

Side Channel Pumps

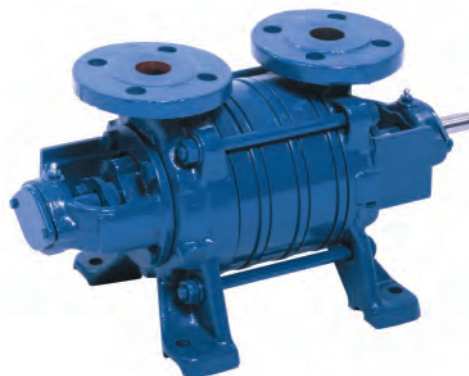
Self-priming, segmental type



AKH 1101 ... 6103

Technical data

| | |
|------------------------|---|
| Capacity: | from 0,2 up to 35 m ³ /h |
| Head: | from 6 up to 144 m |
| Speed: | 1450 rpm (max. 1800 rpm) |
| Temperature: | max. 120 °C |
| Casing pressure: | PN 16 |
| Shaft sealing: | stuffing box or mechanical seal |
| Flange connections: | DIN 2501 / PN 16 |
| Direction of rotation: | clockwise (when seen from the drive end) |



Application

The Sterling SIHI AKH pump is a self-priming side channel pump capable of handling gas along with the medium and operates at a low noise level. The AKH is suitable for trouble free handling of clean or turbid liquids without any abrasive particles.

The performance curve steepness admits a precise regulation of the pressure with a small change in capacity.

The AKH pump has been developed for a broad range of medium duty applications in:

- Chemical industry,
- Petro-Chemical industry,
- Oil industry,
- Machinery and automobile industry ,
- Food industry,
- Building trades,
- Plastic and rubber industry,
- Surface treatment,
- Ship yards.

Design

Pumps of the series AKH have a segmental type construction with open vane wheel impellers. The pump construction is either with one liquid surrounded slide bearing and one ball bearing or in a more industrial construction by using a double ball bearing design.

The program comprises 6 sizes with up to 4 stages (an extension with 5 or 6 stages is possible for certain sizes). The performance curves of the AKH are identical for all the material designs.

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

Suction and discharge branch point radially upwards.

Flanges

The flanges correspond to DIN EN 1092-2 / PN 16. Flange design as per DIN 2512 with groove or drilled according to ANSI 150 or 300 lbs is basically possible.

Bearing

Either by one grease lubricated ball bearing and one liquid surrounded sleeve bearing (design A) or by two grease lubricated ball bearings (design B). The ball bearings are according to DIN 625. The first grease filling is done in the factory.

Direction of rotation

Clockwise, when looking at the pump from the drive end. Anti-clockwise is possible.

Shaft sealing

The shaft can be sealed by either a stuffing box or a standard mechanical seal.

Material design AKH

Cast iron

| Pos | Components | Material design | | |
|----------------------|---------------------|-----------------|--------------------------|------|
| | | 0A | 0B | 0F |
| 1060 | Suction casing | EN-GJL-250 | | |
| 1070 | Discharge casing | | | |
| 1090 1140 1141 | Intermediate piece | | | |
| 2100 | Shaft | | | |
| 2350 | Vane wheel impeller | CuZn40Al2 | G-X 3 CrNiMoCuN 26 6 3 3 | PAEK |
| 0241 | Bearing bush | EK 2203 | | |

Stainless steel and Bronze

| Pos | Components | Material design | | | |
|----------------------|---------------------|-----------------------|-----------------------|--------------------------|------|
| | | 2H* | 3B | 4B | 4F |
| 1060 | Suction casing | EN-GJL-250 | GC-CuSn 12 | G-X 6 CrNiMo 18 10 | |
| 1070 | Discharge casing | | | | |
| 1090 1140 1141 | Intermediate piece | G-Sn Bz 16 | | | |
| 2100 | Shaft | X 5 CrNiMo 17 12 2 | | | |
| 2350 | Vane wheel impeller | G-Cu Sn chrome plated | G-Cu Sn chrome plated | G-X 3 CrNiMoCuN 26 6 3 3 | PAEK |
| 0241 | Bearing bush | EK 2203 | | | |

* The construction of the AKH in material 2H is conform the construction of the AKH in Cast iron (see the next page)

Casing seal

The casing can be sealed with a liquid sealing compound or soft Teflon.

