

► Our technology. Your success.

Pumps • Valves • Service



**Reliability in even toughest conditions:**  
Our unique range of marine pumps + valves



## Quality, reliability and safety combined – at sea with KSB products.

For a demanding set of applications, KSB is considered as a worldwide supplier for quality and reliability among the best professionals in the naval industry. We have a unique range of products and services on offer, which ensure maximum safety and reliability. Our holistic solutions and expertise from years of working in this field allow us to provide high-quality and comprehensive equipment for all marine applications. KSB products used on board need to function even under the toughest conditions typically found in the rough environment of production vessels. KSB tackles the related challenges with technically mature products designed to the respective standards.



## The flexible comprehensive range for **all marine applications**

Engineers, shipyards and ship-owners trust our experience and high product quality. KSB offers best in class solutions for any application at sea. See for yourself: the table on pages 7 and 10 gives an overview of KSB products and the different applications in which they are deployed. KSB pumps and valves, KSB ITUR pumps and pumping equipment, AMRI and SISTO valves and actuators and KSB Seil actuators and automation products complete the KSB marine portfolio. All these products are designed to perfectly fit to any marine application. Different fluids can be handled, including sea water, brine, fresh water, hot water, cooling water, fresh water, process water, all kinds of oil, LNG, LPG, LEG, sewage and waste water, aggressive and non aggressive chemical fluids, sludges and dirty oils. KSB products have proven their performance over decades.



## Commitment and Quality Guarantee

KSB products fulfil quality, safety and environment standards and requirements. KSB is certified according to:

**ISO 9001:2000**  
**ISO 14001:2004**  
**OHSAS 18001:1999**

This certification establishes a KSB continuous commitment with the quality standards. It proves the excellence of our products that made us first choice as official supplier for companies all over the globe. Many companies have joined KSB as an official supplier.

KSB pumps and valves and automation products have been approved by the most famous and recognised certification authorities in the world including DNVGL, NKK, GL, KRS, ABS, LRS, RINA, RS, BV, etc. These approvals authorise the use of our products on basically all types of ships and processes like cryogenic applications for LNG and LPG, salt and fresh water, ballast, bilge, sanitary, cargo oil, fuel oil, lubricating oil, compressed air, cement and mud, fire water, inert gas systems and on cargo handling systems of ships classified as 'product' and 'chemical' carriers.



Thousands of sailing ships are equipped with KSB pumps, valves or remote control systems. No matter the ship type (LNGC, oil tanker or dry cargo) or route of the vessel, KSB is always near. Due to collaborations with the main ship repair yards, and well-situated marine service shops, KSB can provide original spare parts and send qualified service engineers in little to no time.

# Pumps

| Ship Area              | Service                  | ILN | ILNC | RC / RCV | REK | DSK | TSK | AU | AU Monobloc | EZ B/L | Hydrophore | Movitec | Etanorm | Etanorm SYT | Etabloc | Etabloc SYT | Etaline | Etaline SYT | Omega | RDLO | MegaCPK | UPA | BEV | Amarex KRT | LSA-S | LHD | MHD | TBC | LCC-M | Multitec | Magnochem |   |      |  |
|------------------------|--------------------------|-----|------|----------|-----|-----|-----|----|-------------|--------|------------|---------|---------|-------------|---------|-------------|---------|-------------|-------|------|---------|-----|-----|------------|-------|-----|-----|-----|-------|----------|-----------|---|------|--|
| Engine Room            | Cooling SW               | ■   | ■    |          |     |     |     | ■  | ■           |        |            |         | ■       |             | ■       |             |         |             | ■     | ■    | ■       |     |     |            |       |     |     |     |       |          |           |   |      |  |
|                        | Cooling FW               | ■   | ■    |          |     |     |     | ■  | ■           |        |            | ■       | ■       |             | ■       |             | ■       |             |       | ■    | ■       | ■   |     |            |       |     |     |     |       |          |           | ■ |      |  |
|                        | Ballast (1)              | ■   | ■    |          |     |     |     | ■  | ■           |        |            |         | ■       |             | ■       |             |         |             |       | ■    | ■       | ■   |     |            |       |     |     |     |       |          |           |   |      |  |
|                        | Bilge (1)                | ■   | ■    |          | ■   |     |     | ■  | ■           |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            | ■     |     |     |     |       |          |           |   |      |  |
|                        | Fire (1)                 | ■   | ■    |          |     |     |     | ■  | ■           |        |            |         | ■       |             |         |             |         |             |       | ■    |         |     |     | ■          | ■     |     |     |     |       |          | ■         |   |      |  |
|                        | Jockey pump              |     |      |          |     |     |     |    |             |        |            |         | ■       |             |         |             |         |             |       |      |         |     |     | ■          |       |     |     |     |       |          |           |   |      |  |
|                        | General service (1)      | ■   | ■    |          |     |     |     | ■  | ■           |        |            |         |         | ■           |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           | ■ |      |  |
|                        | Bilge & Ballast (1)      | ■   | ■    |          |     |     |     | ■  | ■           |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   |      |  |
|                        | Temporary ballast pump   |     |      |          |     |     |     |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     | ■          |       |     |     |     |       |          |           |   |      |  |
|                        | Bilge, Fire & GS (1)     | ■   | ■    |          |     |     |     | ■  | ■           |        |            |         |         |             |         |             |         |             |       |      |         |     |     | ■          |       |     |     |     |       |          |           |   |      |  |
|                        | Tank washing             | ■   | ■    |          |     |     |     |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     | ■   |            |       |     |     |     |       |          |           |   |      |  |
|                        | Economizer Feed          | ■   | ■    |          |     |     |     |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | Emergency Fire (1)       | ■   | ■    |          |     |     |     | ■  | ■           |        |            |         |         | ■           |         | ■           |         |             |       |      |         |     | ■   |            |       |     |     |     |       |          |           |   |      |  |
|                        | FW generator ejector     | ■   | ■    |          |     |     |     |    |             |        |            |         |         | ■           |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | SW&FW Hydrophore         |     |      |          |     |     |     |    |             |        | ■          | ■       | ■       | ■           |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   |      |  |
|                        | Foam                     | ■   | ■    |          |     |     |     |    |             |        |            |         | ■       |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   |      |  |
|                        | H.T. cooling FW          | ■   | ■    |          |     |     |     |    |             |        |            |         |         | ■           |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | L.T. cooling FW          | ■   | ■    |          |     |     |     |    |             |        |            |         |         | ■           |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | Hot water circulation    |     |      |          |     |     |     | ■  | ■           | ■      |            |         | ■       |             |         | ■           |         | ■           |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | Inert Gas SW             | ■   | ■    |          |     |     |     |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   |      |  |
|                        | IGG cooling SW           | ■   | ■    |          |     |     |     |    |             |        |            |         |         | ■           |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   |      |  |
|                        | M/E SW cooling           | ■   | ■    |          |     |     |     |    |             |        |            |         |         | ■           |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   |      |  |
|                        | M/E FW cooling           | ■   | ■    |          |     |     |     |    |             |        |            |         |         | ■           |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | M/E Jacket FW            | ■   | ■    |          |     |     |     |    |             |        |            |         |         |             |         | ■           |         | ■           |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | M/E Pre-heating          |     | ■    |          |     |     |     |    |             |        |            |         |         |             |         | ■           | ■       | ■           | ■     |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | Main Lub. Oil            |     |      | ■        |     |     | ■   | ■  |             |        |            |         |         | ■           |         | ■           |         |             |       |      |         |     |     |            | ■     |     |     |     |       |          |           |   | ■    |  |
|                        | Scrubber cooling SW      | ■   | ■    |          |     |     |     |    |             |        |            |         |         | ■           |         | ■           |         |             |       |      | ■       |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | Vacuum condensate SW     | ■   | ■    |          |     |     |     |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | Water spray SW           | ■   | ■    |          |     |     |     |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | Condensate water         | ■   | ■    |          |     |     |     |    |             |        |            |         | ■       | ■           |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | Deck seal water          | ■   | ■    |          |     |     |     |    |             |        |            |         | ■       | ■           |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | Air Conditioning cooling | ■   | ■    |          |     |     |     |    |             |        |            |         |         | ■           |         | ■           |         | ■           |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | Anti-Heeling             | ■   | ■    |          |     |     |     |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   |      |  |
|                        | Boiler Feed              |     |      |          |     |     |     |    |             |        | ■          |         | ■       |             |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          | ■         | ■ |      |  |
|                        | Boiler Circulation       |     |      |          |     |     |     |    |             |        |            |         | ■       |             |         | ■           |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | Air cooler cleaning      | ■   | ■    |          |     |     |     |    |             |        | ■          |         | ■       | ■           |         | ■           |         | ■           |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | S.W. Lift                |     |      |          |     |     |     |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     | ■          | ■     |     |     |     |       |          |           |   |      |  |
|                        | Dredging                 |     |      |          |     |     |     |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     | ■   | ■   | ■     | ■        | ■         | ■ | ■(2) |  |
|                        | HFO/FO/MDO transfer      |     |      | ■        |     |     | ■   | ■  |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   | ■    |  |
|                        | ME & GE FO supply        |     |      | ■        |     |     |     | ■  |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   |      |  |
| ME & GE FO circulating |                          |     | ■    |          |     |     | ■   |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           | ■ |      |  |
| HFO/FO purifier feed   |                          |     | ■    |          |     |     | ■   |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   |      |  |
| L.O. transfer          |                          |     | ■    |          |     | ■   | ■   |    |             |        |            |         | ■       |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   |      |  |
| Sludge                 |                          |     | ■    | ■        |     | ■   | ■   |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     |     |            |       |     |     |     |       |          |           |   |      |  |
| Temporary drain pump   |                          |     |      |          |     |     |     |    |             |        |            |         |         |             |         |             |         |             |       |      |         |     | ■   |            |       |     |     |     |       |          |           |   |      |  |
| Cargo                  | Cargo (3)                |     |      |          |     | ■   |     |    |             |        |            |         | ■       |             |         |             |         |             |       | ■    | ■       | ■   |     | ■          |       |     |     |     |       |          |           | ■ |      |  |

