

## Product information

### **U Pump Series**

Normal priming,  
centrifugal pumps  
with a single mechanical seal  
Material: PVDF

**SCHMITT**

chemical resistant pumps

## Description

### U Pump Series



**SCHMITT**

chemical resistant pumps

Normal priming centrifugal pumps with a single mechanical seal

**Application:** The U Pump Series is universally applicable. The design and manufacturing materials allow for optimization for many operating conditions and media to be pumped.

**Field of application:** Wastewater treatment, filtration, exhaust air scrubbers, electro-plating technology, environment engineering, textile industry, laboratory applications, photographic chemicals, purifying plants, applications also for dirty and metallicly contaminated media, outer side set up with fluctuating viscosities

**Material:** PVDF (polyvinylidene fluoride)

**Max. output rate:** 500 l/min

**Max. discharge head:** 40 m

**Motor power:** 0,18 - 5,5 kW

In the U Pump Series, the motor power is transmitted without slip directly to the pump impeller with a rigid shaft (no magnetic coupling). A mechanical seal prevents the leakage of the media to be pumped and ensures the leak proof sealing of the centrifugal pump.

**Advantages:**

- » also applicable for higher viscosities or metallic particles in the medium
- » 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
- » open impeller (i.e. solids up to 3 mm grain size and 10 Vol. % possible)
- » 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 as stock items
- » available as explosion proof version for combustible environments (ATEX)

# Types

## U Pump Series



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### Materials and Components:

- » Main material: Parts solid made of PVDF (up to +95°C)
- » 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
- » Also available with a double mechanical seal

### Material details:

- » **PVDF:** Polyvinylidene Fluoride, Pure, milky white, not colored (up to +95° 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 resin, food-safe
- » **Stainless steel:** 1.4571 or stainless steel fine cast 1.4581 (A4) (up to +150° C)
- » **Hastelloy C4:** 2.4610
- » **Ceramic:** Highly pure Al<sub>2</sub>O<sub>3</sub>-ceramic 99.7%

# Types

## U Pump Series



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### Motor details:

#### Standard Motors (stock items):

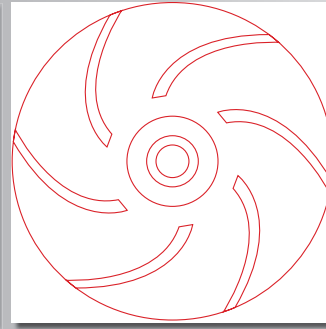
- » Three-phase motors: 230/400 V 3ph, 50 Hz, IP 55, insulation-class F or 277/480 V 60 Hz also with PTC thermistor
- » Alternating current motors: 230 V 1ph, 50/60 Hz, IP 55, Insulation class F
- » Three-phase motors: spark arrested for combustible environments, explosion proof: EEx e IIT3

