

## Product information

### **U-DO Pump Series**

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

**SCHMITT**

chemical resistant pumps

## Description

### U-DO Pump Series



**SCHMITT**

chemical resistant pumps

Normal priming centrifugal pumps  
with a double mechanical seal

**Application:** The U-Do Pump Series is a universally applicable all-rounder. 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:** Wastewater treatment, laboratory applications, environment engineering, varnish processing operations, electro-plating technology, filtration, outside set up with fluctuating viscosities, Paper manufacturing, applications for soiled and metallicly contaminated media

**Materials:** PVDF (polyvinylidene fluoride)

completely dry run safe with connected seal water circle

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

**max. discharge head:** 40 m

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

In the U-Do Pump Series, the motor power is transmitted without slip directly to the pump impeller with a rigid shaft (no magnetic coupling). A double mechanical seal (back to back) prevents the leakage of the media to be pumped and ensures the leak proof sealing of the centrifugal pump. The cooling and lubrication of the mechanical seals is carried out through a separate seal water circle.

**Advantages:**

- » with a connected seal water circuit (circulation system), the pump cannot be damaged through an operating error or through malfunctions in the plant (dry run safe under certain conditions).
- » applicable also for media to be pumped that do not have any lubricating properties (e.g. varnishes and paints)
- » 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)
- » 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

# Types

## U-DO Pump Series



**SCHMITT**

chemical resistant pumps

### 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
- » Structured in the designs B and C:
  - **Design B:**

The double 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 double 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)
- » **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 (A4)
- » **Hastelloy C4:** 2.4610
- » **Ceramic:** Highly pure Al<sub>2</sub>O<sub>3</sub>-ceramic 99.7%

