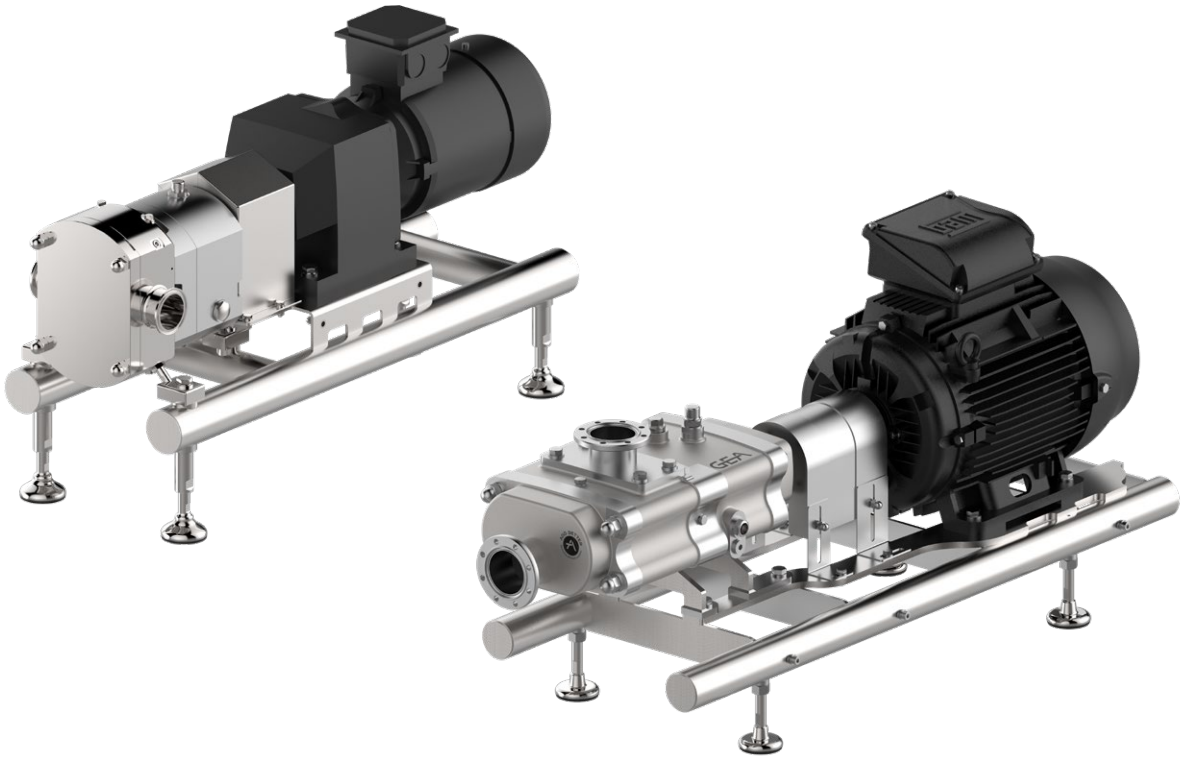


GEA HILGE NOVALOBE
GEA HILGE NOVATWIN+

GEA Hilge positive displacement pumps – the specialists
for gentle product handling of viscous and sensitive media

Engineering
for a better
world.

GEA.com

CHOOSE THE BEST SUITABLE PUMP FOR YOUR APPLICATION

When it comes to pumping sensitive media with low, medium or high viscosity GEA positive displacement pumps are the right choice for hygienic processes in the food, beverage or pharma industry. Why?

Our positive displacement pumps combine the features that ensure you deliver the product quality your customers expect. Through high flexibility we can adapt any pump to your special requirements and application demands.

GEA Hygienic Pumps are manufactured and certified to meet the highest industry standards. Viscous liquids are pumped with care and precision at a constant pressure so they retain the desired consistency, even if the medium contains large and sensitive particles.

Our pumps are constructed from high-quality stainless steel for hygienic, pore- and blowhole-free surfaces. Maximum hygiene is further assured by fast and efficient cleaning.

Of course, our pumps are CIP- and SIP-capable and are fully drainable.

Lobe or Screw – Up to You!
Rotary lobe or twin screw pump principle: When it comes to highly viscous media, our portfolio of positive displacement pumps offers two outstanding design concepts to fulfill all your wishes. Both principles, twin screw and rotary lobe, have their advantages. If you have a preference, we will deliver the pump type you require. Your are not sure? We will decide case by case on account of pumped media, application and design conditions and we will select the best solution for your specific demand!

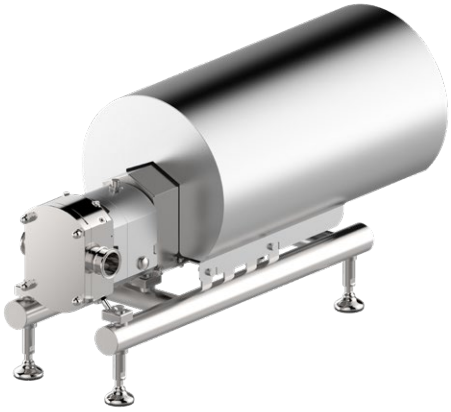
YOUR ADVANTAGES AT A GLANCE.

