

# Side Channel Pumps

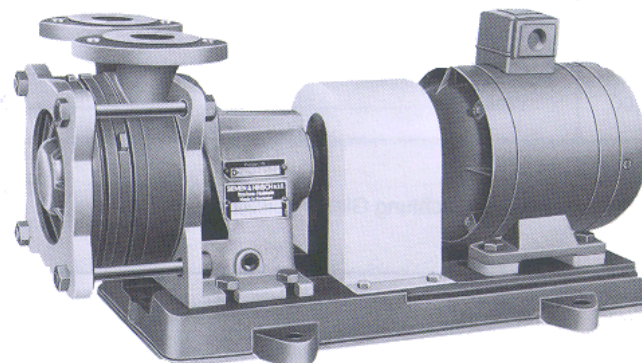
self-priming, with bearing pedestal



## AOL 1201 . . . 4101

### TECHNICAL DATA

Output:	max. 12 m <sup>3</sup> /h
Head:	max. 32 m
Speed:	max. 1800 1/min
Temperature:	max. 120 °C
Casing pressure:	PN 6
Shaft sealing:	standard mechanical seal
Flange connections:	DIN 2558 PN 6
Sense of rotation:	clockwise, when seen from the drive on the pump



### APPLICATION

Sterling SIHI side channel pumps

- self-priming
- capable of handling entrained gas
- low noise

Pumps of the series AOL are used for problem-free pumping of pure, turbid, aggressive liquids not containing any abrasives.

The material applied allow the pumping of highly aggressive media, for example:

- chlorine
- hydrochloric and
- sulfuric acid

in several temperature and concentration ranges.

Due in the abovementioned features, these pumps are employed in the

- chemical industry
- petrochemistry
- pharmaceutical industry
- plastics and rubber industry
- surface treatment and hardening
- food and semi-luxuries industry

The space saving and robust bearing pedestal which due to the construction requires but little use of high-quality material has made already this low-priced pump a standard in the companies of the above mentioned industries.

### DESIGN

Horizontal, single stage, self-priming side channel pumps with bearing pedestal, capable of pumping entrained gas along with the media.

The constructional set up, to arrange the suction and discharge branch in one casing part, offers the possibility to exchange all wear parts without removing the pump from the pipe assembly. The hydraulic construction elements used, correspond to our side channel pump MAT.

### CONSTRUCTION

#### Casing pressure:

Max. 6 bar from -40 °C to + 120 °C

#### Please note:

Casing pressure = inlet pressure + delivery head at minimum output

#### Position of branches:

Suction and discharge branches point radially upwards.

#### Flanges:

Oval flanges to DIN 2558/PN 6.

#### Bearing:

Two grease-lubricated grooved ball bearings to DIN 625. First grease filling is done in the factory.

Designation of this construction type: B·

#### Sense of rotation:

Clockwise, when seen from the drive on the pump.

Designation of this construction type: ·N

#### Shaft sealing:

The shaft is sealed by a standard mechanical seal.

Designation 135: uncooled, not balanced single standard mechanical seal, flushed from internal source

Designation 135: as 135, but round seal rings of **Teflon**.  
temperature range: -40 °C to 120 °C

## Material design

Item	COMPONENTS	MATERIAL DESIGN	
		42	53
1	casing	G-X 6 Cr Ni Mo 18 10	Ni Cr 20 Mo 15
10	cover		
11	stage casing		
30	vane wheel impeller	G-X 3 Cr Ni Mo Cu 226	
40	tie bolt ring	GG 25 coated	
210	bearing pedestal		
200	shaft	X 5 Cr Ni Mo 18 10	Mi Mo 16 Cr 16 Ti
500	shaft seal    mechanical seal	X 5 Cr Ni Mo 18 10 / carbon / Viton	Mi Mo 16 Cr 16 Ti / carbon / Teflon

### Casing seal:

The casing is sealed with soft Teflon. Designation of this construction type: 4

### Drive:

By commercial electric motors, construction type IM B3.

### General comments:

For handling aggressive media, a comprehensive, complete programme is at disposal, tailored for almost every application.