# Types

## U-DO Pump Series



**SCHMITT**

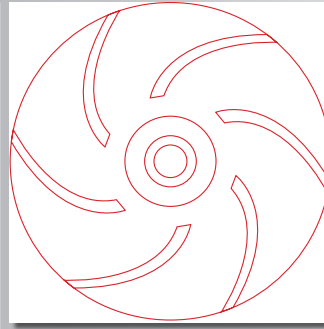
chemical resistant pumps

### 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-DO Pump Series

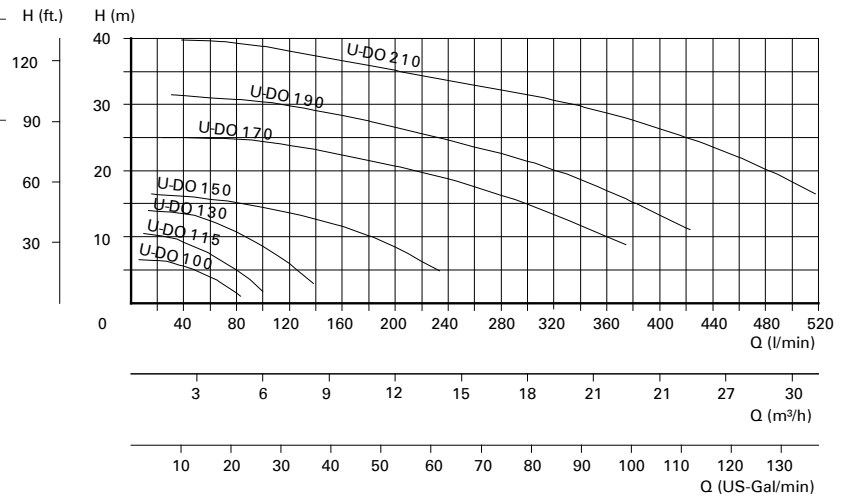


**SCHMITT**

chemical resistant pumps

### U-DO 100 to U-DO 210 Pump Series

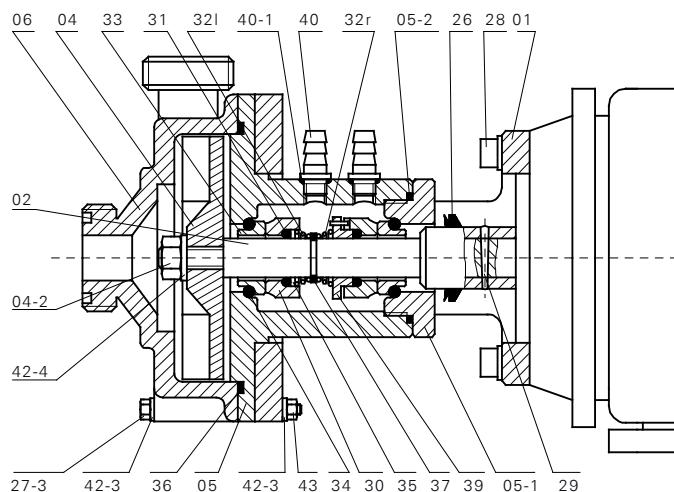
<b>Motor power</b>	» U-DO 210:	<b>5,50 kw</b>
	» U-DO 190:	<b>3,00 kw</b>
	» U-DO 170:	<b>2,20 kw</b>
	» U-DO 150:	<b>1,10 kw</b>
	» U-DO 130:	<b>0,55 kw</b>
	» U-DO 115:	<b>0,25 kw</b>
	» U-DO 100:	<b>0,18 kw</b>



# Parts Descriptions

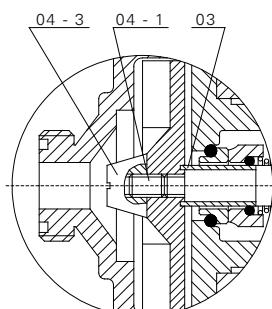
## U-DO Pump series

Design C



Part-no.	Part	Materials standard	on request
01	mounting flange		
02	shaft extension	1.4571	Hastelloy C
04	impeller	PVDF	
04-2	locking nut	1.4571	Hastelloy C
05	backplate	PVDF	
05-1	inset	PVDF	
05-2	o-ring	Viton	
06	pump housing	PVDF	
26	flinging disc	rubber	
27-3	hexagon bolt	A4	
28	bolt + washer	A4	
29	cotter pin	1.4305	
30	rotating seal	carbon	SiC
31	o-ring seal	Viton	FEP or EPDM
32	coil spring	Hastelloy C	
33	stationary seal	ceramic	SiC
34	o-ring seal	Viton	FEP or EPDM
35	thrust washer	1.4571	Hastelloy C
36	pump housing seal	Viton	FEP or EPDM
37	lockwasher	A4	
39	spacer ring	1.4305	
40	hose nozzle	1.4305	
40-1	o-ring	Viton	
42-3	washer	A4	
42-4	locking washer	A4	Hastelloy C
43	hexagon nut	A4	