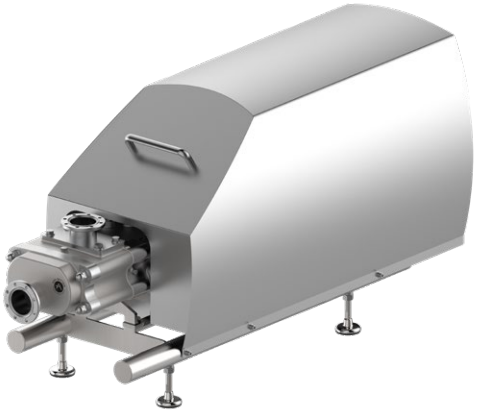
GEA Hilge Positive Displacement Pumps
- Always the best pump for your application
- Global GEA network
- Professional support throughout the whole life cycle

Hygienic Design
- All product-wetted materials are approved for food, dairy, beverage and pharmaceutical applications
- Proven cleanability ensures reliable and fast CIP, saving time and resources

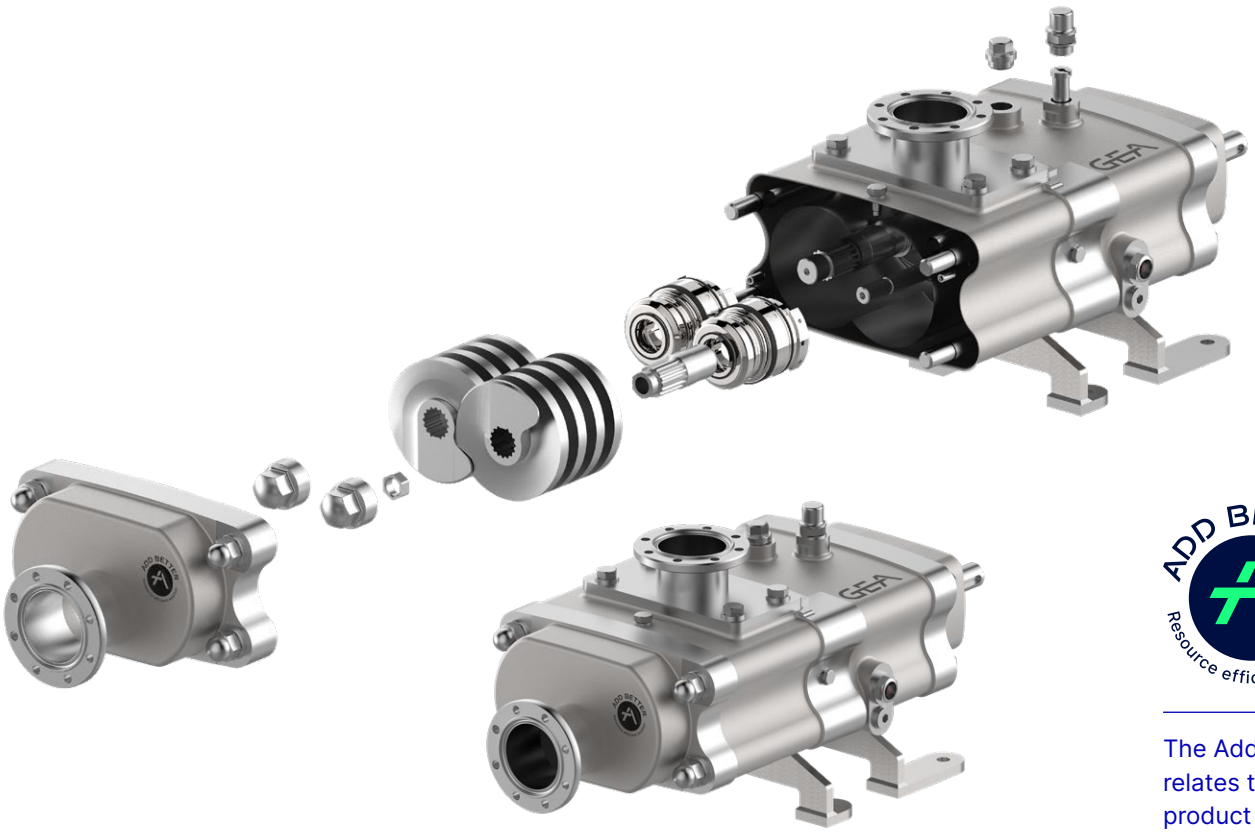
Long-time Reliability
- Robust design prevents galling and wear and allows high differential pressures
- No metal-to-metal contact, which secures smooth transport even for abrasive media

High Versatility
- Flexible pump configuration depending on application requirements
- Pump variants for demanding applications available
- Pumps can easily be retrofitted to cover a different application





GEA HILGE NOVATWIN+



The Add Better label relates to the serial product GEA Hilge NOVATWIN+, released in July 2023. The comparison refers to its predecessor model, the GEA Hilge NOVATWIN.

GEA Hilge NOVATWIN+ is the flexible twin screw pump series that meets the highest hygienic requirements.

With the new design of the NOVATWIN+, the volume has been increased and thus a smaller size can be used in ⅔ of the applications, saving up to 23 % material and on average 13 % energy thanks to its higher efficiency.

