

AKL / AKV

Sizes 1201 ... 4201

Technical data

Capacity:	max. 12 m ³ /h
Delivery head:	max. 70 m
Speed:	max. 1800 1/min for AKL/AKV 1201, 3101, 3601, 4101 max. 3000 1/min for AKL/AKV 1301, 3201, 3701, 4201
Temperature:	max. 120 °C (higher temperatures on request)
Casing pressure:	PN 16
Shaft sealing:	Mechanical seal
Flange connections:	DIN 2501 / PN 16
Direction of rotation:	clockwise (when seen from the drive end)



Application

SIHI side channel pumps of the series AKL / AKV in inline design have been constructed as space saving and easy to install pumping units with standard motor. The AKL / AKV pumps are used for problem-free and economically pumping of clear, turbid, aggressive, valuable, toxic or ill smelling liquids that do not contain any abrasive particles. The AKVA, AKVB, AKLA and AKLB pumps are capable of handling gas along with the medium while the AKVB is also self-priming.

The AKL / AKV pumps are used for application in the fields of for example:

- Chemical industry
- Petro-chemical
- Pharmaceutical industry
- Plastic and rubber industry
- Surface treatment and hardening
- Food and beverage industry
- Air conditioning and refrigeration

The space-saving and robust design with bearing pedestal or bearing bracket and the small quantity of high-quality material has made this inexpensive design a well-known pump in the above-mentioned industries. Furthermore, the AKV/AKL pumps are very suitable wherever **standard chemical pumps** are oversized and are operating uneconomically.

Design

Horizontal or vertical, single stage side channel pumps with opposite arranged suction and discharge cover. The arranging of the suction and discharge branch in one casing part gives the possibility to change all parts subject to wear without detaching the pumps from the piping system. The program comprises 4 sizes at 1450 rpm and 4 sizes at 2900 rpm. The applied hydraulic components are from our Modular Side Channel system (interchangeability of parts).

Construction

Casing pressure

Maximum 16 bar from -40 °C up to + 120 °C

Please observe

Technical rules and safety regulations.
Casing pressure = inlet pressure + delivery head at minimum pump capacity

Position of branches

Horizontal suction and discharge branch on opposite sides of the pump.

Flanges

The flanges correspond to DIN EN 1992-2 / PN 16. Flange design to DIN 2512 with groove or drilled according to ANSI 150 or 300 lbs is basically possible.

Bearing

AKLA/AKVA: two grease lubricated ball bearing (design B)
AKLB/AKVB: one grease lubricated ball bearing, one liquid surrounded sleeve bearing (design A). The ball bearing are greased for life as per DIN 625.

Direction of rotation

Clockwise, when looking at the pump from the drive end.

Shaft sealing

The shaft can be sealed by a mechanical seal conform EN DIN 12756.

Material design

Pos.	Components	Material design	
		1F	4F
1010	Casing	EN-GJS-400-18-LT	G-X 6 CrNiMo 18 10
1140	Stage casing	EN-GJS-400-18-LT	G-X 6 CrNiMo 18 10
1610	Cover AKLB/AKVB	EN-GJS-400-18-LT	G-X 6 CrNiMo 18 10
	Cover AKLA/AKVA	X 6 CrNiMoTi 17 12 2	
1810	Pump support AKVB	S 355 J 2 G 3 coated	
	Pump support AKVA	EN-GJS-400-18-LT coated	
1840	Tie bolt ring AKL	EN-GJS-400-18-LT coated	
2100	Shaft AKLB/AKVB	X 5 CrNiMo 17 12 2	
	Shaft AKLA/AKVA	X 20 Cr 13	X 5 CrNiMo 17 12 2
2350	Vane wheel impeller	PAEK	
3300	Bearing bracket AKLB/AKVB	EN-GJS-400-18-LT coated	
	Bearing bracket AKVA	EN-GJS-400-18-LT	
5451	Bearing bush	CY 10 C	

Casing seal

The casing is sealed with soft Teflon.

Drive

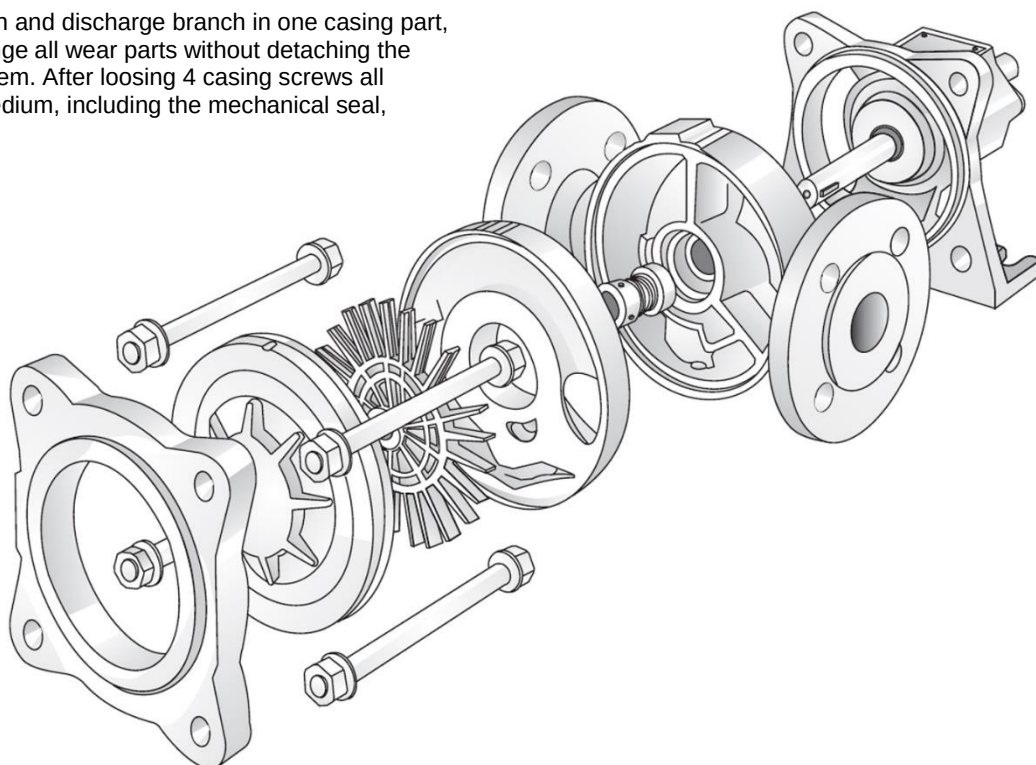
By electrical motors:

AKL: construction type IM B35

AKV: construction type IM B5 or V 1.

