

**The chemistry is right with KSB.**





# The safe solution for chemical fluids. For people and the environment.

For more than 140 years now, we at KSB have engaged in innovative, holistic thinking as a matter of course. That is what made us our industry's pioneer. Landmark innovations and further developments like our new MegaCPK standardised chemical pump, our holistic FluidFuture energy efficiency concept and our groundbreaking KSB SuPremE motor attest to our ingenuity and to the future-oriented way we think and act.

Our all-in solutions – covering everything from pumps, valves and systems to specific service items – put you at a decisive advantage. Manufacturing top-quality products is just one of the goals we have set ourselves. For us, taking an active part in helping to ensure safety and progress in chemical engineering and to protect the cycle of life is equally important.

We have over 14,500 KSB employees around the world working to provide you with economically efficient, safe, environmentally sound solutions for your needs. We also have over 2,600 service specialists on hand around the clock all over the world: from product installation and commissioning to servicing and repair. Because, if it is about handling chemicals – be they aggressive, corrosive or explosive – the safety of people and the environment takes top priority at KSB.





## Safely cast in a quality role.

As a company with global expertise in the chemical industry, we have the optimal solution for every application. We provide for the highest quality of our products with our own foundries in Germany, the USA, Brazil, Mexico, India, China, Indonesia and Pakistan. Every day, we shape more than 40 cast materials into first-rate valve and pump components. Our design, manufacturing and materials development departments make perfect use of synergies to give you bespoke solutions for every application. Our state-of-the-art KSB materials laboratories keep a check on compliance with our strict quality standards.

## Ceramics help you keep your cool, even at 300°C.

In cooperation with ESK (Elektro Schmelzwerk Kempten), we have developed an innovative plain bearing for seal-less pumps which can handle even the most aggressive liquids up to 300°C: the SICADUR plain bearing made of high-quality silicon carbide. This bearing material is so hard that not even entrained solids can abrade it. Even hot water up to 240°C cannot damage it. Our SICADUR plain bearing copes with all kinds of liquid – whether acid, basic, corrosive, abrasive or hot.

## Unique materials – for an optimum product.

With all our know-how and years of experience, we are able to engineer products that fully satisfy the increasingly stringent criteria in terms of safety and stability. That's what makes us so successful. Backed by our own foundry centres, state-of-the-art research laboratories and comprehensive quality assurance, we continuously expand our globally unparalleled materials expertise. And we like to pass on that expertise, too – by way of customer seminars with maximum best-practice field requirements. And when existing materials are simply not up to your tasks, we develop new ones. Such as our innovative NORI materials, which offer above-average service life in the metals sector.

Material	Material designation	Material number	Brief description	Application
Norinox	GX3CrNiMo 19-11-2	1.4408	Cast austenitic stainless steel	Wide range of industrial and process-engineering applications
Noridur	GX3CrNiMoCuN 24-6-2-3	1.4593	Duplex stainless steel	All kinds of chloride-containing fluids, reductive acids and acidic process water
Noridur DAS	GX3CrNiMoCuN 24-6-2-3 specially heat-treated	–	Wear-resistant duplex stainless steel	For pump components exposed to hydraulic loads in the handling of solids-laden acids and lyes
Noriclor	GX3CrNiMoCuN 24-6-5	1.4573	Super duplex stainless steel	For aggressive fluids in chemical process engineering
Noricid	GX3CrNiSiN 20-13-5	9.4306	Cast high-alloy austenitic special steel	For highly oxidative acids such as concentrated nitric, chromic or sulphuric acid
Noricrom	GX150CrNiMoCuN41-6-2	1.4475	Cast corrosion- and wear-resistant triplex steel	For strongly acidic, chloride-containing fluids with high solids contents
Titan	GTi2, GTi2Pd	3.7031, 3.7032	Highly corrosion resistant special material	For oxidative fluids with high chloride contents (e.g., chlorinated lyes in chlorine electrolysis)
Nickel-chrome-molybdenum alloy	GNiMo17Cr		Highly corrosion-resistant, NiCrMo-base castings	For hot, concentrated acids
Nickel	GNi95	2.4170.01	Nickel-base casting material	Highly concentrated lyes (caustic soda solutions)



## No leaks – if nothing is lost, everyone wins.

In the living, breathing, self-contained system we call Earth, every drop lost is a drop too many – especially when we are talking about chemical or toxic liquids. Our AMRI butterfly valves with their unique AMRING sealing system provide for absolute tight shut-off and, hence, top-notch operational safety and reliability. Our maintenance-free ISORIA butterfly valve, for example, offers maximum security for the environment, and our seal-less canned motor pumps guarantee zero leakage and utmost reliability coupled with low life cycle costs. Add to that their low maintenance requirement and the broad choice of materials, and you have even more outstanding advantages to gain by putting them into practice.