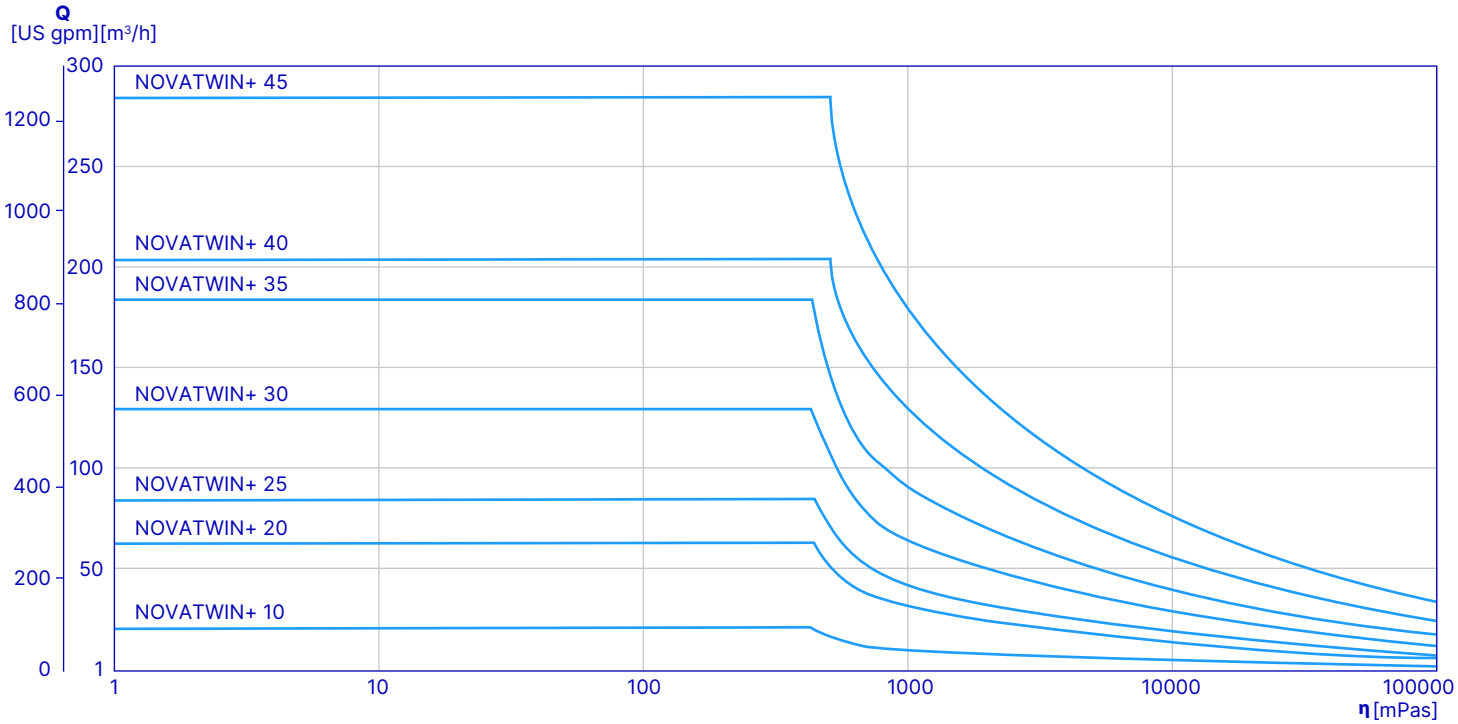
One pump for product and CIP
Variable speeds up to 3,000 rpm allow production and cleaning with only one pump.

Variable screw combinations
Over 40 different combinations of screw diameters and pitches allow the pumps to operate at different operating points.

Gentle product handling
The pump design ensures a low-pulsation flow, which makes the pump especially suitable for large and delicate particles.

Product protective procedure
To avoid any waste of the product, the reverse operation allows to empty the discharge piping from the product, before starting the cleaning process.

GEA Hilge NOVATWIN+ Performance Chart



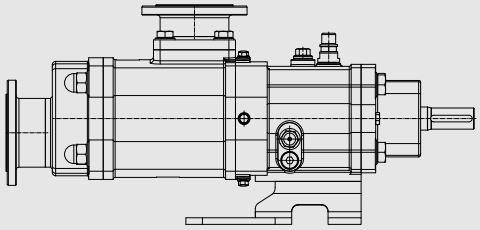
NOVATWIN+		10	20 / 25	30 / 35	40 / 45
	Product	15	50	107	210
Max. flow rate (m³/h)	CIP	20	80	180	330
Max. differential pressure (bar)		25	25	25	25
	Product	1,760	1,760	1,760	1,760
Max. speed (rpm)	CIP	3,000	3,000	3,000	2,850
Standard connection size (mm)		50	65	80	100
Max. particle size (mm)		17	25 / 33	31 / 43	38 / 53

Extended intermediate size for even more gentle transport of media or larger particles