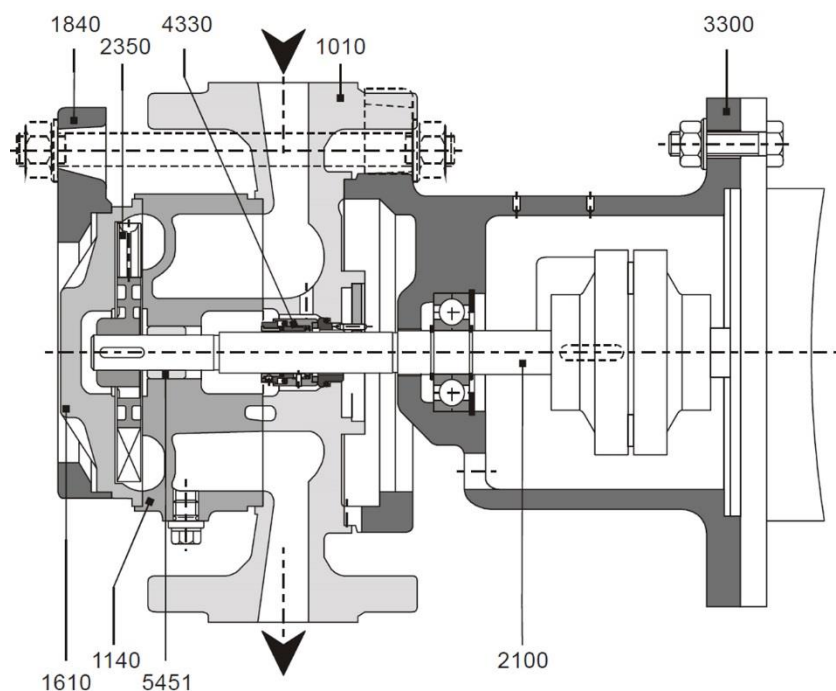
Easy maintenance

The arranging of the suction and discharge branch in one casing part, gives the possibility to change all wear parts without detaching the pumps from the piping system. After loosening 4 casing screws all parts in contact with the medium, including the mechanical seal, can be replaced



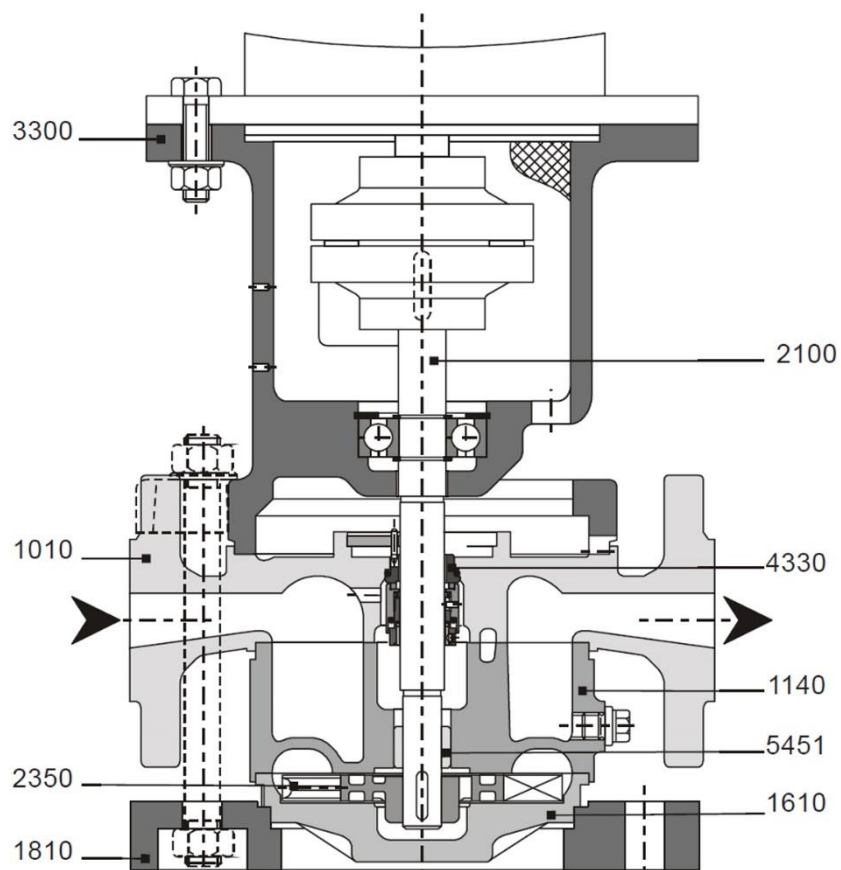
Sectional drawing and parts list

AKLB



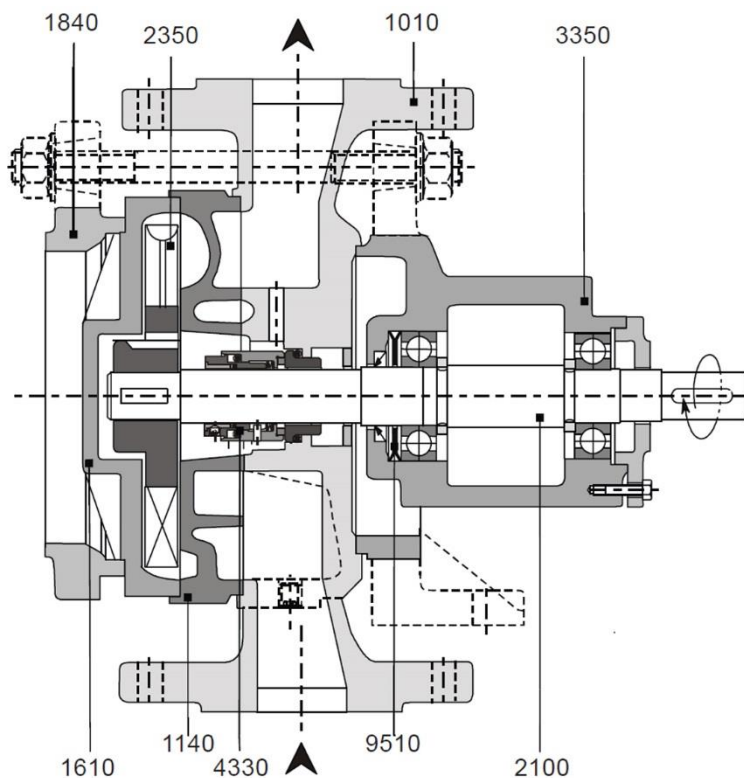
- | | |
|------|------------------------------|
| 1010 | Casing |
| 1140 | Discharge intermediate piece |
| 1610 | Cover |
| 1810 | Pump support |
| 1840 | Tie bolt ring |
| 2100 | Shaft |
| 2350 | Vane wheel impeller |
| 3300 | Lantern |
| 4330 | Mechanical seal |
| 5451 | Bearing bush |

