

# X

**STÜBBE**

## X-CLASS

### BUILT FOR THE EXTREME

#### **STÜBBE X-CLASS HEAVY DUTY PUMP**

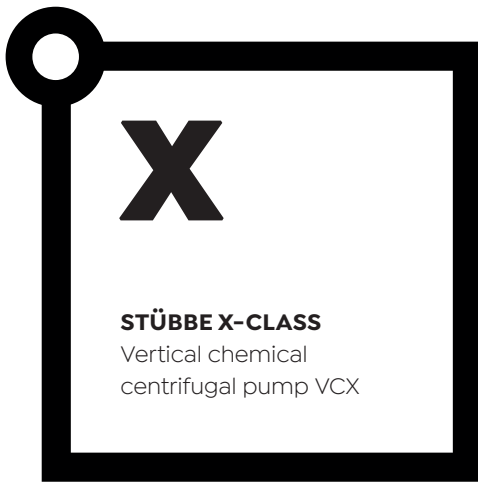
VERTICAL CHEMICAL CENTRIFUGAL  
PLASTIC PUMP – TYPE VCX

Shaft without any bearings in the wet area (Cantilever design)

#### **FEATURES**

- Capacity up to 250 m<sup>3</sup>/h (1500 rpm)
- Delivery head up to 90 m (3000 rpm)
- Immersion depth up to max. 1500 mm
- Suction pipe extension up to max. 2500 mm
- Operating temperature
  - PE-UHMW (-20 °C up to max. +90 °C)
  - PVDF (-30 °C up to max. +115 °C)





## FEATURES

- STÜBBE X-CLASS: Heavy Duty model of STÜBBE pump family
- Non self-priming, vertical, single-stage submersible plastic pump without any bearings in the wet area (Cantilever design)
- Immersion depth / suspension pipe
  - Up to max. 1500 mm steel with coating of hard rubber or E-CTFE (Halar), max. speed 1750 rpm (60 Hz)
  - Up to 1000 mm
    - a) All-plastic (PP or PVDF)
    - b) Steel with coating of hard rubber or E-CTFE (Halar) and plastic protection tube
  - Optional: 650 mm made of all-plastic (PP or PVDF) suction pipe extension (max. 2500 mm)
- Sealing to the atmosphere
  - Without mechanical seal (hydrodynamic pressure reduction on the rear of the impeller)
  - With lip seal ring as standard (dust tight)
  - Optional with external flushing water connection
- Gap clearance is variably adjustable
- Vertical discharge nozzle integrated in the pump housing
- Efficient hydraulics due to up-to-date calculation programs
- Extreme durability

## USE

- Pumping of aggressive, crystallizing and toxic fluids as well as fluids filled with solid
- For open basins and tanks
- Do not use pump for flammable or explosive media.

## OPERATION MODE

- When starting the pump, the volute casing must be completely submerged (observe the lowest and highest switch-on level according to the dimension drawing)
- After start of pumping, the liquid level can be lowered to the end of the optional suction pipe extension (suction operation mode)

## PUMP VARIETY

- 10 different pump sizes with half-open impellers (H) up to 250 m<sup>3</sup>/h (VCX 32-200 up to VCX 100-315)

## CUSTOMIZED HYDRAULIC SYSTEM

### Half-open impellers (H)

- Best suited for fluids filled with solids
- For best possible efficiency

### Unique 3-channel non-clogging impeller (F)

- Available for specifically gentle pumping in extreme solids applications with large solids

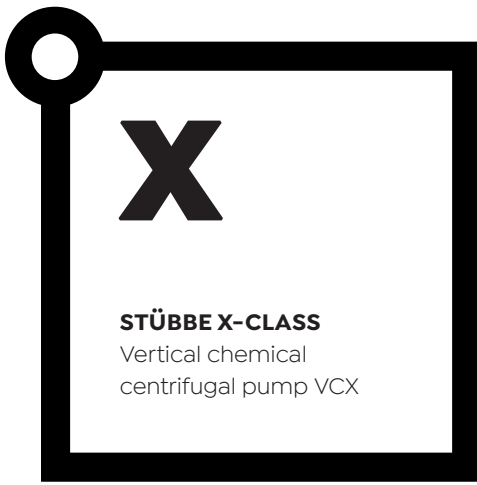
All designs are marked with the 3rd letter in the type designation.

## SAFETY

- Insensitive to short-term dry running (e.g. in the event of blockages on the suction side or tank emptying) due to missing bearings in wet area
- Pumping against closed shut-off valves on the pressure side is not permitted (furthermore observe direction of rotation)
- Thick-walled, corrosion- and diffusion-resistant plastic housing

## LONG-LIVED AND STURDY

- Sturdy conical universal shaft with plastic shaft protection tube
- External, protected, robust double bearing arrangement (grease lubricated ball bearings)
- Stable mounting plate made of metal plated with plastic on product side
- Vertical discharge nozzle is a part from the pump housing (reduces pressure losses, eliminates the need of fastening of separate 90° elbow as a weak point)
- Standard screw connection made of 1.4301
- Screw connection in the wet area made of plastic-molded screws (made of 1.4301)
- High-quality painting of the metal components with a 2K protective lacquer (standard RAL 2002)



## **MATERIAL VARIANTS**

### **(volute casing + impeller)**

Two materials are available for different applications depending on chemical and thermal stress:

- UHMW-PE (ultra high molecular low-pressure polyethylene [E])
- PVDF (polyvinylidene fluoride [D])

All designs are marked with the 4th letter in the type designation.