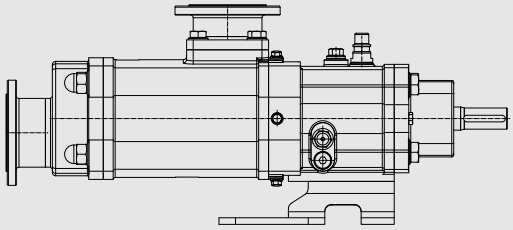
1. GEA Hilge NOVATWIN+ 30

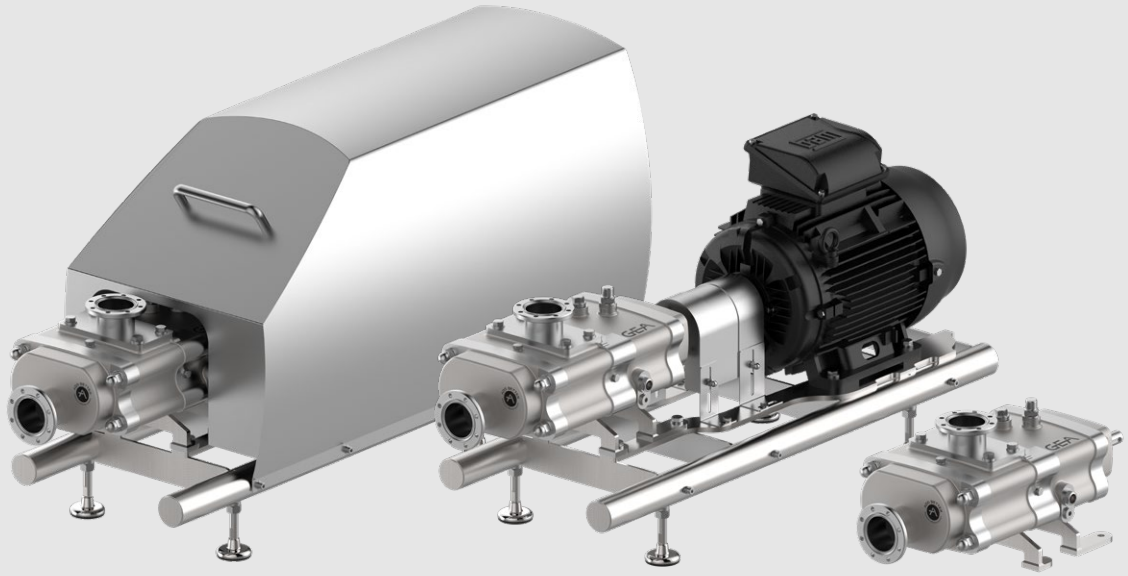
2. GEA Hilge NOVATWIN+ 35

1



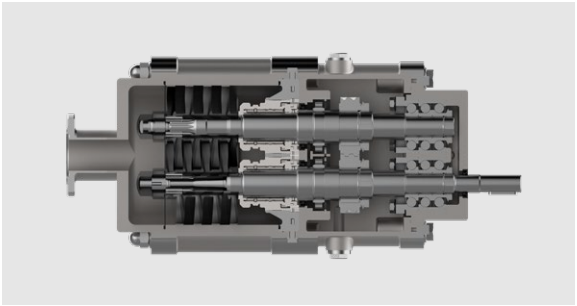
2





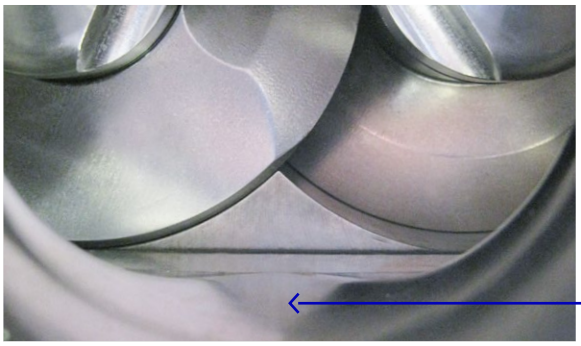
Features & Benefits

- Thanks to the gentle, low-pulsation conveying, even sensitive products with large particles remain intact and ensures longer shelf life.
- Flexible 2-in-1 pump for product and CIP, saving investment, adaption time, expense, and labor
- Good suction performance due to tight manufacturing tolerances and narrow gaps in the pump.
- Hygienic design ensures quick and safe cleanability, saving time and resources and increasing production safety.
- Ideal adaptation to customer needs and demanding conveying tasks through numerous combinations of screw diameters and pitches.
- Extensive customer- and requirement-specific documentation and certificates for the qualification of the pump in the system
- Thanks to its hygienic design, the pump can also be completely emptied without a drain valve.
- Easy drop-in and replacement with previous generation and installed piping dimensions.
- **New design helps to reduce up 23 % material and 13 % energy consumption on average.**



Principle of operation
The pumping elements are two non-contact screws that form chambers with the pump casing.

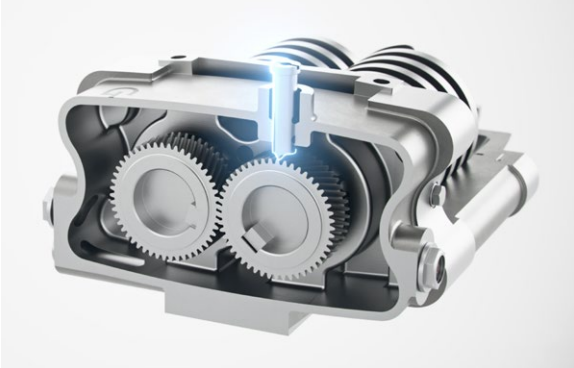
By rotation, the pumped medium is continuously moved along the screw axis from the suction to the pressure chamber. The product is not diverted and is not sheared in the chambers. This guarantees a very gentle conveying!



