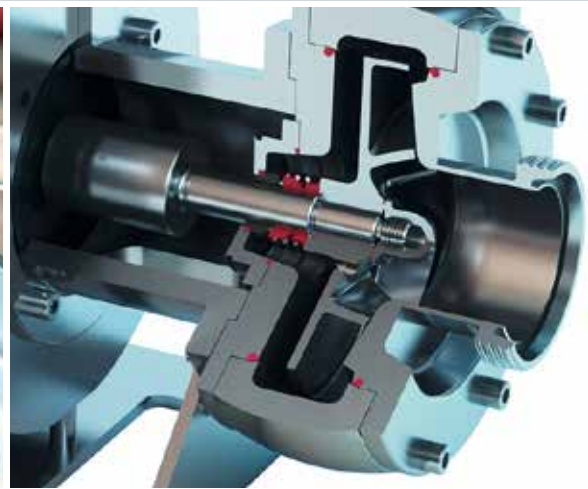


PRODUCT CATALOGUE

SAWA PUMPS - OVERVIEW



- Centrifugal pumps (self-priming)
- Centrifugal pumps
- Peripheral pumps
- Gear pumps
- Sterile / Aseptic pumps



As a flexible Swiss family company we can look back on over 100 years of experience. We combine consultation, development and production of high-quality pumps under one roof. This means we are able to find the ideal solutions for your company.



Internal quality control, high demands on the material and precise manufacturing guarantee reliable and hygienic delivery of your media.



Our customers come from a wide variety of industries, but they all have two characteristics in common – they pump liquids of all kinds and they have the highest standards. Every day our customers produce food, beverages, chemical substances, pharmaceutical solutions and numerous other products for daily use. We have set ourselves the goal of moving these liquids.



SAWA, quality and reliability since 100 years



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Centrifugal pump HD – self-priming	4
Centrifugal pump LE/ZA	6
Submersible centrifugal pump ZAT	8
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Peripheral pump P	10
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Centrifugal pump HD – self-priming



Gentle and quiet product delivery are the strengths of the HD pumps. The centrifugal pump features an impressive suction capacity (up to 7 m) and a very silent operation. It can be operated in both directions.

Food industry

Liquid egg, vinegar, concentrates, flavourings, vitamins, milk, cream, buttermilk, sauces, cooking oil, sugar solutions, brine, spices, fatty acids, CIP, whey, fats, cocoa butter etc.

Beverage industry

Mineral water, syrup, spirits, fruit juices (including fruit juices with pulp), wine, beer, brewer's yeast, lemon juice, alcohol, liqueur, CIP, vegetable juices, iced tea etc.

Pharmaceuticals/cosmetics

Perfumes, emulsions, alcohols, herbal extracts, flavourings, WFI/PUW/HPW, CIP/SIP, colourants, infusion solutions, applications in bio-technology etc.

Chemicals/industry

Lyes, acids, milk of lime, alcohols, methanol, ethanol, solvents, hydrogen peroxide, DI water, urea, glycol solutions, biodiesel, condensates etc.



The optimal solution for a gentle and quiet handling of the liquid



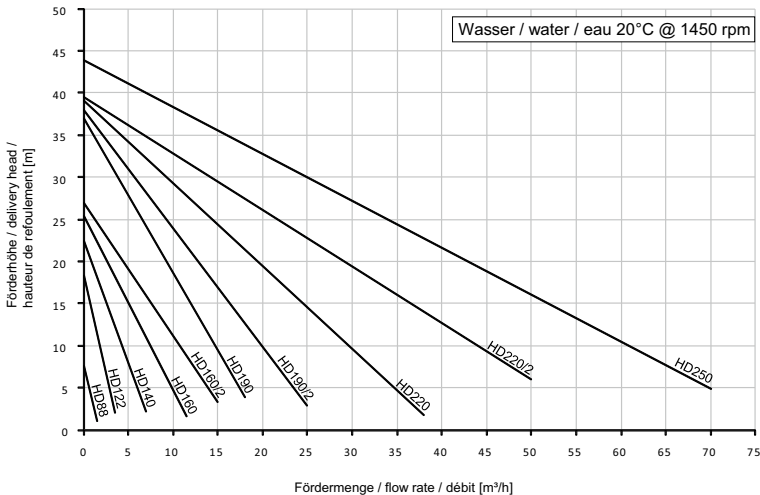
Features:

- Self-priming (suction head up to 7 m),
- Excellent delivery behavior with fluids containing gas,
- Suitable for left and right rotation,
- Very quiet operation,
- Dead space free construction (hygienic design),
- Modular design and low maintenance costs,
- Sturdy design comprising high-quality Cr-Ni-Mo stainless steel 1.4435 (316L) with electro polished surfaces,
- CIP (including CIP-return) and SIP,
- Various shaft sealing systems (e.g. mechanical seals) available.

Optional forms:

- ✓ ATEX
for zones 1, 2, 21, 22
- ✓ Pharma design
for maximum safety, reliability and hygiene
(surface roughness down to Ra < 0.4 µm)
- ✓ Magnetic coupling
hermetically sealed design HDM160
for crystallising, toxic, flammable and environmentally hazardous liquids
- ✓ Bearing housing option
for special requirements
- ✓ Mobile
version with sturdy trolley

Flow rate Q [m³/h]	max. 70
Delivery head H [m]	up to 40
Temperature range [°C]	minus 30 to 120, max. 145 (SIP)
Viscosity [mPa s]	up to 500
Nominal pressure	max. PN10



Centrifugal pump LE/ZA



Type LE: The flow optimised impeller and volute allow a very silent, gentle and efficient handling of the liquids. The dead space free and hygienic design guarantees fast cleaning and complete draining.

Type ZA: The centrifugal pump ZA can be used to convey fluid media with viscosities up to 500 mPa s without any danger of clogging. Different impeller versions guarantee an optimum adaption to the pumped media which makes this pump type an ideal all-rounder.



Food industry

Liquid egg, vinegar, concentrates, flavourings, vitamins, milk, cream, curd, buttermilk, sauces, cooking oil, sugar solutions, brine, spices, fatty acids, CIP, yoghurt, whey, fats, cocoa butter, liquid malt etc.

Beverage industry

Mineral water, syrup, spirits, fruit juices (including fruit juices with pulp), wine, beer, brewer's yeast, lemon juice, alcohol, liqueur, CIP, vegetable juices, iced tea etc.

Pharmaceuticals/cosmetics

Perfumes, emulsions, alcohols, herbal extracts, flavourings, WFI/PUW/HPW, CIP/SIP, colourants, infusion solutions, applications in bio-technology etc.

Chemicals/industry

Lyes, acids, milk of lime, alcohols, methanol, ethanol, solvents, hydrogen peroxide, DI water, urea, glycol solutions, various applications in reverse osmosis processes, biodiesel, waste water with particles, condensates, liquid-deicing salt etc.



The pump types for pure and solids-laden liquids



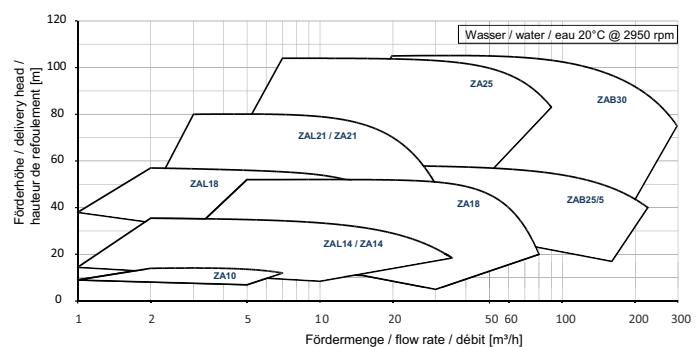
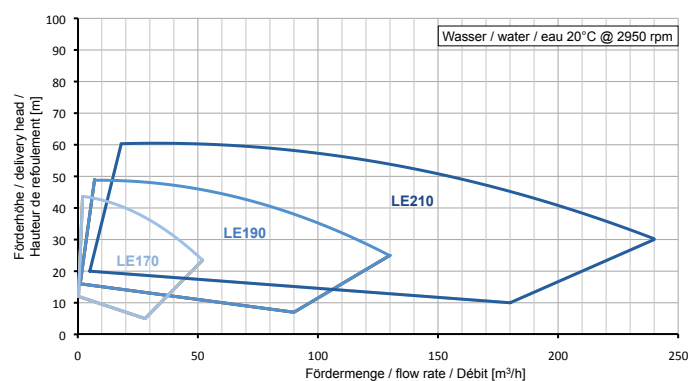
Features:

