

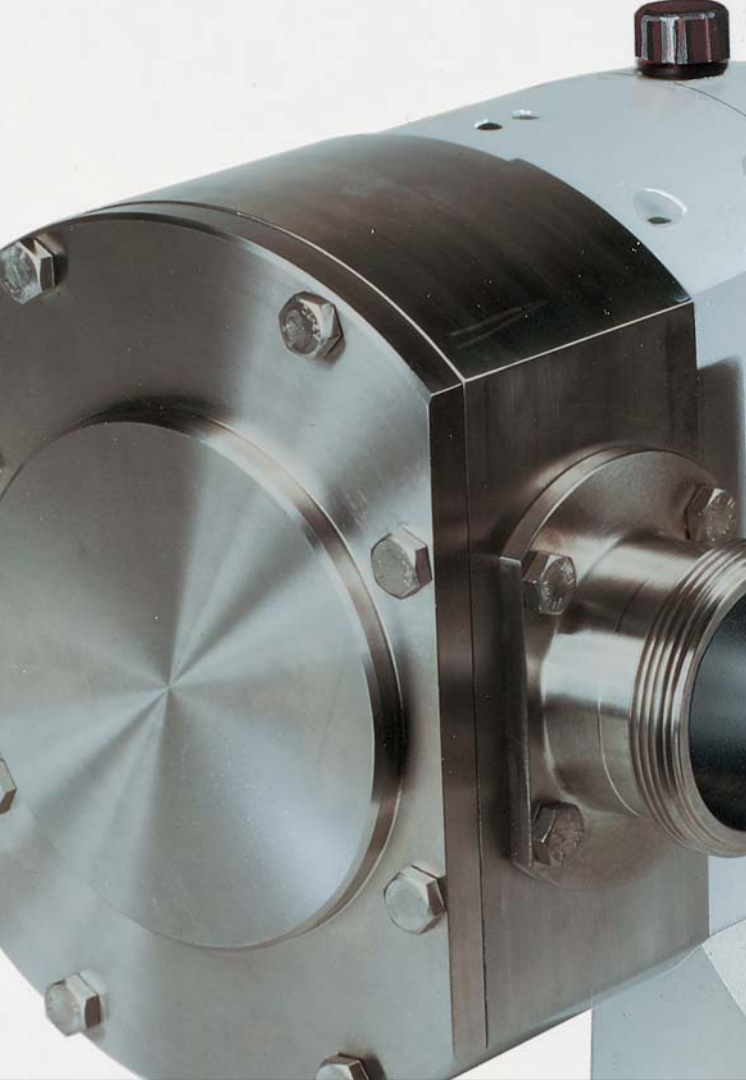
# GEA Tuchenhagen<sup>®</sup>-VARIFLOW Rotary Lobe Pumps

VPSH and VPSU Series



Process Equipment

**GEA Tuchenhagen**



## Tuchenhausen®-VARIFLOW Rotary Piston Pumps . . .

. . . are used wherever viscous, sensitive or solids-containing liquids need to be transferred gently. Type VPSH is used for hygienic applications of all kinds. Type VPSU has been designed especially for the high aseptic requirements in sterile areas.

The special design of the Skimitar rotors and the pump's design enable the pump to convey a wide range of media: from low-viscous media to products with a viscosity of up to 1,000,000 cP or even media with suspended solids. Due to the shape of the Skimitar rotors, a particularly high efficiency is achieved.

### Application

The Tuchenhausen®-VARIFLOW rotary lobe pumps type VPSH and VPSU work according to the principle of opposed rotors which do not come in contact neither with each other nor with the pump housing. This principle combines gentle conveying with high delivery pressures and capacities.

Tuchenhausen®-VARIFLOW rotary lobe pumps type VPSH and VPSU are used wherever highest demands on hygiene and product quality must be met, for instance in the brewery and beverage industries, the food and luxury food industries, e.g. for pastes, yeasts, sauces, fruit pulp, dough, fats etc.

In the pharmaceutical, cosmetics and chemical industries, type VPSU is preferably used in view of its special features for sterile processes, e.g. for blood products, fermenter supply and propagation, yeasts, proteins etc.

### Capacity range

The Tuchenhausen®-VARIFLOW rotary lobe pumps VPSH and VPSU are available for flow rates up to approx. 700 l/min. and differential pressures up to 15 bar

### Special features

- All product contact parts of the pumps are made of high-grade stainless steel:  
VPSH: 1.4401 / AISI 316  
VPSU: 1.4404 / AISI 316L  
The gear housing on the pump type VPSU is also made of stainless steel.
- The synchronized gear with sturdy roller bearings ensures a long service life and prevents contact between the rotors.
- The design of the rotor bolts allows them to be used in both directions of rotation, without the risk of the rotors getting loose. On type VPSU, the rotor fixture is fitted outside the product area.
- The lobes free of wear made of 1.4401/AISI 316.