Self-draining even without a drain valve
Thanks to its hygienic design where the position of the suction connection is the deepest point in the pump, it can be completely emptied without a drain valve.

Patented Screw Adjustment

- Blockage toll integradted into the gearbox to tighten and lossen screws
- Patented easy screw adjustment directly on screws without oil release and disassembly

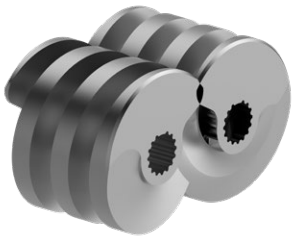


Options

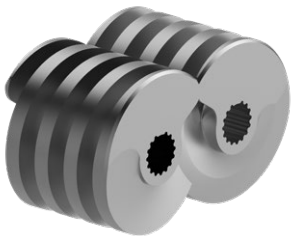
Hardened pump housing
For abrasive media screws and additionally the pump housing can be hardened to ensure a longer lifetime of the pump.

Thermal jacket
This option allows to either heat or cool the pump chamber depending on the temperature require-ments for the pumped media.

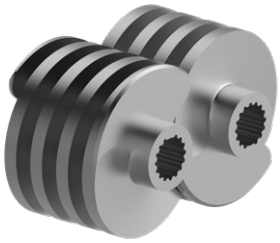
Srew options



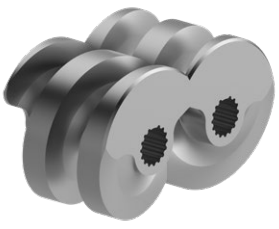
Standard applications
and pressure
(e.g. yoghurt)



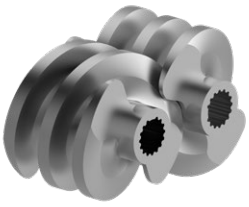
Standard applications
with higher pressure
(e.g. juice concentrates)



High pressure or
vacuum applications



Big particles or high flow rate
(e.g. cheese curd)



Double helix screws for
special applications

GEA Hilge NOVATWIN+ can fulfill several tasks with one pump, facilitating an efficient plant setup.

Advantages in dairy applications

Yoghurt is one of the exceptionally demanding products in the dairy sector when it comes to transport: on the one hand, it is essential to avoid excessive shear forces to protect the valuable bacteria cultures and prevent the irreversible separating of the different phases and reduction of viscosity. On the other hand, like for almost all dairy products, the pumps needs to meet all hygienic requirements as well as fast and save cleaning to assure product safety.

With the GEA Hilge NOVATWIN+ the product is gently moved through the chambers without changing the direction and with reduced backflow to ensure product integrity.

The same advantage applies to cheese curd applications.

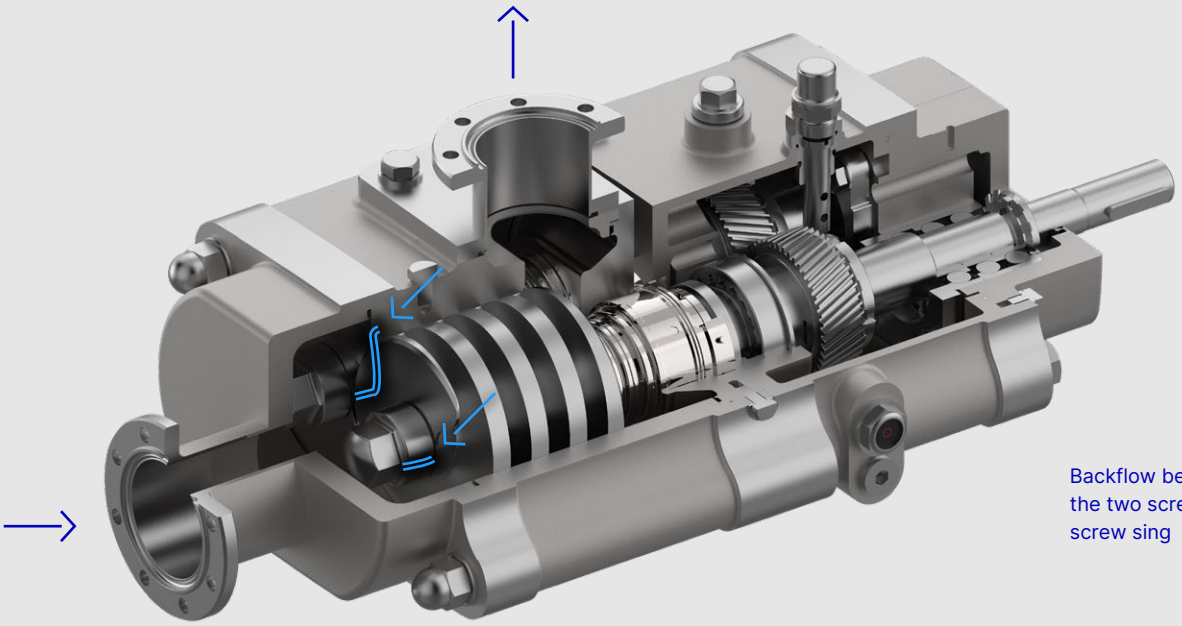
High flexibility

The wide speed range increases flexibility in use with varying viscosities, temperatures, operating pressures or other important criteria. The conveyance of low viscous to extremely high viscous media is possible.