(1) It is mandatory self priming device for these services

(2) Jetting services

(3) Cargo services are variable depending of size of ship and cargo fluid. Additional devices should be adapted for validation of pumps.

# Valves

| Ship Area                         | Service  | ISORIA | MAMMOUTH | DANAIS 150 | DANAIS TBTII | TRIODIS | KE | WADA GL 150 | WADA GT 150 | WADA SC 150 | SISTO-KB | SISTO-16/20 | SISTO-RSK/RSKS | BOA-H Family (FT) |
|-----------------------------------|--|--------|----------|------------|--------------|---------|----|-------------|-------------|-------------|----------|-------------|----------------|-------------------|
| Ballast                           | Sea water  | ■      |          | ■          |              |         |    |             |             |             |          | ■           |                |                   |
| Shipsides valves                  | Sea water  | ■      |          |            |              |         |    |             |             |             |          |             |                |                   |
| S.W. / F.W. cooling               | Sea water, brine, fresh water, hot water, cooling water  | ■      |          |            |              |         |    |             |             |             |          |             |                |                   |
| Scrubbing services                | Sea water, fresh water, process water (acidic, hot, warm water)  | ■      |          | ■          |              |         | ■  |             |             |             | ■        | ■           | ■              |                   |
| M/E Lubrication oil               | Oil lubrication  |        |          |            |              |         |    |             |             |             |          |             |                | ■                 |
| FiFi, bilge and general service   | Sea water, fresh water, sewage water   | ■      |          |            |              |         |    |             |             |             |          | ■           | ■              |                   |
| Tank washing                      | Sea water, fresh water, chemical IMO I II, non aggressive chemical fluids  | ■      | ■        |            |              |         |    |             |             |             | ■        | ■           | ■              |                   |
| Lubrication oil and fuel transfer | Oil lubrication  | ■      |          |            |              |         |    |             |             |             |          |             |                | ■                 |
| HVAC                              | Sea water, fresh water, hot water, cooling water, non aggressive chemical fluids   | ■      |          |            |              |         |    |             |             |             |          |             |                | ■                 |
| Sludge and sewage                 | Sea water, brine, sewage water, sludge, vacuum toilet systems  | ■      |          |            |              |         |    |             |             |             | ■        |             | ■              |                   |
| Fuel feed and circulating         | Marine Diesel oil, Heavy fuel oil  | ■      |          |            |              |         |    |             |             |             |          |             |                | ■                 |
| Cargo Valves                      | LNG, LPG, LEG, crude oil, chemical IMO I II, petroleum product, chemical IMO III, highly aggressive fluids, non aggressive chemical fluids |        |          | ■          | ■            | ■       | ■  | ■           | ■           | ■           | ■        | ■           | ■              | ■                 |



## General Information

### Key to Actuators

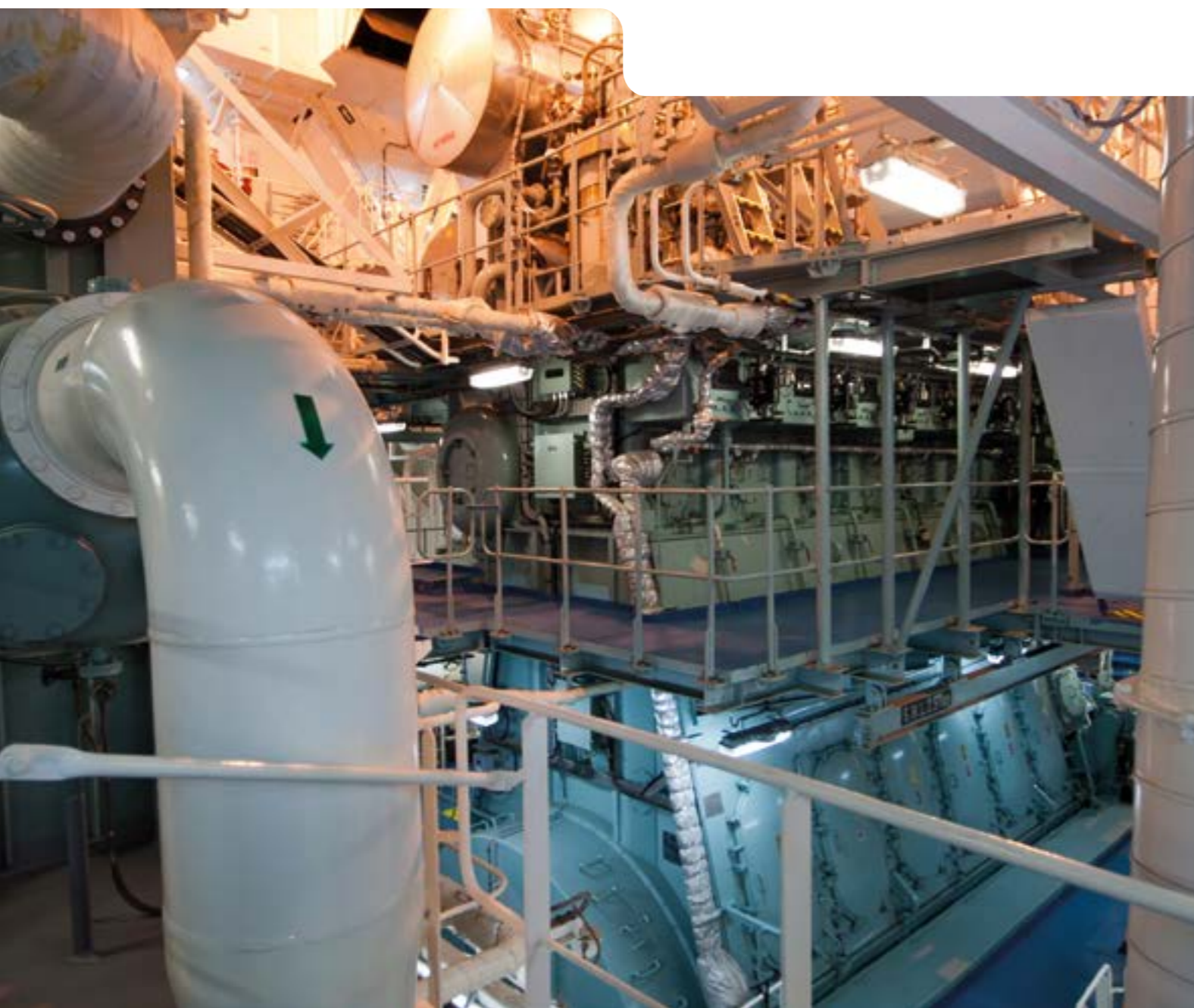
In the products section from page 20 the symbol in conjunction with the relevant letter indicates the actuator type(s) available.