## Fast and efficient – service that does the job.

As a global market leader, KSB has more to offer than a wide choice of pumps and valves. KSB Service GmbH – a wholly owned subsidiary of KSB AG – operates a global network of service centres offering a complete service spectrum ranging

from new installations and commissioning through inspection and repair to technical consulting and bespoke service solutions. And all this applies just as well to non-KSB products, too.

### Facts and figures at a glance:

- A complete service spectrum for valves, pumps, motors and other rotating equipment
- Over 2,500 qualified, experienced service specialists in more than 120 service centres worldwide
- Safety and reliability through comprehensive certification such as SCC\*\* and state-accredited service personnel with regard to testing and repair of explosion-proof pump sets
- Service throughout the life cycle
- Use of special techniques on site, e.g. electric-discharge machining
- Total Pump Management for bespoke service solutions
- SES System Efficiency Services – for increased profitability of pump systems through comprehensive systems analysis with comparison of actual and rated performance
- Spare parts service for all brands
- Retrofits
- More than 350,000 assignments worldwide every year

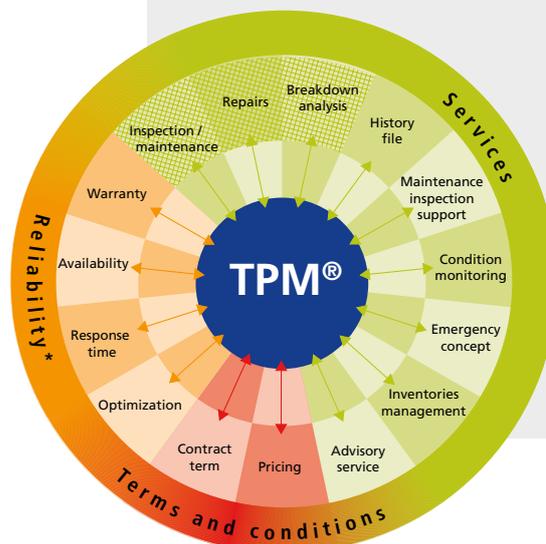
\*\* SCC: Safety Certificate Contractors

## Total Pump Management – for your individual requirements.

Total Pump Management is our way of offering you service solutions for pumps, valves and other rotating systems. The modular nature of our service concepts enables us to put together individual service packages – tailored to your needs and your system.

### Your benefits:

- System optimisation through improved system availability
- Reduced energy input
- Lower maintenance costs



\* Only in combination with inspection / maintenance, repairs and breakdown analysis services

## We spend all our energy to save lots of yours.

As a long-standing global partner to the industry, KSB reliably fulfils the particularly stringent criteria in the chemical sector. With a range of products and services that set standards: above all in terms of reliability, but also with regard to energy efficiency. Both of those areas call for intimate knowledge of the system as a whole and a keen sense of detail. As a full-range supplier of pumps, valves and automation equipment, we ensure all that and more.

We drew on all this expertise in developing our comprehensive energy efficiency concept for your entire hydraulic system: FluidFuture. It aims to optimise your plant's overall efficiency – and its profitability. To make that a reality, we've developed five modules. Together, they enable us to identify and achieve savings right through the full life cycle of your pumps and valves:

- System Analysis
- Selection
- High-efficiency Hydraulic Components
- High-efficiency Drives
- Demand-driven Operation

More information is available at

 [www.ksb.com/fluidfuture](http://www.ksb.com/fluidfuture)

## Energy Efficiency by KSB



### SYSTEM ANALYSIS.

Our experts analyse your system and show where you can save energy – with SES System Efficiency Services or PumpMeter.



### SELECTION.

Your KSB partner or KSB EasySelect will help you find exactly the right pumps and valves.



### HIGH-EFFICIENCY HYDRAULIC COMPONENTS.

Top pump and valve performance with minimum loss – all thanks to 140 years of innovation and expertise.



### HIGH-EFFICIENCY DRIVES.

Our high-efficiency motors even exceed today's standards.



### DEMAND-DRIVEN OPERATION.

Optimised control systems like PumpDrive continuously match pump output to system requirements.

The FluidFuture energy efficiency concept has real, concrete benefits to offer for engineering contractors and plant operators. We help you cut costs, secure your equipment's availability and prolong its service life, thus proving ourselves as a seasoned, competent partner to the chemical industry.

Only someone who thoroughly understands a complex system can optimise its components. We can and do just that by comprehensively analysing hydraulic systems with our tried and tested SES System Efficiency Services. We can also provide you with PumpMeter and have it automatically monitor and record all of your pump's important data on site.

Economic efficiency is something that has to be targeted from the word go. Our sales consultants are at your service for that. Let them provide you with proactive solutions and opportunities for exploiting your savings potentials. Or just use KSB EasySelect to select new pumps and matching valves on your own.