Drive

By electric motor, type of construction IM B3.

General comments

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

AOH Low duty pump with oval flanges, PN 10

CEH High duty pump, PN 40

Also available with magnetic coupling

CEB Vertical tank mounted pump, PN 25 with magnetic coupling

CEV Vertical tank mounted pump, PN 25 with mechanical seal (replacement for CVGP)

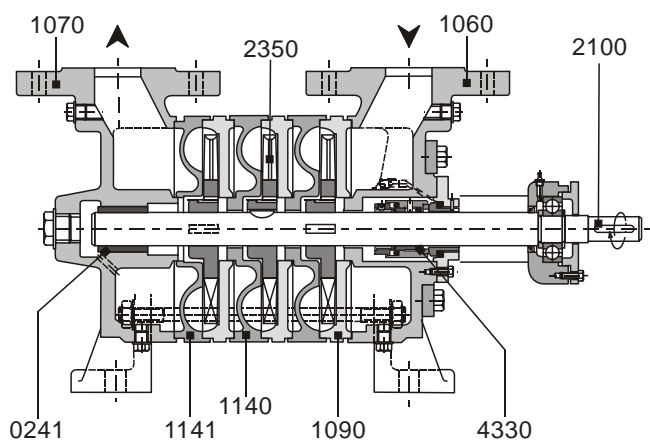
AEH High duty pump, PN 40

Also available with magnetic coupling

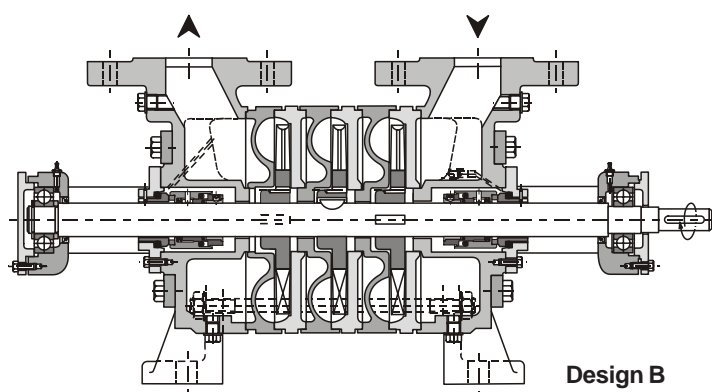
Technical documents about these pump series will be readily supplied on request.

Sectional drawing and parts list AKH (typical)

AKH in Cast iron (0A, 0B, 0F, 2H)



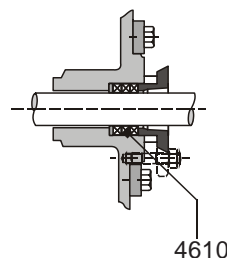
Design A
(only for sizes 1100 up to 5100)



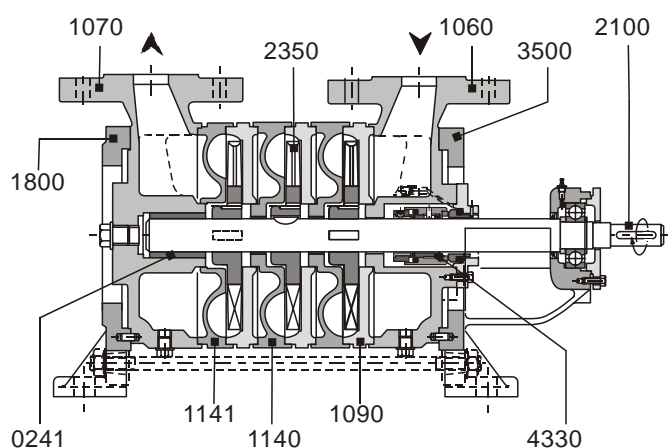
Design B

| Pos. | Components |
|------|------------------------------|
| 0241 | Bearing bush |
| 1060 | Suction casing |
| 1070 | Discharge casing |
| 1090 | Suction intermediate piece |
| 1140 | Discharge intermediate piece |
| 1141 | Discharge intermediate piece |
| 1800 | Mounting flange |
| 2100 | Shaft |
| 2350 | Vane wheel impeller |
| 3500 | Bearing housing |
| 4330 | Mechanical seal |
| 4610 | Stuffing box |

