



**ZEILFELDER**  
PUMPEN

english



Our pumps  
crunch everything  
**stronger**  
**unbreakable**

liquids containing up to 90% of solids  
TS-content up to 90%  
wear-resistant & heavy-duty design  
efficiency up to 88%



## **T-REX PUMP**

full-metal design for biogas plants

ZEILFELDER

**HIGH PERFORMANCE PUMPS**

made in Germany

[www.zeilfelder-pumpen.com](http://www.zeilfelder-pumpen.com)



a trademark of  
**ASM**  
DIMATEC

our pumps  
crunch everything



heavy-duty design

pumps biomass,  
slurry and silage



biogas industries

# T-REX ROTARY LOBE PUMPS

## full-metal design for biogas plants

Our T-REX biomass pump series are specially designed for the use in biogas plants. The highly wear resistant configuration and heavy-duty design of the pump's pistons make it a reliable choice to pump biomass, silage and manure.

The concave shape of the piston reduces wear and makes it possible to pump highly viscous media with high solids content or containing impurities and large solid particles.

Our rotative displacement pumps are robust, self-priming and have running dry capability.

The T-REX biogas series is specially designed for:

- liquids containing up to 90% of solids
- liquids containing crystals or fibers
- lifting height up to 8 m
- flow rates up to 250 m<sup>3</sup>/h

Advantages\*:

- high durability through high-end bearings and special coatings
- all metal design
- low energy consumption and high efficiency up to  $\eta = 92\%$  through:
  - lowest manufacturing tolerance
  - special design
- running dry capability
- CONCAVE PISTON GEOMETRY of the T-REX Pump
  - wear reduction: the piston pushes liquids and solids away from the inner side of the pump housing to the middle
- large displacement per turn, reduced rotation speed
- long life cycle and high-strength components
- insensitive to contamination solids through large free ball passage
- left and right rotation, any flow direction
- valve-less

Options:

- packing glands
- single acting mechanical seal
- explosion proof

\*depending on the type of the pump

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# T-REX biomass series

## full-metal design for biogas plants



	from	to*
lifting height	0 m	8 m
RPM	1 RPM	350 RPM
flow rate	0.5 l/min	4165 l/min
	0.030 m <sup>3</sup> /h	250 m <sup>3</sup> /h
efficiency	60%	88%
liquid viscosity	0.3 mPas	1.400.000 mPas
temperature	-60°C	+350°C

### Sizes

size	volume l/U	max. flow rates*													
		n = 10 min		n = 30 min		n = 60 min		n = 90 min		n = 160 min		n = 200 min		n = 350 min	
		l/min	m <sup>3</sup> /h	l/min	m <sup>3</sup> /h	l/min	m <sup>3</sup> /h	l/min	m <sup>3</sup> /h	l/min	m <sup>3</sup> /h	l/min	m <sup>3</sup> /h	l/min	m <sup>3</sup> /h
50	1,90	19	1,14	57	3,42	114	6,84	171	10,26	304	18,2	380	22,8	665	39,9
80	5,85	58,5	3,51	175	10,52	350,7	21	526	31,6	935	56,1	1169	70,1	2045,8	123
150	11,90	119	7,14	357	21,4	714	42,8	1071	64,3	1904	114,2	2380	143	4165	250