Numerous outstanding examples can be named when it comes to maximum-efficiency hydraulic systems by KSB. Utmost precision and many years of expertise went into optimising our standardised chemical pump MegaCPK. KSB's butterfly valves like ISORIA have exemplary flow characteristics, and with individual impeller trimming, we can easily keep your system running efficiently.

KSB is known as a pacemaker in connection with high-efficiency drives. Our variable-speed synchronous motors, for example, already satisfy the criteria of energy efficiency classes that aren't even in effect yet. A crucial contribution for increasing your system's overall efficiency already today.

Constant control is essential for reducing total life cycle costs. No pump always runs at rated load. Our optimised control concepts help you operate your pumps efficiently and thus increase their availability. And the fact that PumpDrive mounts just as well on the pump as on the wall shows that we cater to the chemical industry's own particular needs.

# MegaCPK. A new era starts here.

## The standardised chemical pump that redefines progress.

Global competence, experience and the highest possible self-imposed standards are what enable us to find solutions on an international scale and accelerate progress with real innovations. MegaCPK offers particularly high energy efficiency and the best in operating reliability. Its improved hydraulic system ensures excellent operating efficiency. And thanks to our standardised global manufacturing with optimal adaptation to local needs, you'll benefit from all these advantages wherever you are.

Your benefits:

- Maximum operating reliability
- Optimum energy efficiency
- Outstanding efficiency from improved hydraulic systems
- Unrivalled price/performance ratio
- Global availability



MegaCPK is the natural further development of the internationally successful CPKN and Megachem type series. It is a truly innovative product offering many different features of first-class quality, which combine to make this pump unique.

## Maximum operating reliability – day after day.

Years of expertise in pump safety, reliability and durability have helped KSB optimise a whole set of MegaCPK features. The pump is now more rigid, generates only minimal axial thrust and offers exemplary hydraulic characteristics. Its low NPSH ensures that MegaCPK runs quietly and smoothly. All together that means a significant increase in availability and operating reliability.

## A huge range of applications.

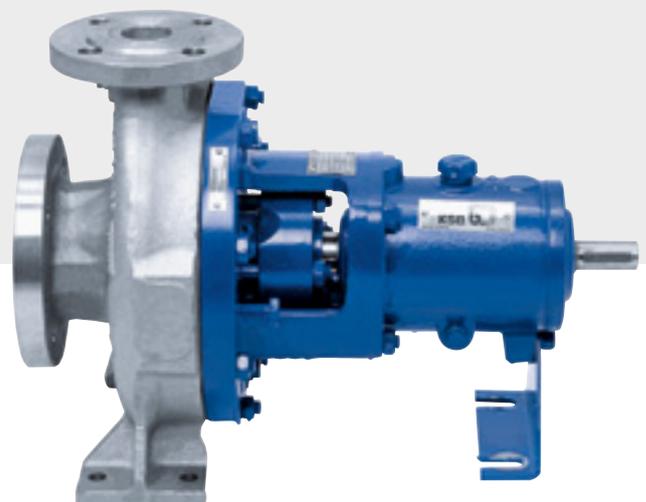
MegaCPK is particularly flexible due to its modular design system, including a choice of hydraulic systems, impeller and casing types, shaft seals and a wide range of materials. So even the standard model masters your individual and local demands.

## Record marks for energy efficiency.

MegaCPK is the perfect example of cutting-edge features for energy efficiency. Years of KSB expertise in pump technology and hydraulics helped us optimise the design of the hydraulic components. Trimming the impeller to match individual customer and plant requirements, and high-efficiency drives contribute to achieving high overall efficiency. PumpDrive and PumpMeter represent further options for economical plant operation.

### Material variants:

Grey cast iron	JL1040/A48CL35
Cast steel	GP240GH+N/A216GrWCB
Stainless steel	1.4408/A743GrCF8M
Duplex steel	1.4593/1.4517/A995GrCD4MCuN
Special materials	



## Pumps with shaft seal

Our standardised chemical pumps have set standards for decades. More than 300,000 basic models or bespoke variants for wide-ranging applications have proved their worth in everyday chemical operations.

### MegaCPK Standardised chemical pump



**Description:**

Standardised chemical pump to EN 22858, ISO 2858, ISO 5199 and Directive 94/9/EC (ATEX 100).

**Applications:**

MegaCPK is a standardised chemical pump for handling aggressive organic and inorganic fluids. The modular design system equips the pump for an extraordinary range of applications. The reduced number of parts makes it particularly reliable and easy to service. MegaCPK has an even higher maximum flow rate while the optimal operating point can sometimes be achieved with a smaller pump size.

### CPKN Standardised chemical pump



**Description:**

Standardised chemical pump to EN 22858, ISO 2858, ISO 5199 and Directive 94/9/EC (ATEX 100).

