

## Product information

### **S Pump Series**

Self-priming centrifugal pumps with a  
single mechanical seal

Materials: housing: PP or PVC  
other parts made of PVDF

**SCHMITT**

chemical resistant pumps

## Description

### S Pump Series



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Self-priming centrifugal pumps with a single mechanical seal

**Application:** The S Pump Series is especially conceived for the self-priming operation. Therefore, it is particularly suitable if frequent starts with an empty suction line are necessary or the penetration of gasses cannot be prevented. The design and manufacturing materials allow for optimized adaptability for the many different operating conditions as well as for the various media to be pumped.

**Field of application:** Sampling or the transmission out of containers, pits or plants, transfusing operations, environment engineering, tanker trucks, electro-plating technology, laboratory applications, everywhere, where the technical safety regulations do not allow the application of normal priming pumps

**Materials:** » Housing: PP (polypropylene) or PVC (polyvinylchloride)  
» Other parts: PVDF (polyvinylidene fluoride)

**Suction head:** up to a max. of 5 m

**Max. output rate:** 200 l/min

**Max. discharge head:** 27 m

**Motor power:** 0,25 - 2,2 kW

The S Pump Series has a special pump housing with a collection container that serves as a liquid reservoir. After filling the liquid container, the pump creates a strong negative pressure and is so enabled to independently prime the medium. In the S Pump Series, the motor power is transmitted without slip directly to the pump impeller through a solid shaft. A mechanical seal prevents the leakage of the media to be pumped and ensures the leak proof sealing of the centrifugal pump.

**Advantages:**

- » self-priming, the liquid level can be up to 5 m below the pump
- » offers a high degree of operational safety
- » the highest chemical resistance
- » robust, thick-walled design
- » low-maintenance through an optimal adaptation to the medium to be pumped
- » long-lasting and wear resistant, various types of designs for almost all operating conditions
- » models are also available, where no metal parts are in contact with the medium
- » easy to maintain (wear parts and the mechanical seal can be changed swiftly)
- » universally applicable, quiet and compact
- » various chemical resistant materials can be supplied from stocked inventory

# Types

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### Materials and Components:

- » Main material: Parts made solid of PVDF, PP or PVC
- » Medium temperature up to 50° C possible
- » Elastomere alternatively made of FKM, EPDM, FEP or Kalrez®
- » Shafts are made of stainless steel or Hastelloy C4
- » Mechanical seals made of PTFE, ceramic, carbon or SiC
- » Structure in the designs A, B and C:
  - **Design A:** No metal parts in the pump are in contact with the medium. The impeller is equipped with a shaft sleeve. The face pressure is achieved with a thrust-collar-loaded mechanical seal.
  - **Design B:** The mechanical seal is spring-loaded. The impeller is equipped with a shaft sleeve. The spring is made of Hastelloy and in contact with the medium; however, the shaft is not.
  - **Design C:** The mechanical seal is spring-loaded. The impeller does not have a shaft sleeve. Simple, robust structure.
- » The metal parts that are in contact with the medium (shaft sleeve, impeller insert and locking nut) are available in stainless steel or Hastelloy.
- » High-quality electric motors made in Germany

### Material details:

- » **PVDF:** Polyvinylidene Fluoride, Pure, milky white, not colored (up to +95° C)
- » **PP:** Polypropylene, Fiber glass-reinforced, gray (up to +80° C)
- » **PVC:** Polyvinyl chloride, dark gray (up to +50° C)
- » **FKM:** Viton® quality, -20...+200° C
- » **EPDM:** Ethylene propylene diene M-class rubber, Food-safe (FDA, KTW, WRC), -40...+160° C
- » **FEP:** Fluorinated ethylene propylene with Viton® or silicone core, -60...+200° C
- » **Kalrez®:** High performance elastomere up to +315° C
- » **PTFE:** Pure Teflon®, fiber glass or carbon fiber reinforced
- » **SiC:** Silicon carbide, without free silicon, sintered
- » **Carbon:** Carbon, impregnated with synthetic resin, food-safe
- » **Stainless steel:** 1.4571 or stainless steel fine cast 1.4581 (A4) (up to +150° C)
- » **Hastelloy C4:** 2.4610
- » **Ceramik:** Highly pure Al<sub>2</sub>O<sub>3</sub>-ceramic 99.7%