AKVB



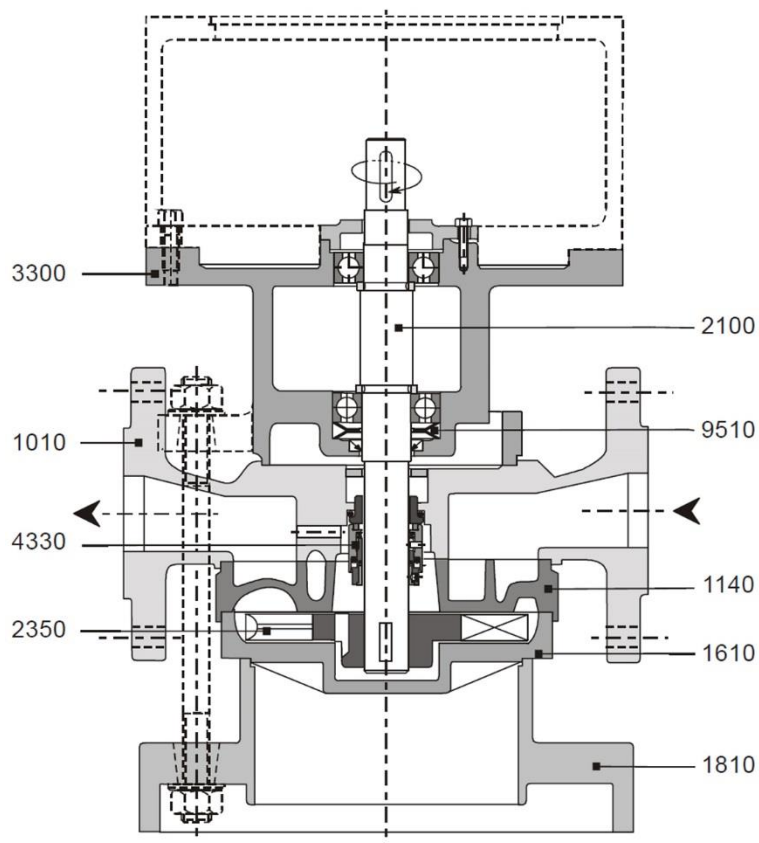
Sectional drawing and parts list

AKLA



- | | |
|------|---------------------------------|
| 1010 | Casing |
| 1140 | Discharge intermediate piece |
| 1610 | Cover |
| 1810 | Pump support |
| 1840 | Tie bolt ring |
| 2100 | Shaft |
| 2350 | Vane wheel impeller |
| 3300 | Bearing bracket |
| 4330 | Mechanical seal |
| 5451 | Bearing bush |
| 9510 | Cup spring (only for size 4100) |

AKVA



Performance range

General conditions

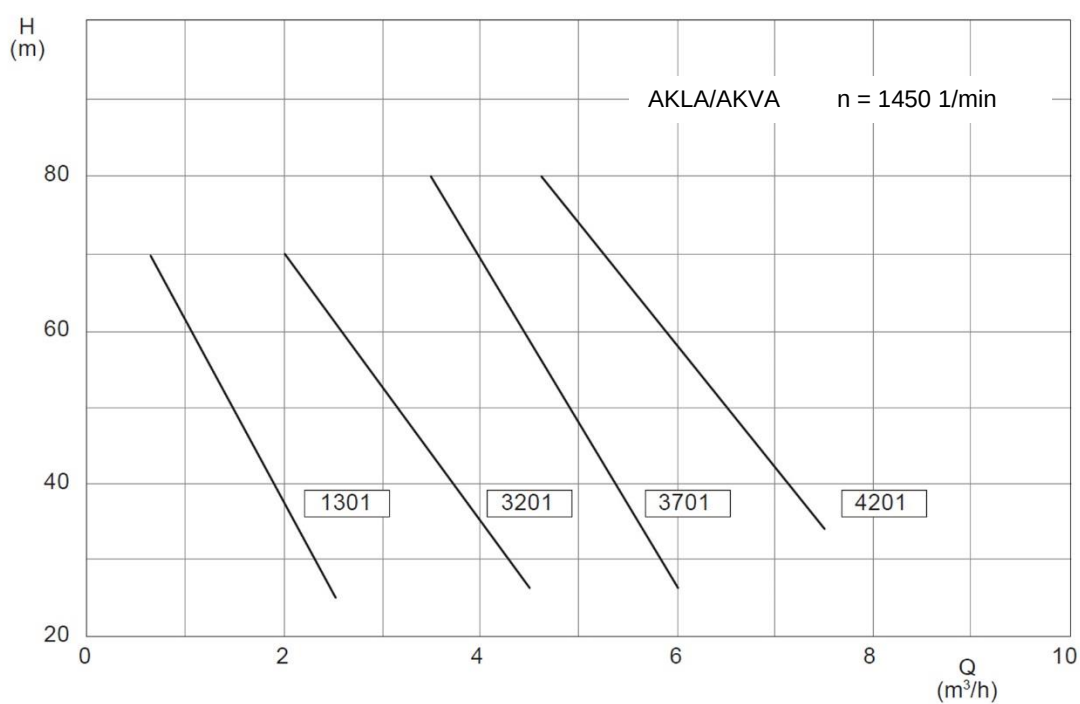
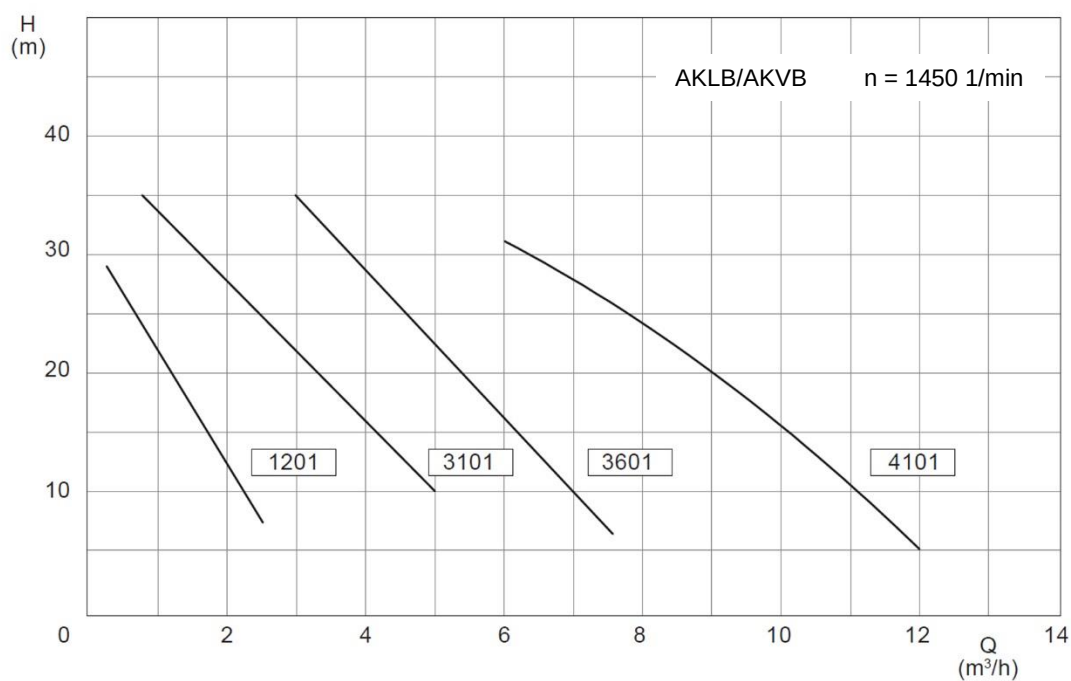
Liquid: Water
 Density: 1 kg/dm³
 Viscosity: 1 cSt
 Temperature: 20 °C
 Atmospheric pressure: 1013 mbar