## Construction

- Pump and gear motor, connected by an elastic coupling are mounted on a stainless steel baseframe.
- Both pump shafts are sealed with a single-acting carbon/stainless steel mechanical seal, optional different materials available.
- The synchronized gear is factory-adjusted and does not need re-adjustment when the rotors are replaced.
- The large leakage cavity between motor and pump guarantees that leakage, and hence possible risk of product contamination, is detected early.
- The pump can be equipped with a variable frequency drive (VFD).
- The position of the ports of type VPSH are on choice either horizontal or vertical.
- Type VPSU has as a rule vertical ports to ensure self-draining. In addition steam barriers are provided for bacteriologically safe sealing.

## Technical Data, Tuchenhausen®-VARIFLOW Rotary Lobe Pump Type VPSH

Size	VPSH 42	VPSH 44	VPSH 52	VPSH 54	VPSH 62	VPSH 64
Capacity (l/100 rpm)	12,3	20,4	26,5	45,5	64,0	95,0
Connection, standard mm (Inch)	25 (1")	38/40 (1 1/2")	38/40 (1 1/2")	50 (2")	65 (2 1/2")	76/80 (3")
Connection, enlarged mm (Inch)	38/40 (1 1/2")	50 (2")	50 (2")	76/80 (3")	76/80 (3")	100 (4")
Connection, reduced mm (Inch)	-	-	-	-	50 (2")	-
Max. pressure (bar)	15	8	15	8	15	8
Max. speed (rpm)	1.000	1.000	1.000	1.000	720	720
Max. capacity (l/min)	123	204	265	455	461	684
<b>Available Options:</b>						
Single acting shaft seal	√	√	√	√	√	√
Flushed shaft seal	√	√	√	√	√	√
Double acting shaft seal	√	√	√	√	√	√
Safety relief valve	√	√	√	√	√	√
Heating jacket at cover	√	√	√	√	√	√
Heating jacket at rotor housing	√	√	√	√	√	√
Connections, horizontal	√	√	√	√	√	√
Connections, vertical	√	√	√	√	√	√
Elastomers • NBR	√	√	√	√	√	√
Elastomers • EPDM	√	√	√	√	√	√
Elastomers • FPM (Viton)	√	√	√	√	√	√
PTFE/Perfluorelastomer					√	√
0,8 µm Surface	√	√	√	√	√	√
0,8 µm Surface, electro polished	√	√	√	√	√	√
0,5 µm Surface, electro polished	√	√	√	√	√	√

## Technical Data, Tuchenhausen®-VARIFLOW Rotary Lobe Pump Type VPSU

Size	VPSU 42	VPSU 44	VPSU 52	VPSU 54	VPSU 62	VPSU 64
Capacity (l/100 UpM)	12,3	20,4	26,5	45,5	64,0	95,0
Connection, standard mm (Inch)	25 (1")	38/40 (1 1/2")	38/40 (1 1/2")	50 (2")	65 (2 1/2")	76/80 (3")
Connection, enlarged mm (Inch)	38/40 (1 1/2")	50 (2")	50 (2")	76/80 (3")	76/80 (3")	100 (4")
Connection, reduced mm (Inch)	-	-	-	-	50 (2")	-
Max. pressure (bar)	15	8	15	8	15	8
Max. speed (rpm)	1.000	1.000	1.000	1.000	720	720
Max. capacity (l/min)	123	204	265	455	461	684
<b>Available Options:</b>						
Single acting shaft seal	√	√	√	√	√	√
Flushed shaft seal	√	√	√	√	√	√
Double acting shaft seal	√	√	√	√	√	√
Safety relief valve	√	√	√	√	√	√
Heating jacket at cover	√	√	√	√	√	√
Sterile barrier at cover	√	√	√	√	√	√
Connections, horizontal	√	√	√	√	√	√
Connections, vertical	√	√	√	√	√	√
Elastomers • EPDM	√	√	√	√	√	√
Elastomers • FPM (Viton)	√	√	√	√	√	√
PTFE/Fluorelastomer					√	√
0,8 µm Surface	√	√	√	√	√	√
0,8 µm Surface, electro polished	√	√	√	√	√	√
0,5 µm Surface, electro polished	√	√	√	√	√	√

### Connection fittings

- Threaded unions acc. to DIN 11851
- VARIVENT® flange connection, type tested and TÜV approved
- VARIVENT® aseptic union
- Other typical connections according to BS, SMS, RJT, Tri-Clamp
- Metric and inch diameters
- Type VPSU has as a standard Tri-Clamp connections directly welded at the pump housing.