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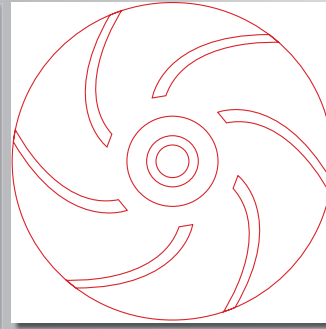
### Motor details:

- Standard Motors (stock items):
- » Three-phase motors: 230/400 V 3ph, 50 Hz, IP 55, insulation-class F or 277/480 V 60 Hz also with PTC thermistor
  - » Alternating current motors: 230 V 1ph, 50/60 Hz, IP 55, Insulation class F

- Special design models (available):
- » Three-phase motors, explosion proof, flameproof enclosure, EEx de II CT4
  - » Special voltages and frequencies
  - » 2-, 4- and 8-pole
  - » UL and CSA execution
  - » Special protection types (e.g. IP 65)
  - » High temperature designs
  - » Special insulation classes (e.g. tropical insulations)
  - » Multi area voltage (e.g. 220-290 / 380-500 V 50 Hz;
  - » 220-332 / 380-575 V 60 Hz.)
  - » Additional designs upon enquiry.

# Characteristics

## S Pump Series

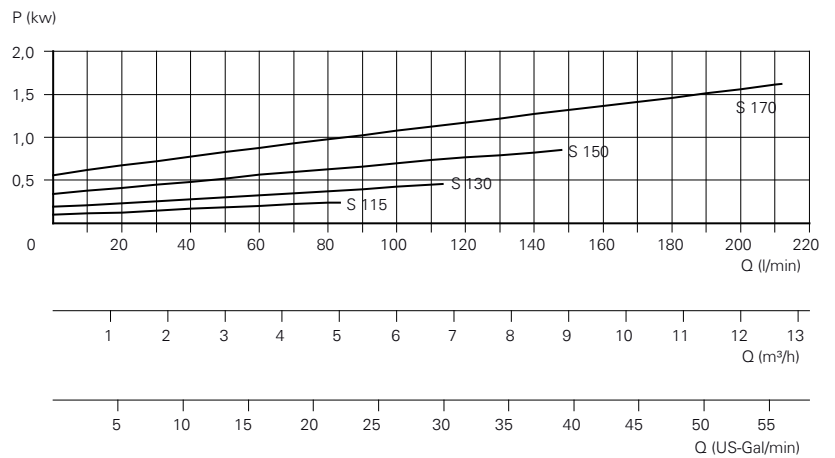
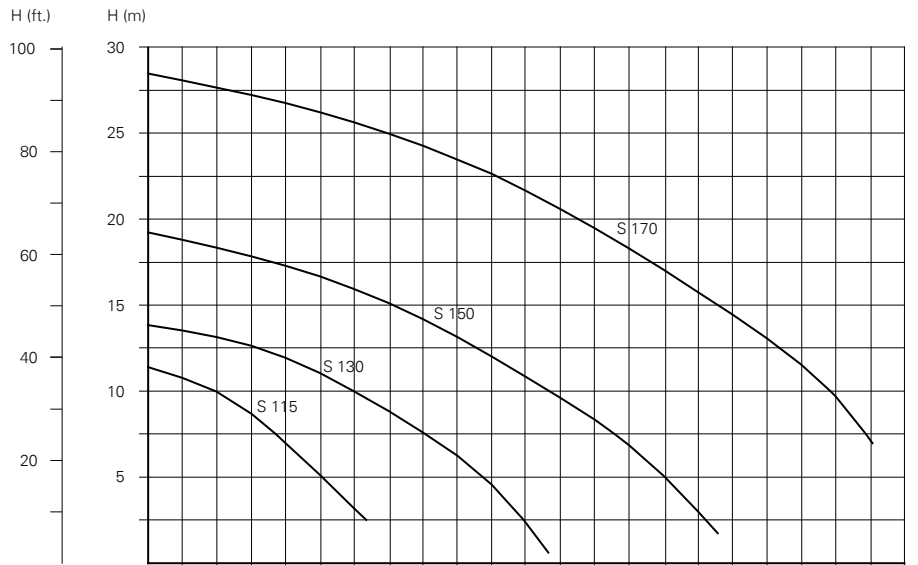