m=manual (lever, handwheel, etc)

e=electric actuator

p=pneumatic actuator

h=hydraulic actuator



## In-line pumps

### ILN



|                       |            |
|-----------------------|------------|
| DN                    | 65-400     |
| Q [m <sup>3</sup> /h] | max. 3700  |
| H [m]                 | max. 162   |
| p [bar]               | max. 16    |
| n [rpm]               | max. 3600  |
| T [°C]                | -20 to +70 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Vertical in-line centrifugal pump with closed impeller and mechanical seal. ILNS fitted with an auxiliary vacuum pump, ILNE with ejector. The back pull-out design allows the impeller to be dismantled without removing the pipes and the motor. ATEX-compliant version available.

**Services:** Cooling SW & FW, ballast, bilge, fire, general service, tank washing, economizer feed, emergency fire, FW generator ejector, foam, HT and LT cooling FW, inert gas SW, IGG cooling SW, M/E SW & FW cooling, M/E Jacket FW, Scrubber cooling SW, vacuum condensate SW, water spray SW, condensate water, deck seal water, air conditioning cooling, ant-heeling



Switchgear

[www.ksb.com/product/iln](http://www.ksb.com/product/iln)

### ILNC



|                       |            |
|-----------------------|------------|
| DN                    | 32-125     |
| Q [m <sup>3</sup> /h] | max. 447   |
| H [m]                 | max. 161   |
| p [bar]               | max. 16    |
| n [rpm]               | max. 3600  |
| T [°C]                | -20 to +70 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Vertical close-coupled centrifugal pump in in-line design, with electric motor, closed impeller and mechanical seal. ILNCS fitted with an auxiliary vacuum pump, ILNCE with ejector. Standardised IEC frame motor. ATEX-compliant version available.

**Services:** Cooling SW & FW, ballast, bilge, fire, general service, tank washing, economizer feed, emergency fire, FW generator ejector, foam, HT and LT cooling FW, inert gas SW, IGG cooling SW, M/E SW & FW cooling, M/E Jacket FW, M/E Pre-heating, scrubber cooling SW, vacuum condensate SW, water spray SW, condensate water, deck seal water, air conditioning cooling, ant-heeling, air cooler cleaning.



Switchgear

[www.ksb.com/product/ilnc](http://www.ksb.com/product/ilnc)

### Etaline



|                       |             |
|-----------------------|-------------|
| DN                    | 32-200      |
| Q [m <sup>3</sup> /h] | max. 700    |
| H [m]                 | max. 95     |
| p [bar]               | max. 16     |
| n [rpm]               | max. 3500   |
| T [°C]                | -30 to +140 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Single-stage volute casing pump in in-line design with standardised motor; pump shaft and motor shaft are rigidly connected.

**Services:** Cooling FW, Hot water circulation, M/E Jacket FW, M/E Pre-heating, Air Conditioning cooling, Air cooler cleaning



[www.ksb.com/product/etaline](http://www.ksb.com/product/etaline)

## Self-priming pumps

### AU



|                       |            |
|-----------------------|------------|
| DN                    | 40-200     |
| Q [m <sup>3</sup> /h] | max. 600   |
| H [m]                 | max. 52    |
| p [bar]               | max. 10    |
| n [rpm]               | max. 3600  |
| T [°C]                | -10 to +80 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Horizontal, self-priming centrifugal pump, open or semi-open impeller, adjusted via wear plate, with mechanical seal, ATEX compliant version available.

**Services:** Cooling SW & FW, ballast, bilge, fire, general service, emergency fire, hot water circulation



[www.ksb.com/product/au](http://www.ksb.com/product/au)

## AU Monobloc



|          |            |
|----------|------------|
| DN       | 40-50      |
| Q [m3/h] | max. 53    |
| H [m]    | max. 50    |
| p [bar]  | max. 10    |
| n [rpm]  | max. 3600  |
| T [°C]   | -10 to +80 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Horizontal, self-priming centrifugal pump in close-coupled design, semi-open impeller, adjusted via wear plate, with mechanical seal, driven by electric motors or internal combustion engines, ATEX-compliant version available.

**Services:** Cooling SW & FW, ballast, bilge, fire, genreal service, emergency fire, hot water circulation



[www.ksb.com/product/au-monobloc](http://www.ksb.com/product/au-monobloc)

## EZ B/L



|          |               |
|----------|---------------|
| DN       | 25-50 (1"-2") |
| Q [m3/h] | max. 24       |
| H [m]    | max. 160      |
| p [bar]  | max. 16       |
| n [rpm]  | max. 1800     |
| T [°C]   | +5 to +80     |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Self-priming multistage liquid ring horizontal pump in close-coupled (EZ B) or longcoupled (EZ L) design, with mechanical seal.

**Services:** SW & FW Hydrophore, hot water circulation, air cooler, boiler feed applications



[www.ksb.com/product/ez-b-l](http://www.ksb.com/product/ez-b-l)

## Helical gear pump

### RC / RCV



|          |           |
|----------|-----------|
| DN       | 20-100    |
| Q [m3/h] | max. 94   |
| H [m]    | max. 100  |
| p [bar]  | max. 10   |
| T [°C]   | +5 to +80 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Helical gear pump, self-priming, with bypass valve, for horizontal installation with baseplate or vertical installation.

**Services:** Main lub. Oil, HFO/FO/MDO transfer, HFO/FO purifier feed, LO transfer, sludge



[www.ksb.com/product/rc](http://www.ksb.com/product/rc)

## Eccentric screw pump

### REK



|          |           |
|----------|-----------|
| DN       | 20-200    |
| Q [m3/h] | max. 350  |
| H [m]    | 235       |
| p [bar]  | 24        |
| T [°C]   | 0 to +180 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Rotating eccentric screw pump on a base plate or close coupled, with gear box, elastomer stator and relief valve.

**Services:** Bilge, sewage, black and grey waters, sludge



[www.ksb.com/product/rek](http://www.ksb.com/product/rek)

## Three screw pump

### DSK



|          |           |
|----------|-----------|
| DN       | 40-500    |
| Q [m3/h] | max. 2800 |
| H [m]    | max. 400  |
| p [bar]  | 40        |
| T [°C]   | 0 to +300 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Twin screw self priming pump for horizontal or vertical position with built-in relief valve.

**Services:** Main lub.oil, HFO/FO/MDO transfer, L.O. transfer, sludge, cargo, stripping



[www.ksb.com/product/dsk](http://www.ksb.com/product/dsk)

## Twin screw pump

### TSK



|          |             |
|----------|-------------|
| DN       | 25-200      |
| Q [m3/h] | max. 174    |
| H [m]    | max. 160    |
| p [bar]  | max. 16     |
| T [°C]   | -20 to +180 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Three screw spindles self-priming pump with horizontal or vertical position with built-on relief valve.

