Making snow your daily forecast: KSB.
Running a resort? Make tracks to us.

Winter is a great time for sport. But every skiing holiday depends on snow. Sadly, the weather doesn’t always cooperate. Mountain resorts can’t guarantee natural snow – but they can prepare great slopes. Snow cannons help keep your winter on track.
KSB has more than 140 years of experience with industrial pumps, valves and systems. If your business is snow, we’ll provide economical solutions all the way from water extraction to the automatic controlling of entire systems. Our packages cover commissioning, maintenance and 24-hour all-round assistance. With individual consulting from the planning phase onwards, maturely developed products and comprehensive service, every step fits exactly into place.

KSB solutions help you avoid downtimes and their expensive consequences. Our latest monitoring technology keeps a permanent watch on your operations and precisely matches your needs. We’ve been in action for years with our products and services, and a long-standing partner of major ski resorts in Austria, Switzerland, France, Italy and Germany.

Ischgl ski resort, Austria

Go skiing in Ischgl/Samnaun, and you’ll be very glad KSB Austria got there first. We planned all the artificial snow production, and provided the pumps. In 2009, we helped expand operations of the snow cannon system in Ischgl with the entire hydraulic equipment for the Vellil pumping station. It is located at an altitude of 2,500 metres and part of the new Vellil water reservoir with a storage capacity of some 160,000 cubic metres. The operators are so pleased with the results, we’re now planning further projects together.
Improve your system’s efficiency: KSB knows where you can save.

Anyone who wants to keep quality and manufacturing costs under control has to ensure the processes within the system are efficient.

**Hyamaster® The smart control system**

Our solution to control and monitor multiple-pump hydraulic systems. Frequency inverters adjust the speed. Hyamaster ensures reliable supply in open and closed cycles.

- All-in solution comprising pump, hydraulic system, valve, open and closed-loop control system, frequency inverter, motor and sensor
- Reduces operation and maintenance costs
- Automatically adjusts the system to match changes in conditions
- Early detection of malfunctions is enabled by characteristic curve control function

**Technical data:**

- Number of pumps: 1 to 4
- Motor rating: all pump outputs
- Number of Fi: 1 to 4
- Amb. temp.: 0 °C to 40 °C
- Mains voltage: 3 x 400 V ± 10 %
  - 3 x 500 V ± 10 %
  - 3 x 690 V ± 10 %
- Mains frequency: 50 Hz / 60 Hz

**PumpMeter The innovation for efficient pump operation**

Gain a deeper insight into your pump and identify potential energy savings: PumpMeter measures your pump’s suction, discharge and differential pressures around the clock. So you’re always up to date on the current operating point of the pump. A load profile is established in the course of the pump’s operation using all data compiled, which provides information on its actual operating mode. This helps optimise the system and save costs.

- Provides all important measurement variables
- Allows on-site display of all relevant operating data
- Calculates the pump’s operating point
- Establishes a load profile
- Displays information on the optimisation potential by means of the energy efficiency icon (EFF)
Pumps for water extraction

Our advanced and well-proven pumps for water extraction can be used even way up in the mountains to reliably handle and transport water.

Amarex® KRT®  Submersible motor pump DN 40 to DN 700

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

Applications:
Handling of all types of abrasive or aggressive waste water in water and waste water engineering, seawater desalination as well as industry, especially untreated sewage containing long fibres and solid substances, fluids containing gas/air as well as raw, activated and digested sludge.

Installation:
In tanks, sumps, or directly in the lake or river.
Easy to install, years of operation with no maintenance required.

Technical data:

<table>
<thead>
<tr>
<th>DN</th>
<th>Q [m³/h]</th>
<th>H [m]</th>
<th>T [°C]</th>
<th>n [min⁻¹]</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-700</td>
<td>10800 max.</td>
<td>100 max.</td>
<td>+60 max.</td>
<td>2900 max.</td>
</tr>
</tbody>
</table>

These data refer to 50 Hz operation. Also available for 60 Hz

UPA® 200, 200B, 250C  Submersible borehole pump

Description:
Single- or multistage, single-entry centrifugal pump in ring section design for vertical or horizontal installation. Optionally available with non-return valve or connection branch.

Applications:
Handling clean and slightly contaminated water in general water supply, irrigation and spray irrigation, lowering and maintaining groundwater levels, fountains and pressure booster systems, in mining, fire-fighting systems, and for emergency water supply, etc.

Installation:
In tanks, sumps, lakes or rivers for demanding pressure requirements or transporting water over long distances.
Easy and flexible to install, years of operation with no maintenance required.