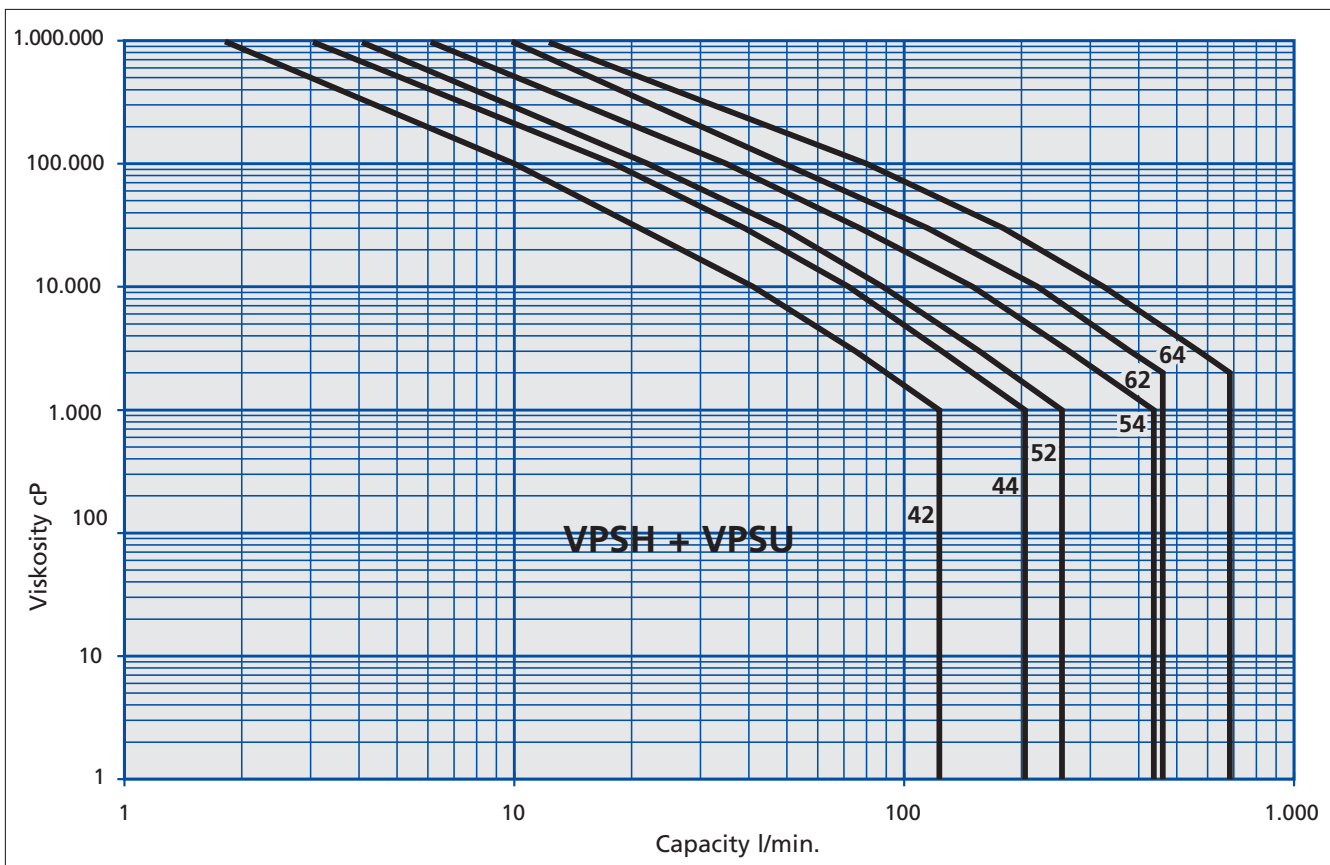
### Accessories and options

Mechanical seals in different materials:

- Carbon / stainless steel
- Silicon carbide / silicon carbide
- Carbon / silicon carbide
- Mechanical seals, single-acting, double-acting and flushed type.
- Different FDA approved soft seals:
  - NBR
  - EPDM
  - FPM (Viton)
- Frame with height adjustable calotte feet.

### Pre-sizing diagram

This is a guide line for the sizing of the rotary lobe pumps.  
For exact sizing please use the detailed characteristic curves.



Process Equipment

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