**Services:** Main lub. Oil, HFO/FO/MDO transfer, ME & GE FO supply, ME & GE FO circulating, HFO/FO purifier feed, LO transfer, sludge



[www.ksb.com/product/tsk](http://www.ksb.com/product/tsk)

## Pressure booster systems

### Hydrophore



|          |              |
|----------|--------------|
| DN       | 1" to 1 1/2" |
| Q [m3/h] | max. 110     |
| H [m]    | max. 100     |
| p [bar]  | max. 100     |
| T [°C]   | +5 to +50    |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Fully automatic pressurized water equipment and system, composed by a pumping set with one or several pumps, valves, collector, electric panel and an accumulation pack with pressure tank.

Pump control system for continuous speed adjustment on request.

**Services:** SW&FW Hydrophore

## High-pressure pumps

### Movitec



|                       |               |
|-----------------------|---------------|
| DN                    | 25-125        |
| Q [m <sup>3</sup> /h] | max. 192      |
| H [m]                 | max. 249      |
| p [bar]               | max. 40       |
| n [rpm]               | max. 3500     |
| T [°C]                | -20 to +140°C |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Multistage vertical high-pressure centrifugal pump in ring-section design with suction and discharge nozzles of identical nominal diameters arranged opposite to each other (in-line design), close-coupled. ATEX compliant version available.

**Services:** Cooling FW, Fire, SW & FW Hydrophore, Foam, Hot water circulation, Condensate water, Deck seal water, Boiler feed, Boiler circulation, Air cooler cleaning



[www.ksb.com/product/movitec](http://www.ksb.com/product/movitec)

### Multitec



|                       |             |
|-----------------------|-------------|
| DN                    | 32-250      |
| Q [m <sup>3</sup> /h] | max. 1500   |
| H [m]                 | max. 1000   |
| p [bar]               | max. 100    |
| n [rpm]               | max. 3500   |
| T [°C]                | -10 to +200 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Multistage centrifugal pump in ring-section design. Horizontal installation in long-coupled or close-coupled design. Vertical installation in close-coupled design or with universal joint shaft. With either one or two roller bearings. Axial or radial suction nozzle, radial discharge nozzle. Radial suction and discharge nozzles can be turned in steps of 90°. ATEX-compliant and ACS-compliant versions available.

**Services (marine):** Boiler feed, fire-fighting, jetting



[www.ksb.com/product/multitec](http://www.ksb.com/product/multitec)

## Standardised pumps

### Etanorm



|                       |             |
|-----------------------|-------------|
| DN                    | 25-150      |
| Q [m <sup>3</sup> /h] | max. 740    |
| H [m]                 | max. 160    |
| p [bar]               | max. 16     |
| n [rpm]               | 3500        |
| T [°C]                | -30 to +140 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Volute casing pump, single-stage, ratings to EN 733, radially split volute casing, volute casing with integrally cast pump feet, replaceable casing wear rings (optionally available for casings in material variant C), closed radial impeller with multiply curved vanes, single mechanical seals to EN 12756, double mechanical seals to EN 12756, shaft fitted with a replaceable shaft protecting sleeve in the shaft seal area.

**Services:** Cooling SW and FW, Ballast, Emergency fire, FW generator ejector, H.T. cooling FW, L.T. cooling FW, Deck seal water, Air conditioning cooling



[www.ksb.com/product/etanorm](http://www.ksb.com/product/etanorm)

## Close-coupled pumps

### Etabloc



|                       |             |
|-----------------------|-------------|
| DN                    | 25-150      |
| Q [m <sup>3</sup> /h] | max. 740    |
| H [m]                 | max. 144    |
| p [bar]               | max. 16     |
| n [rpm]               | max. 3500   |
| T [°C]                | -30 to +140 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Volute casing pump, single-stage, ratings to EN 733, radially split volute casing (some volute casings with integrally cast pump feet), replaceable casing wear rings (optionally available for casings in material variant C), closed radial impeller with multiply curved vanes, single mechanical seals to EN 12756, double mechanical seals to EN 12756, shaft fitted with a replaceable shaft protecting sleeve in the shaft seal area.

**Services:** Cooling SW and FW, Ballast, Emergency Fire, FW generator ejector, SW&FW Hydrophore, H.T. cooling FW, L.T. cooling FW, Hot water circulation, M/E Jacket FW, M/E Pre-heating, Deck seal water, Air conditioning cooling, Air cooler cleaning



[www.ksb.com/product/etabloc](http://www.ksb.com/product/etabloc)

## Hot water / thermal oil pumps

### Etanorm SYT



|                       |             |
|-----------------------|-------------|
| DN                    | 25-150      |
| Q [m <sup>3</sup> /h] | max. 754    |
| H [m]                 | max. 100    |
| p [bar]               | max. 16     |
| n [rpm]               | max. 3500   |
| T [°C]                | -30 to +350 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Volute casing pump for horizontal installation, back pull-out design, single-stage, ratings and dimensions to EN 733, radially split volute casing, volute casing with integrally cast pump feet, replaceable casing wear rings, closed radial impeller with multiply curved vanes, single mechanical seal to EN 12756, double mechanical seal to EN 12756, driveend bearings: rolling element bearings, pump-end bearings: plain bearings.

**Services:** Boiler Feed, Boiler circulation



[www.ksb.com/product/etanorm-syt](http://www.ksb.com/product/etanorm-syt)

### Etabloc SYT



|                       |             |
|-----------------------|-------------|
| DN                    | 25-80       |
| Q [m <sup>3</sup> /h] | max. 337    |
| H [m]                 | max. 99     |
| p [bar]               | max. 16     |
| n [rpm]               | max. 3500   |
| T [°C]                | -30 to +350 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Volute casing pump for horizontal and vertical installation, back pull-out design, single-stage, with ratings to EN 733, radially split volute casing, replaceable casing wear rings, volute casing with integrally cast pump feet, closed radial impeller with multiply curved vanes, single mechanical seal to EN 12756, product-lubricated carbon plain bearing and greaselubricated radial ball bearing in the motor housing.

**Services:** M/E Pre-heating



[www.ksb.com/product/etabloc-syt](http://www.ksb.com/product/etabloc-syt)

### Etaline SYT



|                       |             |
|-----------------------|-------------|
| DN                    | 32-100      |
| Q [m <sup>3</sup> /h] | max. 228    |
| H [m]                 | max. 101    |
| p [bar]               | max. 16     |
| n [rpm]               | max. 3500   |
| T [°C]                | -30 to +350 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Single-stage volute casing pump in in-line design with standardised motor; pump shaft and motor shaft are rigidly connected.

**Services:** M/E Pre-heating



[www.ksb.com/product/etaline-syt](http://www.ksb.com/product/etaline-syt)



## Axially split pumps

### Omega



|                       |           |
|-----------------------|-----------|
| DN                    | 80-350    |
| Q [m <sup>3</sup> /h] | max. 2880 |
| H [m]                 | max. 210  |
| p [bar]               | max. 25   |
| n [rpm]               | max. 3500 |
| T [°C]                | 0 to +140 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Single-stage axially split volute casing pump for horizontal or vertical installation, with double-entry radial impeller, mating flanges to DIN-EN or ASME.

**Services:** Cooling SW/FW, Ballast, Fire, Scrubber cooling SW



[www.ksb.com/product/omega](http://www.ksb.com/product/omega)

### RDLO



|                       |            |
|-----------------------|------------|
| DN                    | 350-700    |
| Q [m <sup>3</sup> /h] | max. 10000 |
| H [m]                 | max. 240   |
| p [bar]               | max. 25    |
| n [rpm]               | max. 1800  |
| T [°C]                | 0 to +140  |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Single-stage axially split volute casing pump for horizontal or vertical installation, with double-entry radial impeller, mating flanges to DIN-EN or ASME.