Characteristic tolerances

Capacity $\pm 5\%$ - Delivery head $\pm 5\%$ - Power + 10%

Measuring tolerance

According to ISO 5198.



Performance curves AKLB/AKVB (n = 1450 1/min)

General conditions

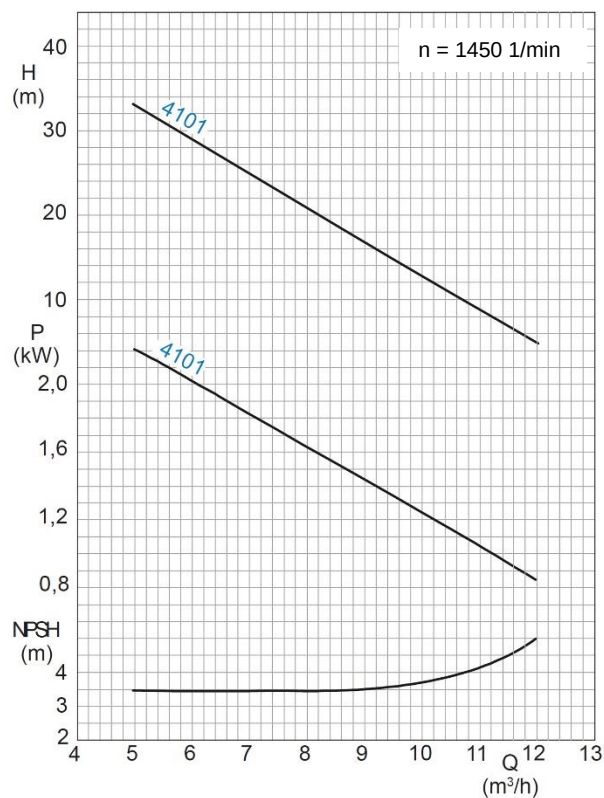
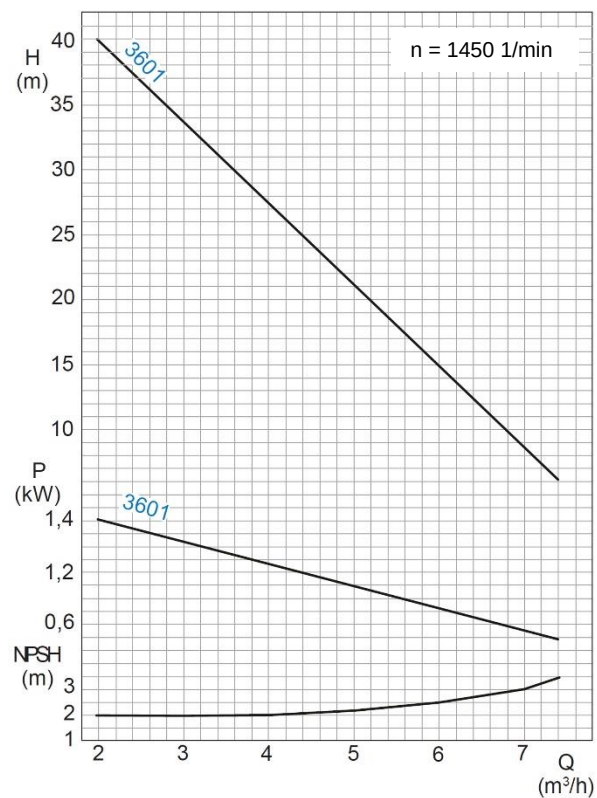
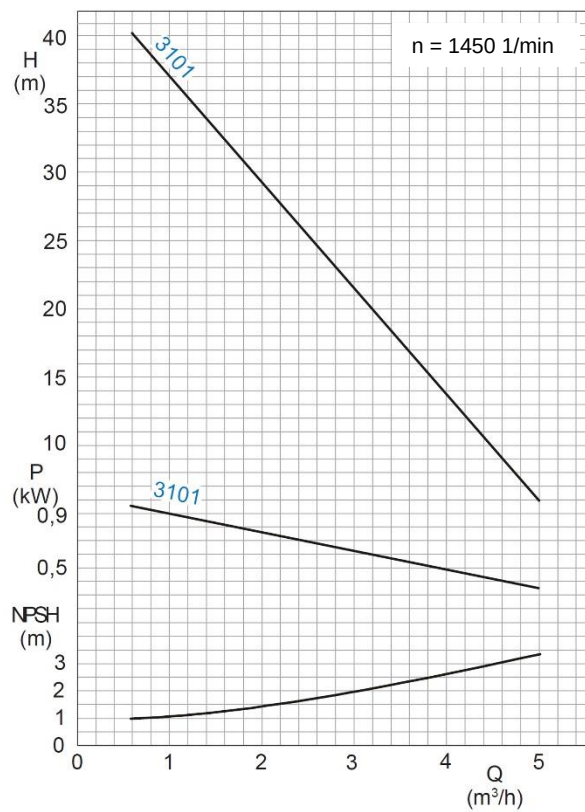
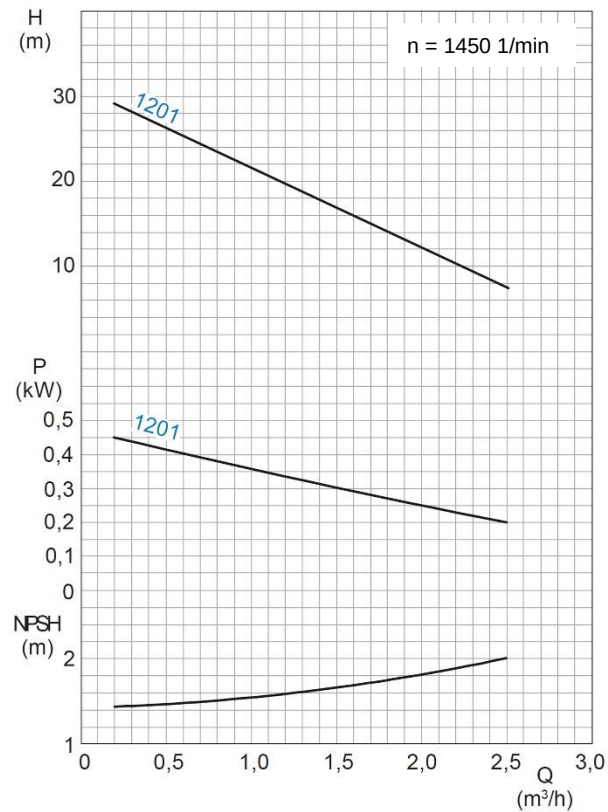
Liquid: Water
 Density: 1 kg/dm³
 Viscosity: 1 cSt
 Temperature: 20 °C
 Atmospheric pressure: 1013 mbar

