

Side Channel Pumps



AKL, AKV 1201 - 4201

Technical data

Capacity:	from 0,2 up to 12 m ³ /h
Delivery head:	from 5 up to 70 m
Speed:	max. 1800 rpm for AKL/AKV 1201, 3101, 3601, 4101 max. 3000 rpm for AKL/AKV 1301, 3201, 3701, 4201
Temperature:	max. 120 °C (higher temperatures upon request)
Casing pressure:	PN 16
Shaft sealing:	standard mechanical seal
Flange connections:	DIN 2501 / PN 16
Sense of rotation:	clockwise (when seen from the drive end)



Application

Sterling 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 abbrasive 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,
- Plastics and rubber industry,
- Pharmaceutical industry,
- Food industry,
- Surface treatment and hardening,
- 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 branche on opposite sides of the pump.

Flanges

The flanges correspond to DIN EN 1092-2 / PN16.
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 bearings (design B)
AKLB / AKVB: one grease lubricated ball bearing, one liquid surrounded sleeve bearing (design A). The ball bearings 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 DIN EN 12756.

Material design AKL, AKV

Pos	Components	Material design	
		1F	4F
1010	Casing	EN-GJS-400-18-LT	G-X 6 CrNiMo 18 10
1140	Stage casing		
1610	Cover AKVB, AKLB Cover AKVA, AKLA		
		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 AKVB, AKLB	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 electric motors:
 construction type AKV: series IM B5 or V 1
 construction type AKL: series IM B35.

General comments

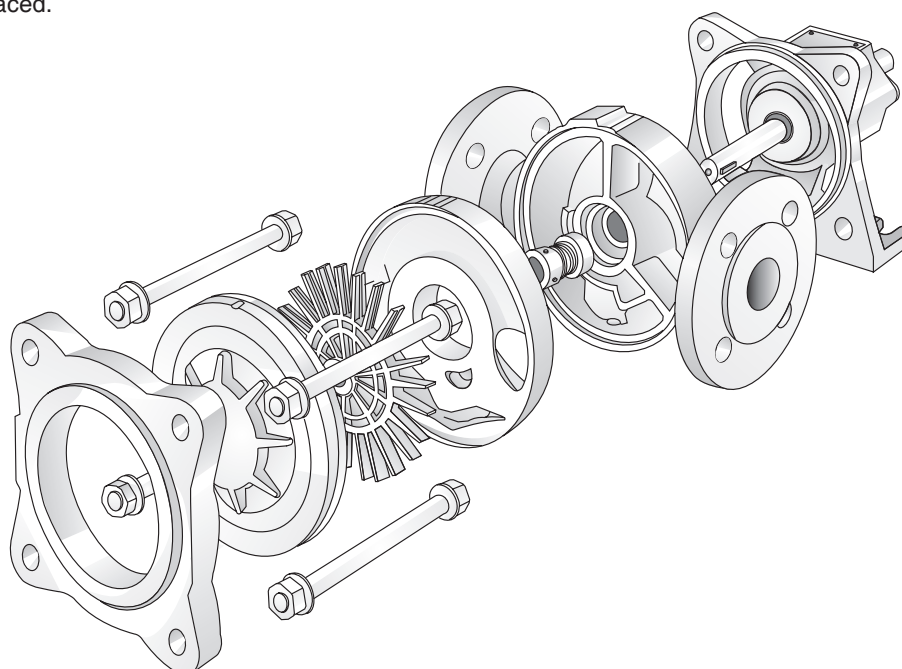
In case of greater delivery heads in heavy-duty operations, we recommend the series **AEH** side channel pump. These pumps are also available with magnetic coupling.

In order to get smaller NPSH values in heavy-duty operation we recommend the series **CEH** side channel pump. The CEH is also available with magnetic coupling.

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

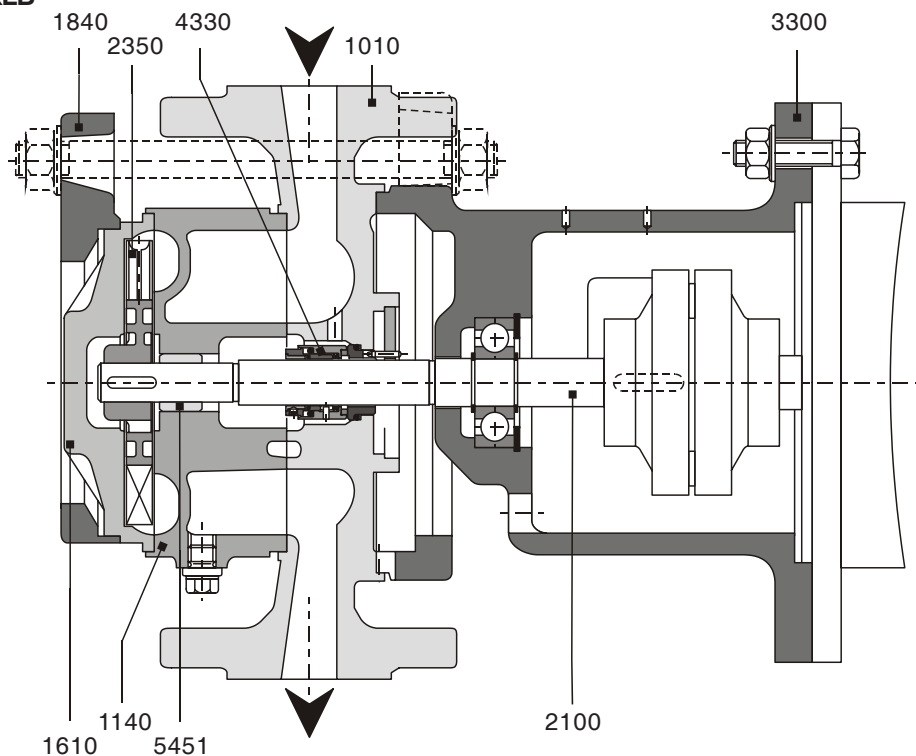
Easy Maintenance

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.