#### 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

## U Pump Series

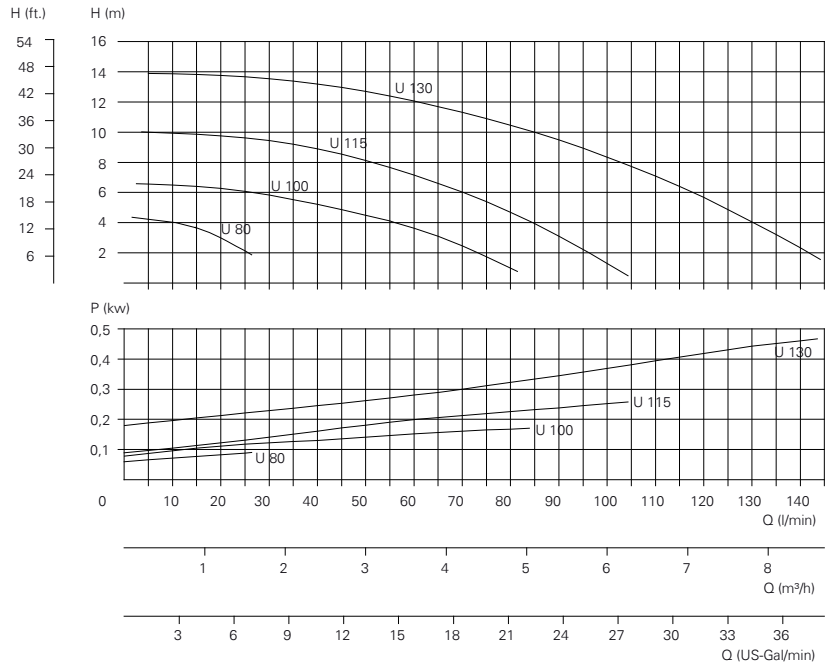


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chemical resistant pumps

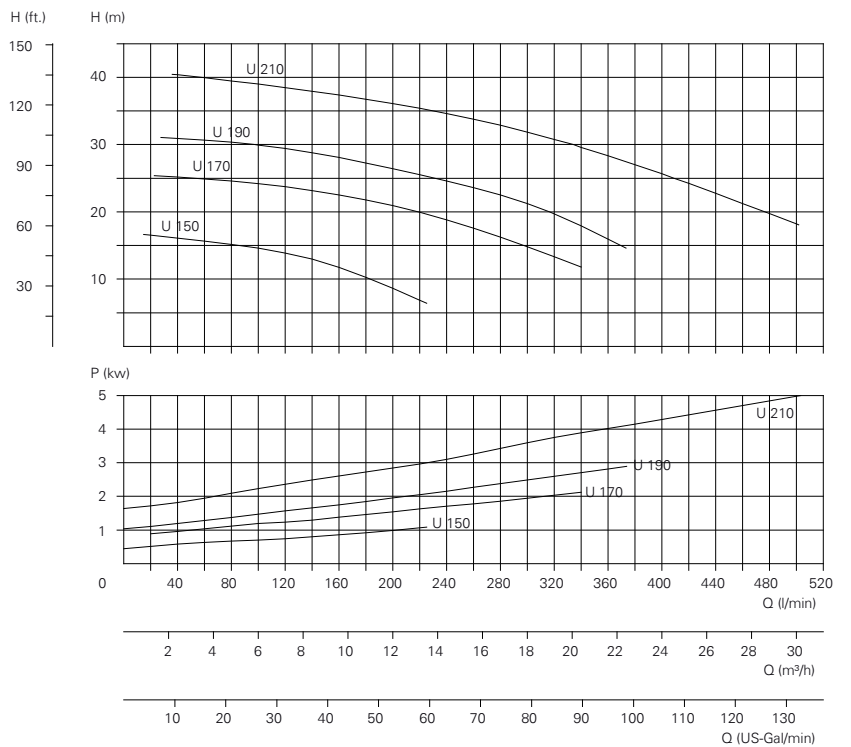
### U Pump Series

- Motor power**
- » U 130: 0,55 kW
  - » U 115: 0,25 kW
  - » U 101: 0,18 kW
  - » U 80: 0,18 kW



### U Pump Series

- Motor power**
- » U 210: 5,50 kW
  - » U 190: 3,00 kW
  - » U 170: 2,20 kW
  - » U 150: 1,10 kW

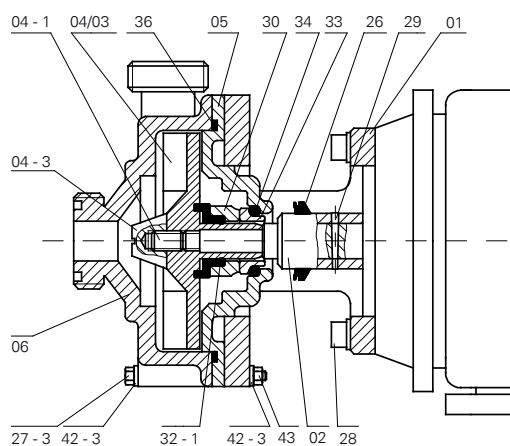


Characteristic lines measured with water, 20° C and 2900 Rpm (50 Hz.)