## **OPTIONS**

- Further specifications on request

## **STÜBBE RESISTANCE LIST**

[www.stuebbe.com/pdf\\_resistance](http://www.stuebbe.com/pdf_resistance)

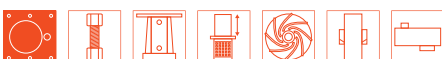
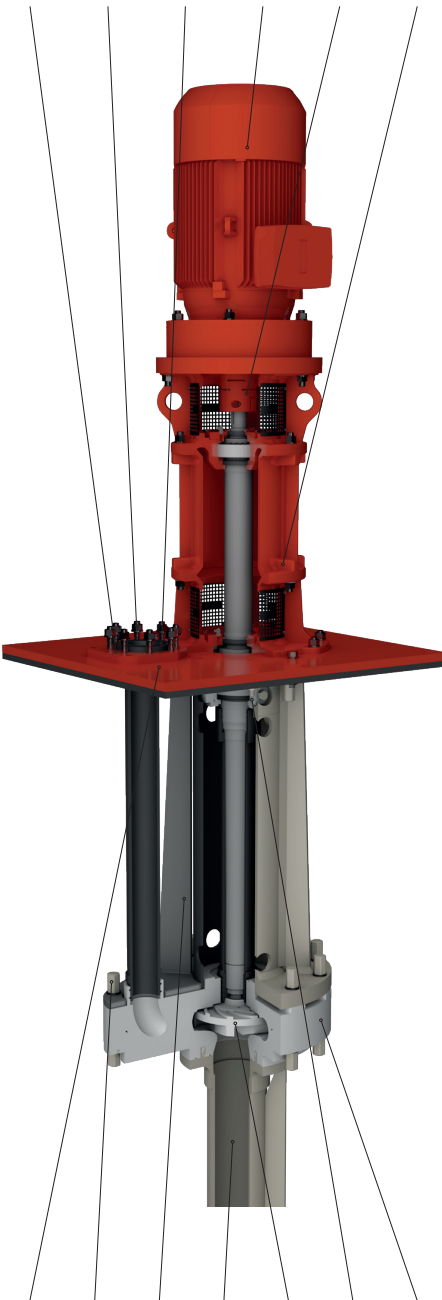
# X

**STÜBBE X-CLASS**  
Vertical chemical  
centrifugal pump VCX

- ✓ STANDARD
- OPTIONAL
- NOT AVAILABLE
- METALLIC MATERIAL
- OTHER MATERIAL

- <sup>1</sup> Or equivalent
- <sup>2</sup> Also ATEX
- <sup>3</sup> Latern made of EN-GJS-400-15
- <sup>4</sup> Immersion depth max. 1000 mm, for 32-200, 32-250, 50-200 also 650 mm available. For 100-315 only 1500 mm available.
- <sup>5</sup> Depending on speed (2/4 poles)
- <sup>6</sup> With protection tube made of PE or PVDF
- <sup>7</sup> Max. 1750 rpm (60 Hz) at 1500 mm (max.) immersion depth
- <sup>8</sup> Length max. 2500 mm