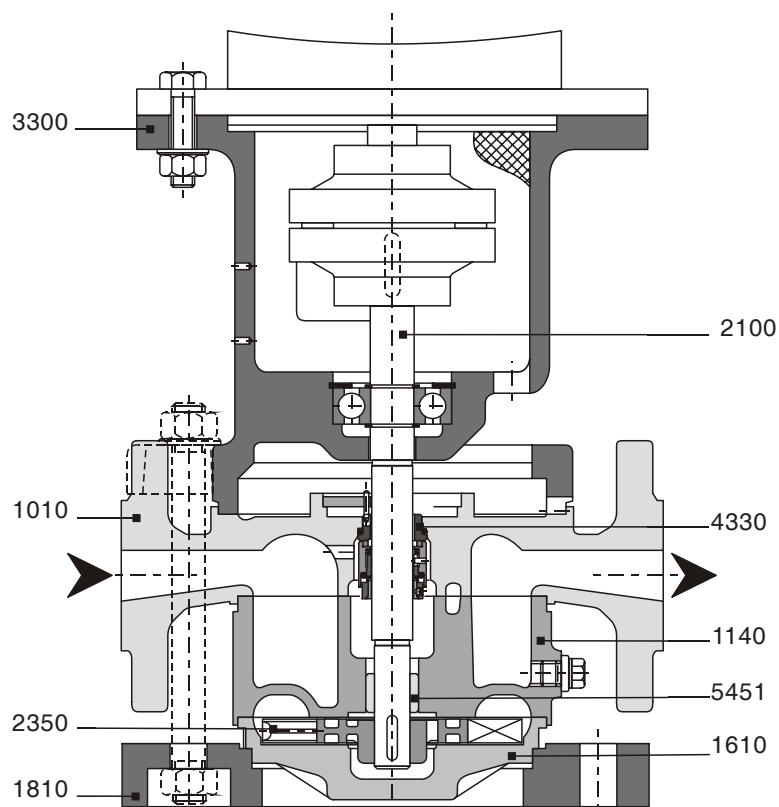


Sectional drawing and parts list AKLB, AKVB (typical)

AKLB



AKVB

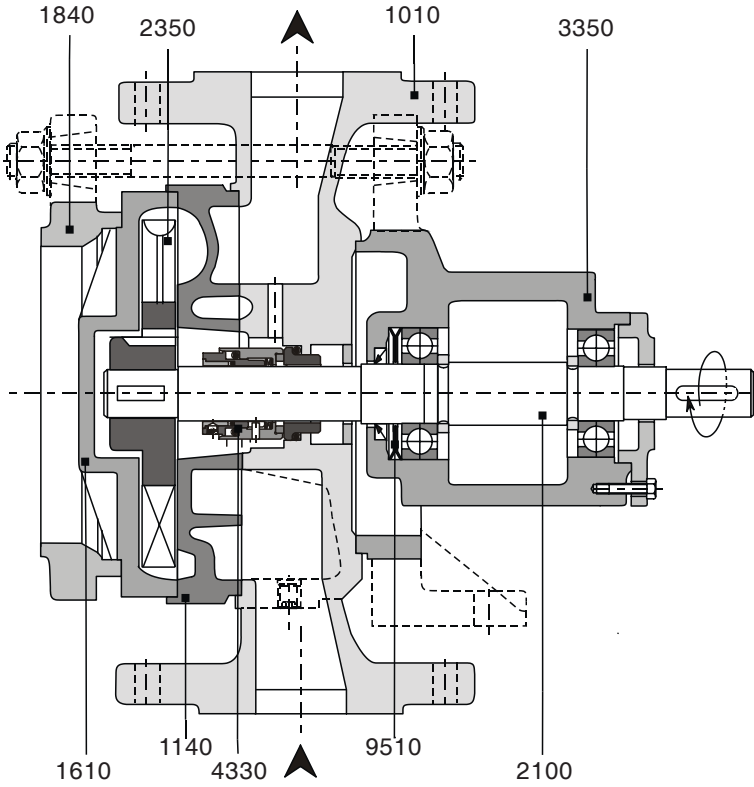


Pos.	Components
1010	Casing
1140	Discharge intermediate piece
1610	Cover
1810	Pump support
1840	Tie bolt ring
2100	Shaft
2350	Vane wheel impeller
3300	Lantern
4330	Mechanical seal
5451	Bearing bush

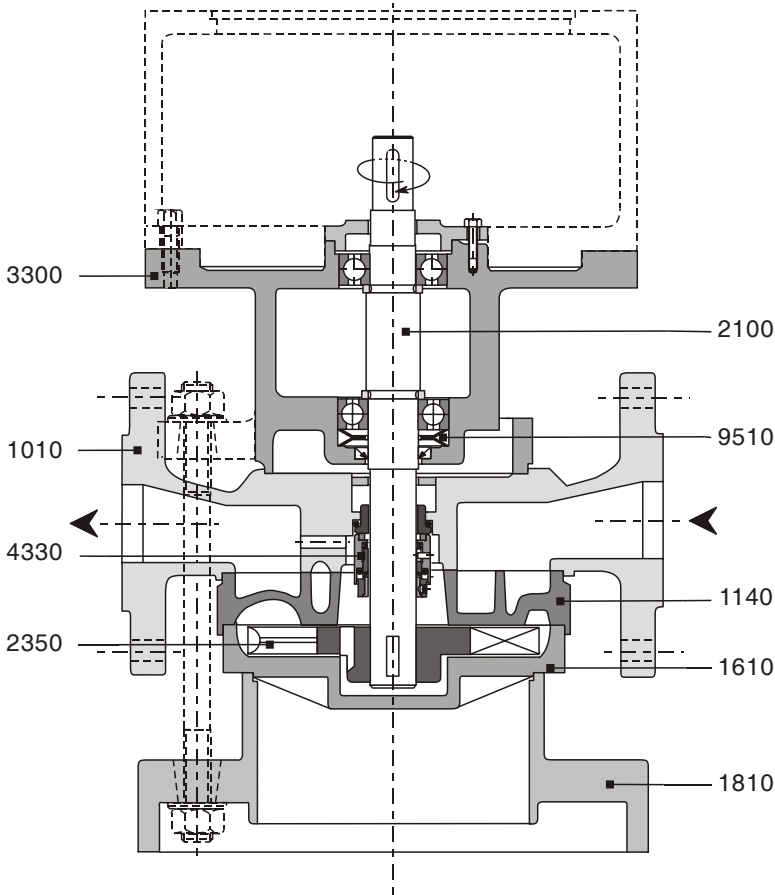
All possible design combinations can be found in the delivery program