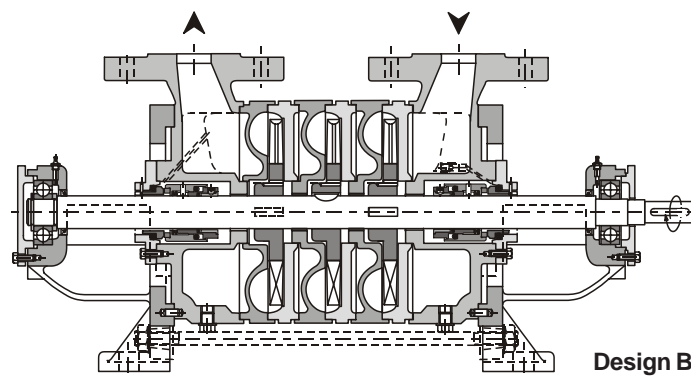
Stuffing box (available for all material designs)



AKH in Bronze (3B) and Stainless steel (4B and 4F)



Design A
(only for Stainless steel in sizes 1200 up to 5100)



Design B

All possible design combinations can be found in the delivery program

Performance range AKH

General conditions

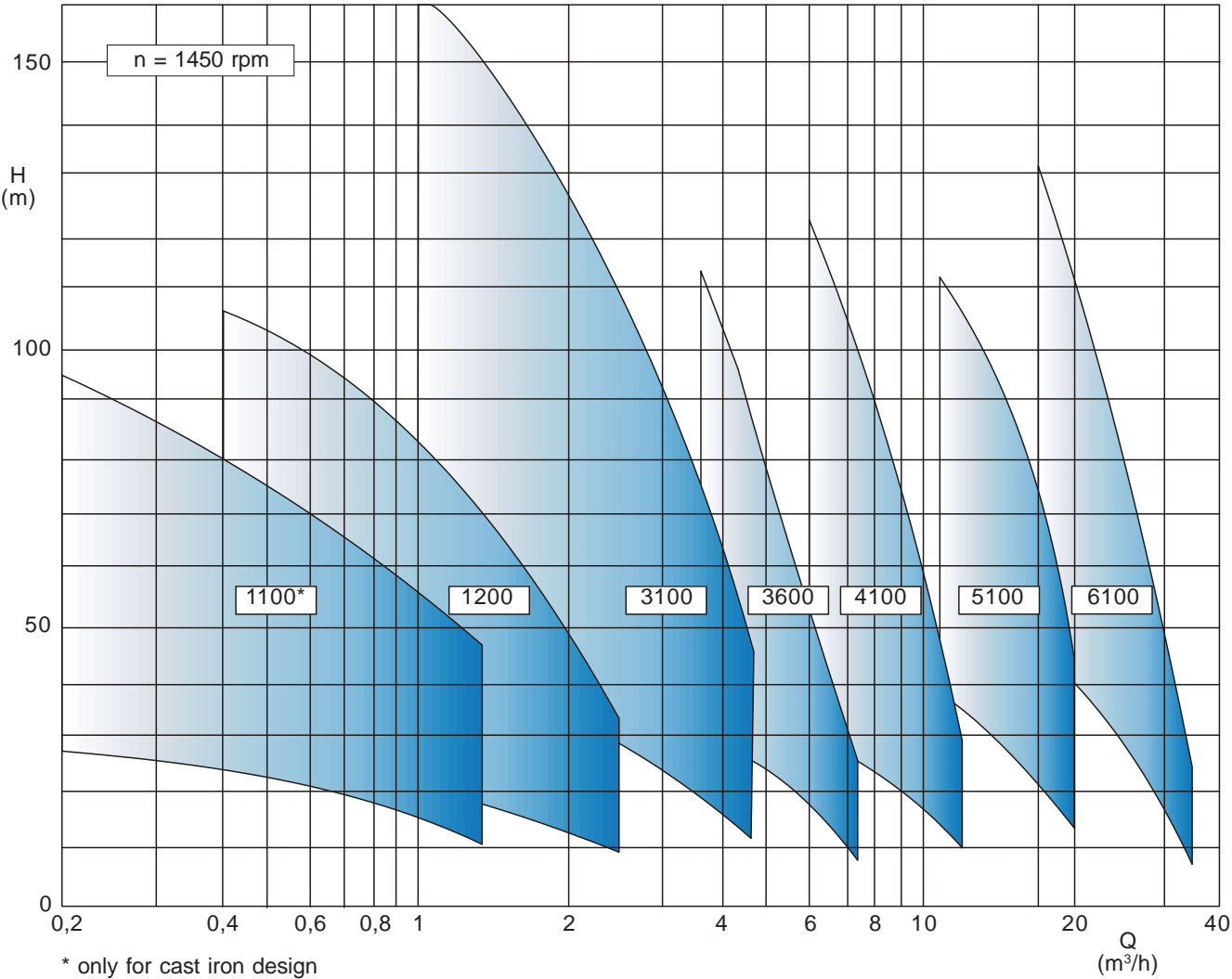
Liquid: Water
 Density: 1 kg/dm³
 Viscosity: 1 cSt
 Temperature: 20 °C
 Atmospheric pressure: 1013 mbar