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### S 115 - S 170 Pump Series

- Motor power**
- » S 170: 2,20 kW
  - » S 150: 1,10 kW
  - » S 130: 0,55 kW
  - » S 115: 0,25 kW

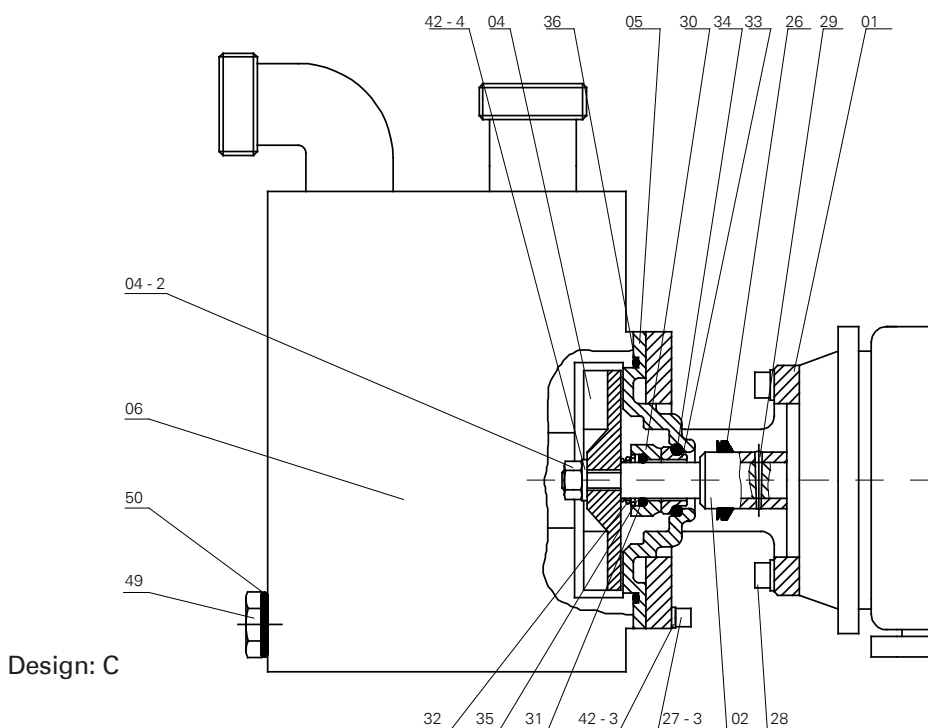


Characteristic lines measured with water, 20° C and 2900 Rpm (50 Hz.)

# Parts Descriptions

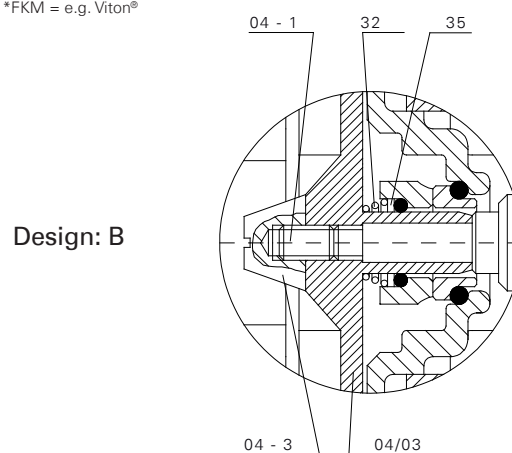
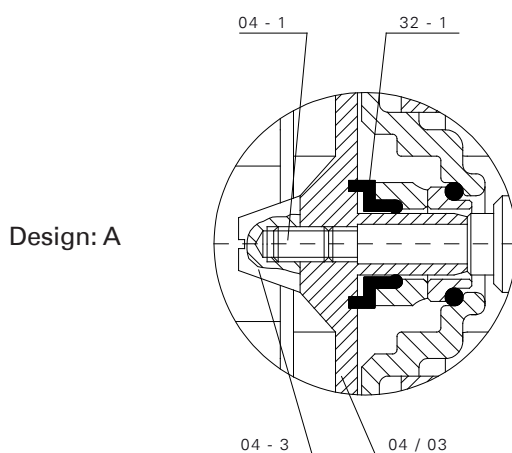
## S Pump series