Characteristic tolerances

Capacity ± 5% - Delivery head ± 5% - Power + 10%

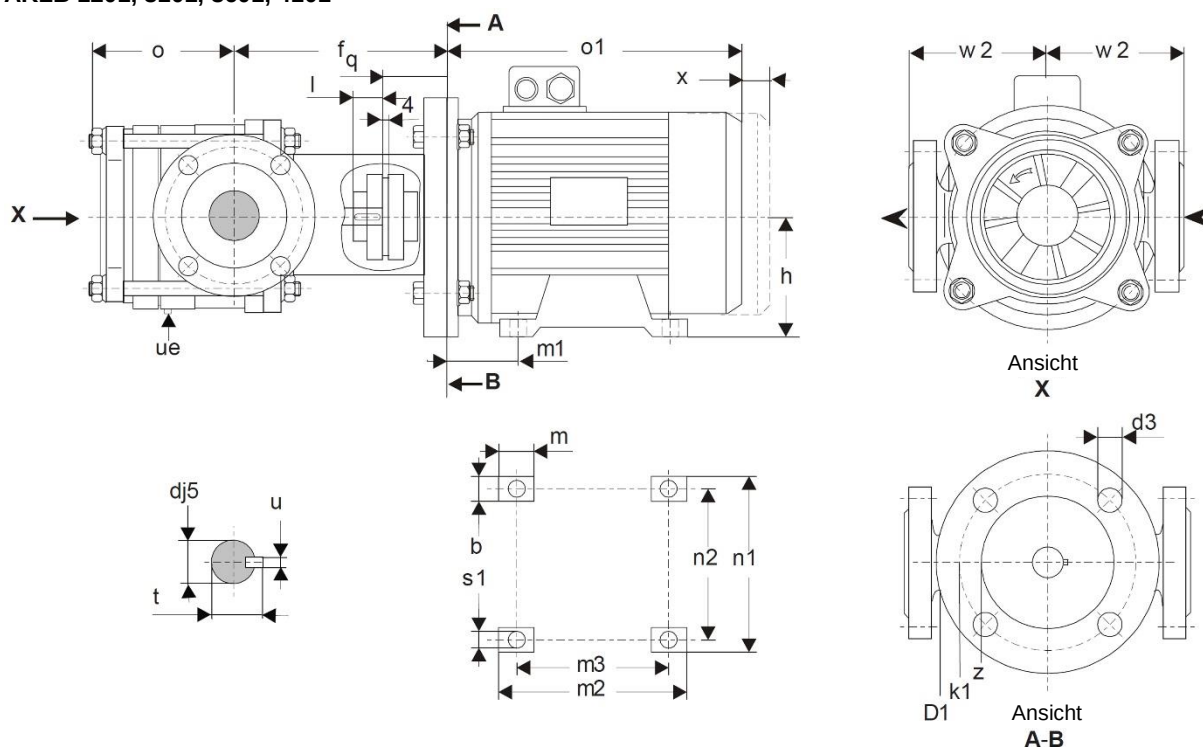
Measuring tolerance

According to ISO 5198



Dimension chart and pump set drawing

AKLB 1201, 3101, 3601, 4101

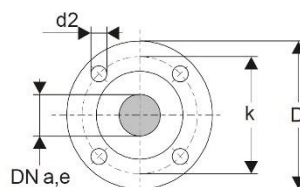


Pump

Pump size	DN a,e	Dimensions [mm]												
		d1	d3	f	k1	l	o	q	w2	z	d	t	u	ue
1201	20	200	14	178	165	30	95	39	105	130	16	18,1	5	G1/8
3101	32	200	18	175	165	30	115	52	125	130	19	21,5	6	G1/8
3601	32	200	18	175	165	30	115	52	125	130	19	21,5	6	G1/8
4101	40	250	18	187	215	45	135	63	135	180	24	26,9	8	G1/8

Flange dimensions

according to DIN EN 1092-2 / PN 16			
DN a,e	20	32	40
k	75	100	110
D	115	140	150
d2 x number	14x4	18x4	18x4