Sectional drawing and parts list AKLA, AKVA (typical)

AKLA



AKVA



Pos.	Components
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)

All possible design combinations can be found in the delivery program

Performance range AKL, AKV

General conditions

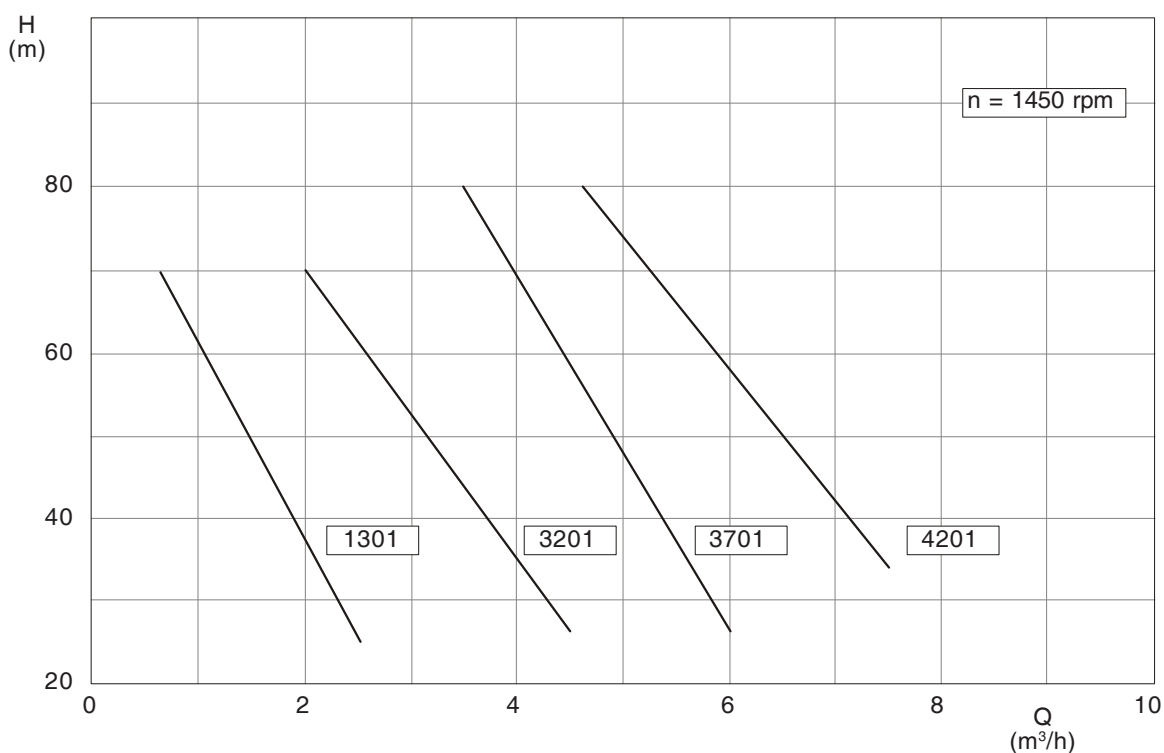
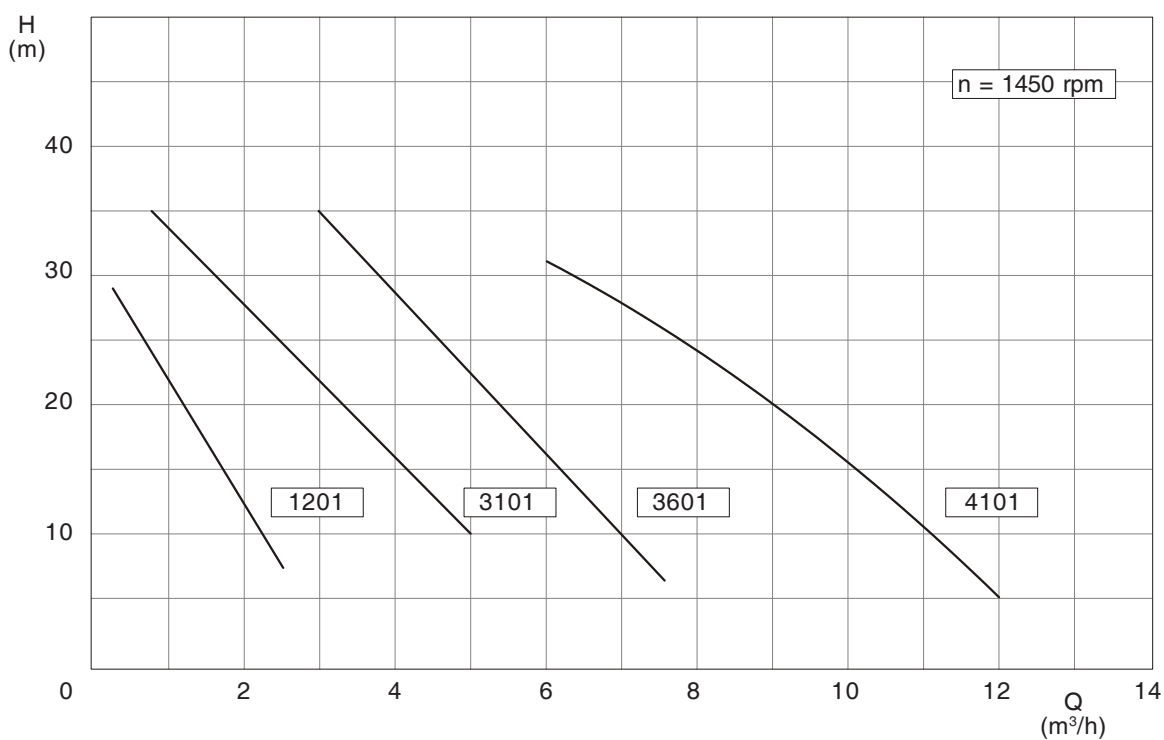
Liquid: Water
 Density: 1 kg/dm³
 Viscosity: 1 cSt
 Temperature: 20 °C
 Atmospheric pressure: 1013 mbar