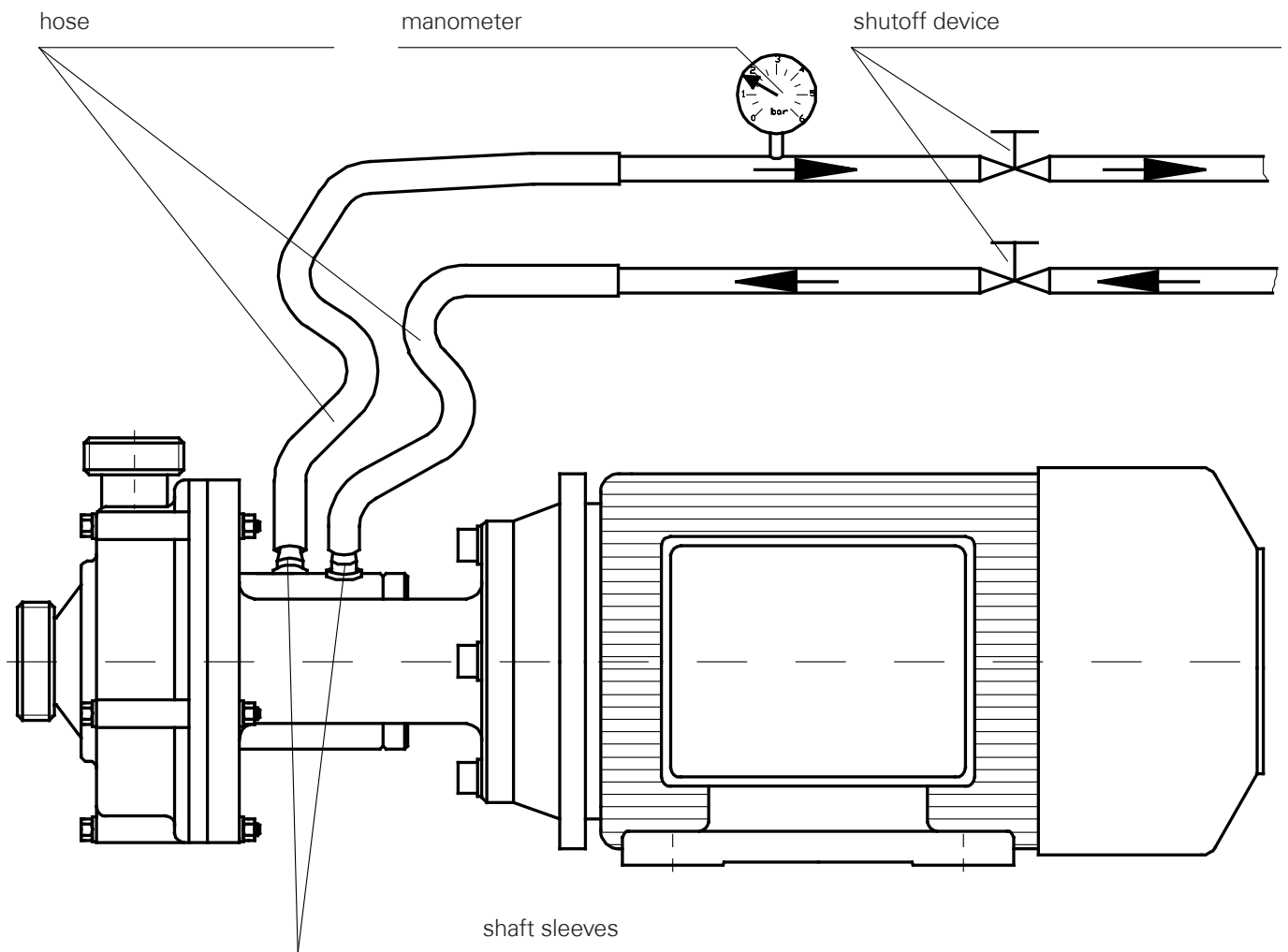
Design B



Part-no.	Part	Materials standard	on request
03	shaft sleeve	PTFE	
04-1	locking screw	1.4571	Hastelloy C
04-3	cap	PVDF	

# Seal water - wiring diagram U-DO Pump series

for pumps with double  
mechanical seal



The necessary barrier pressure can be determined after following rules:

$$P_{\text{sperr}} (\text{bar}) = H/20 \times \rho + 1 \text{ to } 1,5 \text{ bar}$$

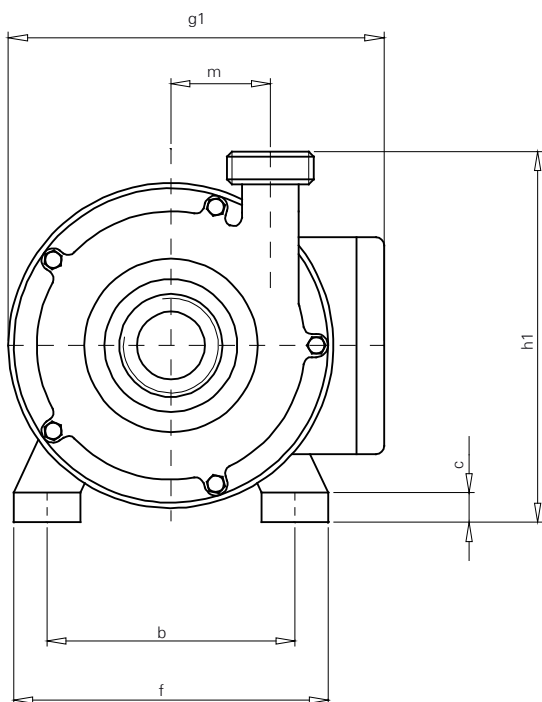
$\rho$  ( $\text{kg}/\text{dm}^3$ ) = specific gravity of the medium to be pumped