- Flow optimised volute casing and impeller designs with high efficiencies,
- Dead space free design (hygienic design),
- Very silent operation,
- Modular design and low maintenance costs,
- Sturdy design comprising high-quality Cr-Ni-Mo stainless steel 1.4435 [316L] with electropolished surfaces,
- Pumping of solids-laden media with no risk of clogging,
- Ideal for fast temperature changes thanks to sturdy design,
- The robust design allows the handling of abrasive and corrosive media,
- All common shaft sealing systems (e.g. mechanical seals) available.

Optional forms:

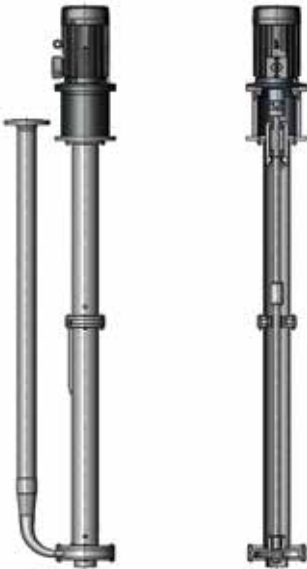
- ✓ **ATEX**
for zones 1, 2, 21, 22
- ✓ **Pharma design**
for maximum safety, reliability and hygiene
(surface roughness down to $Ra < 0.4 \mu m$)
- ✓ **Magnetic coupling**
hermetically sealed design LEM for
crystallising, toxic, flammable and
environmentally hazardous liquids
- ✓ **Vertical option**
for easy draining
- ✓ **Bearing housing option**
for special requirements
- ✓ **Inducer**
for low NPSHa values ($< 1 m$)
- ✓ **Mobile**
version with sturdy trolley

Flow rate Q [m³/h]	max. 240
Delivery head H [m]	up to 110
Temperature range [°C]	minus 30 to 120, max. 145 (SIP)
Viscosity [mPa s]	up to 500
Nominal pressure	max. PN10 to PN100 (type LEH/ZAH)



For immersion depths
up to 3 m

Submersible centrifugal pump ZAT



Features:

- Up to a maximum depth of 3 m,
- All wetted parts are electropolished,
- Robust construction made of chrome-nickel-molybdenum stainless steel 1.4435 (316L),
- Gentle pumping of sensitive liquids,
- CIP capability,
- Variety of application areas.

Applications:

- Salt water, sugar solutions,
- Chemicals,
- Solvents,
- Textile wastewater with fiber and yarn shares (no clogging),
- Contaminated wastewater,
- For use in neutralization plants.

Flow rate Q [m³/h]	max. 70
Delivery head H [m]	up to 60
Temperature range [°C]	minus 30 to 80
Viscosity [mPa s]	up to max. 500



Gentle pumping of
challenging media

Centrifugal pump ZAB

Sawa
PUMPE



Features and optional forms:

- Sturdy design comprising high-quality Cr-Ni-Mo stainless steel 1.4435 (316L),
- CIP and SIP capability,
- Gentle pumping of sensitive liquids,
- The broad pump body with enlarged diameter and extended outlet to DN 100 permit flow rates up to 200 m³/h,
- Bearing housing option for special requirements,
- ATEX for zones 1, 2, 21, 22,
- Developed and designed for the gentle handling of various cheese churd.

Applications:

- Curd (for hard and soft cheese),
- Industrial wastewater containing sludge,
- CIP cleaning,
- Corrosive acids and lyes,
- Solids-laden wastewater.