Characteristic tolerances

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

Measuring tolerance

According to ISO 5198



Performance curves AKLB / AKVB (1450 rpm)

General conditions

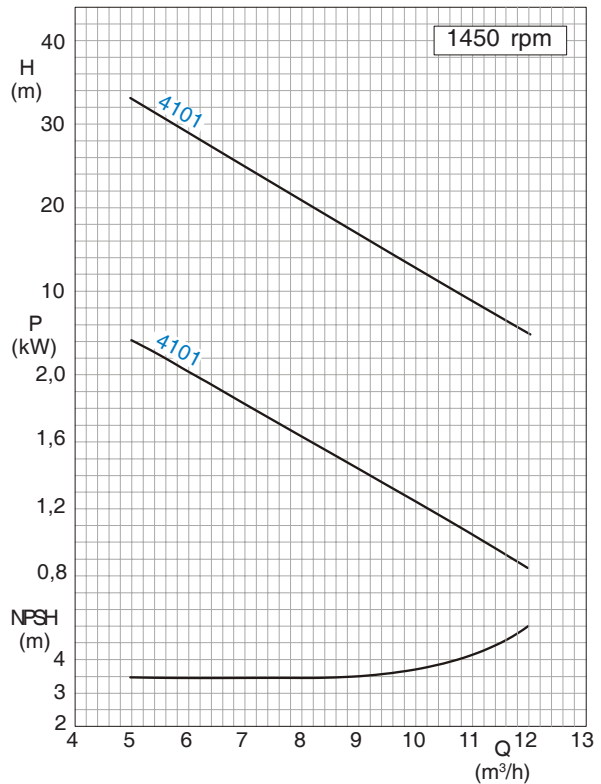
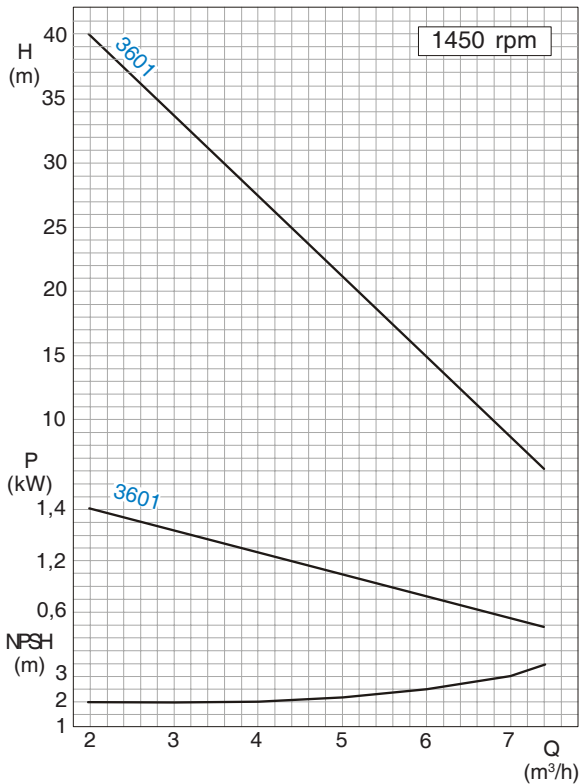
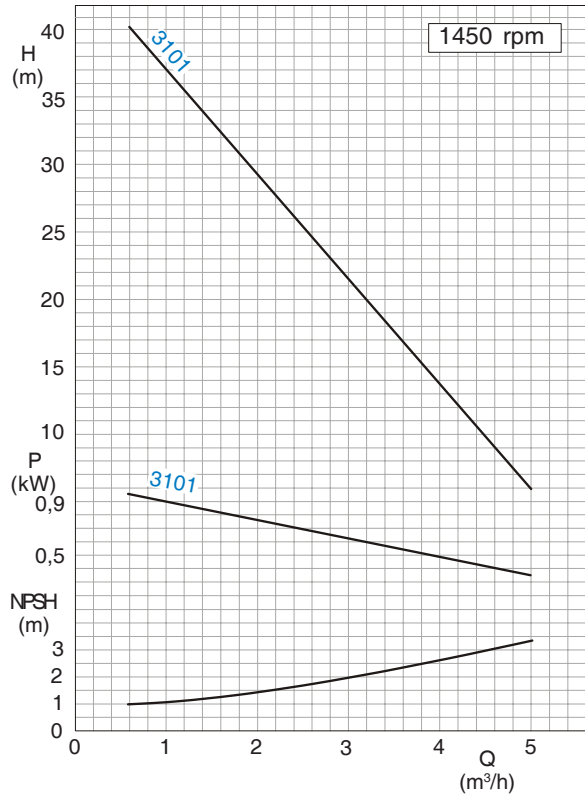
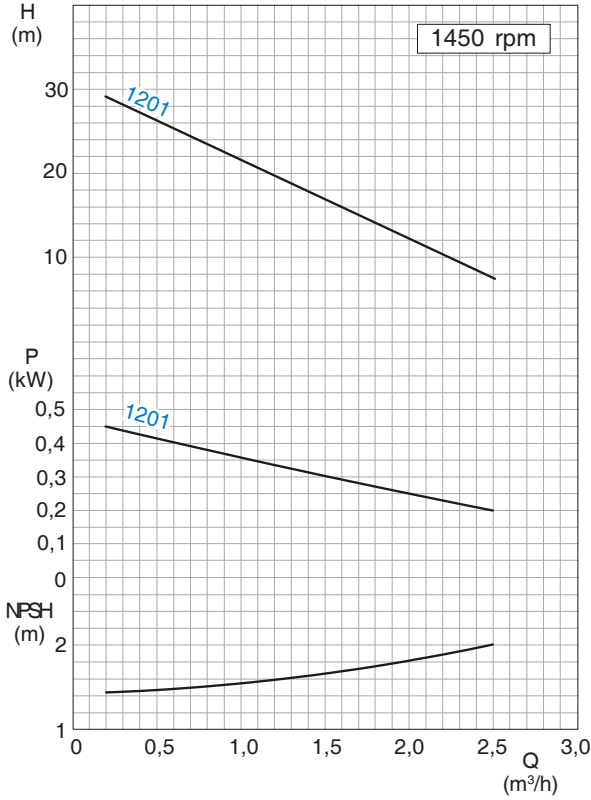
Liquid: Water
 Density: 1 kg/dm³
 Viscosity: 1 cSt
 Temperature: 20 °C
 Atmospheric pressure: 1013 mbar

