

Liquids to Value



Hygienic GEA Tuchenhagen®-VARIFLOW Centrifugal Pumps

TP Series

Made by GEA Tuchenhagen



GEA Tuchenhagen®-VARIFLOW TP-Series . . .

. . . is designed to meet today's industry requirements of cleanability, gentle product handling, efficiency and easy maintenance.



The TP series is covering 10 pump models with a capacity range of 1 m³/h up to 220 m³/h and flow heads up to 92 m w.c..

The TP-Series is designed for pumping media up to a viscosity of 1,000 mPas.

Low flow velocities and gentle discharge of media through the spiral housing ensure extremely gentle product handling. Independent institutes have proven the cleaning ability of the TP series, an important fact for pumping media in hygienic processes.

The spiral housing for the TP series is made of rolled stainless steel. This material has an excellent surface quality which is essential for optimum cleaning in CIP/SIP processes.

Wall thickness of 6 mm giving a high strength for critical pipings and high inlet pressures.

A aseptic mechanical sealing is used with an support spring outside the product room. Flushed and double mechanical seals are available as an option.

Hydraulic characteristics

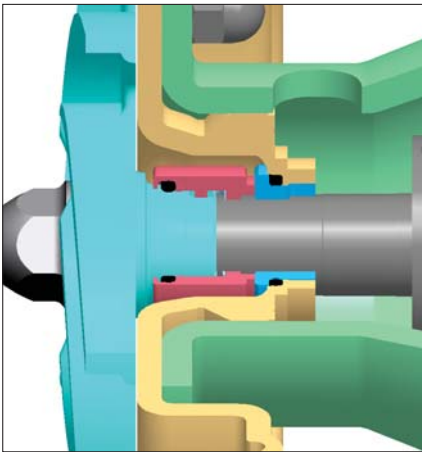
- Gentle product handling due to low flow velocities in the impeller
- Low NPSH-value avoids early cavitation to the pump
- Optimised hydraulic efficiency
- The pumping characteristic can be adapted to the requirements of your system by speed control or impeller trimming
- Optimal SIP/CIP characteristics are obtained by avoiding undercuts, dead corners and as well as by use of the VARIVENT® sealing principle

Design characteristics

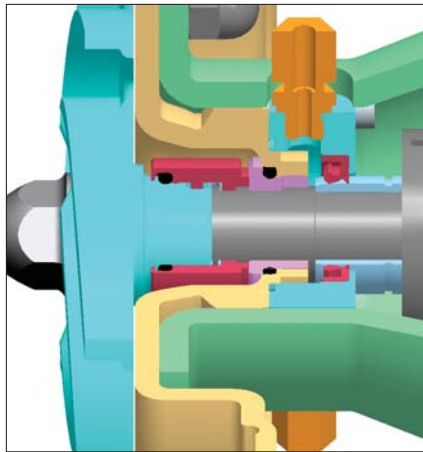
- The open impeller design ensures optimum cleaning characteristics
- Surface roughness of $R_a \leq 0,8 \mu\text{m}$ can be achieved by mechanical treatment of the surface, better surfaces available on request
- Standard foot and flange motors of type IM B35, according to IEC can be used as pump drive

All pumps can be equipped with a variety of mechanical seals

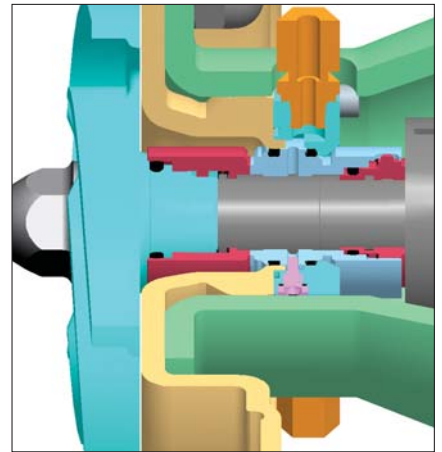
- Excutions:
 - Single mechanical seal
 - Single mechanical seal with flush
 - Double mechanical seal
- Isolated seal springs lead to optimum CIP/SIP characteristics
- Different seal face materials available:
 - Carbon/Silicon carbide (Standard)
 - Silicon carbide/Silicon carbide
 - Carbon/Stanless steel
- Different FDA approved gaskets:
 - EPDM
 - FKM
- Ease of maintenance:
 - Front access to mechanical seal
 - Mechanical seals as cartridge
 - No special tools
 - Only two mechanical seal sizes
 - Simple upgrade of flushing unit
 - Pump shaft protection by wear sleeve
 - No dismantling of the pipe system is required