Pump set

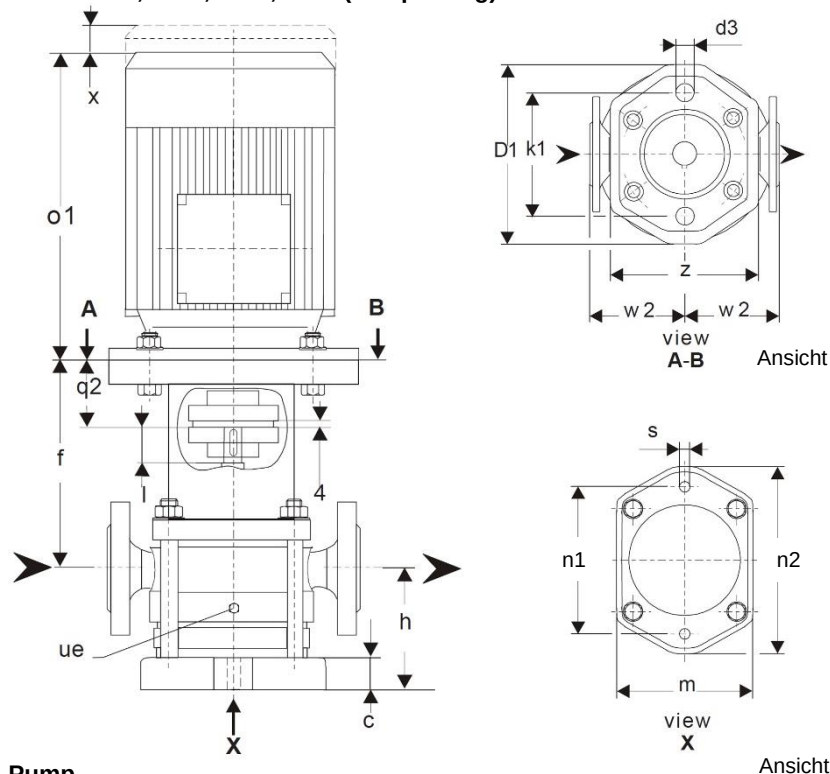
Pump size	Motor kW	Motor size	Coupling	Weight [kg]	Dimensions [mm]											
				Pump	Set	b	h	M	m1	m2	m3	n1	n2	s1	o1*	x
1201	0.55	80	B68	19	28	36	80	35	70	130	100	160	125	10	296	50
	0.75	80			28											
3101	0.55	80	B68	26	35	36	80	35	70	130	100	160	125	10	296	50
	0.75	80			35											
	1.1	90S			38	42	90	42	76	165	100	180	140	12	318	60
	1.5	90L			40											
3601	0.75	80	B68	26	35	36	80	35	70	130	100	160	125	10	296	50
	1.1	90S			38											
	1.5	90L			40	42	90	42	76	165	100	180	140	12	318	60
4101	2.2	100L	B68	33	54	50	100	50	63	180	140	205	160	12	366	70
	3.0	100L	B80		54											

* Dimensions depend upon the motor brand.

The weight of the pump in design 4F will be approximately 8% higher.

Dimension chart and pump set drawing

AKVB 1201, 3101, 3601, 4101 (self-priming)

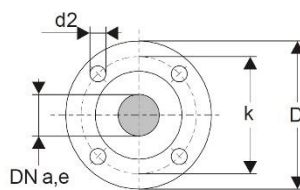


Pump

Pump size	DN a,e	c	D1	d3	h	f	k1	l	m	n1	n2	q2	s	w2	z	d	t	u	ue
1201	20	25	200	14	90	178	165	30	170	160	200	39	14	105	130	16	18,1	5	G1/8
3101	32	25	200	18	115	175	165	30	180	190	235	52	14	125	130	19	21,5	6	G1/8
3601	32	25	200	18	115	175	165	30	180	190	235	52	14	125	130	19	21,5	6	G1/8
4101	40	30	250	18	135	187	215	45	200	210	260	63	14	135	180	24	26,9	8	G1/8

Flange dimensions

according to DIN EN 1092-2 / PN 16			
DN a,e	20	32	40
k	75	100	110
D	115	140	150
d2 x number	14x4	18x4	18x4



Pump set

Pump size	Motor kW	Motor size	Coupling	Weight [kg] Pump	Weight [kg] Set	o1*	x
1201	0.55	80	B68	19	28	296	50
	0.75	80			28		
3101	0.55	80	B68	26	35	296	50
	0.75	80			35		
	1.1	90S			38	318	60
	1.5	90L			40	333	
3601	0.75	80	B68	26	35	296	50
	1.1	90S			38	318	60
	1.5	90L			40	333	
4101	2.2	100L	B68	33	54	366	70
	3.0	100L	B80		54		

* Dimensions depend upon the motor brand.
The weight of the pump in design 4F will be approximately 8% higher.

Performance curves AKLA/AKVA (n = 2900 1/min)