**Applications:**

CPKN is suitable for handling aggressive fluids in the chemical and petrochemical industries, as well as in refinery and fire-fighting systems. Diverse hydraulic systems enable top efficiency levels and excellent NPSH values, which translates into energy savings.

### Multitec High-pressure pump



**Description:**

High-pressure pump in ring-section design, also available in compliance with Directive 94/9/EC (ATEX 100).

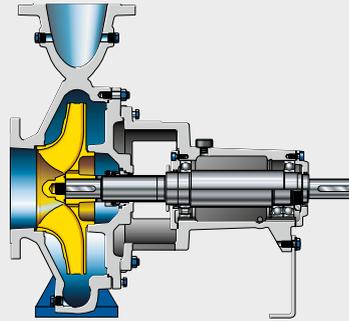
**Applications:**

Multitec is an allrounder made by KSB. Its wide range of materials and models not only make it particularly versatile but also enable optimum adaptation to the pumped fluid. The pumps hydraulics variants make for optimum efficiencies. Special suction impellers result in low NPSH values. Balancing of axial thrust increases the service life of the rolling element bearings and the shaft seal.

**Technical data:**

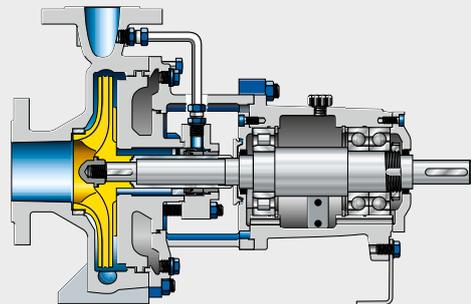
Q [m <sup>3</sup> /h]	Up to 1160 (50 Hz) Up to 1400 (60 Hz)
H [m]	Up to 162 (50 Hz) Up to 233 (60 Hz)
p [bar]	25 max.
T [°C]	Up to +400

Pump also available for 60 Hz

**Technical data:**

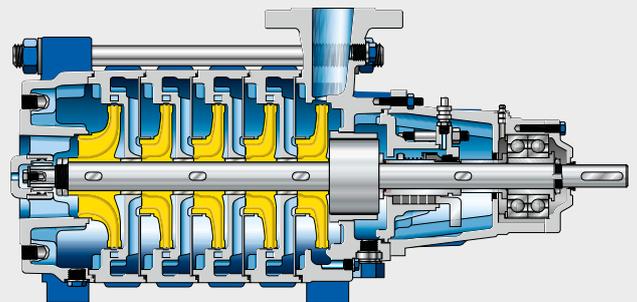
DN	150 to 400
Q [m <sup>3</sup> /h]	1160 min., 4150 max.
H [m]	162 min., 185 max.
p [bar]	25 max.
T [°C]	+400 max.

Pump also available for 60 Hz

**Technical data:**

DN	32 to 150
Q [m <sup>3</sup> /h]	850 max.
H [m]	630 max.
p [bar]	63 max.
T [°C]	-10 to +200

Pump also available for 60 Hz



## Pumps with shaft seal

Our classic centrifugal pumps are selected, designed and manufactured to suit a wide choice of applications, each time tailored to the specific use. We deliver individual pumps with the shaft seal matching the respective requirements and needs.

### RPH Process pump



**Description:**

Process pump to API 610, DIN ISO 13709 and Directive 94/9/EC (ATEX 100).

**Applications:**

On the RPH, all materials and design details such as bearings are selected to achieve the greatest possible robustness of the pump. RPH is characterised by its high efficiency and low NPSH. The steel bearing bracket with integrated cooling fins eliminates the need for a separate cooling circuit. Pump flanges according to all standards are available up to PN 100.

### KWP Centrifugal pump



**Description:**

Centrifugal pump with channel impeller, in close-coupled or back pull-out design, also available in compliance with Directive 94/9/EC (ATEX 100).

**Applications:**

KWP is available with various impeller geometries: channel impeller, open multi-vane impeller, free-flow impeller. It handles corrosive and abrasive fluids with all types of slurries without stringy material and pulps up to 5% bone dry.

## Pumps without shaft seal

Zero leakage. Compact and low noise. Can be made of Hastelloy C4 (2.4610) ensures optimum corrosion resistance and minimum eddy current losses.

### Magnochem Standardised chemical pump



**Description:**

Standardised chemical pump to EN 22858, ISO 2858, ISO 5199 and Directive 94/9/EC (ATEX 100) – seal-less, with magnetic drive.