**Services (marine):** Cooling SW/FW, Ballast



[www.ksb.com/product/rdlo](http://www.ksb.com/product/rdlo)

## Standardised chemical pumps

### MegaCPK



|                       |             |
|-----------------------|-------------|
| DN                    | 25-250      |
| Q [m <sup>3</sup> /h] | max. 1400   |
| H [m]                 | max. 233    |
| p [bar]               | max. 25     |
| n [rpm]               | max. 3600   |
| T [°C]                | -40 to +400 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Horizontal radially split volute casing pump in back pull-out design, with radial impeller, single-entry, single-stage, to DIN EN ISO 2858/ISO 5199; also available as a variant with "wet" shaft and conical seal chamber. ATEX-compliant version available.

**Services:** Cooling SW/FW, Ballast, Tank washing, Emergency Fire, Cargo



[www.ksb.com/product/mega-cpk](http://www.ksb.com/product/mega-cpk)

## Magnetic coupling pumps

### Magnochem



|                       |             |
|-----------------------|-------------|
| DN                    | 25 - 250    |
| Q [m <sup>3</sup> /h] | max. 1160   |
| H [m]                 | max. 162    |
| p [bar]               | max. 40     |
| n [rpm]               | max. 3500   |
| T [°C]                | -90 to +300 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Horizontal, seal-less volute casing pump in back pull-out design, with magnetic drive, to DIN EN ISO 2858 / ISO 5199, with radial impeller, single-entry, single-stage. ATEX-compliant version available.

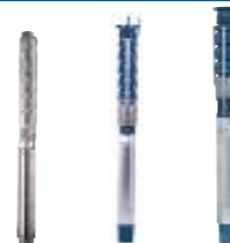
**Services (marine):** Pumping aggressive, toxic, explosive, valuable, flammable, malodorous or harmful liquids in the chemical, petrochemical, marine and general industries



[www.ksb.com/product/magnochem](http://www.ksb.com/product/magnochem)

## Submersible borehole pumps

### UPA 150C



|                       |           |
|-----------------------|-----------|
| DN                    | 100-1250  |
| Q [m <sup>3</sup> /h] | max. 5000 |
| H [m]                 | max. 480  |
| p [bar]               | max. 57   |
| n [rpm]               | max. 3500 |
| T [°C]                | 0 to +50  |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Single- or multistage centrifugal pumps in ring-section design, single entry; for vertical and depending on the number of stages horizontal installation; radial or mixed flow hydraulic systems available with reduced impeller diameters; driven by submersible motors. with lift check valve or connection branch.

**Services (marine):** Seawater lift, fire water pump, jockey, temporary ballast and emergency drain



 KSB UMA-S

[www.ksb.com/product/upa-150c](http://www.ksb.com/product/upa-150c)

## Deep-well turbine pumps

### BEV



|                       |             |
|-----------------------|-------------|
| DN                    | 80-400      |
| Q [m <sup>3</sup> /h] | 2700        |
| H [m]                 | 350         |
| p [bar]               | 40          |
| n [rpm]               | 3600        |
| T [°C]                | -10 to +120 |

Data for 60 Hz operation  
Also available for 50 Hz operation

**Description:** Multistage deep-well turbine pump with closed impellers, column section with bearing assembly, shaft sleeve, shaft sealed by gland packing, driven by electric motor or diesel engine. ATEX-compliant version available.

**Services:** Fire, main lub. Oil, Seawater lift and cargo

## Submersible motor pumps

### Amarex KRT



|                       |            |
|-----------------------|------------|
| DN                    | 40-700     |
| Q [m <sup>3</sup> /h] | max. 10080 |
| H [m]                 | max. 120   |
| n [rpm]               | max. 2900  |
| T [°C]                | max. +60   |

**Description:** Vertical single-stage submersible motor pump in close-coupled design, with various impeller types, for wet installation, stationary or transportable version. ATEX-compliant version available.

**Services:** Bilge



[www.ksb.com/product/amarex-krt](http://www.ksb.com/product/amarex-krt)

## Slurry pumps

### LSA-S



|                       |            |
|-----------------------|------------|
| DN                    | 50-660     |
| Q [m <sup>3</sup> /h] | max. 14000 |
| H [m]                 | max. 90    |
| p [bar]               | max. 16    |
| T [°C]                | Max. +120  |

**Design:** White iron, high efficiency, high head pump for hydrotransport of slurries w/ wide range of particle sizes. Robust, proven reliability, maintenance friendly

**Services:** submerged Dredge, Inboard, Deck, Booster, Jet Water



[www.ksb.com/product/lisa-s](http://www.ksb.com/product/lisa-s)

### LHD



|                       |            |
|-----------------------|------------|
| DN                    | 460-970    |
| Q [m <sup>3</sup> /h] | max. 21600 |
| H [m]                 | max. 65    |
| p [bar]               | max. 17    |
| T [°C]                | Max. +120  |

**Design:** White iron, high efficiency, low head pump for hydrotransport of slurries w/ large particle sizes over short distances. Excellent suction behavior, robust

**Services:** Submerged Dredge, Deck, Jet Water



[www.ksb.com/product/lhd](http://www.ksb.com/product/lhd)

### MHD



|                       |            |
|-----------------------|------------|
| DN                    | 600-1120   |
| Q [m <sup>3</sup> /h] | max. 32000 |
| H [m]                 | max. 80    |
| p [bar]               | max. 28    |
| T [°C]                | Max. +120  |

**Design:** White iron, high efficiency, medium head pump for hydrotransport of slurries w/ large particle sizes over long distances. Very good suction behavior, robust

**Services:** Submerged Dredge, Inboard, Deck



[www.ksb.com/product/mhd](http://www.ksb.com/product/mhd)

### TBC



|                       |            |
|-----------------------|------------|
| DN                    | 460-760    |
| Q [m <sup>3</sup> /h] | max. 18200 |
| H [m]                 | max. 90    |
| p [bar]               | max. 37    |
| T [°C]                | Max. +120  |

**Design:** White iron, high efficiency, high pressure pump for hydrotransport of slurries over very long distances w/ a wide range of particle sizes. Heavy duty, durable

**Services:** Inboard, Deck, Booster



[www.ksb.com/product/tbc](http://www.ksb.com/product/tbc)

### LCC-M



|                       |           |
|-----------------------|-----------|
| DN                    | 50-300    |
| Q [m <sup>3</sup> /h] | max. 3405 |
| H [m]                 | max. 90   |
| p [bar]               | max. 16   |
| T [°C]                | Max. +120 |

**Design:** White iron, high head pump for hydrotransport of mildly corrosive slurries w/ wide range of particle sizes. Maintenance friendly, proven reliability

**Services:** Submerged Dredge, Inboard, Deck, Booster, Jet Water



[www.ksb.com/product/lcc-m](http://www.ksb.com/product/lcc-m)

Automation possible

## Butterfly valves

### TRIODIS



|          |              |
|----------|--------------|
| PN [bar] | 20 to 150    |
| Class    | 150 to 900   |
| DN       | 80 to 1500   |
| T [°C]   | -196 to +600 |

**Description:** Triple-offset butterfly valve, metal-seated (fire-safe), without gland packing, maintenance-free, with lever or manual gearbox, pneumatic, electric or hydraulic actuator. Body made of steel or stainless steel, full-lug body (T4), flanged body (T7) with flat or raised faces, body with butt weld ends (BWSE). Body types T4 and T7 can be used for dead-end service. Connections to EN, ASME or JIS. Connections to ASME: Schedule 10S, 10, STD and XS to NPS for valves with butt weld ends (other connections on request). Fugitive emissions performance tested and certified to EN ISO 15848-1. Certified to German TALuft Technical Guidelines on Air Quality Control. Fire-safe design tested and certified to EN ISO 10497. ATEX-compliant in accordance with Directive 2014/34/ EU. In compliance with NACE MR0175 / ISO 15156 and MR 0103. Type Approval Certificate by main Classification Societies available.