Design tolerance

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

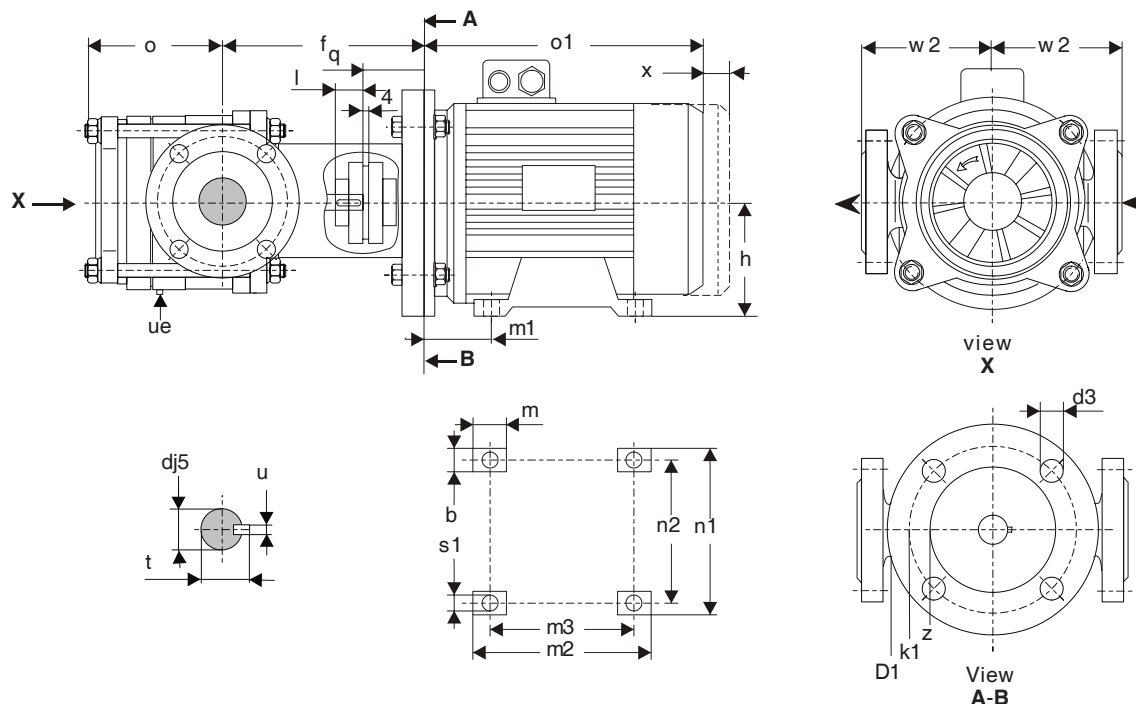
Measuring tolerance

According to ISO 5198



Dimension chart and Pump set drawing

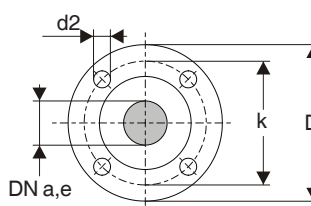
AKLB 1201, 3101, 3601, 4101



Pump dimensions

Pump Size	DN a,e	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	G 1/8
3101	32	200	18	175	165	30	115	52	125	130	19	21.5	6	G 1/8
3601	40	250	18	187	215	45	135	63	135	180	24	26.9	8	G 1/8

Flanges connections conform 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



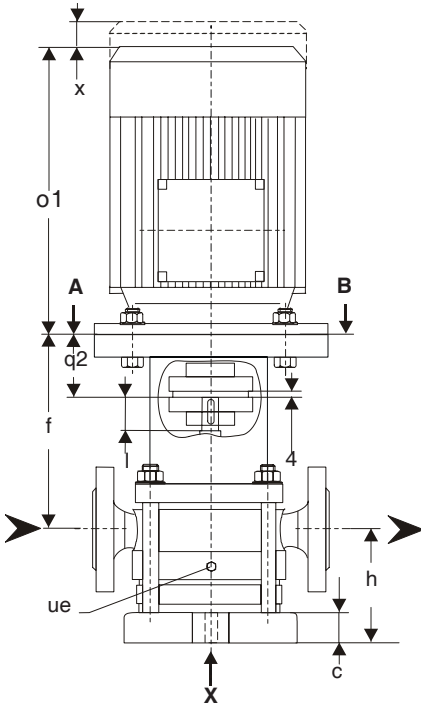
Pump set dimensions

Pump Size	Motor kW	Motor size	Coupling	Weight 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	B68		28											
3101	0.55	80	B68	26	35	36	80	35	70	130	100	160	125	10	296	50
	0.75	80	B68		35											
	1.1	90S	B68		38											
	1.5	90L	B68		40											
3601	0.75	80	B68	26	35	36	80	35	70	130	100	160	125	10	296	50
	1.1	90S	B68		38											
	1.5	90L	B68		40											
4101	2.2	100L	B80	33	54	50	100	50	63	180	140	205	160	12	366	70
	3	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