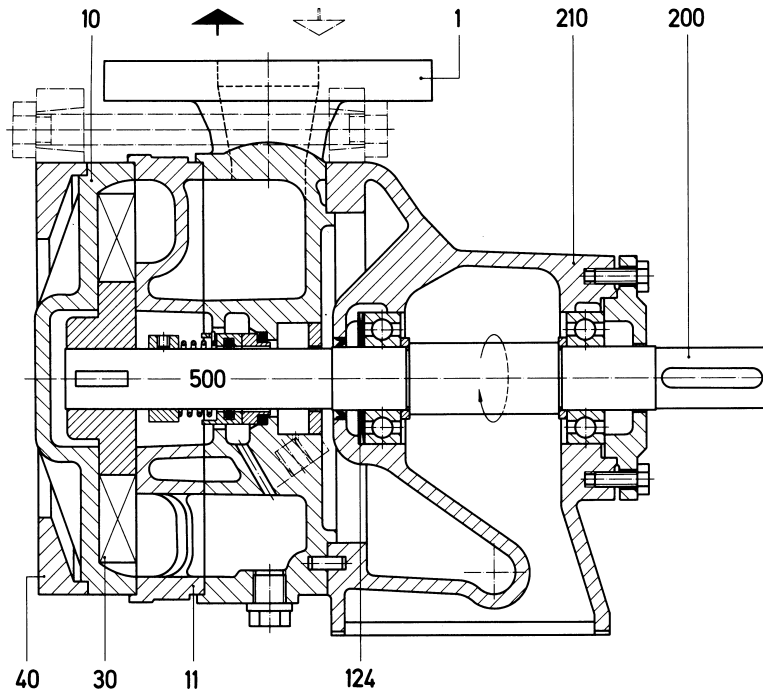
Technical documentation about these programmes will be supplied on request.

### „Easy-Control“-System

The combination of bearing pedestal and sectional construction offers easy maintenance possibilities. After removing the four connection screws of the pump, all medium-surrounded parts, including the mechanical seal, can be disassembled at the pump side, checked over, cleaned and exchanged in case of wear. Pump and motor remain as complete unit in the pipe assembly of the plant. The mark „Easy Control“ guarantees that the system is service-friendly.



# Sectional drawing and nomenclature



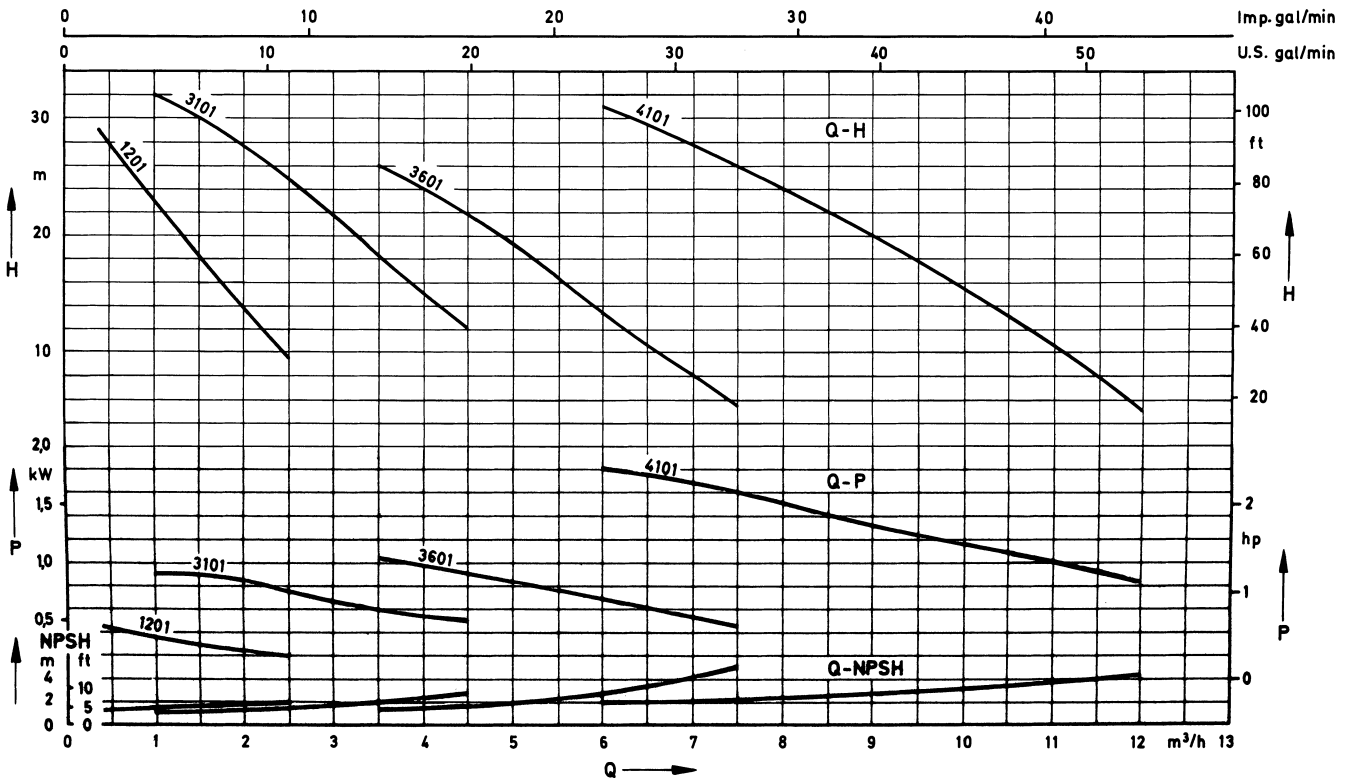
- 1 casing
- 10 cover
- 11 stage casing
- 30 vane wheel impeller
- 40 tie bolt ring
- 124 cup spring, only for size 4101
- 200 shaft
- 210 bearing pedestal
- 500 mechanical seal