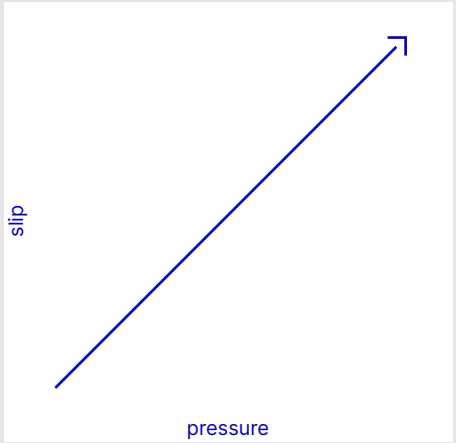
By using different screws with different pitches, the pump can be optimally adapted to the pumped medium in terms of particle size. This enables gentle pumping of pieces of fruit or meat salads with particles diameters up to 74 mm.

Slip path

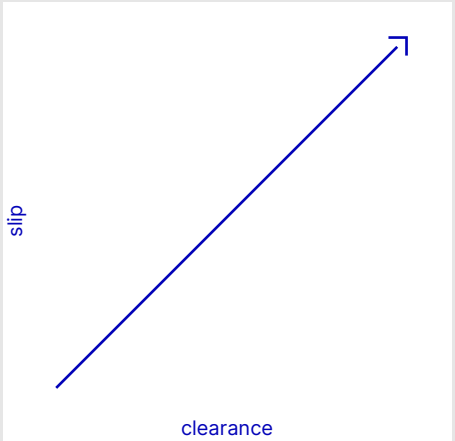
There is no contact between the screws and the casing. The tolerances between the rotors and the rotor casing allow some of the medium to escape from the discharge side to the suction side.



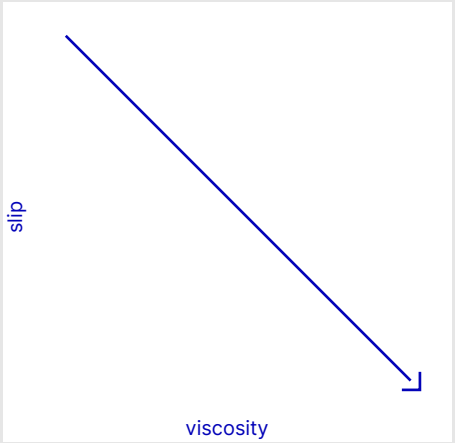
Backflow between the two screws and screw sing