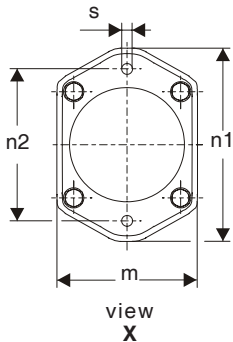
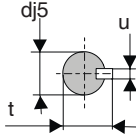
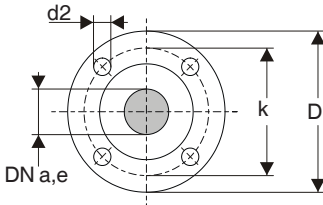
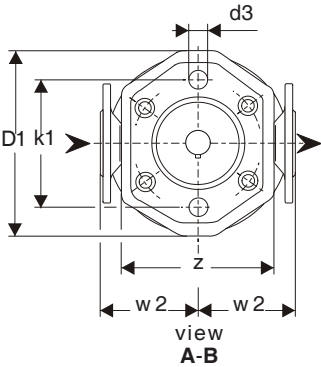
AKVB 1201, 3101, 3601, 4101 (Self priming)



Pump set dimensions

Pump Size	Motor kW	Motor size	Coupling	Weight pump	Weight set	o1*	x
1201	0.55	80	B68	19	28	296	50
	0.75	80	B68		28		
3101	0.55	80	B68	26	35	296	50
	0.75	80	B68		35		
	1.1	90S	B68		38	318	60
	1.5	90L	B68		40	333	
3601	0.75	80	B68	26	35	296	50
	1.1	90S	B68		38		
	1.5	90L	B68		40	333	60
4101	2.2	100L	B80	33	54	366	70
	3	100L	B80		54		

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



Flanges connections conform 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 dimensions

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	G 1/8
3101	32	25	200	18	115	175	165	30	180	190	235	52	14	125	130	19	21.5	6	G 1/8
3601																			
4101	40	30	250	18	135	187	215	45	200	210	260	63	14	135	180	24	26.9	8	G 1/8

Performance curves AKLA / AKVA (2900 rpm)

General conditions

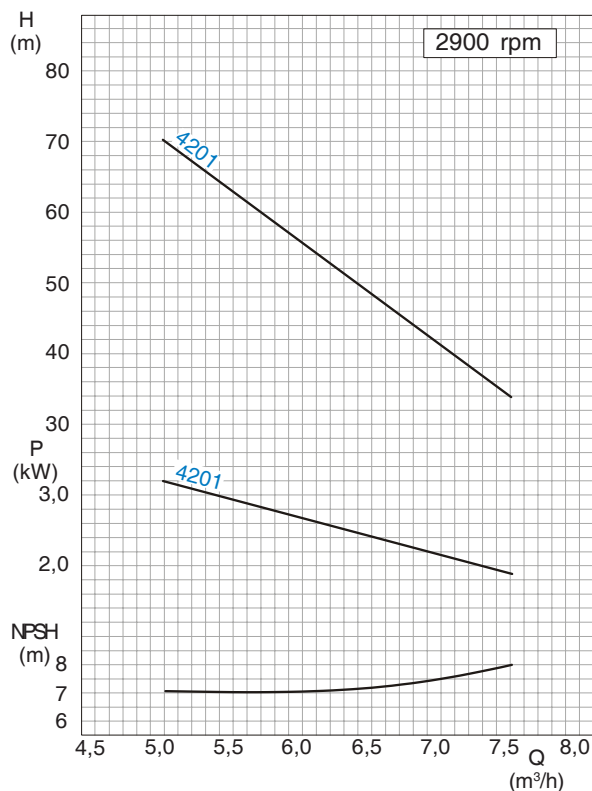
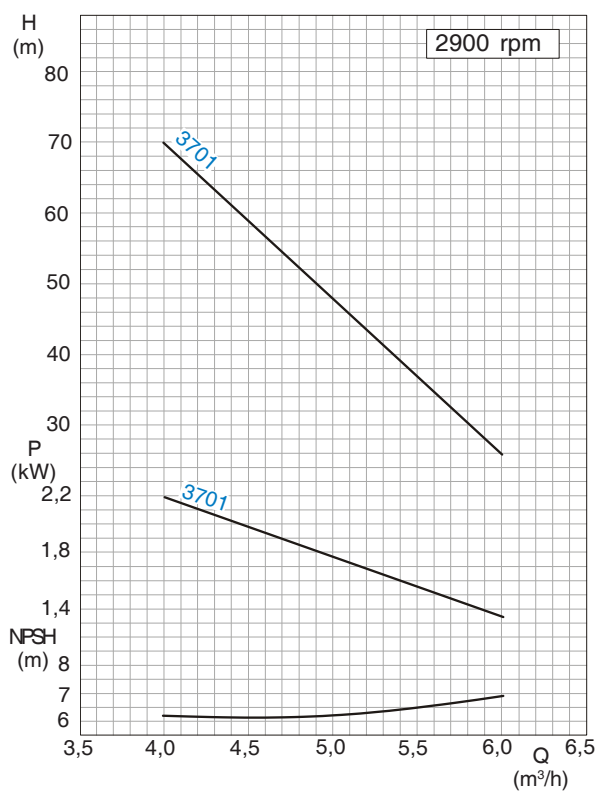
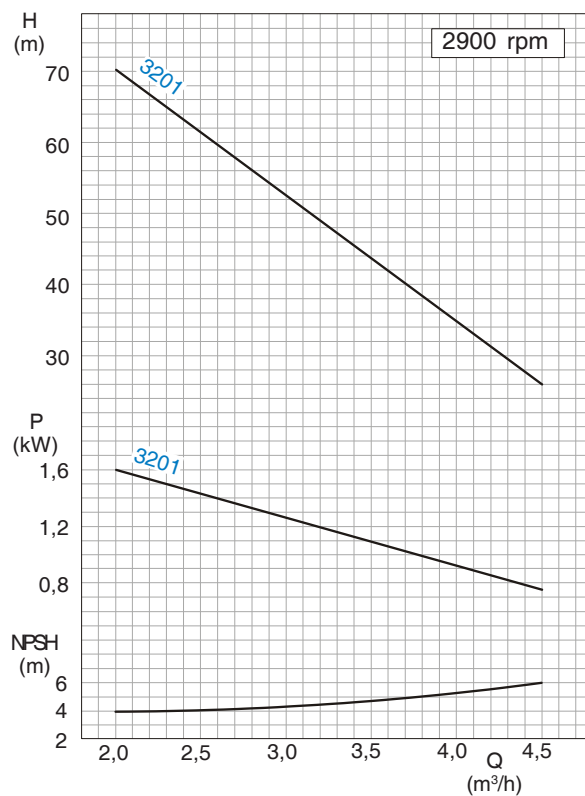
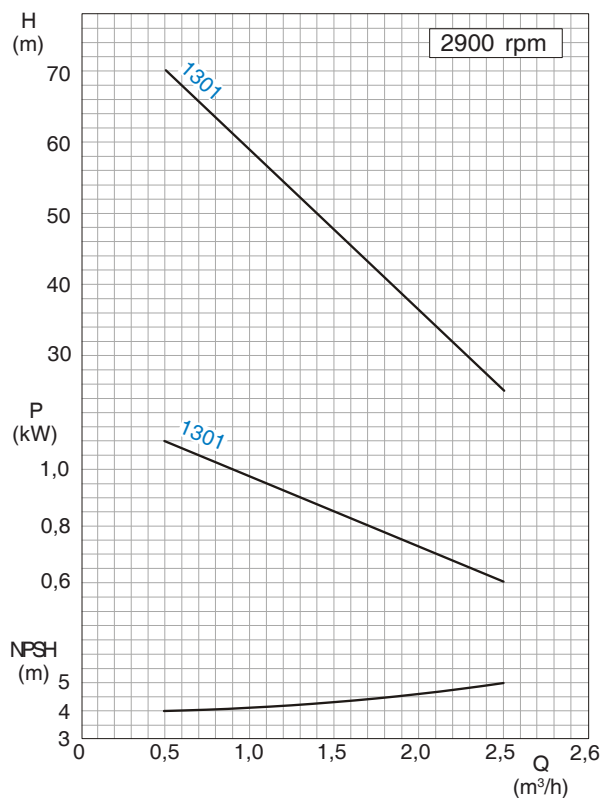
Liquid: Water
 Density: 1 kg/dm³
 Viscosity: 1 cSt
 Temperature: 20 °C
 Atmospheric pressure: 1013 mbar