Characteristic tolerances

Capacity ± 10% - Delivery head ± 10% - Power + 10%
 For designs with a mechanical seal or a casing seal of soft Teflon, the tolerance for the delivery head is extended by 2% each.

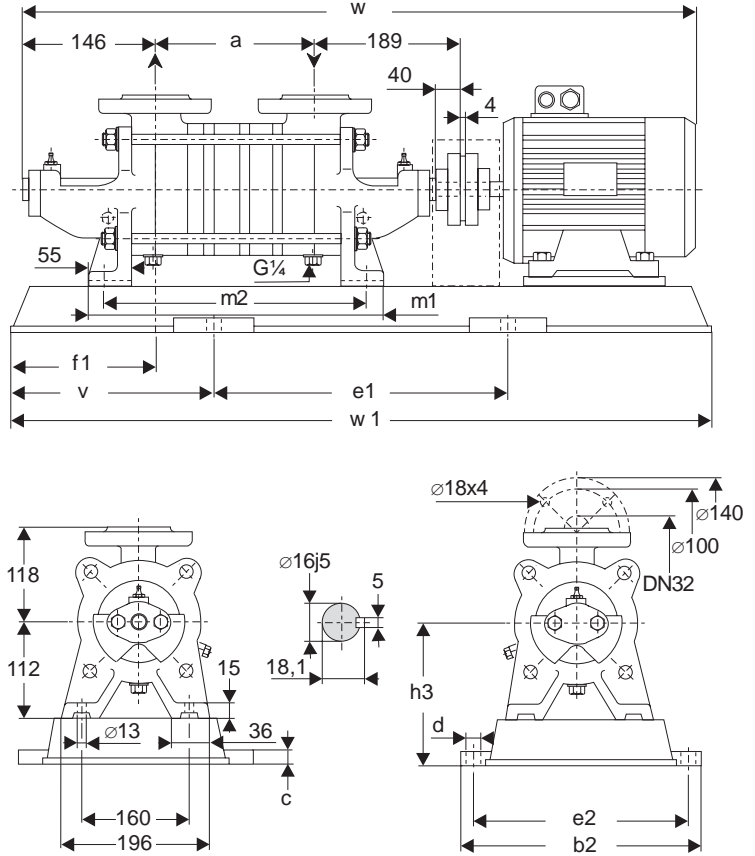
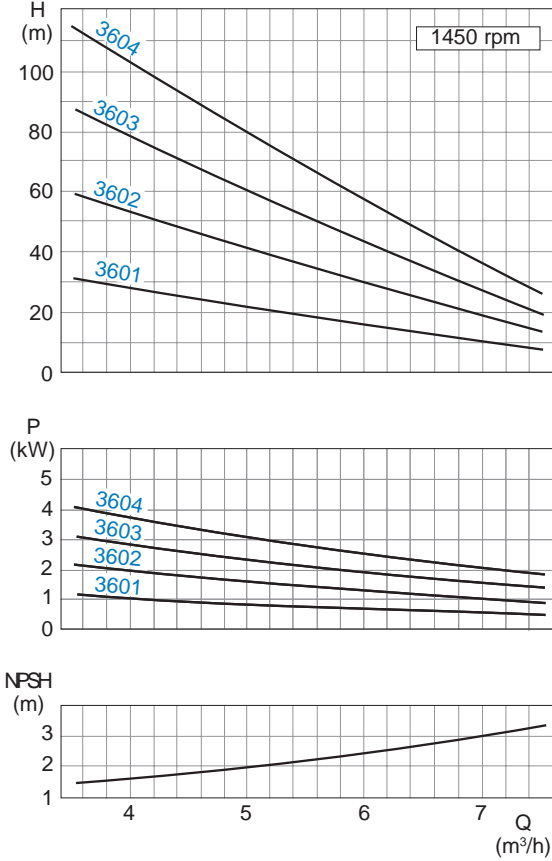
Measuring standard