## Performance graph

**n = 1450 rpm**

The following tolerances are applicable for the values indicated in the performance graph

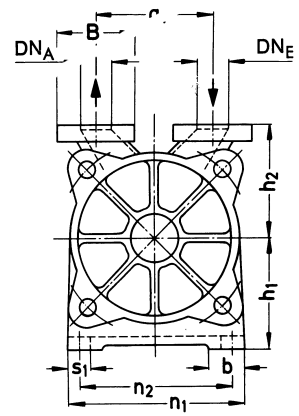
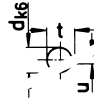
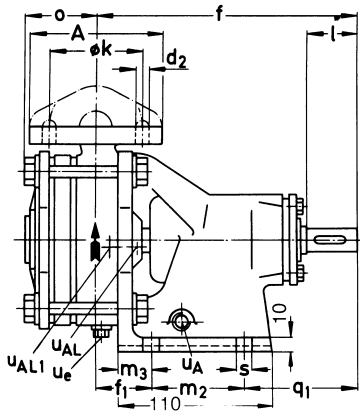
design tolerances: output  $\pm 5\%$ , delivery head  $\pm 5\%$ , power absorbed  $+10\%$   
 measuring tolerances: to DIN 1944



Values applicable for water  $\rho = 1\text{kg/l}$

## Dimension table

n = 1450 rpm



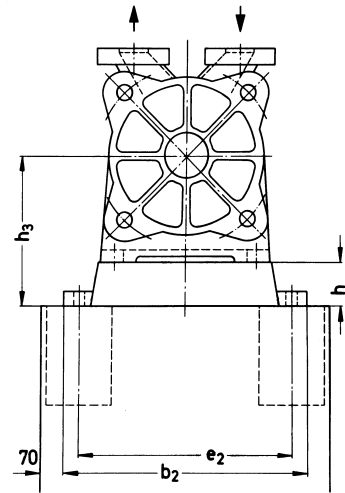
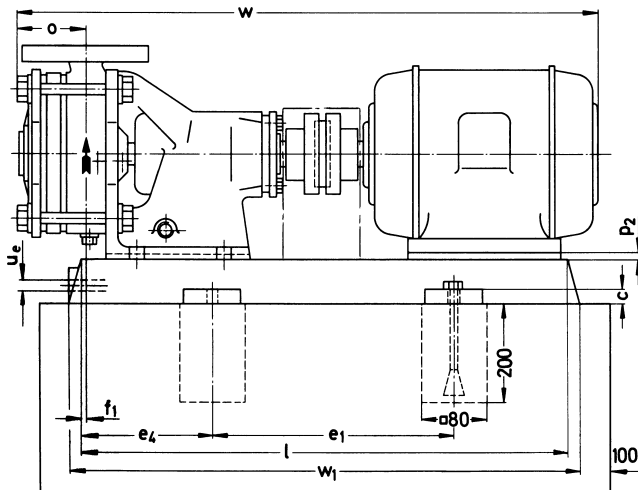
- U<sub>A</sub> = connection for liquid drain
- U<sub>AL</sub> = connection for leaking liquid (control bore for mechanical seal) at size 1201 to 3601 G1/8
- U<sub>AL1</sub> = connection for leaking liquid (control bore for mechanical seal) at size 4101 G 1/4
- u<sub>e</sub> = drain connection (screwed plug)