## VARIANTS

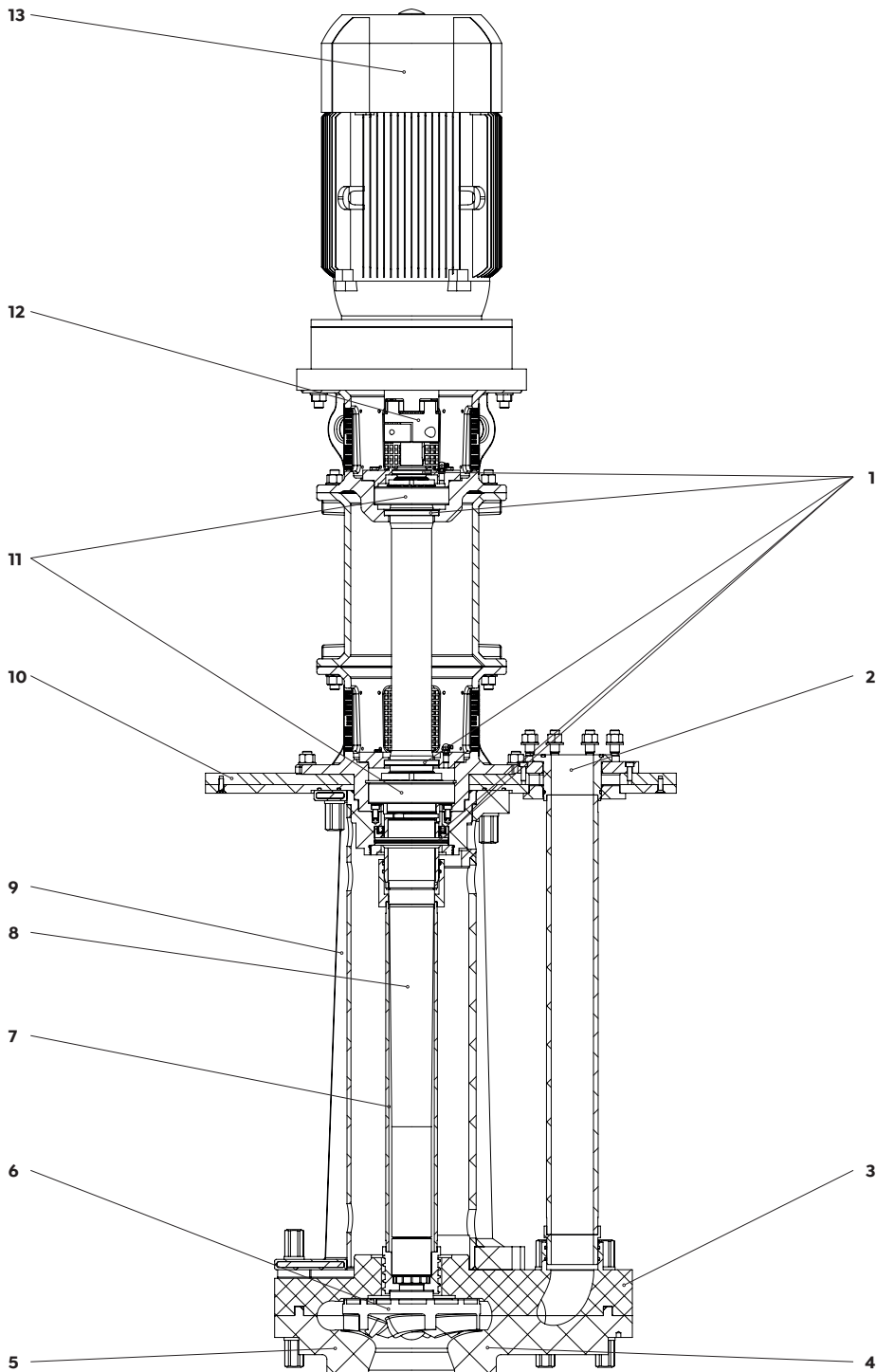


PUMP TYPE	I			II			III			
VCX bearing bracket size (LTG)	32-200	32-250	50-200	50-250	50-315	80-200	80-250	80-315	100-250	100-315
<b>Connections</b>										
DIN EN 1092-1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
ANSI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>O-rings</b>										
EPDM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FKM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Further (FFKM, FKM/FEP-covered)	•	•	•	•	•	•	•	•	•	•
<b>Screws</b>										
1.4301 <sup>1</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1.4571 <sup>1</sup>	•	•	•	•	•	•	•	•	•	•
<b>Motor</b>										
Lammers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Siemens	•	•	•	•	•	•	•	•	•	•
2 poles (3000 / 3600 rpm [50/60 Hz]) <sup>2</sup>	✓	✓	✓	○	○	✓	○	○	○	○
Further on request	•	•	•	•	•	•	•	•	•	•
<b>Coupling</b>										
StS (WKE/H) <sup>3</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Further on request	•	•	•	•	•	•	•	•	•	•
<b>Bearing<sup>3</sup></b>										
Greased bearings can be relubricated	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Protected double bearing arrangement	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Mounting plate</b>										
Steel / PE plated (rectangular)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Steel / PVDF plated (rectangular)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Steel / PE or PVDF plated (round)	•	•	•	•	•	•	•	•	•	•
<b>Screw connection pump housing</b>										
1.4301 / PP molded	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1.4301 / PVDF molded	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Suspension pipe</b>										
PP <sup>4</sup> (Tmax. 50/70°C) <sup>5</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PVDF <sup>4</sup> (Tmax. 70/90°C) <sup>5</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Steel / hard rubber coating <sup>6,7</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Steel / E-CTFE (Halar) coating <sup>6,7</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Suction pipe extension / suction strainer</b>										
PP <sup>8</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PE <sup>8</sup>	•	•	•	•	•	•	•	•	•	•
PVDF <sup>8</sup>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Plastic (casing + impeller)</b>										
PE-UHMW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PVDF	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Shaft sealing to the atmosphere</b>										
Radial rotary shaft seal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
External flushing	•	•	•	•	•	•	•	•	•	•
<b>Hydraulic</b>										
Half-open	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Non-clogging	•	○	•	•	•	•	•	○	○	○

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Vertical chemical  
centrifugal pump VCX