H = max. discharge head

# Specification

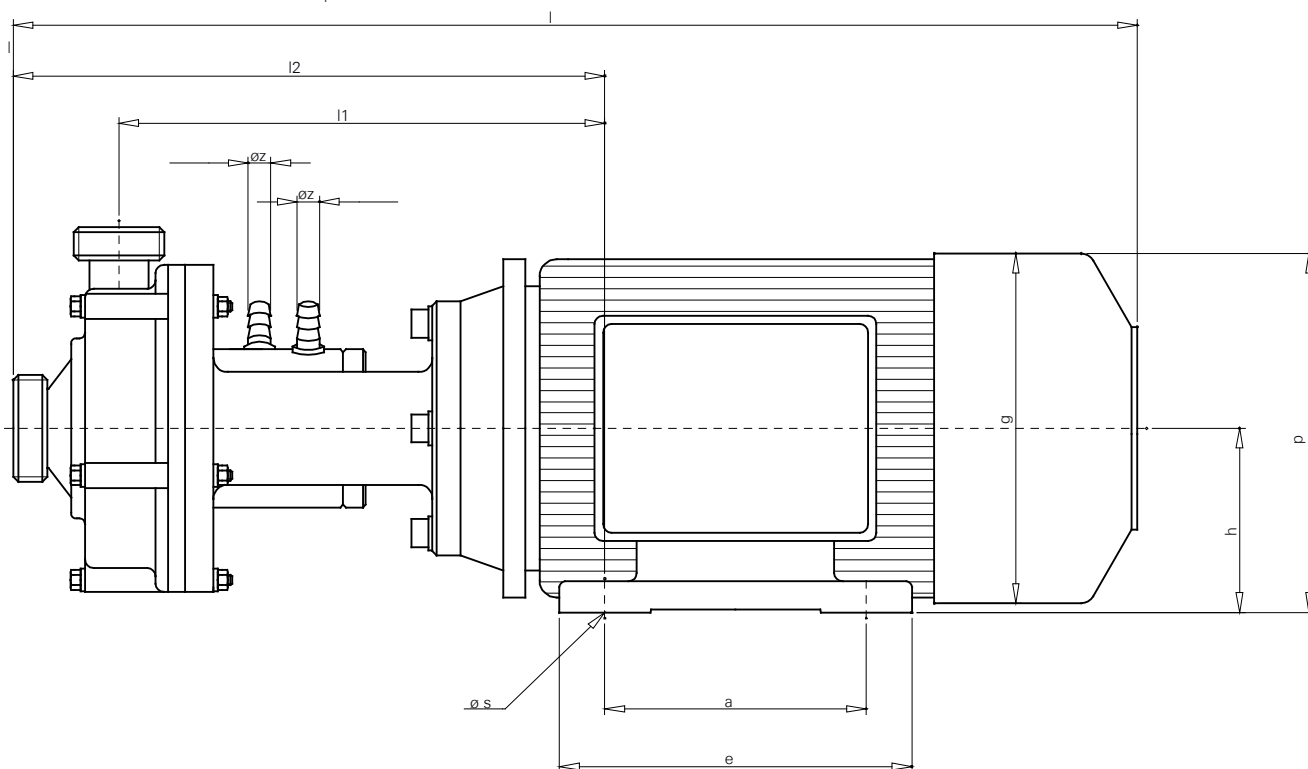
## U-DO Pump Series

chemical resistant pumps



Type	h	p	g	a	e	ø s	b	f	c	g1	ø z	l	l1	l2	m	h1	suction conn.		pressure conn.		weights kg
																	nom. bore	male thread	nom. bore	male thread	
U-DO 100	56	112	111	71	90	6	90	110	9	146	13	316	146	182	31	118	15	G 1"	15	G 1"	5,0
U-DO 115	63	125	123	80	100	7	100	125	10	158	13	360	171	209	37	134	15	G 1"	15	G 1"	5,5
U-DO 130	71	140	139	90	108	8	112	140	11	182	13	387	176	216	42	150	20	G 1¼"	20	G 1"	10,0
U-DO 150	80	157	154	100	125	10	125	160	11	187	13	433	200	248	47	170	25	G 1½"	20	G 1¼"	14,5
U-DO 170	90	180	177	125	152	11	140	180	14	240	13	515	242	296	58	190	32	G 2"	25	G 1½"	22,2
U-DO 190	100	197	194	140	170	12	160	200	15	258	13	551	252	311	65	211	32	G 2"	25	G 1½"	32,0
U-DO 210	112	260	224	140	180	12	190	235	16	296	13	564	259	309	74	235	40	G 2¼"	32	G 2"	51,5

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





# Types

## U-DO Pump Series



**SCHMITT**

chemical resistant pumps

- 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**

Einsteinstrasse 33

D - 76275 Ettlingen, Germany

Phone: +49 - 72 43 - 54 53 - 0

Fax: +49 - 72 43 - 54 53 - 22

info@schmitt-pumpen.de

[www.schmitt-pumpen.de](http://www.schmitt-pumpen.de)



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

updated 03/2013