**Services:** Natural gas liquefaction. All liquefied gases. Heat transfer fluids, aggressive fluids, oil, gas, petrochemical industry, tank farms, refineries, onshore and offshore plants.



e, m, h, p + AMTROBOX/AMTRONIC/SMARTRONIC

[www.ksb.com/product/triodis](http://www.ksb.com/product/triodis)

### DANAIS TBTII



|          |              |
|----------|--------------|
| PN [bar] | 10 to 20     |
| Class    | 150          |
| DN       | 50 to 1200   |
| T [°C]   | -250 to +200 |

**Description:** Double-offset butterfly valve for cryogenic applications; full-lug body (T4), flanged body (T7) with flat or raised faces, or body with butt weld ends made of stainless steel to ASME Class 150, JIS, fire-safe design. Manual gearbox, pneumatic, electric or hydraulic actuator.

**Services:** Natural gas liquefaction for LNG carriers, FLNG, FSRV



e, m, h, p + AMTROBOX/AMTRONIC/SMARTRONIC

[www.ksb.com/product/danais-tbtii](http://www.ksb.com/product/danais-tbtii)

### DANAIS 150



|          |             |
|----------|-------------|
| PN [bar] | 10 to 25    |
| Class    | 150         |
| DN       | 50 to 1200  |
| T [°C]   | -50 to +260 |

**Description:** Double-offset butterfly valve with elastomer seat ring (also in fire-safe design), metal seat ring or elastomer seat ring (FKM [VITON R] or NBR [Nitrile]), with gland packing (maintenancefree), with lever or manual gearbox, pneumatic, electric or hydraulic actuator, body made of nodular cast iron, cast steel, aluminium bronze, stainless or duplex stainless steel (254 SMO), wafer-type body (T1) or full-lug body (T4). The T4 body type is suitable for dead-end service and downstream dismantling. EN, ASME, JIS connections. Type Approval Certificate by main Classification Societies available

**Services:** Scrubbing services, cargo valves (crude oil, LPG, chemical products)



e, m, h, p + AMTROBOX/AMTRONIC/SMARTRONIC

[www.ksb.com/product/danais-150](http://www.ksb.com/product/danais-150)

### ISORIA



|          |             |
|----------|-------------|
| PN [bar] | 10 to 25    |
| Class    |             |
| DN       | 32 to 1000  |
| T [°C]   | -10 to +200 |

**Description:** Centred-disc butterfly valve, soft-seated, with lever, manual gearbox, pneumatic, electric or hydraulic actuator. Wafer-type body (T1), semi-lug body (T2), full-lug body (T4) or U-section body with flat faces (T5). Body types T2 and T4 are suitable for downstream dismantling and dead-end service with counterflange. EN, ASME, JIS connections possible. Type Approval Certificate by main Classification Societies available.

**Services:** Shut-off and control duties in all industrial and energy sectors.



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[www.ksb.com/product/isoria](http://www.ksb.com/product/isoria)

## MAMMOUTH



|          |              |
|----------|--------------|
| PN [bar] | 6 to 25      |
| DN       | 1050 to 4000 |
| T [°C]   | 0 to +80     |

**Description:** Water supply, water treatment, irrigation, drainage, desalination (reverse osmosis, multi-stage flash), industry. Cooling circuits and fire protection. Shipbuilding, steel industry and power stations (hydraulic, thermal, nuclear). Shut-off and control duties in all industrial sectors.

**Services:** Tank washing, shipside valves, cooling systems



e, m, h, p + AMTROBOX/AMTRONIC/SMARTRONIC

[www.ksb.com/product/mammoth](http://www.ksb.com/product/mammoth)

## KE



|                |             |
|----------------|-------------|
| PN [bar] Class | 10          |
| DN             | 40 to 600   |
| T [°C]         | -20 to +200 |

**Description:** Centred-disc butterfly valve for chemical applications, sealed by plastomer liner or elastomer, with lever, manual gearbox, pneumatic, electric or hydraulic actuator, wafer-type body (T1), full-lug body (T4), U-section body with raised faces (T6), connections to EN, ASME, JIS. Type Approval Certificate by main Classification Society available.

**Services:** Highly corrosive fluids: toxic and highly corrosive fluids which cannot be handled by metals or elastomers, thus requiring the sole use of PFA. Moderately corrosive and aggressive fluids allowing the use of a PFA liner with a stainless steel valve disc. Fluids requiring absolutely safe handling.



e, m, h, p + AMTROBOX/AMTRONIC/SMARTRONIC

[www.ksb.com/product/ke](http://www.ksb.com/product/ke)

## Lift check valves to DIN/EN

## BOA-R



|          |             |
|----------|-------------|
| PN [bar] | 6 to 16     |
| DN       | 15-350      |
| T [°C]   | -10 to +350 |

**Description:** Lift check valve to DIN/EN with flanged ends, spring-loaded valve disc, maintenance free. Type Approval Certificate by main Classification Society available.

**Services:** M/E Lubrication oil, lubrication oil and fuel transfer, HVAC, fuel feed and circulating, cargo valves – non aggressive chemical fluids



[www.ksb.com/product/boa-r](http://www.ksb.com/product/boa-r)

## Swing check valves to ANSI/ASME

## WADA SC 150



|            |              |
|------------|--------------|
| PN [bar]   | 10 to 20     |
| ANSI Class | 150          |
| DN         | 15-600       |
| T [°C]     | -196 to +100 |

**Description:** Swing check valve to ANSI/ASME with flanged, butt weld or socket weld ends, made of cast steel A351 CF3M/CF8/CF8M, bolted cover, dash-pot function, graphite or stainless steel/graphite gaskets. Type Approval Certificate by main Classification Societies available.

**Services:** LNG process / All liquefied gases cargo valves



[www.ksb.com/product/wada-sc-150](http://www.ksb.com/product/wada-sc-150)

## Swing check valves to DIN/EN

## Sisto-RSK



|          |             |
|----------|-------------|
| PN [bar] | 16          |
| DN       | 25 to 300   |
| T [°C]   | -20 to +140 |

**Description:** Swing check valve to DIN/EN with flanged ends, body with or without lining, soft-seated, no dead volumes, straight-way pattern, full bore, slanted seat, static sealing to atmosphere; with soft rubber encapsulated pre-loaded valve disc featuring short travel to closure.

**Services:** Scrubbing services, FIFI, bilge and general service, tank washing, sludge and sewage, cargo valves



[www.ksb.com/product/sisto-rsk](http://www.ksb.com/product/sisto-rsk)

## Serie 2000



|          |              |
|----------|--------------|
| PN [bar] | 16/25        |
| Class    | 150/300      |
| DN       | 50 to 600    |
| T [°C]   | -196 to +538 |

**Description:** Dual-Plate check valve with single-piece, water-type body made of lamellar graphite cast iron, nodular cast iron, steel stainless steel or copper aluminium alloy, metal/elastomer-seated, maintenance-free, connection to EN, ASME or JIS

**Applications:** Building services: heating, air-conditioning, water supply, irrigation, water treatment. General processes: water, air, gas. Process engineering, chemical and petrochemical industry, sugar industry, paper industry, water supply, desalination, marine applications: water, air, gas, hydrocarbons



[www.ksb.com/product/serie-2000](http://www.ksb.com/product/serie-2000)

## Globe valves to DIN/EN

## BOA-H



|          |             |
|----------|-------------|
| PN [bar] | 16 to 25    |
| DN       | 15-350      |
| T [°C]   | -10 to +350 |

**Description:** Bellows-type globe valve to DIN/EN with flanged ends, with shut-off valve disc or throttling plug, standard position indicator with colour coding for identification of valve design, replaceable valve disc, bellows protected when valve is in fully open position; seat/disc interface made of wear and corrosion resistant chrome steel or chrome nickel steel. Type Approval Certificate by main Classification Societies available.

**Services:** M/E Lubrication oil, lubrication oil and fuel transfer, HVAC, fuel feed and circulating, cargo valves – non aggressive chemical fluids



m

[www.ksb.com/product/boa-h](http://www.ksb.com/product/boa-h)

## Automated globe valves to DIN/EN

## BOA-H Mat E/P



|          |             |
|----------|-------------|
| PN [bar] | 16 to 25    |
| DN       | 20-150      |
| T [°C]   | -10 to +350 |

**Description: BOA-H Mat E:** Automated globe valve with electric actuators and 3-point actuation, actuating forces from 2,000 N to 14,000 N, stem sealed by maintenance-free PTFE V-rings with spring (up to 250 °C) or graphite gland packing (up to 350 °C).