## SECTIONAL VIEW

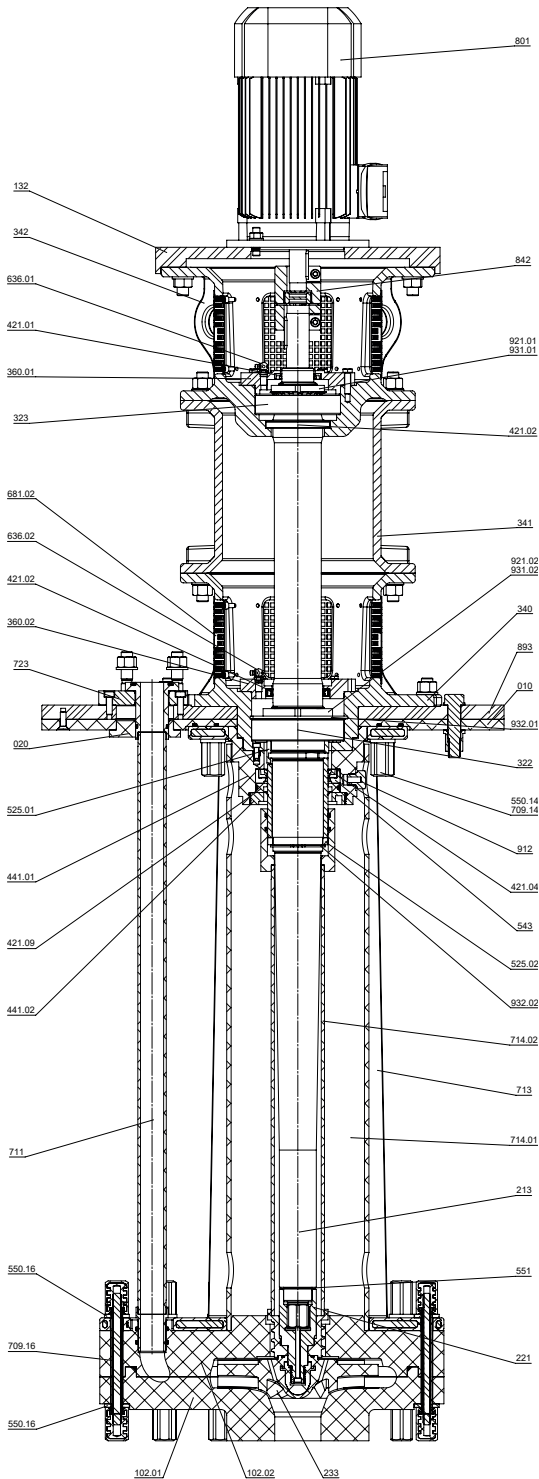


POSITION	DESCRIPTION
1	Sealing ring
2	Discharge nozzle
3	Volute casing
4	Strainer (optional)
5	Suction pipe extension
6	Impeller
7	Shaft protection tube
8	Shaft
9	Suspension pipe
10	Mounting plate
11	Shaft bearing
12	Coupling
13	Motor

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## SECTIONAL VIEW PUMP

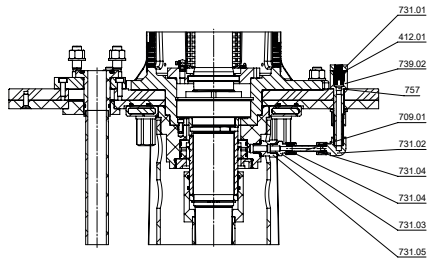


POSITION	DESCRIPTION
010	Plating for mounting plate
020	Riser pipe adapter
102.01, 102.02	Volute casing
132	Motorflange adapter
213	Drive shaft
233	Impeller
322	Cylindrical roller bearings
323	Four point bearing
340	Bearing lantern
341	Drive lantern
342	Support bearing lantern
360.01, 360.02	Bearing cover
412.01	O-ring
421.01, 421.02, 421.04	Radial rotary shaft seal
441.01	Sealing cover
441.02	Clamping disk
525.01	Driver for shaft protection sleeve
525.02	Casing insert
543	Spacer
550.14, 550.16	Supporting washer
551	Shim washer
636.01, 636.02	Grease nipple
681.02	Coupling protection
709.01, 709.14, 709.16	Hose pipe
711	Riser pipe
713	Suspension pipe
714.01	Protection tube
714.02	Shaft protection tube
723	Flange
731.01 - 731.05	Fitting
739.01, 739.02	Hose nozzle
757	Flow regulator
801	Flange motor
842	Claw coupling
893	Mounting plate
912	Screw plug
921.01, 921.02	Grooved nuts
931.01, 931.02	Safety plate
932.01, 932.02	Retaining ring

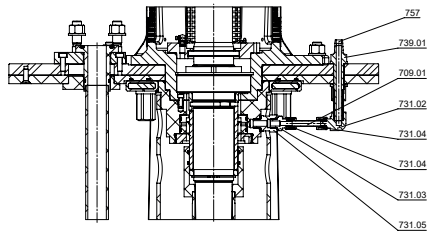
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## SECTIONAL VIEW PUMP SHAFT SEAL