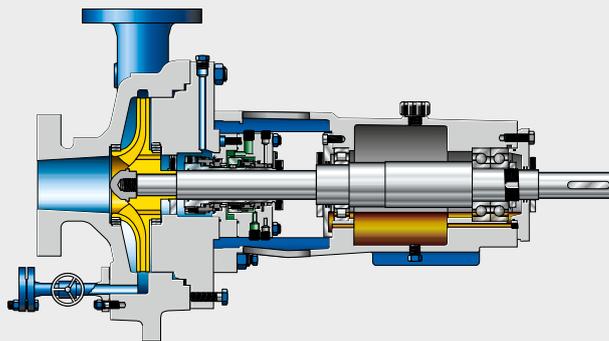
**Applications:**

Our Magnochem pump, also available in close-coupled design as Magnochem-Bloc, is suitable for a whole spread of applications, with options for individual situations, e.g. a heatable model. Having only two static seals, the pump provides top safety. A heating facility integrated in the rotor space makes for high energy savings.

**Technical data:**

DN	25 to 400
Q [m <sup>3</sup> /h]	4150 max.
H [m]	270 max.
p [bar]	110 max.
T [°C]	-70 to +450

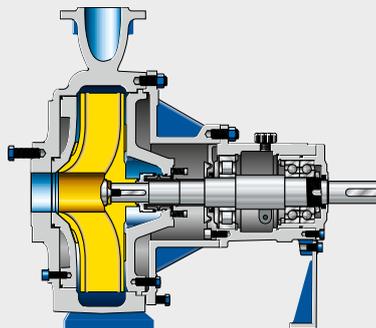
Pump also available for 60 Hz

**Technical data:**

DN	400 to 900
Q [m <sup>3</sup> /h]	15000 max.
H [m]	100 max. <sup>1)</sup>
p [bar]	10 max. <sup>1)</sup>
T [°C]	-40 to +280 <sup>1)</sup>

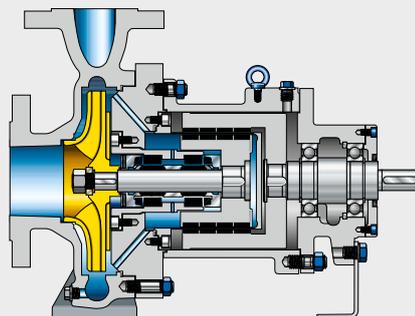
<sup>1)</sup> Higher ratings on request

Pump also available for 60 Hz

**Technical data:**

Q [m <sup>3</sup> /h]	1250 max.
H [m]	153 max.
p [bar]	25 max.
T [°C]	-40 to +300 max.
P <sub>2</sub> kW	160 max.

Pump also available for 60 Hz



## Canned motor pumps – seal-less design

Zero leakage. Compact and low noise. The proven hydraulic system of the CPKN standardised chemical pump, combined with modern drives.

### Secochem Ex Standardised chemical pump

**Description:**

Standardised chemical pump to EN 22858, ISO 2858 and Directive 94/9/EC (ATEX100) – seal-less, with canned motor.

**Applications:**

Zero-maintenance Secochem Ex is developed for installation in potentially explosive atmospheres and has excellent efficiency. Its hydraulics/motor combination has been optimised to save energy. Highly reliable operation thanks to direct monitoring of the fluid temperature.

### Secochem Ex K Standardised chemical pump

**Description:**

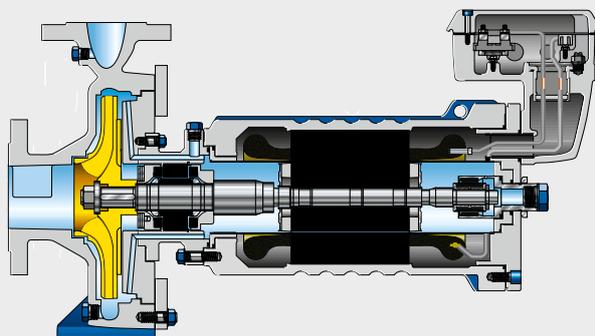
Standardised chemical pump to EN 22858, ISO 2858 and Directive 94/9/EC (ATEX100) – seal-less, with canned motor.

**Applications:**

Developed for installation in potentially explosive atmospheres, Secochem Ex K reliably transports solids-laden and hot fluids. Its novel and unique design enables full separation of pump space from drive. Excellent efficiency due to low temperatures in the rotor space.