Flow rate Q [m ³ /h]	max. 200
Delivery head H [m]	up to 25
RPM [1/min]	800 to 1500
Temperature range [°C]	up to 120, max. 145 [SIP]
Viscosity [mPa s]	up to 500
Nominal pressure	PN10



Peripheral pump P



The characteristics of the peripheral pump P makes it suitable for use in a wide range of industrial sectors where small volumes are to be pumped against high pressure. They can be installed in applications with a low inlet height without cavitation.

Food industry

Vinegar, concentrates, flavourings, vitamins, milk, cooking oil, fatty acids, CIP etc.

Beverage industry

Mineral water, syrup, spirits, fruit juices, lemon juice, alcohol, CIP, beverage-concentrates etc.

Pharmaceuticals/cosmetics

Perfumes, emulsions, alcohols, flavourings, WFI/PUW/HPW, CIP/SIP, proteins, essences etc.

Chemicals/industry

Lyes, acids, alcohols, methanol, ethanol, solvents, hydrogen peroxide, urea, colorants, decalcifier, glycol solutions etc.



The suitable pump for low flow rates against high pressure



Features:

- Pumping of low flow rates at high pressure without pulsation,
- Good adjustability with frequency converter due to a steep linear pump characteristic curve,
- The symmetrical design is suitable for both left and right rotation,
- Insensitive to cavitation when inlet height is low,
- Construction of 1.4435 (316L) with electropolished surfaces,
- Optional: SiC bearing and ceramic shaft to prevent abrasion and wear,
- Various shaft sealing systems (e.g. mechanical seals) available.

Optional forms:

✓ ATEX

for zones 1, 2, 21, 22

✓ Pharma design

for maximum safety, reliability and hygiene
(surface roughness down to $Ra < 0.8 \mu m$)

✓ Magnetic coupling

hermetically sealed design MP for
crystallising, toxic, flammable and
environmentally hazardous liquids

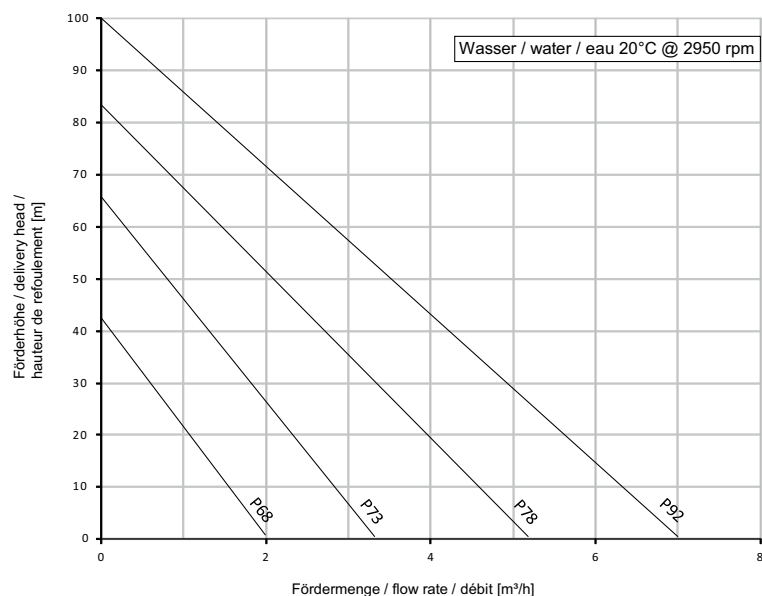
✓ Bearing housing option

for special requirements

✓ Mobile

version with sturdy trolley

Flow rate Q [m³/h]	max. 7
Delivery head H [m]	max. 100
Temperature range [°C]	minus 30 to 200 (type MP)
Viscosity [mPa s]	< 150
Nominal pressure	up to PN40



Gear pump ZR



The SAWA gear pump ZR is the robust all-rounder for a broad range of industrial applications. They are suitable for pumping fluid media to viscosities up to 3000 mPa s.



Food industry

Glycose, fats, oils, essences, concentrates etc.