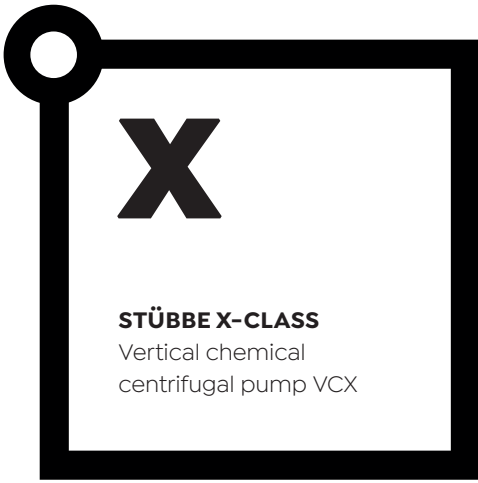


Pump shaft seal execution: SG



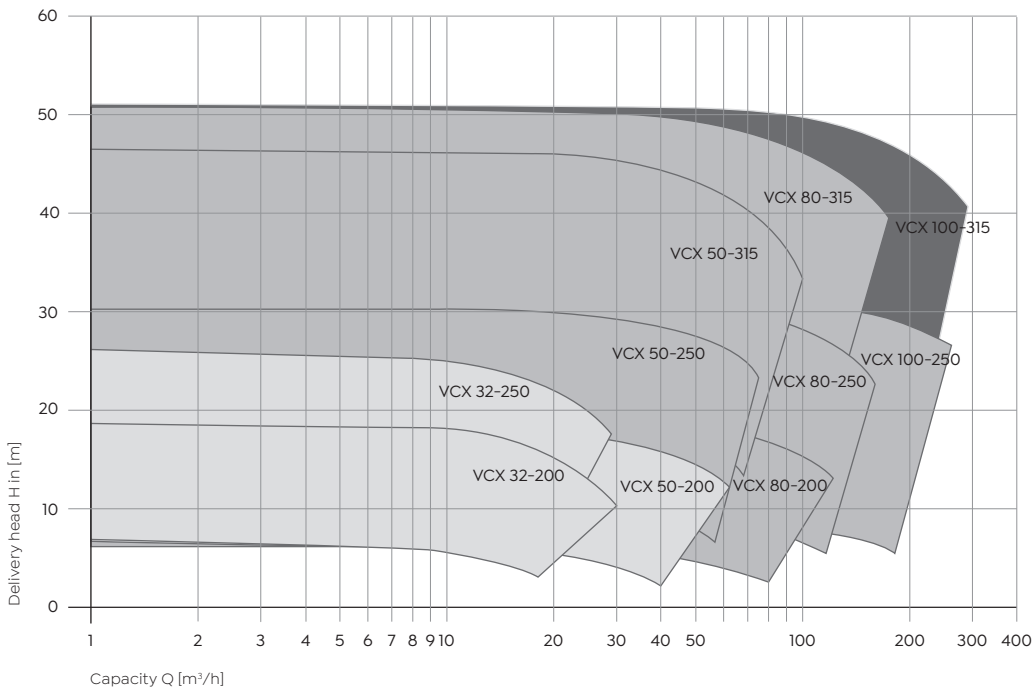
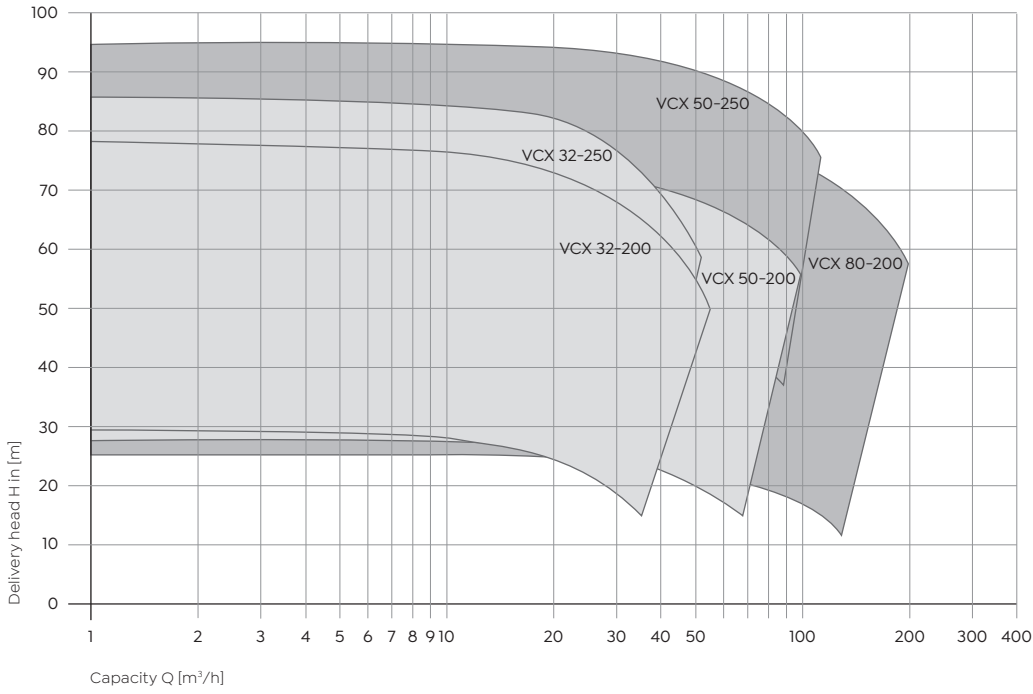
Pump shaft seal execution: ST

POSITION	DESCRIPTION
412.01	O-ring
709.01	Hose pipe
731.01 - 731.05	Fitting
739.01, 739.02	Hose nozzle
757	Flow regulator