series + size	DN <sub>A,E</sub>	a	b	f	f <sub>1</sub>	h <sub>1</sub>	h <sub>2</sub>	m <sub>2</sub>	m <sub>3</sub>	n <sub>1</sub>	n <sub>2</sub>	o	q <sub>1</sub>	s	s <sub>1</sub>	d	l	t	u	u <sub>A</sub>	u <sub>e</sub>
AOL	1201	20	90	25	184	43	90	66	24	130	110	61	75	10	15	16	30	18,1	5	G 1/8	G 1/8
	3101	32	100	33	203	60	115	52	38	159	135	76	91	12	18	19	40	21,5	6		G 1/4
	3601																				
4101	40	110	34	197	62	100	125			180	155	105	83			24	45	26,9	8	G 1/4	

flange connections to DIN 2558 PN 6			
DN <sub>A,E</sub>	20	32	40
A	90	118	132
B	64	85	95
k	65	90	100
d <sub>2</sub>	11,5	14	14

## Foundation plan

n = 1450 rpm



dimensions in mm, casting tolerances to DIN 1683 GTB 16/5

series + size	motor size	kW	base plate 270 ... 100	coupling	weight		b <sub>2</sub>	c	e <sub>1</sub>	e <sub>2</sub>	e <sub>4</sub>	f <sub>1</sub>	h	h <sub>3</sub>	l	o	p <sub>2</sub>	w*	w <sub>1</sub>	u <sub>e</sub>	rag bolt DIN 529		
					pump kg	unit kg																	
AOL	1201	71 b	0,37	003	A 10	9	25	20	270	230	90	27	35	125	450	61	19	461	470	G1/2	M12 x 125		
		80 a	0,55				27					17						10				492	
	3101	80 b	0,75				14					33						76				10	541
		90 S	1,1									37										-	581
	3601	80 b	0,75									33										10	541
	90 S	1,1	37	-	581																		
	90 S	1,1	006	A 25	21	47	312	320	280	8	135	500	105	10	604	520	604	520	G1/2	M12 x 125			
	90 L	1,5																			50	10	629
	100 L	2,2																			67	-	688

\* Motors protection type IP 54, dimensions depend on the motor make

## Data regarding the pump size - order notes

series + size	bearing and sense of rotation	shaft seal	material design	casing seal
	<ul style="list-style-type: none"> <li>B · two grease-lubricated grooved ball bearing</li> <li>· N sense of rotation, clockwise when seen on the pump from the drive</li> </ul>	standard mechanical seal 135 Viton design 135 Teflon design	42 main parts of Cr-Ni-Mo cast steel 53 main parts of Ni-Cr cast steel	4 soft teflon
AOL	BN	135	42	4
1201				
3101				
3601				
4101		133	53	

cope of delivery	designation	motor selection table		
pump with free shaft end	01	motor n = 1450 rpm		
pump with coupling, pre-drilled at motor side	04	kW	size	designation
as above, but pump mounted on base plate	05	0,37	71 b	EB
as above, but with motor and contact safety device for shaft coupling, e.g. 0,75 kW three-phase AC motor (50 Hz, 230/400 V Δ ), at 1450 rpm	e.g.. GB	0,55	80 a	FB
		0,75	80 b	GB
		1,1	90 S	HB
		1,5	90 L	JB
		2,2	100 L	KB

### Example for ordering:

The size AOL 3601 BN 135.42.4 with coupling, rough-drilled at the motor side has the complete order number:

**AOL · 3601 BN 135.42.4 04**

The size AOL 3601 BN 135.42.4 as a complete unit with 0,75 kW three-phase A.C. motor of 1450 rpm has the complete order number:

**AOL · 3601 BN 135.42.4 GB**

On delivery the period ( · ) at the fourth place of the type designation is replaced by a letter in the factory.

Any changes in the interest of the technical development are reserved.

**Sterling SIHI GmbH**

Lindenstraße 170, D-25524 Itzehoe, Germany, Telephone +49 (0)48 21 / 7 71 - 01, Fax +49 (0)0 48 21 / 7 71-274