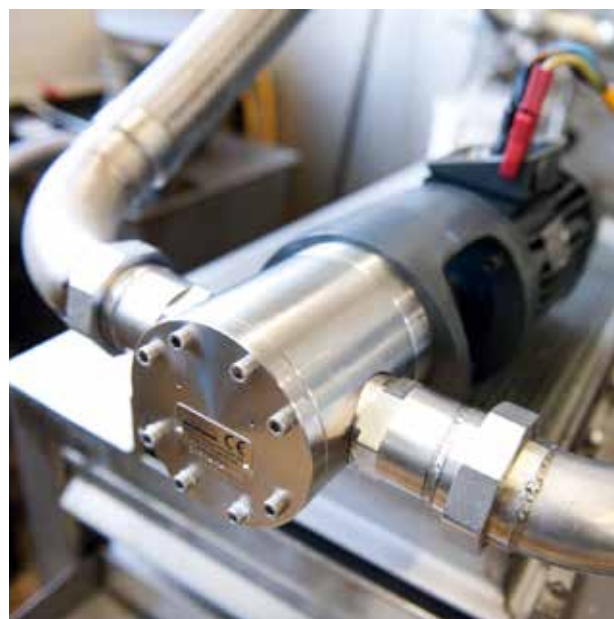
Feed industry

Molasses, fats, fatty acid, propionic acid, preservatives etc.



Chemicals/industry

Lyes, acids, emulsions, oils, resins, refrigerants, heat transfer oil up to 350 °C, solvents, deionized water, glycol solutions etc.



The robust solution for industrial applications



Features:

- Pulsation free conveying of the medium,
- Sturdy design comprising high-quality Cr-Ni-Mo stainless steel 1.4435 (316L),
- Helical gears for quiet operation,
- Versatile applications,
- Good adjustability with frequency converter due to a steep linear pump characteristic curve,
- Equipped with shaft seal (single or double),
- Available as hermetically sealed, magnetic coupled pump design ZRP.

Optional forms:

✓ ATEX

for zones 1, 2, 21, 22

✓ Magnetic coupling

hermetically sealed design ZRP for crystallising, toxic, flammable and environmentally hazardous liquids

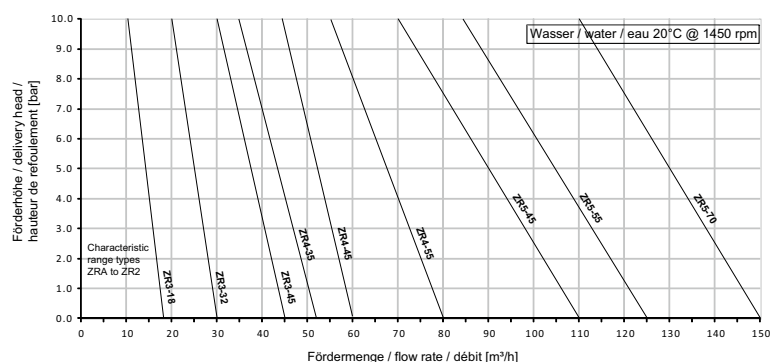
✓ Pressure relief valve

built into pump cover

✓ Mobile

version with sturdy trolley

Flow rate Q [m³/h]	max. 9
Delivery head H [m]	max. 100
Temperature range [°C]	minus 30 to 200
Viscosity [mPa s]	max. 3000
Nominal pressure	up to PN16



Sterile / aseptic pumps

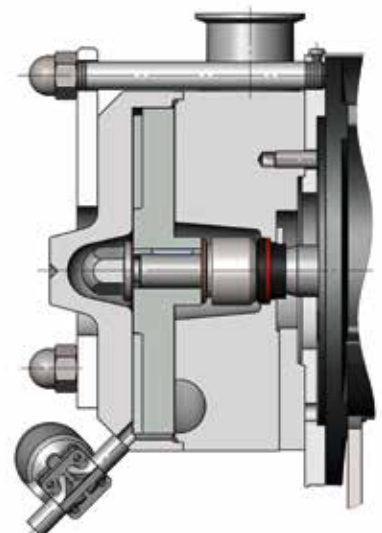


Safety and reliability when pumping fluids in sterile and pharmaceutical applications – with surface roughness values down to Ra 0.4 µm and optimal residual emptying. The ideal pump when absolute sterility is required.



