highly recommended
Albatros comes highly recommended!
Giving a recommendation means assuming personal responsibility for the performance of a third party. Accordingly, a recommendation is the highest recognition that a customer can allocate to a supplier. This fact makes us proud, as since its foundation, Albatros has lived and grown on the basis of recommendations. Therefore, at this point we would like to thank all our proponents, not one of whom we have ever disappointed.

Experience, experience, experience
Theoretical know-how is one thing, practical experience quite another. Only those that offer both can give the customer the secure feeling during contract allocation of having taken the right decision.

Internationally successful
Customers from all over the world trust in the know-how of the winch specialists from the central area of Upper Austria. Special solutions is the promise that many international clients are pleased to accept.

References that create confidence
Please note that inside this brochure you will find a selection of our references. Should you require more details regarding individual projects, we will be pleased to inform you personally.
Winches and transportation systems for hydro power plants

Our customers rely on the expertise to develop and manufacture electrical or electro-hydraulic powered winches, pipe transport carriage, shaft access and inspection systems. This equipment is most frequently used for the construction and rehabilitation of penstock. Among other areas of know-how, Albatros can rely on long-term experience in the planning, construction, installation and commissioning of:

- Winches with rope guides
- Pipe transport carriage
- Personnel transport carriage
- Work cages for vertical shafts

In addition, Albatros also undertakes
- The preparation of documentation for official submissions
- The official acceptance of the complete system including risk hazard analysis and operating instructions, as well as the design examination

Albatros winches and transportation systems are used throughout the life cycle of penstocks.

New construction of penstock
Heavy-duty winches including carriages for mining and pipe transport, as well as personnel transport winches including the related work cage for welding, testing and painting.

Inspection
Personnel transport winches with special carriage for inspection work.

Rehabilitation
Transportation systems with all the required special solutions for the quick and safe execution of corrosion protection work.

Maintenance
Albatros systems are generally supplied with a remote maintenance modem. Therefore, if the customer has installed a telephone or internet connection, the time lost in the case of a fault can be cut to a minimum. This modem is also used for the updates of optimised, technical control settings provided especially for the customer.
Especially recommended for
customised solutions

Winches
Albatros winches with a very large rope capacity (200 to 3500 m) for a load range from 5 to 1000 kN are custom-built and provide the following technical features:

- Special LEBUS® grooves for the multilayer winding of rope lengths of up 3500 m.
- Rope winding device for ensuring perfect multilayer winding even with a rope deflection of 2-4°.
- Rope with electrical conductors in the core for control from the work cage (also possible via telephone link).
- Radio remote control (distances: up to 1500 m in penstocks or up to 300 m with a free view).
- Several types of control operation possible (part-load at high speed, full load at low speed).
- Mechanical and electrical overspeed limit switch.
- Optical and digital indication of rope length.
- Digital speed display.
- Data modem for online, remote servicing worldwide.
- Operating disk brake upstream of the first gear stage.
- Safety brake by using the flange of the drum as a brake disc.
- Hydraulically controlled, manual brake release for emergency lowering.
- Securing of the upper and lower end position by means of a geared limit switch.
- Electro-hydraulic or purely electrical drive.
- One- or double-rope technology.
- Precise positioning of the load possible due to infinitely adjustable speed control.

Pipe access trolleys and cages
... for welding, inspection and corrosion protection work are matched to the individual wishes of the customer and the working methods of the user. The following customer-oriented options are available:

- For various pipe diameters.
- For various gradients up to the vertical.
- Steerable axles
- Gradient sensors.
- Lightweight design with glass fibre reinforced synthetic mesh for differing gradients up to the vertical.
- Load capacity matched to individual customer requirements.

Pipe transport carriage
... are always custom-designed, matched to differing pipe diameters, lengths and gradients, and manufactured using modular design. Pipe transport cradles are available:

- For running on rails.
- For use on smooth concreted surfaces.
- For running in existing pipes during rehabilitation.
- With steerable axles
- With devices for adjusting the pipe.
A selection of our references …
the very best recommendation