Design tolerance

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

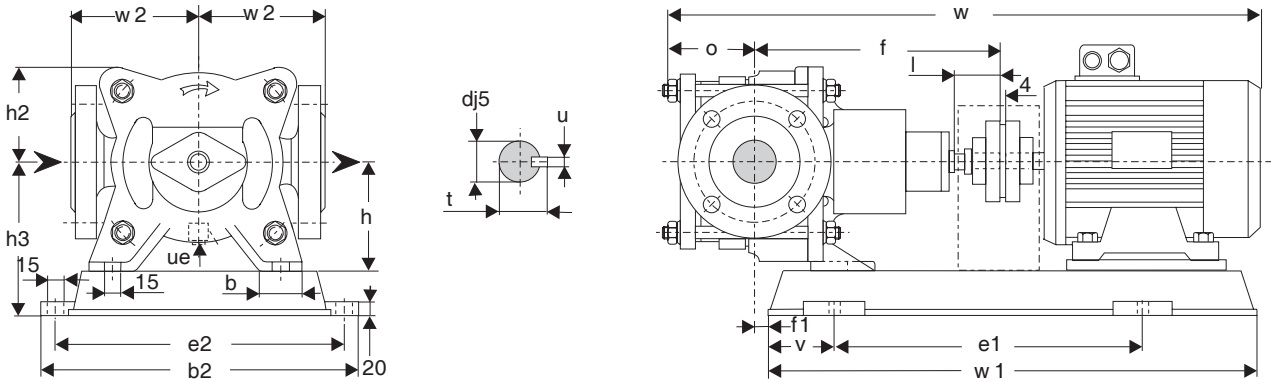
Measuring tolerance

According to ISO 5198



Dimension chart and Pump set drawing

AKLA 1301, 3201, 3701, 4201



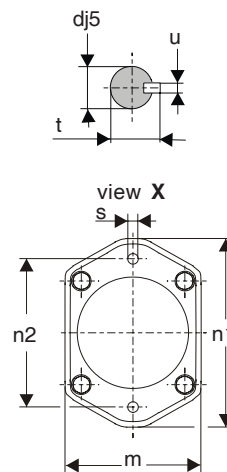
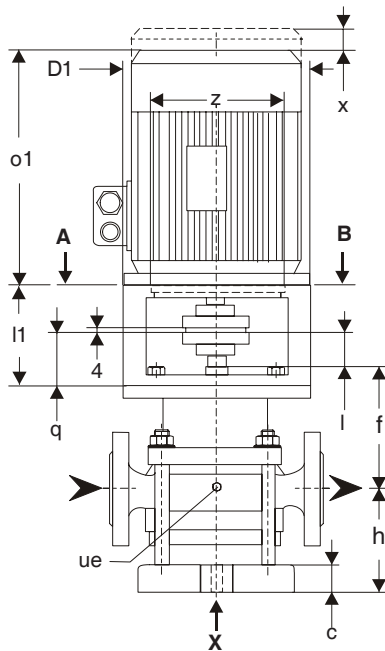
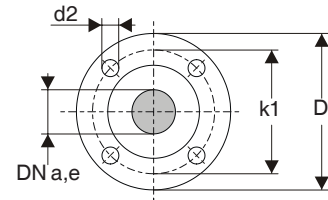
Pump Size	Motor kW	Motor size	Base plate	Coupl.	Weight pump	Weight set	b	b2	e1	e2	f	f1	h	h2	h3	o	w*	w1	w2	d	t	u	ue
1301	0.75	80	P003	B68	12	30	36	262	270	230	184	-7	80	72	115	68	592	470	105	16	18.1	5	G1/8
	1.1	80				32											676						
3201	1.5	90S	P003	B68	20	44	45	262	270	230	202.5	-9	90	78	125	85.5	641	470	125	16	18.1	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 AKLA and AKVA in design 4F will be approximately 8% higher.