Single mechanical seal



Single mechanical seal with flush



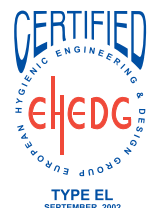
Double mechanical seal

Available range of TP types (50 Hz operation)

Pump Type	Poles	Flow Volumes in m ³ /h	Pump Heads in m	Motor Power in kW
TP 1020	2-pole	1 - 18	23	1.1 - 3.0
TP 1020	4-pole	1 - 10	6	0.55 - 1.1
TP 1540	2-pole	1 - 35	42	3.0 - 7.5
TP 1540	4-pole	1 - 20	11	0.55 - 1.1
TP 2030	2-pole	1 - 35	36	1.5 - 5.5
TP 2030	4-pole	1 - 20	9	0.55 - 1.1
TP 2050	2-pole	1 - 35	62	2.2 - 11.0
TP 2050	4-pole	1 - 17	15	0.5 - 1.1
TP 2575	2-pole	1 - 44	85	4.0 - 22.0
TP 2575	4-pole	1 - 20	31	0.75 - 4.0
TP 3050	2-pole	1 - 70	65	3.0 - 15.0
TP 3050	4-pole	1 - 40	16	0.55 - 2.2
TP 5060	2-pole	1 - 80	74	5.5 - 22.0
TP 5060	4-pole	1 - 50	27	0.75 - 5.5
TP 7060	2-polig	1 - 120	74	11.0 - 37.0
TP 7060	4-polig	1 - 55	19	3.0 - 15.0
TP 8080	2-pole	1 - 110	90	11.0 - 37.0
TP 8080	4-pole	1 - 40	18	3.0 - 7.5
TP 16040	2-pole	1 - 220	48	11.0 - 45.0
TP 16040	4-pole	1 - 110	12	3.0 - 5.5

The concept, which has been designed with economic efficiency in mind, offers many advantages:

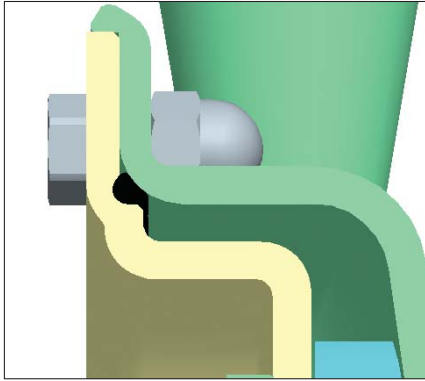
- Flow rates of up to 220 m³/h
- Pump heads of up to 92 m w.c.
- Open impeller with optimum hydraulic properties
- Low-noise operation
- EHEDG certified
- 3A as an option
- ATEX design optional for explosion-proof areas
- Viscosity up to 1.000 mPas
- Temperature up to 140° C



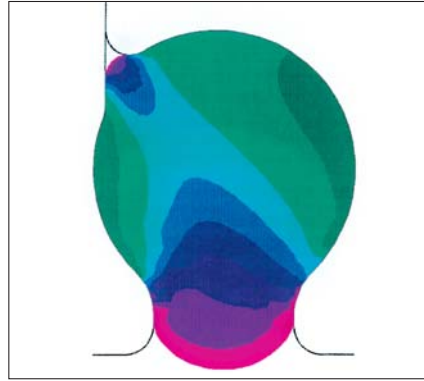
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VARIVENT® Principle

The special groove ensures the safe seal location of the whole time. The shape of the groove is designed on the basis of FEM. The metallic stop allows the defined compression of the seal, ensuring gap-free sealing against the product chamber without dead corners and long service life of the gaskets.