Features:

- Dead space free design in the pump interior including the mechanical seal area
- Gap-free design including the impeller seal, cover gasket etc.
- The easy-to-clean construction allows the complete emptying of the pump. The connections for the emptying can be selected by the customer, such as:
 - Tri-Clamp (DN15)
 - Membrane valve (manual or automatic)
- Excellent CIP and SIP features



Maximum safety for the use in pharmaceutical applications



- Surface roughness of all product-wetted parts (pump body, pump cover impeller, pump shaft, impeller nut, and mechanical seal) available down to Ra 0.4 μm
- Produced from solid stainless steel 316L (1.4435)
- SAWA standard always electropolished, this despite the surface roughness requirements
- Ferrite content < 1%
- A variety of different connections is available, *see technical information*
- Various shaft sealing systems (e.g. mechanical seals) available

Available documentation:

- Operating and maintenance manual
- SAWA pump test report
- FDA conformity certificate of elastomers
- Certificate of conformity 2.2 EN DIN 20304
- Inspection certificate 3.1 DIN EN 10204
- Surface roughness and ferrite content protocols
- Welding report
- USP CI VI confirmation

Ausführungsoptionen

✓ ATEX

für Zonen 1, 2, 21, 22

✓ Magnetic coupling

hermetically sealed design for crystallising, toxic, flammable and environmentally hazardous liquids

✓ Vertical option

for easy draining

✓ Bearing housing option

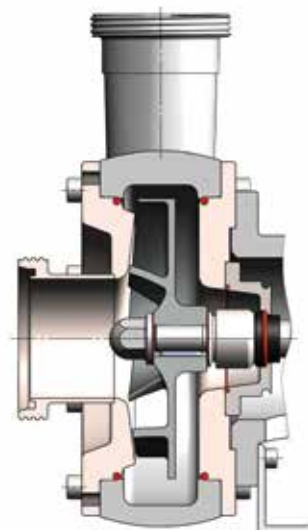
for special requirements

✓ Inducer

for low NPSHa values (< 1 m)

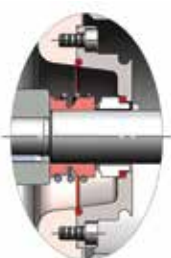
✓ Mobile

version with sturdy trolley

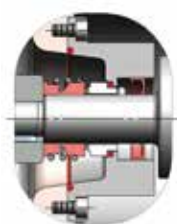


Technical information

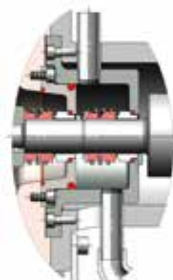
Optional forms	HD	LE/ZA	P	ZR
ATEX	x	x	x	x
Pharma design	x	x	x	
Magnetic coupling	x	x	x	x
Mobile trolley	x	x	x	x
Bearing housing	x	x	x	
Mechanical seals				
Single ¹	x	x	x	x
Double-acting (mechanical seal + radial shaft seal) ²	x	x	x	x
Double-acting (tandem ³ or back-to-back ⁴)	x	x	x	
Sterile mechanical seal ⁵	x	x	x	



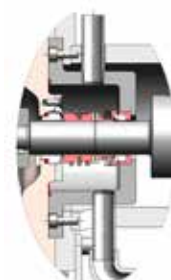
1. Single



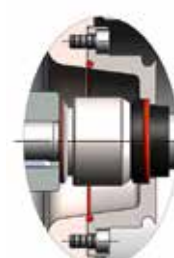
2. Double-acting



3. Tandem



4. Back-to-back



5. Sterile

Materials:

- Pumps: 1.4435/316L (for product-wetted parts)
- Mechanical seals: Carbon, chrome steel, tungsten carbide, SSiC, ceramics
- Secondary seals: FPM/FKM, FFKM, EPDM, PTFE, FEP
- Bearings: Carbon, SSiC