# Parts Descriptions

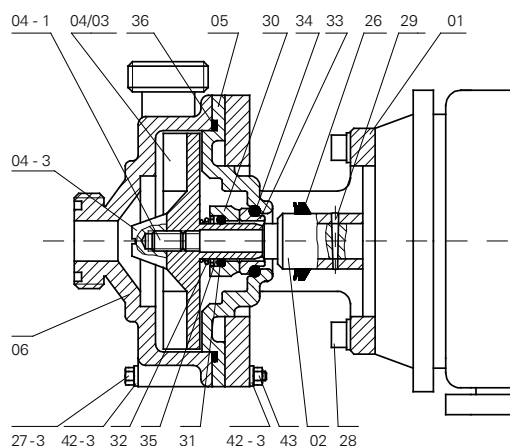
## U Pump series

### Design A with rubber spring



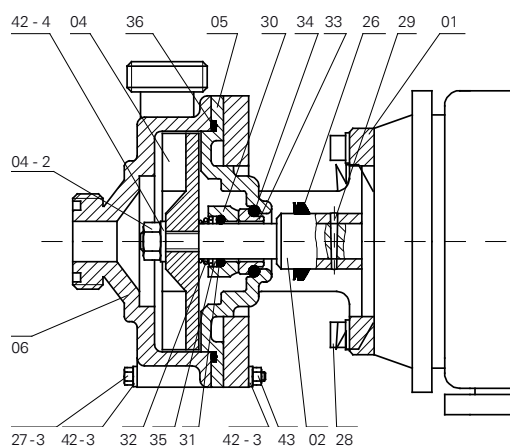
### Design B

with coil spring instead of rubber spring



### Design C

with coil spring instead of rubber spring  
without shaft protector



### Parts for design: A, B, C

Part-no.	Part	Materials standard	on request
01	mounting flange	AL or PP	stainless steel
05	backplate	PVDF	
06	pump housing	PVDF	PP
36	pump housing seal	FKM**	FEP EPDM
26	flinging disc	rubber	Hastelloy C
28	bolt + washer	A4	
29	cotter pin	1.4305	Hastelloy C
42-3	washer	A4	
27-3	hexagon bolt	A4	PVC
43	hexagon nut	A4	

\*\*FKM = z.B. Viton®

### Parts for design: A, B (Edelstahl) or A, B (Hastelloy C)

Part-no.	Part	Materials standard	on request
02	shaft extension	1.4571	Hastelloy C
04/03	impeller (PVDF), inset	1.4571-inset	Hastelloy-inset
04-1	locking screw	1.4571	Hastelloy C
04-3	cap	PVDF	

### Parts for design: C (Edelstahl) or C (Hastelloy C)

Part-no.	Part	Materials standard	on request
02	shaft extension	1.4571	Hastelloy C
04	impeller / PVDF	1.4571-inset	Hastelloy-inset
04-2	locking nut	1.4571	Hastelloy C
42-4	locking washer	1.4571	Hastelloy C

### Parts for axial face seal of design: A

Part-no.	Part	Materials standard	on request
30	rotating seal	carbon	SiC
32-1	rubber spring	FKM*	
33	stationary seal	ceramic	SiC
34	o-ring seal	FKM*	

\*FKM = e.g. Viton®

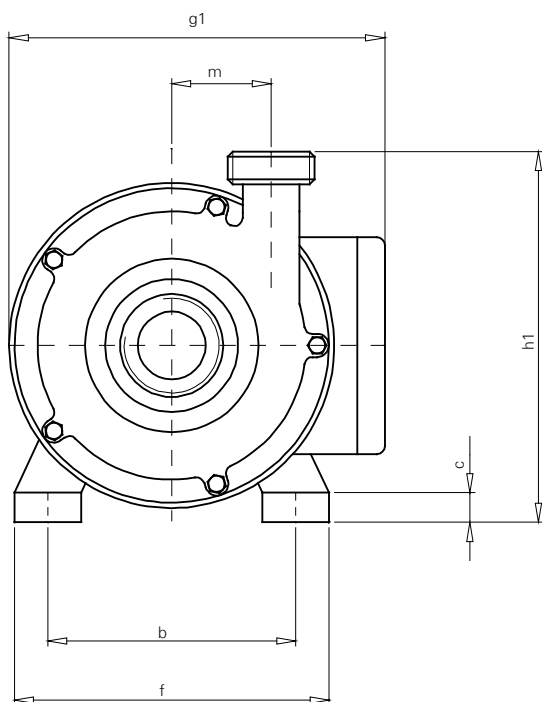
### Parts for axial face seal of design: B

Part-no.	Part	Materials standard	on request
30	rotating seal	carbon	SiC
31	o-ring seal	FKM*	FEP / EPDM
32	coil spring	Hastelloy C	
33	stationary seal	ceramic	SiC
34	o-ring seal	FKM*	FEP / EPDM
35	thrust washer	1.4571	Hastelloy C