General conditions

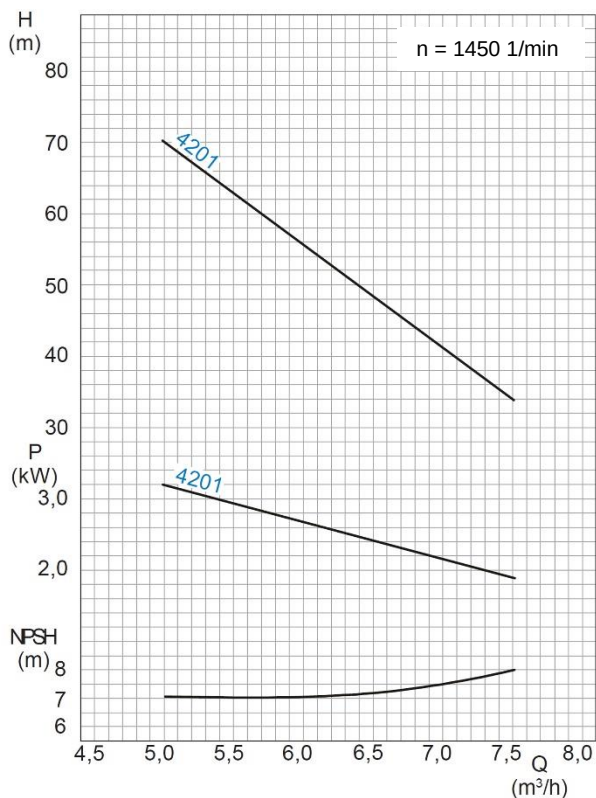
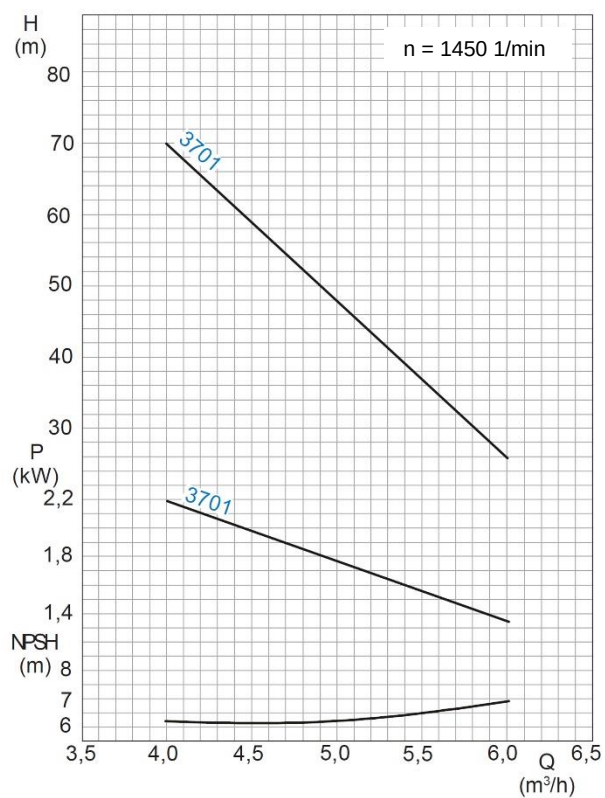
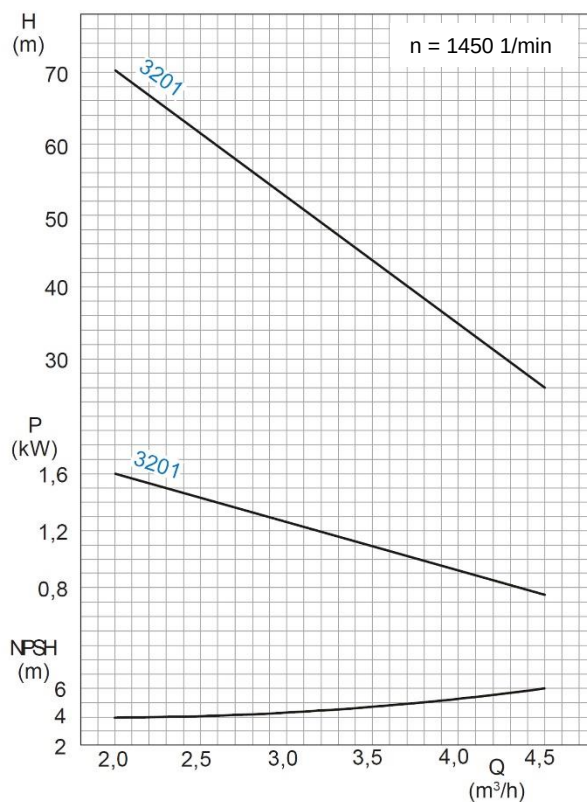
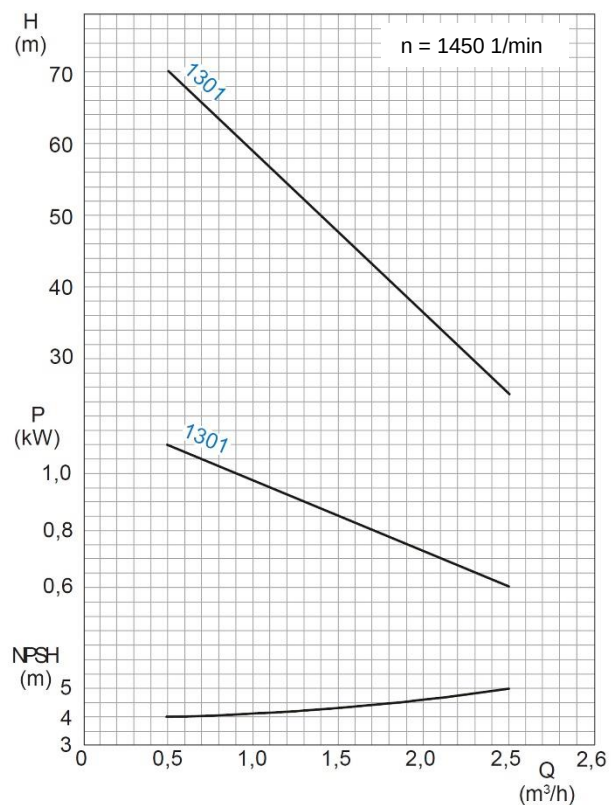
Liquid: Water
 Density: 1 kg/dm³
 Viscosity: 1 cSt
 Temperature: 20 °C
 Atmospheric pressure: 1013 mbar

Characteristic tolerances

Capacity $\pm 5\%$ - Delivery head $\pm 5\%$ - Power + 10%

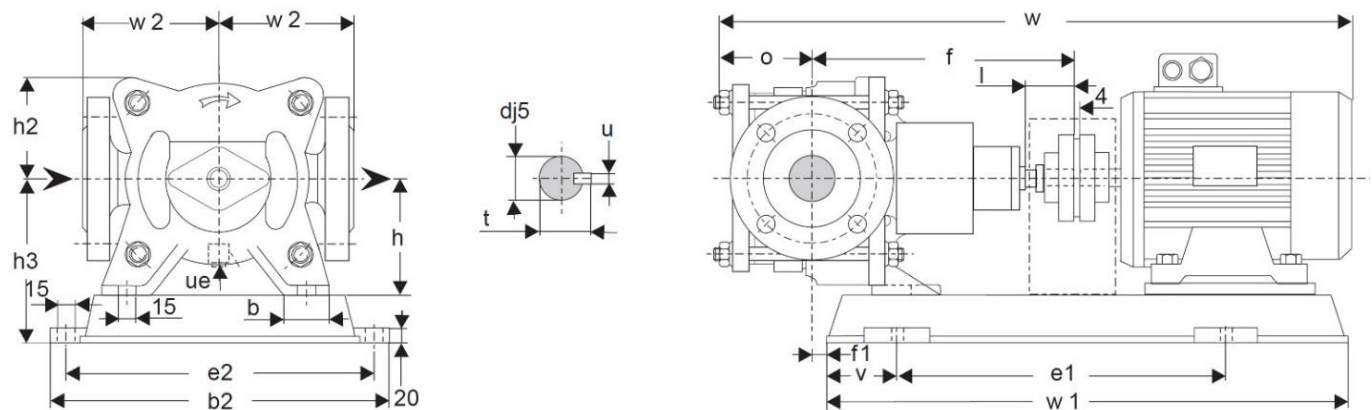
Measuring tolerance

According to ISO 5198



Dimension chart and pump set drawing

AKLA 1301, 3201, 3701, 4201



Pump und pump set

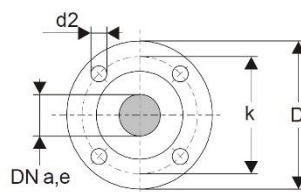
Pump size	Motor		Base plate	Coup- ling	Weight [kg]		Dimensions [mm]																
	kW	size			P.	Set	b	b2	e1	e2	f	f1	h	h2	h3	o	w*	w1	w2	d	t	u	ue
1301	0,75	80	P003	B68	12	30	36	262	270	230	184	-7	80	72	115	68	592	470	105	16	18,1	5	G1/8
	1,1	80				32																	
3201	1,5	90S	P003	B68	20	44	45	262	270	230	202,5	-9	90	78	125	85,5	641	470	125	19	21,5	6	G1/8
	2,2	90L	P006			50											676						
3701	2,2	90L	P006	B68	24	54	40	312	320	280	198	-10	100	87	135	114	699	520	125	24	26,9	8	G1/8
	3,0	100L				59											742						
4201	2,2	90L	P006	B68	24	54	40	312	320	280	198	-10	100	87	135	114	699	520	135	24	26,9	8	G1/8
	3,0	100L		59		742																	
	4,0	112M		B80		75											744						

* Dimensions depend upon the motor brand.