A higher pressure equals more slip

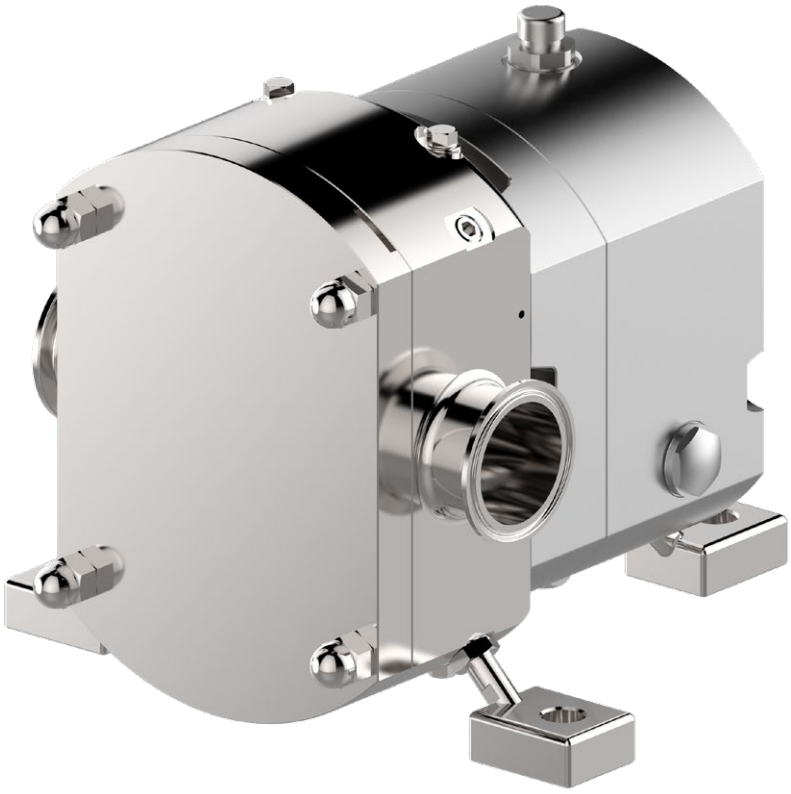


More clearance equals more slip



A higher viscosity equals less slip

GEA HILGE NOVALOBE



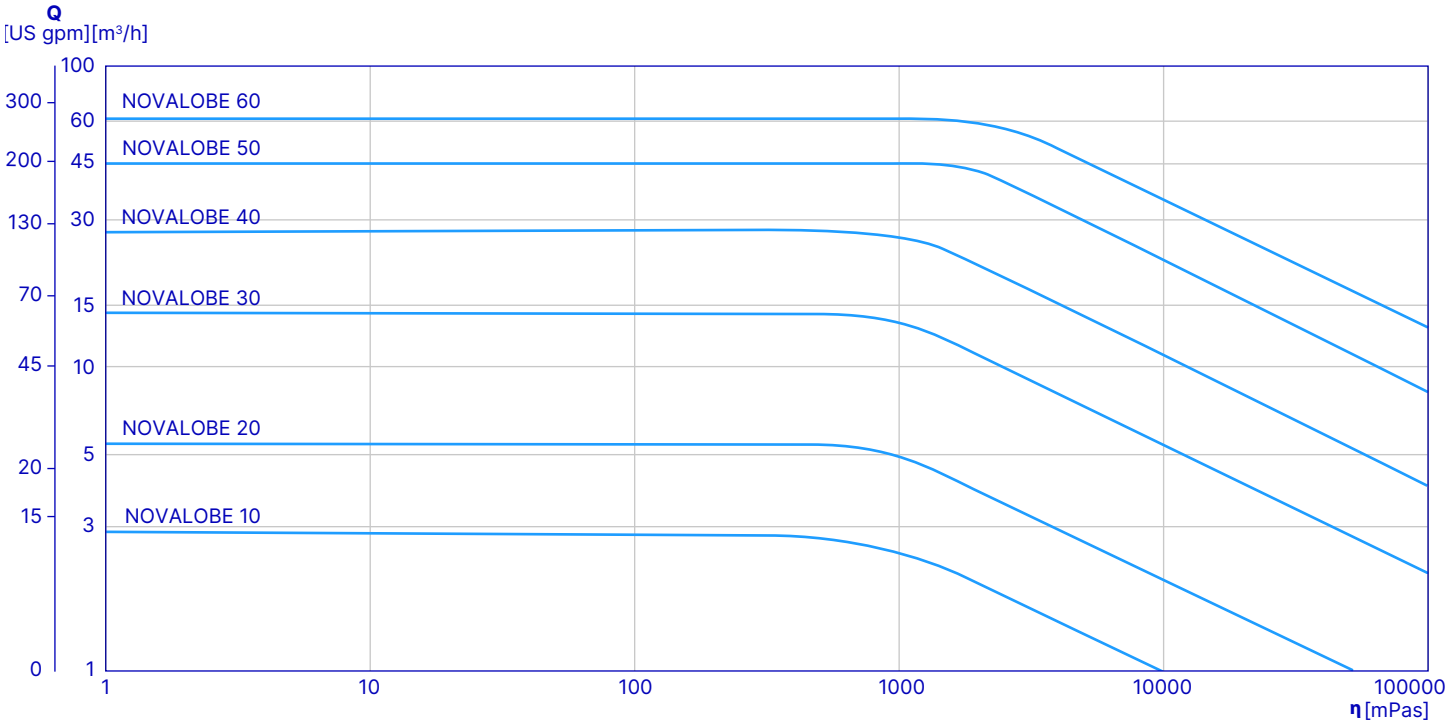
GEA Hilge NOVALOBE is an extremely reliable rotary lobe pump series that fullfills highest hygienic requirements.

Robust construction
The GEA Hilge NOVALOBE's compact design and the rigid shaft geometry prevent galling and wear and allow high differential pressure.

Flexible rotor profiles
The rotor housing can be equipped with various rotor profiles, making it easy to adapt the GEA Hilge NOVALOBE to specific applications for optimum performance in different conditions.

Service-friendly
The front-loaded mechanical seals can be quickly replaced while the pump and pipe connections remain in place.

GEA Hilge NOVALOBE Performance Chart

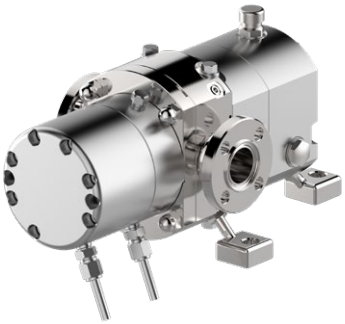


Pump model	NOVALOBE 10/0.06	NOVALOBE 20/0.12	NOVALOBE 30/0.33	NOVALOBE 40/0.65	NOVALOBE 50/1.29	NOVALOBE 60/2.1
Displacement (l/rev)	0.06	0.12	0.33	0.65	1.29	2.1
Max. differential pressure (bar)	16	16	16	16	16	10
Max. liquid temperature	up to 95 °C, 150 °C (SIP)	up to 95 °C, 150 °C (SIP)	up to 95 °C, 150 °C (SIP)	up to 95 °C, 150 °C (SIP)	up to 95 °C, 150 °C (SIP)	up to 95 °C, 150 °C (SIP)
Surface roughness Ra (µm)	≤ 0.8 / ≤ 0.4*	≤ 0.8 / ≤ 0.4*	≤ 0.8 / ≤ 0.4*	≤ 0.8 / ≤ 0.4*	≤ 0.8 / ≤ 0.4*	≤ 0.8
Connection size (mm)	25	40	50	65	80	100
Max. particle size (mm) (non-abrasive)	12	16	23	29	35	41

