space is required for both installation and in place servicing representing a cost saving in terms of site utilisation.

## Operational safety

### From GSS<sup>1</sup> to BSS<sup>2</sup>

The proven physical separation between pump chamber and bearing housing guarantees absolute operational safety.

<sup>1</sup> GSS = Gearbox Security System

<sup>2</sup> BSS = Bearing Security System

## PROCESS OPTIMISATION

### COMPACTNESS



### OPERATIONAL