AKVA 1301, 3201, 3701, 4201

Flanges connections conform 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 Size	Motor kW	Motor size	Coupling	Weight pump	Weight 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										60									
	1.5	90S			30										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										60									
	2.2	90L			42										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										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										90									

It is the policy of Sterling Fluid Systems to seek continually for ways to improve its products and the right is reserved to alter specifications at anytime without prior notice.

Sterling Fluid Systems (Europe)
www.sterlingfluidsystems.com/europe

Sterling Fluid Systems (Austria)
Wien
Telephone: +43 (0)1 680 050
Fax: +43 (0)1 680 0521
E-Mail: sales_austria@sterlingsihi.de

Sterling Fluid Systems (France)
Trappes
Telephone: +33 (0)1 34 82 39 00
Fax: +33 (0)1 34 82 39 61
E-Mail: sterlingsihi@easynet.fr

Sterling Fluid Systems (Greece)
Athens
Telephone: +302 (0)10 9570783
Fax: +0302 (0)10 9568121
E-Mail: sales_greece@sterlingsihi.de

Sterling Fluid Systems (Netherlands)
Beverwijk
Telephone: +31 (0)251 263 232
Fax: +31 (0)251 226 309
E-Mail: info@sihi.nl

Sterling Fluid Systems (Schweiz)
Schaffhausen
Telephone: +41 (0)52 6440606
Fax: +41 (0)52 6440616
E-Mail: info@sterlingfluid.ch

Sterling Fluid Systems (Belgium)
Groot-Bijgaarden
Telephone: +32 (0)2 481 7711
Fax: +32 (0)2 481 7737
E-Mail: sales@sterlingfluidsystems.be

Sterling SIHI (Germany)
Itzehoe
Telephone: 49 (0)4821 77101
Fax: 49 (0)4821 771274
E-Mail: sales@sterlingsihi.de

Sterling Fluid Systems (Hungary)
Veszprém
Telephone: +36 (0)88 40 66 33
Fax: +36 (0)88 40 66 35
E-Mail: sales_hungary@sterlingsihi.de

Sterling Fluid Systems (Polska)
Warszawa
Telephone: +48 (0)22 849 7097
Fax: +48 (0)22 849 6726
E-Mail: sterling@sterling.pl

Sterling Fluid Systems (Spain)
Madrid
Telephone: +34 (0)91 709 1310
Fax: +34 (0)91 715 9700
E-Mail: mibsa@stnet.es

Sterling Fluid Systems (Czech Republic)
Olomouc
Telephone: +420 (0)587 433 651
Fax: +420 (0)587 433 653
E-Mail: sterling@sterling.cz

Sterling Fluid Systems (Italy)
Monza
Telephone: +39 (0)039 2824 1
Fax: +39 (0)039 2824 220
E-Mail: sterlingitaly@sidro.it

Sterling Fluid Systems (Romania)
Bucuresti
Telephone: +40 (0)21 610 7188
Fax: +40 (0)21 210 8287
E-Mail: sales_romania@sterlingsihi.de

Sterling SAT
Dägeling, Germany
Telephone: +49 (0)4821 9000-0
Fax: +49 (0)4821 9000-501
E-Mail: sat@sterlingsat.com

Sterling Fluid Systems (UK)
Altrincham/Cheshire
Telephone: +44 (0)161 9286371
Fax: +44 (0)161 9252129
E-Mail: uksales@sterlingfluid.com

Sterling Fluid Systems (Americas)
www.sterlingfluidsystems.com/americas

Sterling Fluid Systems (USA)
Grand Island
Telephone: (1) 716 773 6450
Fax: (1) 716 773 2330
E-Mail: mail@sihi.com

Sterling Fluid Systems (Canada)
Guelph
Telephone: (1) 519 824 4600
Fax: (1) 519 824 7250
E-Mail: mail@sihi.com

Sterling Fluid Systems (Asia)
www.sterlingfluidsystems.com/asia

Sterling Fluid Systems (Asia)
Singapore
Telephone: (65) 68630 828
Fax: (65) 68630 868
E-Mail: asia.marketing@sterlingasia.com.sg

SIHI (Australia)
Bayswater
Telephone: (61) 3 9720 1500
Fax: (61) 3 9720 4076
E-Mail: sfsaus@ozemail.com.au

Sterling Fluid Systems (China)
Shanghai
Telephone: (8621) 6336 3488/6326 4171/6326 4062
Fax: (8621) 63268487
E-Mail: asia.marketing@sterlingasia.com.sg

Sterling Fluid Systems (Malaysia)
Selangor Darul Ehsan
Telephone: (60) 3 8070 0198/99
Fax: (60) 3 8070 0240
E-Mail: sfsmsia@tm.net.my

Sterling Fluid Systems (Philippines)
Muntinlupa City
Telephone: (63) 2 809 4908
Fax: (63) 2 807 2013
E-Mail: asia.marketing@sterlingasia.com.sg

Sterling Fluid Systems (Thailand)
Bangkok
Telephone: (66) 2 319 2567
Fax: (66) 2 319 25673/4
E-Mail: sfsthai@sterlingthai.co.th