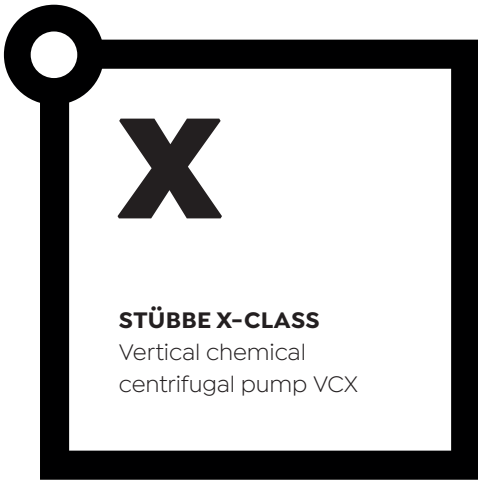


- BEARING BRACKET SIZE I
- BEARING BRACKET SIZE II
- BEARING BRACKET SIZE III

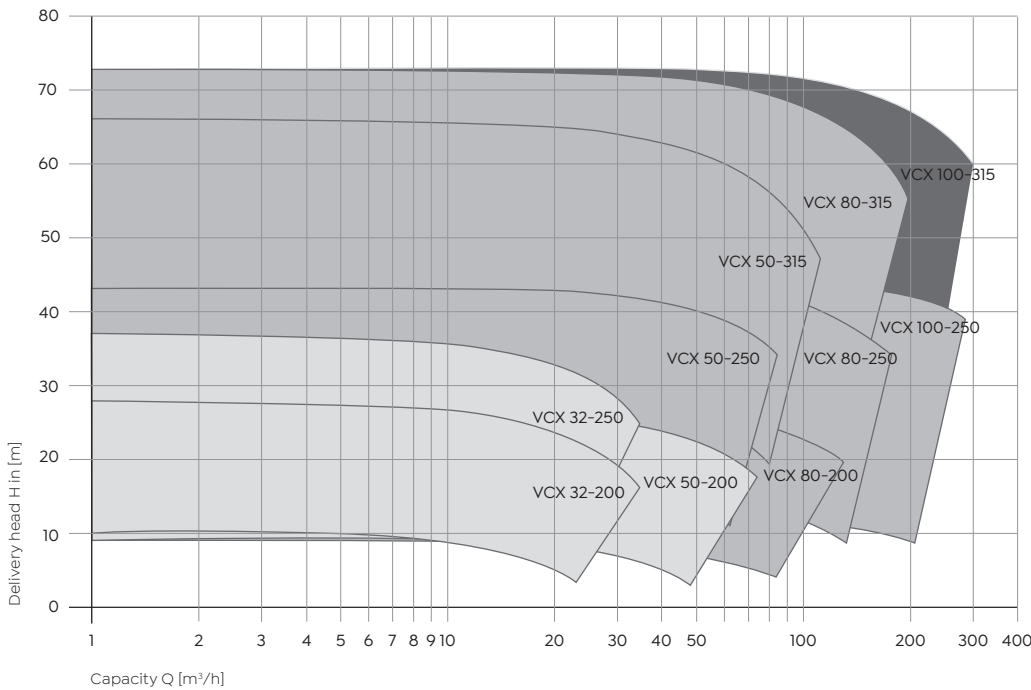
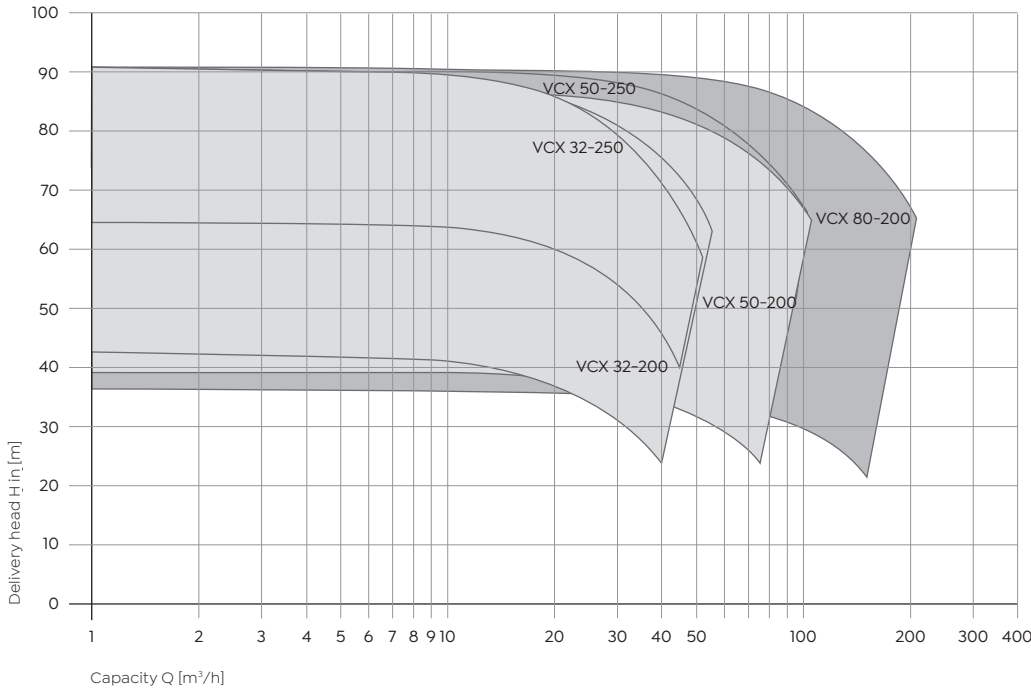
## CHARACTERISTIC CURVES