**Technical data:**

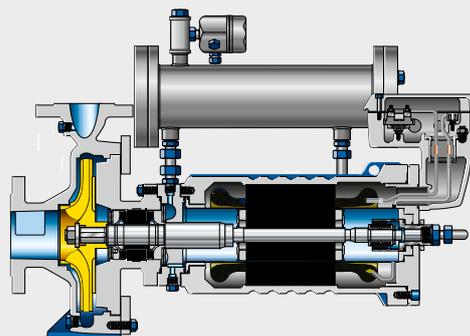
Q [m <sup>3</sup> /h]	300 max.
H [m]	150 max.
p [bar]	40 max.
T [°C]	-40 to +130
P <sub>2</sub> kW	1.1 to 70



Pump also available for 60 Hz

**Technical data:**

Q [m <sup>3</sup> /h]	300 max.
H [m]	150 max.
p [bar]	40 max.
T [°C]	-40 to +400
P <sub>2</sub> kW	1.1 to 70



Pump also available for 60 Hz

## Networked collaboration: the Nikkiso-KSB GmbH joint venture.

A partnership that goes beyond limits and bundles strengths. With their joint venture Nikkiso-KSB, KSB and Nikkiso Co., Ltd., Tokyo, have optimally combined the strengths of the two partners. The canned motor pumps of Nikkiso-KSB are used where utmost safety must be guaranteed for people and the environment: in the chemical industry, in refineries, as well as in thermal oil and refrigeration (liquefied gas) applications.

### HN/BN/TN (Nikkiso-KSB) Chemical pump with canned motor, explosion-proof



#### Description:

Horizontal (HN) or vertical (BN / TN) seal-less single-stage pump with fully enclosed canned motor, uncooled, coolable or heatable, explosion-proof. ATEX-compliant. With ceramic winding (HX) up to 350 °C for drive ratings up to 55 kW

#### Applications:

For handling aggressive, flammable, explosive, toxic, volatile or valuable liquids and thermal oils in the chemical and petrochemical industries.

#### Technical data:

DN	32 to 300
Q [m <sup>3</sup> /h]	800 max.
H [m]	200 max.
p [bar]	40 max.
T [°C]	-50 to +180 (+350)
P <sub>2</sub> kW	Up to 250

Available in Europe, Russia, the Middle East and Africa.

### HT/BT/TT (Nikkiso-KSB) Chemical pump with canned motor, explosion-proof



#### Description:

Horizontal (HT) or vertical (BT / TT) seal-less single-stage pump with fully enclosed canned motor, cooled, explosion-proof. ATEX-compliant. Hydraulic system separated from motor space.

#### Applications:

For handling aggressive, solids-laden, polymerising, flammable, explosive, toxic, volatile or valuable liquids and thermal oils in the chemical and petrochemical industries.

Available in Europe, Russia, the Middle East and Africa.

#### Technical data:

DN	32 to 300
Q [m <sup>3</sup> /h]	800 max.
H [m]	200 max.
p [bar]	40 max.
T [°C]	+400 max.
P <sub>2</sub> kW	Up to 250

### Other canned motor pump variants:

- Liquefied gas models
- Self-priming pumps
- Multistage pumps
- Pumps to API 685

### E-Monitor (Nikkiso-KSB)



Diagnostic unit for reliable monitoring of bearings and direction of rotation on Nikkiso-KSB canned motor pumps. ATEX-compliant. With or without connection options to process control system.

# The best solutions for maximum requirements.

In valve production, too, we can look back on decades of experience. Producing valves for the exacting demands of industry and process engineering has been our core competence from the start. We use high-quality components of exactly defined alloy composition – with digital data available from our documentation centre any time.

## Metal valves

### BOA-H

The cost-effective bellows-type globe valve classic. More than a million sold for pressures up to 40 bar: extremely robust and reliable in continuous operation. Maintenance-free, metal-seated.

**Technical data:**

DN 10 to 350  
p [bar] 16 to 40  
T [°C] -10 to +450

**Material:** Steel, nodular cast iron, grey cast iron



### NORI 40

The classic globe valve up to PN 40 provides utmost safety and reliability. It is available as bellows-type globe valve, globe valve with gland packing and horizontal or slanted seat, as well as non-return valve.

**Benefits of bellows-type globe valves:**

- Double-walled bellows for utmost safety
- Tapered valve disc, self-cleaning due to angled seat/disc interface
- Two-piece stem simplifies actuator mounting

**Technical data:**

DN 10 to 400  
p [bar] 25 to 40  
T [°C] -10 to +450

**Material:** Steel



### NORI 160

Well-proven valve design for safe shut-off of nominal pressure classes PN 63 to 160. Available as globe valve with gland packing with rotating or non-rotating stem, and as non-return valve. The confined gland packing and serrated bonnet gasket provide reliable sealing to atmosphere.

**Technical data:**

DN 10 to 200  
p [bar] 63 to 160  
T [°C] -10 to +550

**Material:** Steel



### NORI 320/500

The forged NORI 320 and NORI 500 globe valves with gland packing are specially designed to offer optimum operation and function for higher pressure classes from PN 250.