chemical resistant pumps



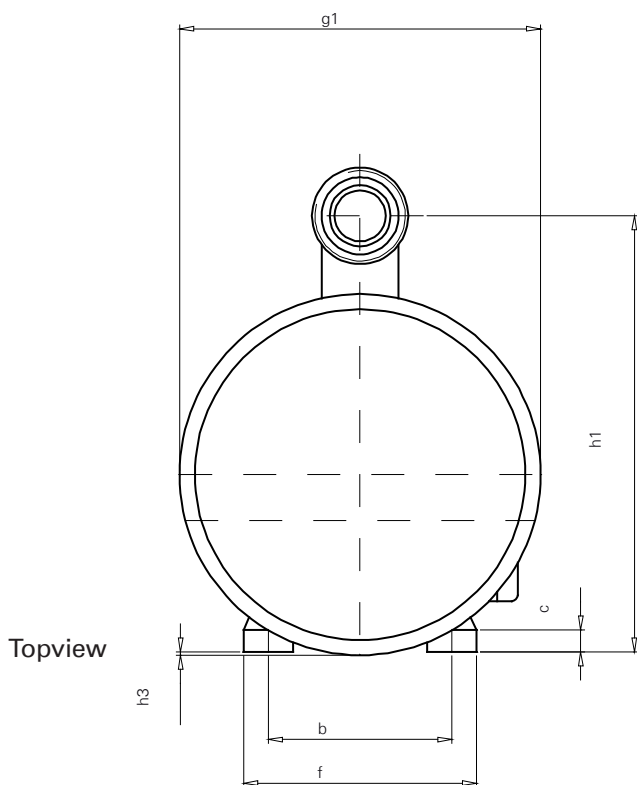
Part-no.	Part	Materials		For design
		standard	on request	
01	mounting flange	aluminium	1.4571	A, B, C
02	shaft ext./C	1.4571	Hastelloy C	A, B, C
04	impeller/PVDF	1.4571	Hastelloy C	C
04-1	locking bolt	A4	Hastelloy C	A, B
04-2	locking nut	A4	Hastelloy C	C
04-3	cap	PvDF		A, B
04/03	impeller/PVDF	1.4571	Hastelloy C	A, B
05	back plate	PVDF		A, B, C
06	pump housing	PP	PVC	A, B, C
26	flinging disc	rubber		A, B, C
27-3	cylinder bolt	A4		A, B, C
28	cylinder bolt and washer	A4		A, B, C
29	cotter pin	1.4305		A, B, C
30	rotating seal	carbon	SiC	A, B, C
31	o-ring seal	FKM*	FEP / EPDM	B, C
32	coil spring	Hastelloy C		B, C
32-1	thrust collar	FKM*		A
33	stationary seal	ceramic	SiC	A, B, C
34	o-ring seal	FKM*	FEP / EPDM	A, B, C
35	thrust washer	A4	Hastelloy C	B, C
36	housing seal	FKM*	FEP / EPDM	A, B, C
42-3	washer	A4		A, B, C
42-4	locking washer	A4	Hastelloy C	C
49	darner	PP	PVC	A, B, C
50	o-ring	FKM*	FEP / EPDM	A, B, C