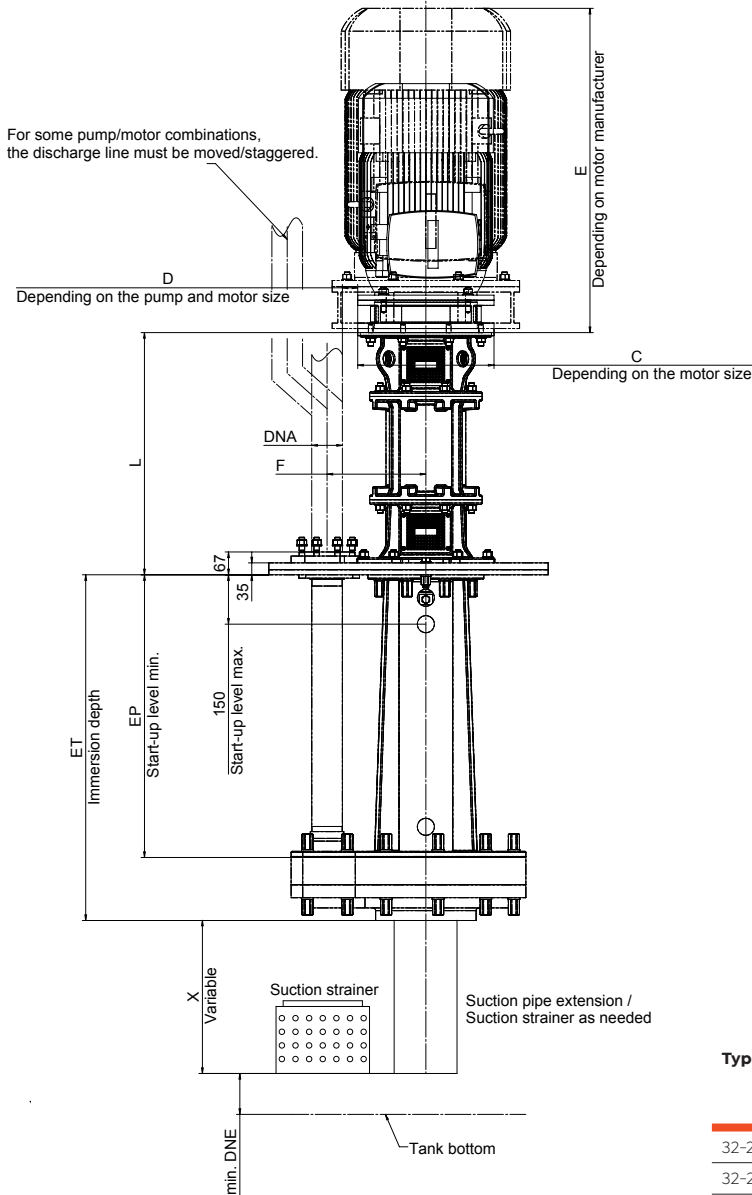
- BEARING BRACKET SIZE I
- BEARING BRACKET SIZE II
- BEARING BRACKET SIZE III



# X

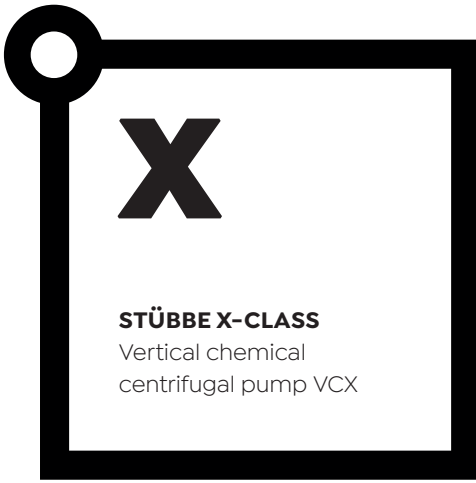
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## DIMENSIONS PUMP AND MOTOR



Motor BG	C	E
90L	400	365
100L	400	410
112M	400	395
132S/M	400	495
160M/L	400	655
180M/L	400	690
200L	400	735
225S	450	805
225M1	450	885
225M2	450	925
250M	550	955
280S1	550	1065

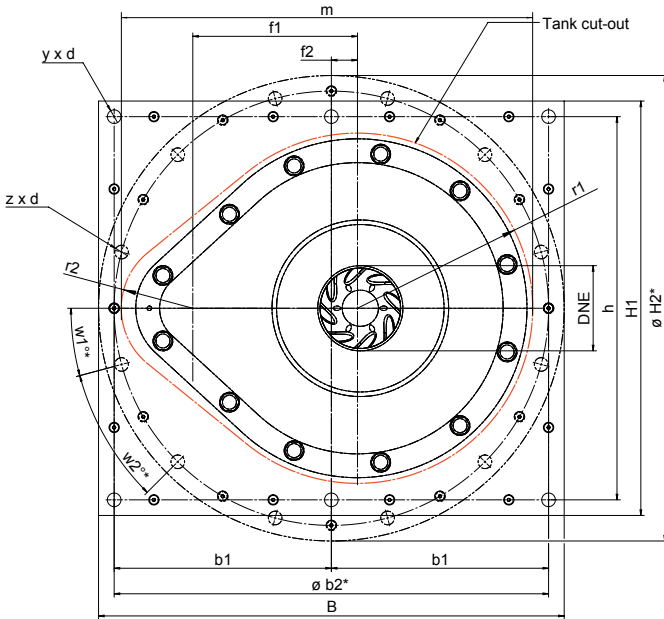
Type	DNE	DNA	D	ET short	ET medium	ET long	EP short	EP medium	EP long	F	L
32-200	65	32	15	650	1000	1500	495	845	1345	205	651
32-250	65	32	15	650	1000	1500	495	845	1345	225	651
50-200	100	50	15	650	1000	1500	495	845	1345	215	651
50-250	100	50	13,5	-	1025	1525	-	830	1330	245	711
50-315	100	50	13,5	-	1025	1525	-	830	1330	245	711
80-200	150	80	35	-	1025	1525	-	830	1330	280	711
80-250	150	80	35	-	1025	1525	-	830	1330	280	711
80-315	150	80	45	-	1025	1525	-	830	1330	290	711
100-250	150	100	40	-	1025	1525	-	830	1330	295	711
100-315	150	100	60	-	-	1500	-	-	1282	315	851