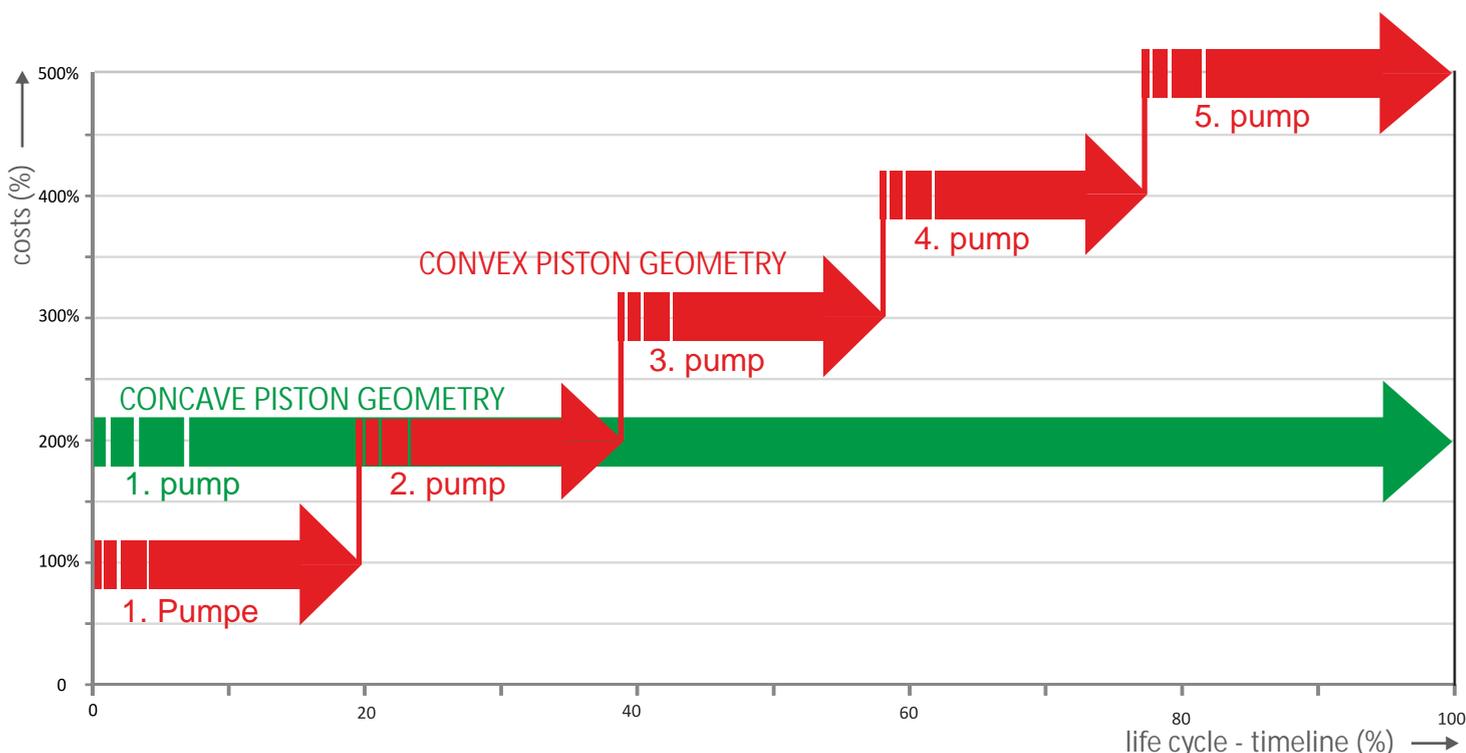
Table: max. flow rates

\*Application specific flow rates will depend on working pressure, viscosity and temperature and will vary from the theoretical flow rates.

  nur KD

### Comparing concave und convex piston geometries

The initial purchasing price of the T-Rex pump with **concave piston geometry** may be initially more expensive, but on a long term, their life cycle costs (LCC) are far less than pumps with **convex piston geometry**.

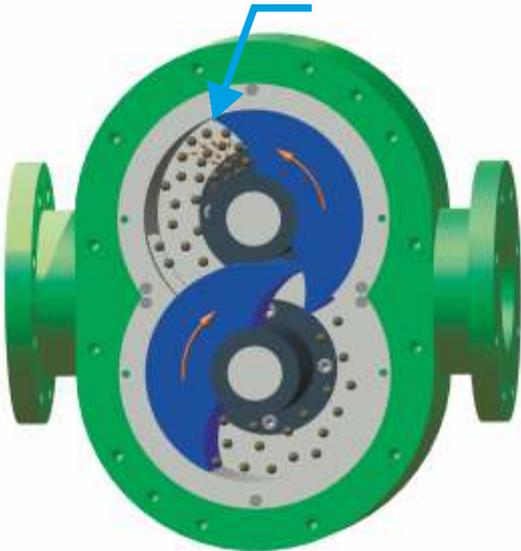


Costs: the costs in the diagram are defined in % of the initial purchase price of the pump with concave piston geometry  
 Life cycle: % of the pump life cycle with concave piston geometry

# THE CONCAVE PISTON GEOMETRY

designed for contaminated liquids with solids, crystals and fibers

The piston pushes solids away from the inner side of the pump housing to the middle



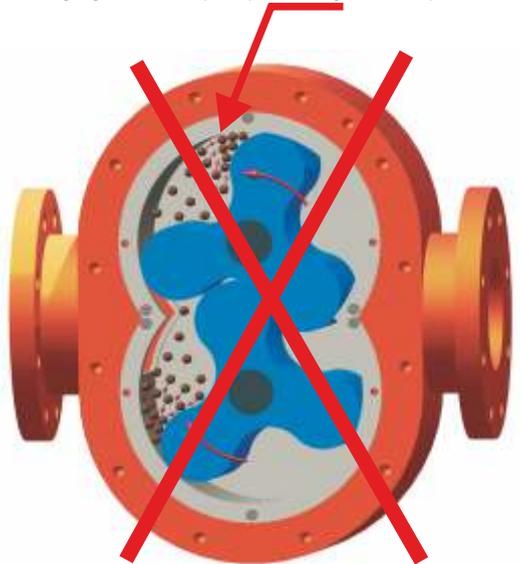
## CONCAVE GEOMETRY of the T-REX pump

The main advantages of the T-Rex pump are its concave piston geometry and its all metal design. The pump offers higher efficiency, higher reliability and a longer life cycle.

The concave piston reduces wear by pushing particles away from the pump walls. The all metal design avoids damages, increases reliability and extends the pump's life cycle.

compared to the

The convex piston presses contaminations and solids into the gap between the piston and the pump housing damaging both, the pump housing and the piston



## CONVEX PISTON GEOMETRY of the KM3

The pump with convex piston geometry is not suitable to pump abrasive and contaminated liquids. Solid particles are pushed in the gap between the piston endings and the pump wall.

**The piston endings and the pump inside walls get damaged.**

Using rubber coated concave pistons make it even worse. The rubber gets cut and breaks apart. The efficiency of the pump falls rapidly and the pump needs close repairs.



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