The weight of the pump in design 4F will be approximately 8% higher.

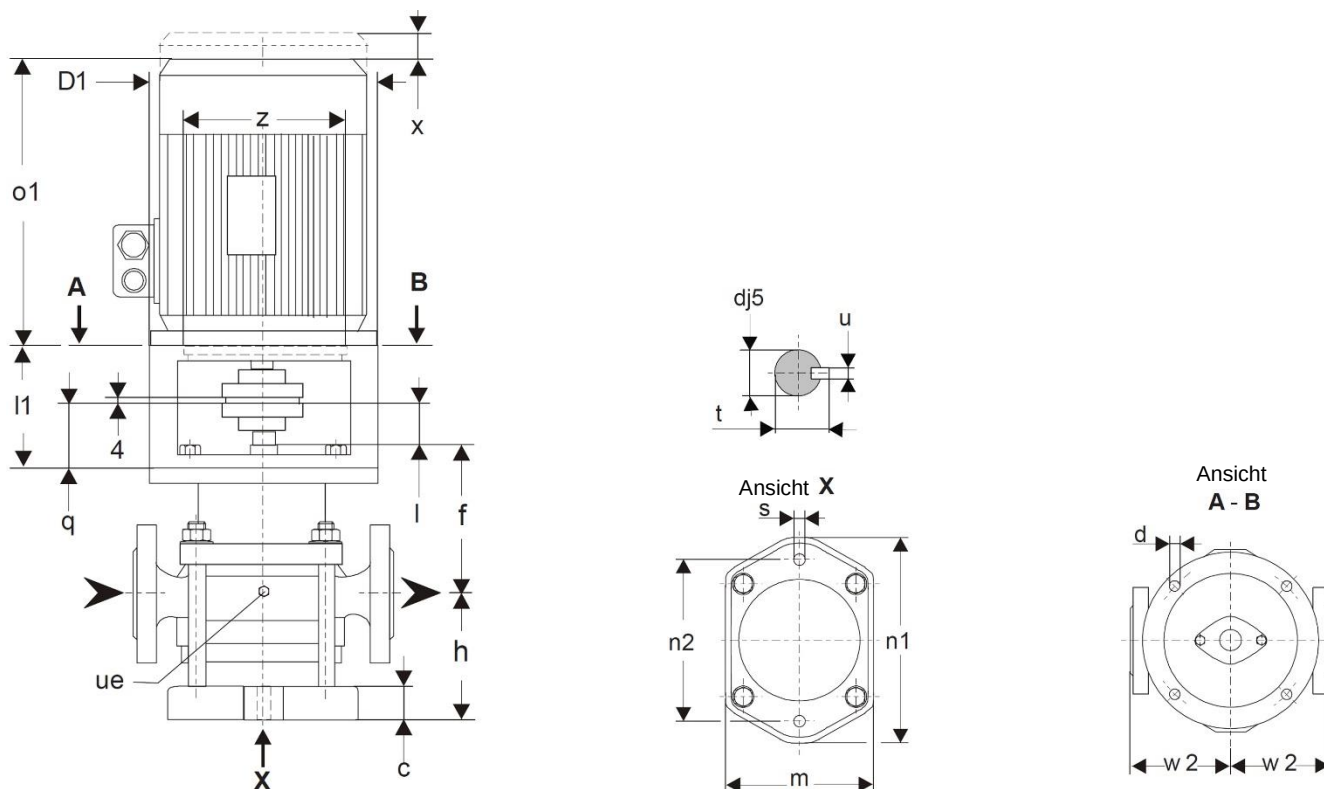
Flange dimensions

according to DIN EN 1092-2 / PN 16			
DN a,e	20	32	40
k	75	100	110
D	115	140	150
d2 x number	14x4	18x4	18x4



Dimension chart and pump set drawing

AKVA 1301, 3201, 3701, 4201



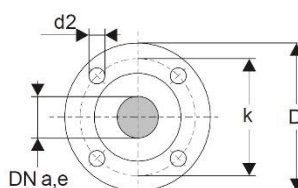
Pump and pump set

Pump size	Motor		Coup- ling	Weight [kg]		Dimensions [mm]																		
	kW	size		P.	Set	c	D1	h	f	l	l1	m	n1	n2	o1*	q	s	w2	x	z	d	t	u	ue
1301	0,75	80	B68	19	27	28	200	90	184	30	82	170	200	160	296	39	15	105	50	130	16	18,1	5	G1/8
	1,1	80			29										318				60					
	1,5	90S			30										318				60					
3201	1,1	80	B68	26	36	32	200	115	202,5	40	112	180	235	190	296	54,5	15	125	50	130	19	21,5	6	G1/8
	1,5	90S			37										318				60					
	2,2	90L			42										333				60					
3701	1,5	90S	B68	33	45	35	250	135	198	45	127	200	260	210	318	62	15	135	70	180	24	26,9	8	G1/8
	2,2	90L			49										333				80					
4201	3,0	100L	B80	33	53	35	250	135	198	45	127	200	260	210	366	62	15	135	80	180	24	26,9	8	G1/8
	4,0	112M			55										368				90					

* Dimensions depend upon the motor brand.
The weight of the pump in design 4F will be approximately 8% higher.

Flange dimensions

according to DIN EN 1092-2 / PN 16			
DN a,e	20	32	40
k	75	100	110
D	115	140	150
d2 x number	14x4	18x4	18x4



General comments

Side channel pumps with the same hydraulic construction are manufactured in series as:

- AKH** Medium duty pump, PN 16
- AEH** High duty pump, PN 40, also available with magnetic coupling
- CEH** High duty pump, PN 40, also available with magnetic coupling
- CEB** Vertical tank mounted pump, PN 25 with magnetic coupling

Technical documentation about these pump series will be supplied on request.