O-ring sealing between pump housing and cover

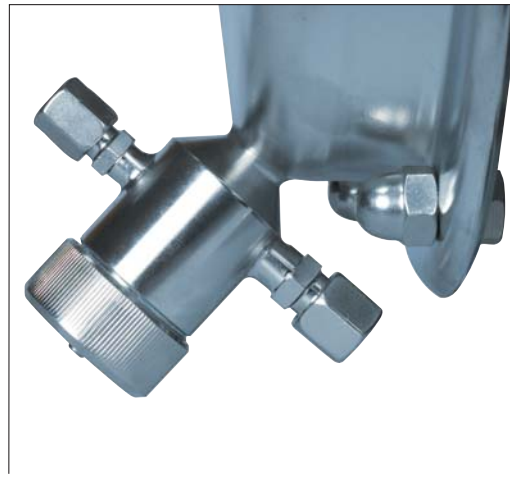


FEM showing the seal ring in operating mode



Inducer

for the reduction of the NPSH-value of the pump



Drain Valve

Pneumatic and manual actuated drain valve for complete draining of the pump housing without dead pockets.

Special features

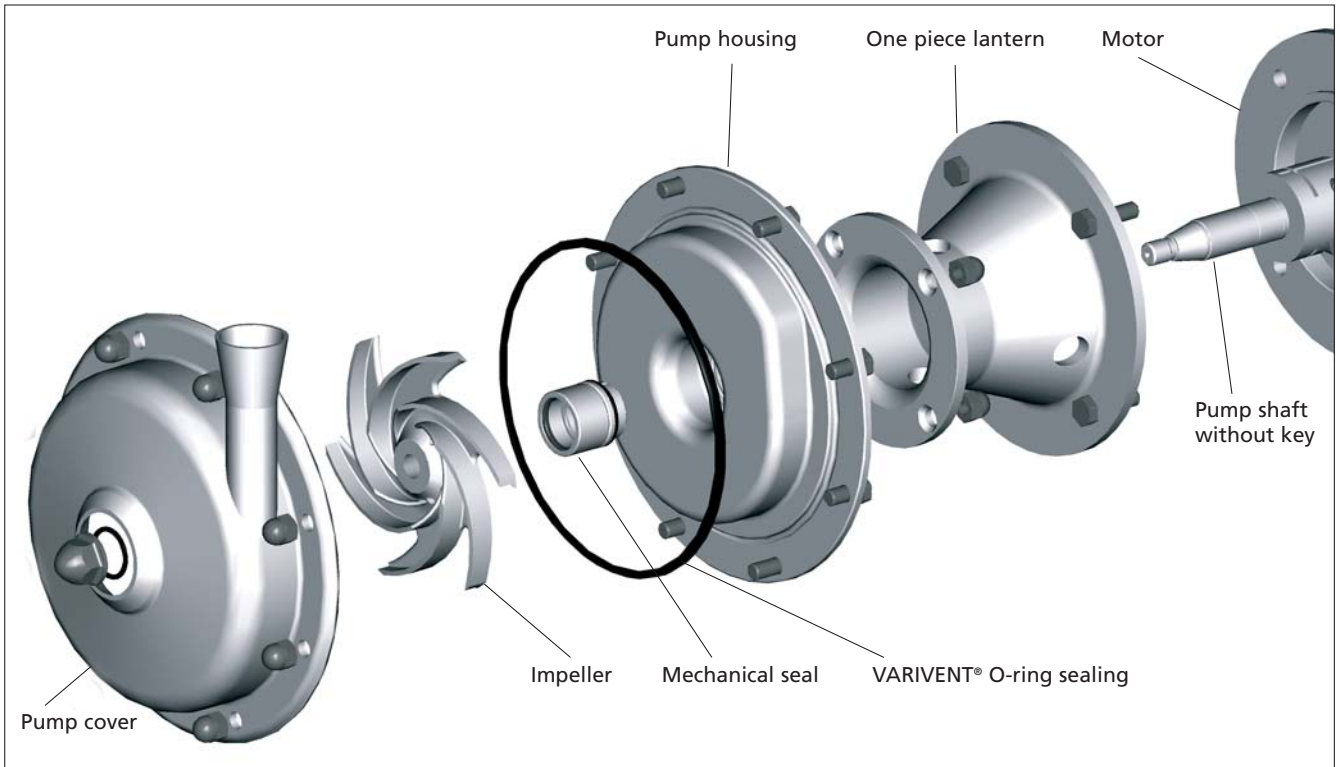
- All parts in stainless steel, wetted components are made of AISI 316L (1.4404)
- Acceptance test certificate 3.1 (optional)
- max. operating pressure 16 bar
- High efficiency
- Gentle product handling
- Low noise
- No bearing flange needed due to low axial forces (pump shaft force-fit connected to motor shaft)