\*FKM = e.g. Viton®

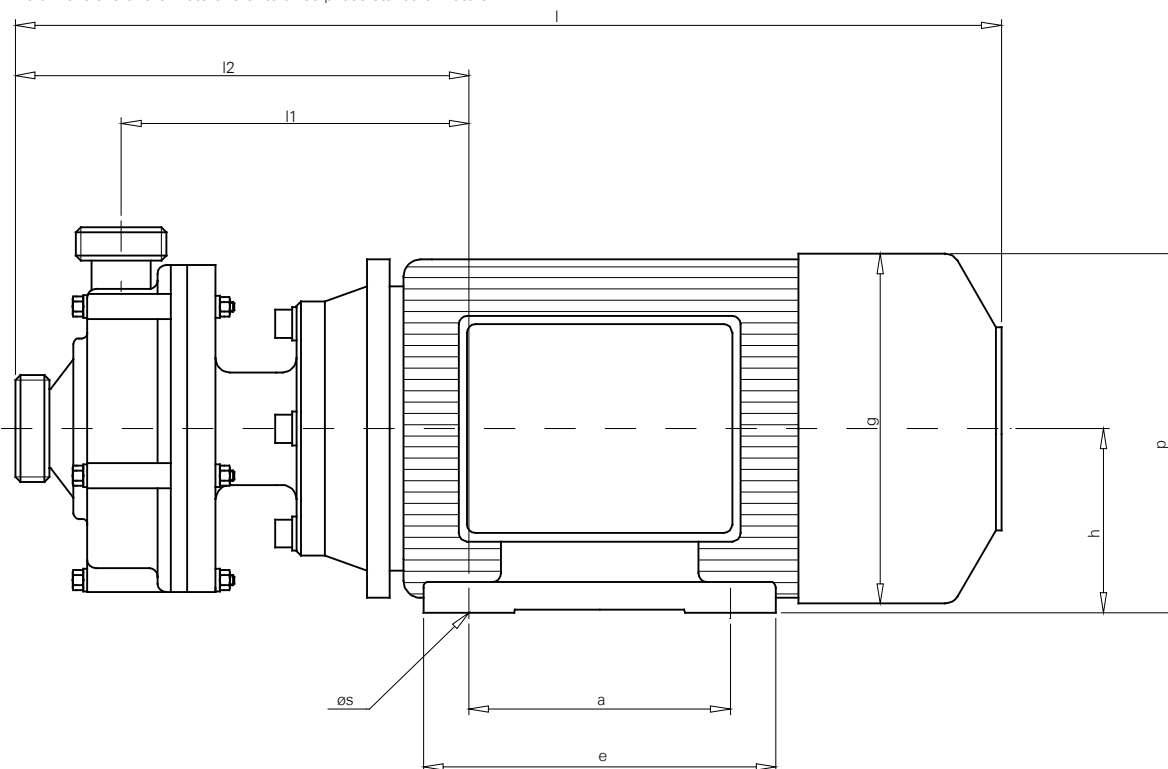
# Specification

## U Pump Series

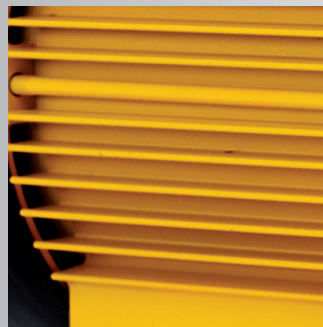


Type	h	h1	l	l1	l2	g	g1	p	a	b	e	f	c	ø s	m	suction conn.		pressure conn.		weights kg
																nom. bore	male thread	nom. bore	male thread	
U 80	56	107	282	110	145	111	140	112	71	90	90	106	5,5	6	25	10	G ¾"	10	G ¾"	4,1
U 100	56	118	284	111	147	111	140	112	71	90	90	106	5,5	6	31	15	G 1"	15	G 1"	4,2
U 115	63	131	312	125	162	126	150	125	80	100	97	116	6	7	37	15	G 1"	15	G 1"	4,5
U 130	71	149	342	130	172	141	167	141	90	112	109	136	7	7	42	20	G 1½"	15	G 1"	7,7
U 150	80	171	388	152	203	157	209	159	100	125	125	160	11	10	47	25	G 1½"	20	G 1½"	13,1
U 170	90	189	448	175	229	177	235	179	125	140	152	180	14	11	58	32	G 2"	25	G 1½"	20,7
U 190	100	213	497	185	244	198	253	199	140	160	170	200	15	12	65	32	G 2"	25	G 1½"	25,6

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



## Types U Pump Series



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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

Kreiselpumpen GmbH & Co.KG

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

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