- Service-friendly bayonet-type connection between body and yoke allows quick dismantling and reassembly
- The single-piece body without separate bonnet eliminates the need for re-tightening the bonnet bolting. Just one sealing point to atmosphere
- One model for shut-off and throttling thanks to standard throttling valve plug. Inventories and spare parts stocks are reduced

**Technical data:**

DN 10 to 65  
p [bar] 250 to 500  
T [°C] -10 to +650

**Material:** Steel



## STAAL 40/100



The sturdy steel gate valve with bolted bonnet up to PN 40 (STAAL 40) and PN 100 (STAAL 100) can handle rough jobs. Its proven forged steel design with hard-faced seat/disc interface makes for a long service life – even under extreme conditions. Swing check valve models available.

**Technical data:**

DN	50 to 1200
p [bar]	10 to 100
T [°C]	-10 to +550

**Material:** Steel

## AKG-A/AKGS-A



Wedge gate valve in pressure seal design for pressures from 63 to 160 bar. Except for the pressure seal design and the nominal pressure class, AKG-A/AKGS-A valves feature the same design as the AKD/AKDS valves of the STAAL type series. Swing check valve model available.

**Technical data:**

DN	80 to 300
p [bar]	63 to 160
T [°C]	-10 to +550

**Material:** Steel

## ZTS



The block-forged extremely robust wedge gate valve with pressure seal bonnet for stringent requirements provides top safety, even for high pressures up to 600 bar. Suitable for temperatures up to 650 °C thanks to a wide range of material variants. Swing check valve model available.

**Technical data:**

DN	50 to 800
p [bar]	600 max.
T [°C]	-10 to +650

**Material:** Forged steel

## ISO F14A/F14D/VU\*



The ball valve series supplied by KSB in cooperation with KITZ is available with two-piece or three-piece body to DIN and ANSI standards.

- Reduced life cycle costs thanks to excellent ball finish
- O-ring for leak-free sealing of the stem passage to atmosphere
- Spiral-wound gasket ensures absolute integrity of the valve body
- Optimum reliability for large temperature differences (not applicable to ISO VU)
- Fire-safe design available (not for ISO VU)

**Technical data: F14D:**

DN	15 to 300
p [bar]	10 to 100
T [°C]	-10 to +250

**Material:** Steel, stainless steel

\* In selected countries only. Please contact your local KSB representative.

## DANAİS 150 / DANAİS MTII



Our AMRI butterfly valve types DANAİS 150 and MTII satisfy the most exacting demands in terms of safety, service life and tight shut-off in both flow directions. Space-saving and of low-weight design, they are easy to install and extremely service-friendly. And they are fire-safe! Equivalent swing check valve model (2000 series) is also available.

**Technical data:**

DN	50 to 1200
p [bar]	10 to 40
T [°C]	-50 to +260

**Material:** Steel, stainless steel

## SICCA ANSI high-pressure valves

SICCA gate, globe and non-return valves are made of cast or forged steel to API 602, ASME B16.34 and BS 5352. With socket weld or threaded ends, external thread rotating stem. Bolted cover (Class 800), welded cover (Class 1500 and 2500) or pressure-sealed cover.

### Technical data:

DN 1/2 to 24"  
Class 800 to 2.500  
T [°C] 0 to +593

**Material:** Various steels



## ECOLINE ANSI low-pressure valves

Gate and globe valves, strainers and non-return valves to API 600, ASME B16.34 and BS. High wear allowance on the sealing surfaces for high wear and corrosion resistance. The stainless steel/graphite gasket is fully confined to provide maximum sealing to atmosphere. The valve is available in a wide range of materials and variants.

### Technical data:

DN 1/2 to 36"  
Class 150, 300, 600, 800  
T [°C] -29 to +593

**Material:** Various steels and stainless steels



## SISTO-10/-16/-16S/-20

Top-quality materials and innovative production processes ensure these valves' high operating reliability and availability. The diaphragm is the only seal element and provides reliable shut-off and sealing to atmosphere while also hermetically sealing all functional parts against the fluid handled.

### Technical data:

DN 15 to 300  
T [°C] -20 to +160  
DIN PN 10,16

**Body material:** gunmetal, grey cast iron, nodular cast iron, stainless steel

**Lining material:** hard rubber, soft rubber, polyamides, PTFE



## Lined valves

**The optimal lining of valves such as diaphragm and butterfly valves is vital for the process reliability of your application. Our competence in linings made of fluoropolymers like PTFE, PFA and TFM, or elastomers such as hard and soft rubber, and our know-how in ECTFE or polyamide coatings give you products with highest levels of quality, safety and reliability.**

Our lined valves prove their strength also with particularly aggressive, corrosive and abrasive fluids. Resistant to wear, chemicals and temperatures, these specially developed systems are a match for even the toughest opponent.

Our valves factory in La Roche Chalais, France, has its own production facilities for elastomer and plastomer liners. So we safeguard our high quality right from the start.