Connections - options (according to DIN, ISO, ASME):

- Thread
- Flange
- Tri-Clamp
- Sterile connection (thread, flange, clamp)

Motors:

- IE2 and IE3
- Synchronous motor
- With mounted frequency converter
- EEx e II T3 and EEx de IIC T4 – T6
- Break motors
- Hydraulic motors for pump type HD
- Hybrid drive (electric motor + hydraulic motor) for pump type HD
- Air motors
- Stainless steel motors

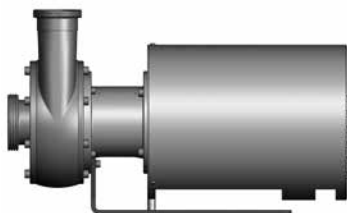
Impeller for pump type LE/ZA

- Open
- Semi-open
- Closed
- Inducer DN50/65/80/125

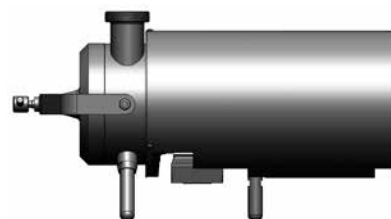
Modules/options: HD LE/ZA PZR	HD	LE/ZA	P	ZR
Design option I – Foot motor without shroud	x	x	x	x
Design option M – stainless steel shroud and chrome steel foot	x	x	x	
Design option K – stainless steel shroud and chrome steel foot with calottes	x	x	x	
Design option T – stainless steel shroud and chrome steel foot with machine feet	x	x	x	



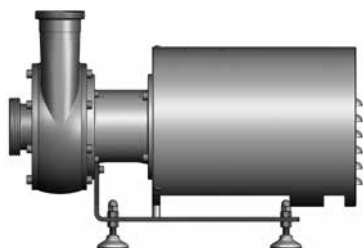
Design option I



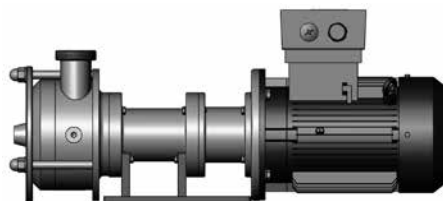
Design option M



Design option K



Design option T



ATEX/Bearing housing option

ATEX option:

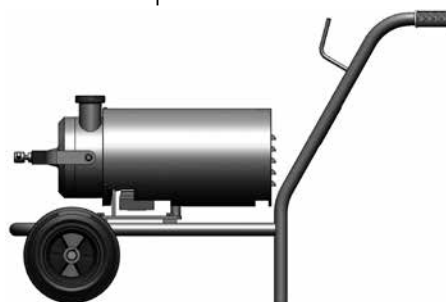
- Zones 1, 2 and 21, 22
- Design with magnetic coupling or bearing housing
- Certified ATEX motors
- Various monitoring options (PT100, dry run protection etc.)

Available documentation:

- Operating and maintenance manual
- SAWA test report
- FDA conformity certificate of elastomers
- Certificate of conformity 2.2 EN DIN 20304
- Inspection certificate 3.1 DIN EN 10204
- Surface roughness and ferrite content protocols
- USP CI VI confirmation

Accessories:

- Mobile trolley
- Bypass
- Pressure relief valve (integrated into pump cover) for gear pump ZR
- Emptying valve
- Circuit breakers and electrical accessories
- Suction filter
- Customer specific accessories



Mobile trolley



A flexible team and a comprehensive supply of pumps and replacement parts are ready to fulfil your wishes. Reliably and on schedule.

Our experienced staff are established specialists in their field. They are on hand to share their expertise with you – from the initial consultation right through to on-schedule delivery, from precise production right through to documented quality checks. We look forward to building a long and successful business relationship with you. You can rely on us.

The high quality of SAWA pumps is in demand all over the world. For that reason we have a far-reaching network of distribution and service partners. These partners support our international customers with their knowledge and carry the good reputation of our company out into the world with professional advice and reliability that befits our family company.



Well prepared for your challenges





Sawa
P U M P E N



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