According to ISO 5198



Dimension chart, Pump set drawing and Performance curves

AKH 3600 in Bronze and Stainless steel (3B, 4B and 4F)



General: Values are valid for water $\rho = 1 \text{ kg/dm}^3$ and $\nu = 1 \text{ cSt}$.

Characteristic tolerances: Capacity $\pm 5\%$ - Delivery head $\pm 5\%$ - Power $+ 10\%$.
For designs with a mechanical seal or casing seal of soft Teflon, the tolerance for the delivery head is extended by 2% each.

| Pump size | Motor | | Base plate | Coupling | Weight | | a | b2 | c | d | e1 | e2 | v | f1 | h3 | m1 | m2 | w* | w1 |
|-----------|-------|------|------------|----------|--------|-----|-----|-----|-----|----|-----|-----|------|-----|-----|-----|-----|-----|-----|
| | kW | size | | | pump | set | | | | | | | | | | | | | |
| 3601 | 0.75 | 80 | P241 | B68 | 26 | 58 | 150 | 330 | 25 | 19 | 480 | 290 | 125 | 99 | 177 | 308 | 268 | 762 | 730 |
| | 1.1 | 90S | | | | | | | | | | | | | | | | | |
| 3602 | 1.5 | 90L | P241 | B68 | 27 | 67 | 150 | 330 | 25 | 19 | 480 | 290 | 125 | 99 | 177 | 308 | 268 | 820 | 730 |
| | 2.2 | 100L | P272 | B80 | | | | | | | | | | | | | | | |
| 3103 | 2.2 | 100L | P272 | B80 | 31 | 82 | 190 | 360 | 25 | 19 | 540 | 320 | 140 | 99 | 177 | 348 | 308 | 901 | 820 |
| | 3 | 100L | | | | | | | | | | | | | | | | | |
| 3604 | 3 | 100L | P272 | B80 | 34 | 87 | 230 | 360 | 25 | 19 | 540 | 320 | 140 | 99 | 177 | 388 | 348 | 941 | 820 |
| | 4 | 112M | | | | | | | | | | | | | | | | | |
| | 5.5 | 132S | P015 | B95 | 131 | 361 | 600 | 325 | 160 | 99 | 162 | 182 | 1038 | 920 | | | | | |