Features & Benefits

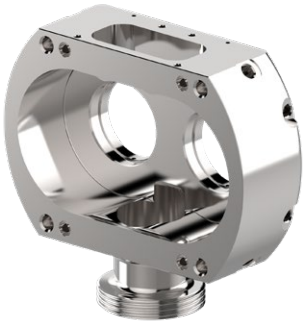
- Long-term reliability thanks to robust pump design and well-flushed shaft seal
- Gentle and safe conveying of the product through no metal-to-metal contact construction
- Process safety and optimal cleanability thanks to sterile, cast-free stainless steel variant with blowhole-free components and full drainability (Hygienic Design)
- Ideally adaptable to customer needs and demanding tasks thanks to great variability of rotary lobe geometries, connections, seals and mountings
- Fast and easy seal servicing thanks to mechanical seals accessible from the front (pump can remain in the pipeline)
- Small machine footprint due to compact design
- Extensive customer- and requirement-specific documentation and certificates for the qualification of the pump in the system
- When mounted vertical connection position, the pump is completely drainable without drain valve

Options



Integrated pressure relief valve

Thermal jacket



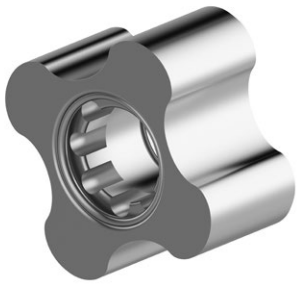
Rectangular inlet

Vertical installation

Cutaway of pump head and gear box

Rotor options

Bi-wing: standard applications (e.g. yeast)



Mulitlobe: low-pulsation/ filling applications (e.g. blood plasma)

A VARIETY OF APPLICATIONS FOR GEA HILGE NOVALOBE AND NOVATWIN+

GEA Hilge positive displacement pumps offer extremely reliable operation and gentle product handling to ensure product safety and high plant availability. The hygienic design makes the pumps suitable for a variety of applications, such as:

Dairy
- Cream cheese
- Butter
- Yoghurt
- Sour cream
- Ice cream
- Cheese curd

Food
- Chocolate
- Sauces & soups
- Mayonnaise
- Pastes
- Oils & fats
- Prepared salads
- Pet food

Beverage
- Smoothies
- Juice concentrate
- Pre-mixes
- Brewing yeast
- Sugar solution

Pharma & Biopharma
- Nutraceuticals
- Blood products
- Vaccines
- Enzymes
- Cell cultures

Personal Care & Home Care
- Cosmetics
- Body & skin care
- Fabric care
- Household cleaners

Liquid Data

*Liquid: _____
*Liquid temperature [°C / °F]: _____
*Density [kg/dm³]: _____
*Viscosity [mPas]: _____
Concentration [%]: _____

Solids: ☐ No ☐ Yes:
Kind of solids: _____
Size of solids [mm]: _____
Abrasive: ☐ No ☐ Yes
Shear sensitive: ☐ No ☐ Yes

Operating Conditions

*Duty point 1 *Flow [m³/h/gpm]: _____
Inlet pressure [bar]: _____

*Diff. Pressure [bar]: _____
Vacuum at inlet: ☐ No ☐ Yes
Vacuum, abs. [mbar]: _____

CIP / SIP Conditions

CIP with another pump: ☐ No: ☐ Yes
CIP Temperature [°C / °F]: _____
CIP Flow [m³/h/gpm]: _____
CIP differential pressure [bar]: _____

SIP (Pump stopped): ☐ No ☐ Yes:
SIP Temperature [°C / °F]: _____
SIP Duration [min]: _____

Pump execution

***Connection Type**

☐ Tri Clamp (DIN 32676) ☐ SMS ☐ DIN 11851
☐ DIN 11853-2 / 11864-2 ☐ Other: _____

Connection Size Standard: ☐ No: ☐ Yes
Special (DN_s/DN_d): _____

Drainable: ☐ No ☐ Yes

Execution

☐ Pump with bare shaft end
☐ Pump on stainless steel base with motor and coupling
☐ Pump in stainless steel trolley with motor and coupling
☐ With stainless steel motor shroud

Connection Position

GEA Hilge NOVALOBE:
☐ Horizontal port orientation
☐ Vertical port orientation

GEA Hilge NOVATWIN+:
☐ Axial in, top out
☐ Top in, axial out

Surface Roughness

☐ $R_a \leq 0.8$ µm
☐ Other: _____

Ferrite Content

☐ Not specified
☐ Fe < 1%

Options

☐ Thermal jacket
☐ Other: _____

Shaft Seal

☐ Single mechanical seal
☐ Double mechanical seal

Material Shaft Seal

☐ Carbon / SiC
☐ SiC / SiC
☐ TuC / TuC

Elastomer

☐ EPDM
☐ FKM (Viton)
☐ Other: _____

Motor Data

*Power supply:

☐ 3~ 400 V / 50 Hz
☐ 3~ 200 V / 50 Hz
☐ 3~ 460 V / 60 Hz
☐ 3~ 200 V / 60 Hz

Variable speed drive ☐ No ☐ Yes:
☐ External frequency converter (not on motor)
☐ Integrated frequency converter (on motor)

Explosion protection ☐ No ☐ Yes

ATEX ☐ No ☐ Yes:

Temperature class: _____
Ambient temperature [°C / °F]: _____

Class: _____
Division: _____
Group: _____

* Fields marked with an asterisk are mandatory for a pump selection

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