**BOA-H Mat P:** Automated globe valve with pneumatic actuators in spring-to-open or spring-to-close design on option, actuating torques from 1500 N to 26,000 N, stem sealed by maintenance-free V-packing (up to 250 °C) or graphite gland packing (up to 350 °C). Type Approval Certificate by main Classification Societies available.

**Services:** M/E Lubrication oil, lubrication oil and fuel transfer, HVAC, fuel feed and circulating, cargo valves – non aggressive chemical fluids



e

[www.ksb.com/product/boa-h-mat-e](http://www.ksb.com/product/boa-h-mat-e)

## Control valves to DIN/EN

### BOA-CVE/CVP H



|          |             |
|----------|-------------|
| PN [bar] | 16 to 40    |
| DN       | 15-200      |
| T [°C]   | -10 to +450 |

**Description:** Service-friendly control valve with linear or equal-percentage control characteristic at KVS values of 2.5 to 630 m<sup>3</sup>/h and closing pressures of up to 40 bar; all internal parts are easy to replace without special tools, including the reversible seat; reduced noise level by standard two-stage pressure reduction combining a parabolic plug and multi-hole cage; available with electric (BOA-CVE H) or pneumatic (BOA-CVP H) actuator. Type Approval Certificate by main Classification Societies available

**Services:** M/E Lubrication oil, lubrication oil and fuel transfer, HVAC, fuel feed and circulating, cargo valves - non aggressive chemical fluids



e

[www.ksb.com/product/boa-cve-h](http://www.ksb.com/product/boa-cve-h)

## Globe valve to ANSI/ASME with gland packing

### WADA GL 150



|            |              |
|------------|--------------|
| PN [bar]   | 10 to 20     |
| ANSI Class | 150          |
| DN         | 15-600       |
| T [°C]     | -196 to +100 |

**Description:** Globe valve to ANSI/ASME with flanged, butt weld or socket weld ends, made of cast steel A351 CF3M/CF8/CF8M, bolted bonnet, outside screw and yoke, Stellite hard-faced valve disc and back seat, with graphite or PTFE gland packing, stainless steel/graphite gaskets. Type Approval Certificate by main Classification Societies available.

**Services:** LNG process / All liquefied gases cargo valves



e, m, p, h

[www.ksb.com/product/wada-gl-150](http://www.ksb.com/product/wada-gl-150)

## Gate valves to ANSI/ASME

### WADA GT 150



|            |              |
|------------|--------------|
| PN [bar]   | 10 to 20     |
| ANSI Class | 150          |
| DN         | 25-450       |
| T [°C]     | -196 to +100 |

**Description:** Gate valve to ANSI/ASME with flanged, butt weld or socket weld ends, made of cast steel A351 CF3M/CF8/CF8M, bolted bonnet, outside screw and yoke, flexible wedge, graphite or PTFE gland packing, stainless steel/graphite. Type Approval Certificate by main Classification Society available.

**Services:** LNG process / All liquefied gases cargo valves



e, m, p, h

[www.ksb.com/product/wada-gt-150](http://www.ksb.com/product/wada-gt-150)

## Diaphragm valves to DIN/EN

### SISTO-KB



|          |             |
|----------|-------------|
| PN [bar] | 10          |
| DN       | 15 to 200   |
| T [°C]   | -20 to +140 |

**Description:** Diaphragm valve to DIN/EN with flanged ends; shut-off and sealing to atmosphere by diaphragm; straight-way pattern, body with or without lining, position indicator with integrated stem protection. DN 125 to DN 200 with threaded bush. All moving parts are separated from the fluid by the diaphragm. Maintenance-free.

**Services:** scrubbing services, tank washing, sludge and sewage, cargo valves. Vacuum toilet systems on large vessels (e.g. cruise ships)



e, m, p,

[www.ksb.com/product/sisto-kb](http://www.ksb.com/product/sisto-kb)

### SISTO-16/20



|                |             |
|----------------|-------------|
| PN [bar] Class | 16          |
| DN             | 15 to 200   |
| T [°C]         | -20 to +160 |

**Description:** Diaphragm valve to DIN/EN with flanged ends; shut-off and sealing to atmosphere by completely enclosed spiral-supported diaphragm; body with or without lining, position indicator with integrated stem protection. All moving parts are separated from the fluid by the diaphragm. Maintenance-free.

**Services:** Ballast, scrubbing services, FIFI, bilge and general service, tank washing, cargo valves



e, m, p,

[www.ksb.com/product/sisto-16](http://www.ksb.com/product/sisto-16)

## Strainers to DIN/EN

### BOA-S



|          |             |
|----------|-------------|
| PN [bar] | 6 to 25     |
| DN       | 15-400      |
| T [°C]   | -10 to +350 |

**Description:** Strainer to DIN/EN with flanged ends, with standard or fine strainer insert, all nominal sizes with drain plug in the cover. Type Approval Certificate by main Classification Societies available.

**Services:** M/E Lubrication oil, lubrication oil and fuel transfer, HVAC, fuel feed and circulating, cargo valves – non aggressive chemical fluids


[www.ksb.com/product/boa-s](http://www.ksb.com/product/boa-s)

## Manual gearbox

### MR



|                    |            |
|--------------------|------------|
| Output torque [Nm] | 16000      |
| Enclosure          | IP67/68    |
| T [°C]             | -50 to +80 |

**Description:** Heavy-duty manual actuators for operating quarter-turn valves. MR range manual gearbox, irreversible worm gear or Yoke patented AMRI kinematics. Handwheel-operated as standard. Models MR 400 to 1600 can be fitted with actuators. Options include alternative operating mechanisms, limit switch boxes, lowtemperature version, etc.

**Services:** Building services, industry and process engineering, water and waste water management, energy, petroleum and natural gas, mining, dredgers and shipbuilding.



AMTROBOX

[www.ksb.com/product/mr](http://www.ksb.com/product/mr)

### SB



|                    |              |
|--------------------|--------------|
| Output torque [Nm] | 71000        |
| Output thrust [KN] | 7300         |
| Enclosure          | IP67 / IP68  |
|                    | upon request |
| T [°C]             | -20 to +70   |

**Description:** Bevel gear boxes suitable for use linear operation valve such as globe, gate valves which required for linear thrust and torque applications. Top entry replacable stem nut with high tensile al-bronze. Body castings are ductile iron class 65-45-12. Heavy duty roller bearings supporting both radial & axial thrust roads. Standard production grade IP67 and IP68 for submerged application is available upon request. Other options such as pad-lock, chain operation, stem cover and dial position indicators are available.

**Services:** Building services, industry and process engineering, water and waste water management, energy, petroleum and natural gas, mining, dredgers and shipbuilding.

## Electric actuators

### ACTELEC



|                    |            |
|--------------------|------------|
| Output torque [Nm] | 1000       |
| Enclosure          | IP67       |
| T [°C]             | -20 to +70 |

**Description:** Electric actuators by BERNARD CONTROLS for direct mounting on quarter-turn valves (actuator flange to ISO 5211) or linear valves in conjunction with a manual gearbox of the MR type series (actuator flange to ISO 5210). Power supply: single-phase AC, three-phase or direct current. Torque switch, travel stop and limit switch box as standard. For on/off or control duties. Integrated local control or remote control.