## ISORIA 10

The butterfly valve available in an extensive range of materials:

- Perfectly matched to the fluid handled thanks to a large number of disc materials and elastomer liners
- Spherical interface between liner and disc
- Actuator types: manual, pneumatic, hydraulic and electric

### Technical data:

DN 40 to 1.000  
p [bar] 10 max.  
T [°C] -10 to +200



## SISTO-KB



Its straight-line flow path makes the SISTO-KB valve particularly suitable for abrasive fluids. The body liner ensures a long service life. The diaphragm valve for suspensions and crystallising acids with both aggressive and abrasive properties.

**Body material:** grey cast iron, nodular cast iron  
**Lining material:** hard rubber, soft rubber

**Technical data:**

DN	15 to 200
PN	10
T [°C]	-20 to +140

## SISTO-10/-16/-16S/-20



High-grade body liners and coatings are intended for demanding applications in all areas of the chemical industry. Thanks to the special design of the SISTO valves and the use of a spiral steel spring-supported diaphragm, the valves can also be used in large sizes at high pressures – and the diaphragms have a substantially longer service life than conventional designs.

**Body material:** gunmetal, grey cast iron, nodular cast iron, stainless steel  
**Lining material:** hard rubber, soft rubber, polyamides, PTFE

**Technical data:**

DN	15 to 300
T [°C]	-20 to +160
PN	10/16
ISOPN	20

## SISTO-RSK



On this maintenance-free, soft-seated swing check valve, fully elastic internal mounting of the valve disc ensures a long service life and versatility of application. The soft rubber-coated disc provides reliable shut-off.

**Body material:** nodular cast iron  
**Lining material:** hard rubber, soft rubber, polyamides

**Technical data:**

DN	25 to 300
PN	10/16
T [°C]	-20 to +120

## KE



KE is a butterfly valve with a Teflon® or elastomer liner for toxic and highly corrosive fluids. When fitted with a PFA (Teflon®) liner and a PFA-lined disc, it provides excellent resistance to aggressive liquids and gases. Double safety is achieved by means of the primary and secondary seals at the stem passage and reliable sealing to atmosphere. KE butterfly valves are fully maintenance-free.

**Body material:** hard rubber, soft rubber  
**Lining material:** nodular cast iron (GGG40.3)

**Technical data:**

DN	40 to 600
p [bar]	10 max.
T [°C]	-20 to +200

# Process optimisation thanks to KSB high tech automation.

AMRI's technologically advanced and well-proven automation systems can supply control systems with important and detailed information. Routes include state-of-the-art field bus technology. So customers can benefit from smooth processes. Intelligent technology automatically regulates fluid flow or prevents pressure surges, so that the entire process is continuously optimised.

## AMTROBOX M

**Description:** specially developed for manual actuation. For open/closed position signalling on on/off valves via mechanical limit switches or proximity sensors. AMTROBOX M is mounted directly on the S series of quarter-turn levers (R1020) and manual reducer types MA 12 and MA 25 (R1021).

**Use:** all applications in water, building services and energy engineering

**Technical data:**

T [°C]     -20 to +80  
Enclosure IP65



## AMTROBOX / AMTROBOX EEx-ia

**Description:** multi-functional control unit for open/closed position signalling on on/off valves via mechanical limit switches or proximity sensors. AMTROBOX (R1149) is mounted directly on reducer type MR, the pneumatic actuators of the ACTAIR series and the hydraulic actuators of the ACTO series. AMTROBOX EEx-ia (R1172): intrinsically safe version for potentially explosive atmospheres. AMTROBOX ATEX (X1140, X1149): ATEX version for potentially explosive dust atmospheres (Zone 22).

**Use:** all applications in water, building services and energy engineering

**Technical data:**

T [°C]     -10 to +50  
Enclosure IP67



## AMTRONIC EEx-ia

**Description:** AMTRONIC EEx-ia (R1301) is an intrinsically safe control units particularly suitable for operation in potentially explosive atmospheres. It complies with ATEX directive 94/9/EC and CE 0081 Ex II 1 G. The unit is certified to EEx-ia IIC T6 as per the EN 50014 and EN 50020 standards. EC type test certificate: LCIE 03 ATEX 6435X.

**Use:** all applications in water, energy and industry

**Technical data:**

T [°C]     -20 to +80  
Enclosure IP67



## SMARTRONIC MA

**Description:** SMARTRONIC provides position control for pneumatic ¼-turn actuators as well as open/closed detection and actual-position feedback. The unit attaches directly to an ACTAIR or DYNACTAIR actuator with no need for a bracket or external piping, providing a rugged, compact and integrated solution. SMARTRONIC PC (process control): SMARTRONIC PC monitors process variables using an integrated programmable microprocessor and provides accurate actuation time monitoring (surge pressure control). SMARTRONIC PC is PC programmable and compatible with Profibus DP systems.

**Use:** all applications in water, energy and industry

**Technical data:**

T [°C]     -20 to +80  
Enclosure IP67



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