\*FKM = e.g. Viton®



# Specification

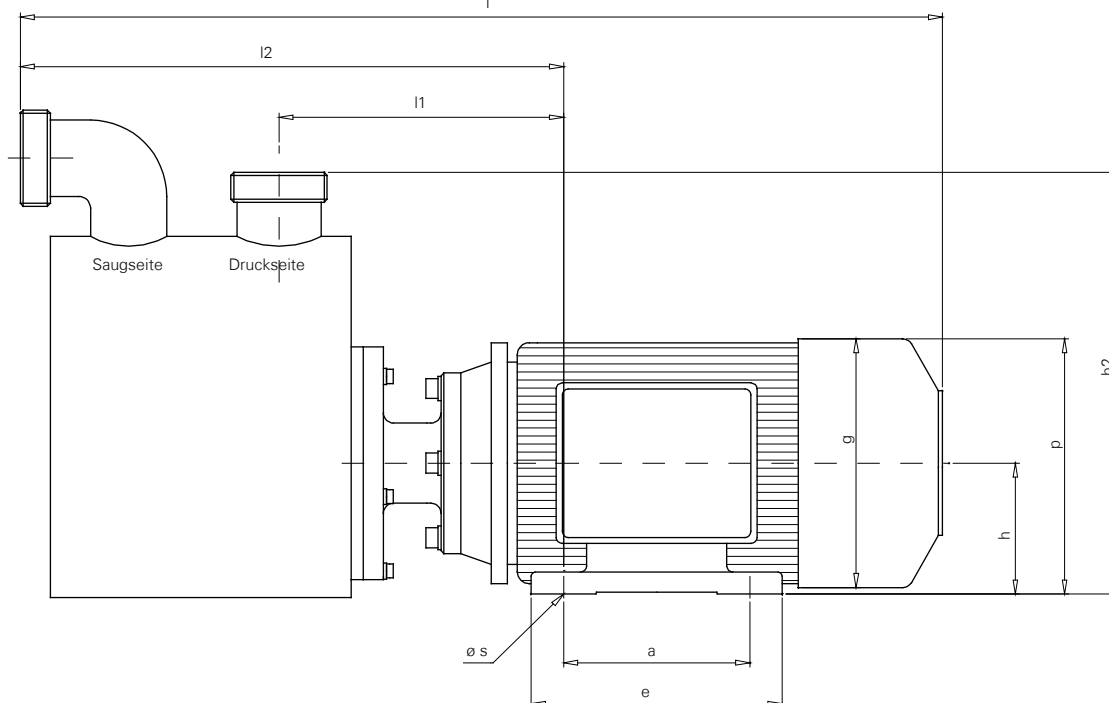
## S Pump Series



type	h	h1	h2	h3	l	l1	l2	g	g1	a	b	e	f	c	$\varnothing s$	suction head m	suction/pressure connections		male threaded	housing capacity l	weights kg
																	DN	d			
S 115	63	214	210	19	421	139	272	123	200	80	100	100	125	10	7	3	20	25	G1¼"	2,5	6,7
S 130	71	228	220	11	456	149	288	139	200	90	112	108	140	11	8	3	25	32	G1½"	2,5	9,7
S 150	80	252	244	12	502	172	317	154	225	100	125	125	160	11	10	4	25	32	G1½"	3,0	16,1
S 170	90	282	271	15	583	196	364	177	250	125	140	152	180	14	11	5	32	40	G2"	5,0	23,7

The dimensions of the motors refer to three-phase standard motors.

### Lateral view



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**Motors:**

- » all driving motors are to IEC standard operating on 230/400 volts 50 cycles.
- » single phase A.C. motors are also available up to 1,10 kW
- » explosionproof motors can be supplied to the whole range of pumps.
- » special voltages, frequencies and types of protection can be delivered on request.

**Note:**

- » upon request all motors can be supplied for USA standard (UL proof).
- » for each pump also detail handouts are available.

### **SCHMITT**

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We reserve the right to alter the technical details.  
Dimensions and performance details without guarantee.

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