Technical data:

<table>
<thead>
<tr>
<th>DN</th>
<th>Q [m³/h]</th>
<th>H [m]</th>
<th>T [°C]</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-250</td>
<td>330 max.</td>
<td>460 max.</td>
<td>+50 max.</td>
</tr>
</tbody>
</table>

These data refer to 50 Hz operation. Also available for 60 Hz
**Pumps for pressure booster systems**

Good news for snow cannons: Multitec®, HGM® and Etanorm® pumps keep up the pressure – and keep down your costs:

- Pumps with only one shaft seal, axial inlet and optimal efficiency make for low operating costs
- A long service life reduces maintenance costs
- Easily accessible wear parts facilitate maintenance and service
- Compact design for easy installation, less on-site work and minimum suction heads

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**Multitec® High-pressure ring-section pump**

<table>
<thead>
<tr>
<th>Description:</th>
<th>Technical data:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multistage horizontal or vertical centrifugal pump in ring-section design, long-coupled and close-coupled versions, with axial or radial suction nozzle, cast radial impellers. ATEX-compliant version available.</td>
<td>DN</td>
</tr>
<tr>
<td>Q [m³/h]</td>
<td>850 max.</td>
</tr>
<tr>
<td>H [m]</td>
<td>630 (1000) max.</td>
</tr>
<tr>
<td>p [bar]</td>
<td>63 (100) max.</td>
</tr>
<tr>
<td>T [ºC]</td>
<td>-10 to +200</td>
</tr>
<tr>
<td>n [min⁻¹]</td>
<td>4000 max.</td>
</tr>
</tbody>
</table>

**Applications:**
Water and drinking water supply systems, industry, pressure booster systems, irrigation systems, in power stations, heating, filter, fire-fighting, reverse osmosis and washing plants, snow guns etc.

Available for 50 Hz and 60 Hz.

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**HGM® Boiler feed pump**

<table>
<thead>
<tr>
<th>Description:</th>
<th>Technical data:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal, radially split, product-lubricated, multistage ring-section pump with radial impellers, axial and radial single-entry inlet.</td>
<td>DN</td>
</tr>
<tr>
<td>Q [m³/h]</td>
<td>274 max.</td>
</tr>
<tr>
<td>H [m]</td>
<td>1400 max.</td>
</tr>
<tr>
<td>p [bar]</td>
<td>140 max.</td>
</tr>
<tr>
<td>T [ºC]</td>
<td>+160 max.</td>
</tr>
<tr>
<td>n [min⁻¹]</td>
<td>3600 max.</td>
</tr>
</tbody>
</table>

These data refer to 50 Hz operation; higher ratings possible on request. Also available for 60 Hz.

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**Etanorm®/Etanorm®-R Standardised pump**

<table>
<thead>
<tr>
<th>Description:</th>
<th>Technical data:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal, single-stage volute casing pump (pump size 125-500 with two stages) with ratings and main dimensions to EN 733, bearing brackets, in back pull-out design, with replaceable shaft sleeves / shaft protecting sleeves and casing wear rings. ATEX-compliant version available.</td>
<td>DN</td>
</tr>
<tr>
<td>Q [m³/h]</td>
<td>1900 max.</td>
</tr>
<tr>
<td>H [m]</td>
<td>102 max.</td>
</tr>
<tr>
<td>p [bar]</td>
<td>16 max.</td>
</tr>
<tr>
<td>T [ºC]</td>
<td>+140 max.</td>
</tr>
<tr>
<td>n [min⁻¹]</td>
<td>4200 max.</td>
</tr>
</tbody>
</table>

Applications:
Irrigation, drainage, water supply, heating and air-conditioning, drinking water and service water systems, etc.

These data refer to 50 Hz operation. Also available for 60 Hz.
Valves with shut-off function

KSB globe valves and gate valves set the yardstick for reliability.

### NORI® 40 Globe and non-return valves

The classic globe valve up to PN 40 provides utmost safety and reliability, ever under the toughest conditions.

- The NORI® 40 is made of steel and available as bellows-type globe valve, globe valve with gland packing and horizontal or slanted seat, as well as non-return valve.
- Double-walled bellows for utmost safety
- Valve disc with conical seat, self-cleaning as seated on the edge, suitable for use with contaminated fluids
- Two-piece stem simplifies actuator mounting

**Technical Data:**
- Pressure class (bar) PN 10-40
- DN 10-400
- T [°C] -60 to +450

### NORI® 160 Globe and non-return valves

Well-proven valve design for safe shut-off for 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:**
- Pressure class (bar) PN 63-160
- DN 10-200
- T [°C] -10 to +550

### NORI® 500 Globe and non-return valves

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

- Bayonet-type connection between body and yoke for quick dismantling and reassembly
- Single-piece body without separate bonnet eliminates the need for re-tightening the bonnet bolting
- One model for shut-off and throttling

**Technical Data:**
- Pressure class (bar) PN 250-500
- DN 10-65
- T [°C] -10 to +650

### STAAL® 40 AKD/AKDS Gate valves

**Description:**
Flanged or weld end gate valve with bolted bonnet, body of forged or welded steel construction, non-rotating stem, flexible wedges for exact adaptation to seats. Seats made of wear and corrosion resistant 17 % Cr steel.

**Applications:** in industrial plants, power stations and process engineering

**Technical Data:**
- Pressure class (bar) PN 10-40
- DN 50-800
- T [°C] -10 to +400