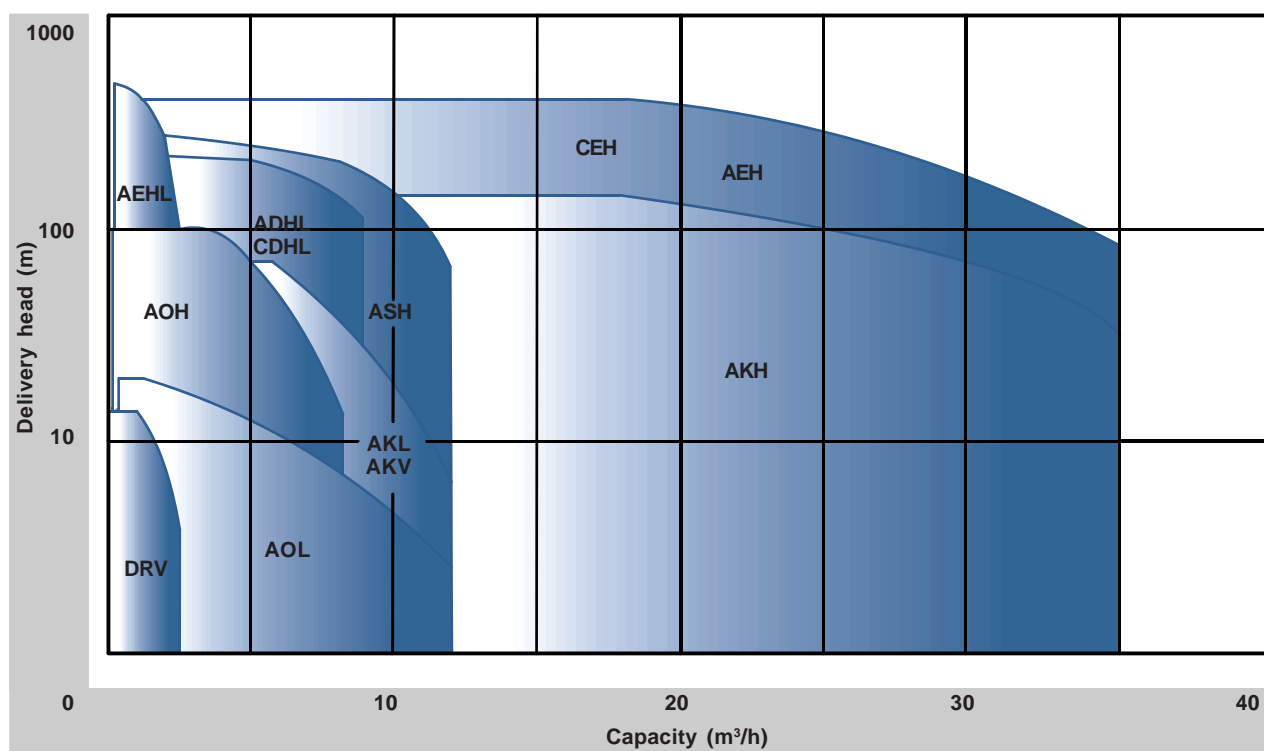
* Design B - dimensions depend on the motor brand.
The weight of the pump in design A (only available in Stainless steel) will be approximately 2,7 kg less.

Sterling SIHI Side Channel pumps

Sterling Fluid Systems offers an extensive Side Channel pump range under its brand name Sterling SIHI. Sterling Fluid Systems has more than 80 years of experience in manufacturing, installation and support of Side Channel pumps. The Sterling SIHI Side Channel pumps can be found in a wide application range for the:

- Chemical market
- Pharmaceutical industry
- Petrochemical industry
- Food industry
- Ship yards
- LPG industry
- and many more ...

The Sterling SIHI Side Channel pump range



The benefits of the Sterling SIHI Side Channel pumps

- Self priming
- Gas handling
- High-resistant materials
- Performance curve characteristics
- High efficiency
- Low NPSH_R value
- Modular hydraulic system

The Sterling SIHI Side Channel pumps comply with the highest demands of our customers and are the best solution for the handling of liquid under critical physical conditions.