**Services:** All applications in water, energy and industrial engineering



[www.ksb.com/product/actelec](http://www.ksb.com/product/actelec)

## Hydraulic actuators

### HQ



|                    |             |
|--------------------|-------------|
| Output torque [Nm] | 55000       |
| Enclosure          | IP68        |
| T [°C]             | -45 to +100 |

**Description:** Designed for the operation of any type of 1/4 turn valve, the hydraulic actuator series offers output torque values up to 55,251 N.m (5,634 kgf.m) at max. working pressure 160 bar (16MPa). The range of quarter turn actuator consist of 8 models in 2 kinematics, – rack and pinion kinematics of actuators: HQ 10, HQ25, HQ 50, HQ 100, HQ 200. – scotch yoke kinematics of actuators: HQ 400, HQ800, HQ1600. Equipped with an interchangeable insert, they can be easily adapted to different valve shaft designs (square, flat, etc...). They can be mounted in any positions, at intervals of 90°. Single acting available for HQS with coil spring pack and HQGS with gas spring.

**Services:** All applications in water, energy and industrial engineering



AMTROBOX

[www.ksb.com/product/hq](http://www.ksb.com/product/hq)

### LH



|                    |            |
|--------------------|------------|
| Output thrust [Nm] | 700000     |
| Enclosure          | IP67/68    |
| T [°C]             | -25 to +80 |

**Description:** The LH-D series are hydraulic double acting actuators, specifically designed for operation of linear movement such as gate, globe and other linear operated valves, and offer output thrust values up to 700,0 00N in standard version, and up to 1,000,000N upon request.

**Characteristics**

- Easy connection and mounting plate according to ISO standard
- Standard design pressure up to 160 bar
- Manual override by hydraulic hand pump unit, if available.
- Suitable design for open/shut, positioning and emergency shut down control Constructions
- Seamless carbon steel cylinder
- Chromium plated and heat treated high tensile steel piston rod
- High tensile or stainless steel bolts with anti-corrosion coatings for tie rods
- Cylinder seal with phenol resin slide ring

**Services:** All applications in water, energy and industrial engineering

## Pneumatic actuators

### ACTAIR NG



|                    |             |
|--------------------|-------------|
| Output torque [Nm] | 8000        |
| Enclosure          | IP 68       |
| T [°C]             | -50 to +120 |

**Design:** Double-acting pneumatic actuator for mounting on quarter-turn valves (butterfly valves or ball valves). Actuator flange to ISO 5211. Control pressure up to 8 bar. Mounts on valve stems with square end or flat end. Force transmission via scotch-yoke kinematics provides output torques of up to 8000 Nm which are ideal for actuating quarter-turn valves. Equipped with a visual position indicator and adjustable travel stops for closed of open/closed position depending on the actuators size as standard. Optional manual override. Suitable for mounting control unit type series AMTROBOX, AMTRONIC, SMARTRONIC or any other device with an interface to VDI/ VDE 3845.

**Services:** All applications in water, energy and industrial engineering



AMTROBOX, AMTRONIC, SMARTRONIC

[www.ksb.com/product/actair-ng](http://www.ksb.com/product/actair-ng)

## LP



|                    |            |
|--------------------|------------|
| Output torque [Nm] | 700000     |
| Enclosure          | IP67/68    |
| T [°C]             | -20 to +80 |

**Description:** The LP-D series are pneumatic double acting actuators, specifically designed for operation of linear movement such as gate, globe and other linear operated valves, and offer output thrust values up to 700,000N in standard version, and up to 1,000,000N upon request.

**Characteristics**

- Easy connection and mounting plate according to ISO standard
- Standard Max. design pressure up to 10 bar
- Manual override by hydraulic hand pump unit, if available.
- Suitable design for open/shut, positioning and emergency shut down control Constructions
- Seamless carbon steel cylinder
- Chromium plated and heat treated high tensile steel piston rod
- High tensile or stainless steel bolts with anti-corrosion coatings for tie rods
- Cylinder seal with PTFE slide ring

**Services:** All applications in water, energy and industrial engineering

## ACTUATORS for valves

### SISTO-LAD (pneumatic)



|                            |        |
|----------------------------|--------|
| Control air pressure [bar] | max. 6 |
| Closing force [N]          | 20000  |

**Description:** Diaphragm actuator in compact design for mounting on valves with a linear stem movement (globe, diaphragm and gate valves). Available in single-acting spring-to-close or spring-to open design, or double-acting air-to-open/air-to-close design; suitable for mounting limit switches or positioners to suit customer requirements, factory-mounted. Settings are adjusted during factory test run.

**Applications:** In building services, industrial plants, power stations, the food and beverage industries and the chemical industry. The pneumatic actuators can also be used in potentially explosive atmospheres.

### SISTO-LAP (pneumatic)



|                            |         |
|----------------------------|---------|
| Control air pressure [bar] | max. 10 |
| Closing force [N]          | 250000  |

**Description:** Piston actuator in heavy-duty design for mounting on valves with a linear stem movement (globe, diaphragm and gate valves). Mounting flange to DIN/ISO 5210, available in single-acting spring-to-close or spring-to-open design or double-acting air-to-open/air-to-close design; suitable for mounting limit switches or positioners to suit customer requirements, factory-mounted. Settings are adjusted during factory test run.

**Applications:** In building services, industrial plants, power stations, the food and beverage industries and the chemical industry. The pneumatic actuators can also be used in potentially explosive atmospheres.

[www.ksb.com/product/sisto-lap](http://www.ksb.com/product/sisto-lap)



## AUTOMATION | Monitoring

### AMTROBOX-R



|           |            |
|-----------|------------|
| Enclosure | IP68       |
| T [°C]    | -45 to +70 |

**Description:** Sturdy and multi-functional. For open/closed position signalling via mechanical limit switches or proximity sensors. AMTROBOX R (R1187) mounts on MR manual gearboxes, ACTAIR/ACTAIR NG pneumatic actuators, HQ hydraulic actuators and any actuators with VDI/VDE interface.

**Services:** All applications in water engineering, energy engineering, offshore and heavy industry



[www.ksb.com/product/amtrobox-r](http://www.ksb.com/product/amtrobox-r)

## Automation systems

### VRCS (Valve Remote Control System)



|        |                         |
|--------|-------------------------|
| Design | customized based on POS |
|--------|-------------------------|

|                 |  |
|-----------------|--|
| Scope of supply | Hydraulic power pack. Control Console. Solenoid valve rack. Solenoid deck box. Stationary handpump. Portable handpump. |
|-----------------|--|

|        |            |
|--------|------------|
| T [°C] | -40 to +75 |
|--------|------------|

**Description:** System designed for position indication and electro-hydraulic remote control of hydraulically actuated valves. The principle of the VRC system is that pressurized oil, generated by the power pack, is used to open or close the valve by means of the solenoid controlled actuator.

**Components:** **Solenoid Valve Rack** to control the direction of oil flow to each actuators operated by an electric signal from control console installed in safety area.

**Control console** for remote operation of the conventional type by the control console with mimic panel. **Hydraulic Power Pack** consisting of consists of oil tank, electric motor & hydraulic pump which generates the required system operating pressure.

**Deck Box** The deck box controls the functions of each actuated valve installed in hazardous areas via explosion proof solenoid valves. **Interface Panel** consisting of relays, Power supplier, Converters, Barriers and etc., is required to communicate between valves and computerized control system.

**Services:** Valves in pipe line of cargo, ballast, bilge & F.O. system of vessels

## Oil discharge monitoring system

### ODME S-3000 v2 (Oil Discharge Monitoring Equipment)



|                 |           |
|-----------------|-----------|
| Measuring range | 0-1000PPM |
| Response time   | 15 s      |

**Description:** equipment for observing and deciding to discharge the cargos according to the rules when each tanker hull is cleaned with sea water after discharging cargos reloading another cargos. They are discharged again after being stored in the slop tank.

- Tested and approved for crude oils, "black" and "white" products as per IMO resol. MEPC.108(49)
- Tested and approved for blend of petroleum oil and bio-fuels as IMO MEPC.240(65) and MEPC.1/Circ761 to meet requirements for testing bio-fuel blends containing 99% and 75% or more of petroleum oil.

MED Certificate and Product Type Approval by Classification Society

**Services:** Chemical tanker, Crude oil tanker



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