Connection fittings

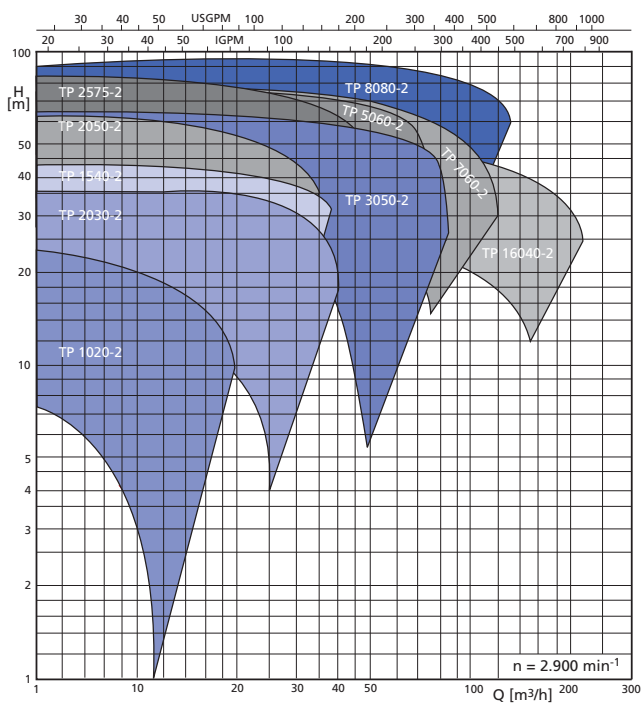
- Metric and Inch OD diameters
- Threaded joint according to DIN 11851 (Standard)
- VARIVENT® flange connection, type tested and TÜV approved
- Aseptic union to DIN 11864-1
- Aseptic flange to DIN 11864-2
- Other marketable connections according to BS, SMS, RJT, Tri-Clamp

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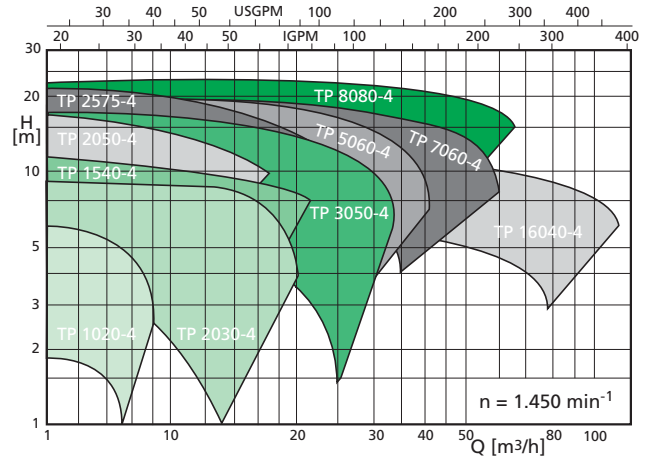
Main components: Pump cover, Impeller, Pump housing, Lantern, Pump shaft and Motor



Performance characteristics, $n = 2.900 \text{ min}^{-1}$, 50 Hz



Performance characteristics, $n = 1.450 \text{ min}^{-1}$, 50 Hz





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