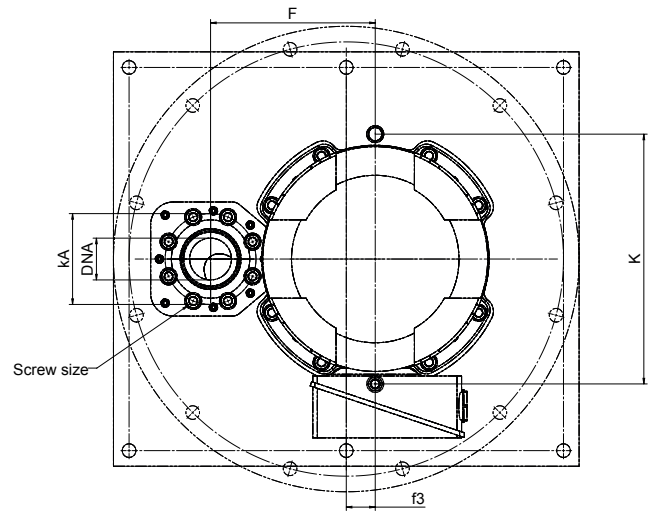
## STÜBBE X-CLASS

Vertical chemical centrifugal pump VCX

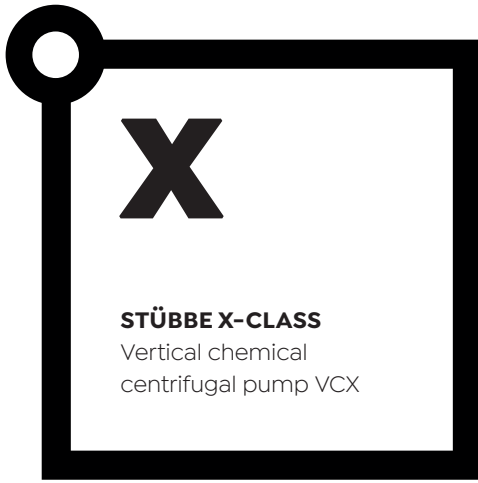
## DIMENSIONS CONNECTIONS



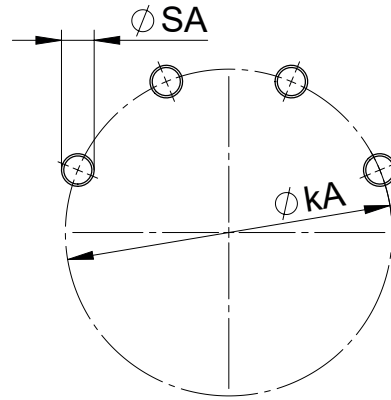
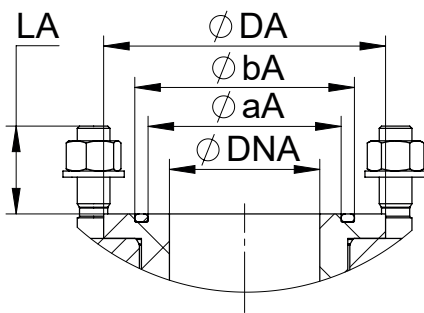
\* = Optional dimensions for the mounting plate in the round version



Type	DNE	DNA	B	F	H1	Ø H2	K	b1	Ø b2	f1	f2	f3	h	m	r1	r2	w1	w2	z x d	y x d
32-200	65	32	645	205	580	585	440	292,5	645	210	33	37,5	520	497,5	212,5	75	22,5	45	8X24	6X24
32-250	65	32	645	225	580	585	440	292,5	645	210	33	37,5	520	544,5	239,5	95	22,5	45	8X24	6X24
50-200	100	50	645	215	580	585	440	292,5	645	240	33	37,5	520	584,5	249,5	95	22,5	45	8X24	6X24
50-250	100	50	820	245	730	820	440	382,5	765	245	46	51	675	594,5	249,5	100	15	30	12X24	6X24
50-315	100	50	820	245	730	820	440	382,5	765	245	46	51	675	614,5	269,5	100	15	30	12X24	6X24
80-200	150	80	820	280	730	820	440	382,5	765	280	46	51	675	648	253,5	114,5	15	30	12X24	6X24
80-250	150	80	820	280	730	820	440	382,5	765	280	46	51	675	653	258,5	114,5	15	30	12X24	6X24
80-315	150	80	820	290	730	820	440	382,5	765	290	46	51	675	714	308,5	115,5	15	30	12X24	6X24
100-250	150	100	820	295	730	820	440	382,5	765	295	46	51	675	719,5	298,5	126	15	30	12X24	6X24
100-315	150	100	870	315	735	870	440	407,5	815	315	52	52	735	762,5	329,5	128	15	30	12X24	6X24



## DIMENSIONS OUTLET NOZZLES DIN/ANSI



TYPE			OUTLET NOZZLE (ACC. TO DIN EN 1092-1)							OUTLET NOZZLE (ACC. TO ANSI B 16.5)								
DNE	DNA	$\phi$	$\phi aA$	$\phi bA$	$\phi DA$	LA	$\phi kA$	$\phi SA$	No.	DNE	DNA	$\phi aA$	$\phi bA$	$\phi DA$	LA	$\phi kA$	$\phi SA$	No.
65	32	200	44,2	57,2	76	49,5	100	M16	4	2 1/2"	1 1/4"	44,2	57,2	76	49,5	88,9	M12	4
65	32	250	44,2	57,2	76	49,5	100	M16	4	2 1/2"	1 1/4"	44,2	57,2	76	49,5	88,9	M12	4
100	50	200	63	76	97	59,5	125	M16	4	4"	2"	63	76	97	59,5	120,6	M16	4
100	50	250	63	76	97	59,5	125	M16	4	4"	2"	63	76	97	59,5	120,6	M16	4
100	50	315	63	76	97	59,5	125	M16	4	4"	2"	63	76	97	59,5	120,6	M16	4
150	80	200	94,5	107,5	131	59,5	160	M16	8	6"	3"	94,5	107,5	131	59,5	152,4	M16	8
150	80	250	94,5	107,5	131	59,5	160	M16	8	6"	3"	94,5	107,5	131	59,5	152,4	M16	8
150	80	315	94,5	107,5	131	59,5	160	M16	8	6"	3"	94,5	107,5	131	59,5	152,4	M16	8
150	100	250	114,5	127,5	158	59,5	180	M16	8	6"	4"	114,5	127,5	158	59,5	190,5	M16	8
150	100	315	114,5	127,5	157	59,5	180	M16	8	6"	4"	114,5	127,5	157	59,5	190,5	M16	8