<table>
<thead>
<tr>
<th>Year</th>
<th>Project</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>HEP Goldisthal</td>
<td>D / MCE</td>
<td>Hoist for pipe transport 350 kN x 1000 m, Hoist for personnel / load transport, 60/100 kN x 1000 m</td>
</tr>
<tr>
<td>1999</td>
<td>HEP Ghazi Barotha</td>
<td>Pakistan / VA Tech</td>
<td>Pipe carrier 1000 kN, ø 10,6m x 110 m</td>
</tr>
<tr>
<td>2002</td>
<td>HEP Kaprun</td>
<td>A / MCE</td>
<td>Engineering of installation method of penstock, Inclined hoist equipment for erection of penstock 350 / 100 / 60 kN, ø 2,6 m x 1400 m</td>
</tr>
<tr>
<td>2003</td>
<td>HEP Parbati</td>
<td>Indien / Jägerbau</td>
<td>Hoist for personnel / load transport 320 kN / 100 kN x 3200 m</td>
</tr>
<tr>
<td>2005</td>
<td>HEP Karahnjukar</td>
<td>Iceland / DSD Noell</td>
<td>Hoist for pipe transport 320 kN x 850 m, Hoist for personnel transport</td>
</tr>
<tr>
<td>2005</td>
<td>HEP Kops</td>
<td>A / MCE</td>
<td>Hoist for pipe transport 550 kN x 1280 m, Hoist for personnel transport 100 kN x 850 m</td>
</tr>
<tr>
<td>2005</td>
<td>HEP Reisseck</td>
<td>A / Verbund</td>
<td>Inclined lift for material transport and limited personnel transport, 20 kN x 200 m</td>
</tr>
<tr>
<td>2006</td>
<td>HEP Kaunertal</td>
<td>A / Koschutz</td>
<td>Inspection equipment for painting works, 30 kN x 80 m TIRAK X2052P, 10 kN x 80 m TIRAK T1020P</td>
</tr>
<tr>
<td>2006</td>
<td>HEP Parbati</td>
<td>India / Gammon India</td>
<td>Hoist for personnel transport 25 kN x 3200 m</td>
</tr>
<tr>
<td>2006</td>
<td>HEP Kaunertal</td>
<td>A / TIWAG</td>
<td>Inspection equipment with limited personnel transport 10 kN x 80 m TIRAK T1020 P</td>
</tr>
<tr>
<td>2006</td>
<td>HEP Häusern</td>
<td>D / Koschutz</td>
<td>Inspection equipment for painting works 30 kN x 250 m TIRAK X2053P</td>
</tr>
<tr>
<td>2007</td>
<td>HEP Markersbach</td>
<td>D / Bauschutz</td>
<td>Inspection equipment for painting works, Hoist for personnel / load transport 75/50 kN x 1150 m</td>
</tr>
<tr>
<td>2007</td>
<td>HEP Kops</td>
<td>A / Illwerke</td>
<td>Hoist for personnel / load transport 75/50 kN x 1350 m</td>
</tr>
<tr>
<td>2007</td>
<td>Ski jumping Hill</td>
<td>A / SV Wörgl</td>
<td>Hoist for load transport 10 kN x 200 m</td>
</tr>
<tr>
<td>2007</td>
<td>Schafberg</td>
<td>A / Salzkammergutbahn</td>
<td>Hoist for load transport 10 kN x 200 m</td>
</tr>
<tr>
<td>2007</td>
<td>HEP Cleuson Dixence</td>
<td>CH / MCE</td>
<td>Hoist for pipe transport 600 kN x 1280 m, Hoist for pipe transport 500 kN x 400 m, Hoist for pipe transport 350 kN x 1060 m</td>
</tr>
<tr>
<td>2007</td>
<td>Ski jumping Hill</td>
<td>A / UVB Hinzenbach</td>
<td>Hoist for load transport 10 kN x 200 m</td>
</tr>
<tr>
<td>2008</td>
<td>HEP Pirris</td>
<td>Costa Rica / Andritz</td>
<td>Engineering of installation method of penstock, Hoist for pipe transport 250 kN x 970 m, Powered pipe carriage for horizontal shaft</td>
</tr>
<tr>
<td>2009</td>
<td>HEP Vianden</td>
<td>Lux / Koschutz</td>
<td>Inspection equipment for painting works, Hoist for personnel / load transport 70/105 kN x 1040 m, Hoist for personnel transport 25 kN x 880 m, 1 trolley for repair works of lower penstock, 2 trolley with installed personnel winches for repair works of vertical penstock</td>
</tr>
<tr>
<td>2009</td>
<td>HEP Kaprun</td>
<td>A / Bauschutz</td>
<td>Rope guiding system and winch for painting works of the penstock, TIRAK X2053P / 30 kN x 460 m</td>
</tr>
<tr>
<td>2010</td>
<td>HEP Vianden 4</td>
<td>Lux / SEO</td>
<td>Inspection equipment for penstock, 10 kN x 200 m</td>
</tr>
<tr>
<td>2010</td>
<td>HEP Schwarzach</td>
<td>A / KBB</td>
<td>Inspection equipment for painting works</td>
</tr>
<tr>
<td>2010</td>
<td>HEP Rodund</td>
<td>A / ARGE Bauschutz und Koschutz</td>
<td>Inspection equipment for painting repair works, 2 pcs. hoists for personnel / load transport</td>
</tr>
<tr>
<td>2011</td>
<td>HEP Vianden</td>
<td>Lux / DSD Noell</td>
<td>Hoist for pipe transport 260 / 110 kN, Hoist with 2 cable system for personnel transport 30 kN x 360 m, 1 trolley for personnel transport</td>
</tr>
<tr>
<td>2011</td>
<td>HEP Linth Limmern</td>
<td>CH / DSD Steel Constr.</td>
<td>2 pcs. hoists for pipe transport 650 kN</td>
</tr>
<tr>
<td>2011</td>
<td>HEP Hapolburg</td>
<td>D / Koschutz</td>
<td>Inspection equipment for painting works, Tirak T2052P / 20 kN for vertical shaft incl. type examination</td>
</tr>
<tr>
<td>2012</td>
<td>HEP Wendefurth</td>
<td>D / KBB</td>
<td>Inspection equipment for painting works, Tirak T2052P / 20 kN with personnel carriage incl. type examination</td>
</tr>
<tr>
<td>2012</td>
<td>HEP Kaunertal</td>
<td>A / Planttech</td>
<td>Inspection equipment for existing penstock</td>
</tr>
<tr>
<td>2012</td>
<td>HEP Vianden 4</td>
<td>Lux / DSD Noell</td>
<td>Inspection equipment incl. type examination</td>
</tr>
<tr>
<td>2012</td>
<td>HEP Linth Limmern</td>
<td>CH / DSD Steel Constr.</td>
<td>Hoist for personnel transport</td>
</tr>
</tbody>
</table>
Albatros Engineering GmbH
The specialist for construction, special machinery and assembly

Jetwash wheel washes
This Albatros brand product is ideal for both standard and customised solutions. Differing lengths (4 to 10 m) and widths are available to fulfil every requirement. Roller and drive-through washes in a diversity of mobile versions (ready to use within an hour) are also available and can be fitted with optional automatic dirt removal.

Construction machinery for special civil works and tunnelling

Special machinery
Albatros fans have every reason to be proud, as Albatros installed the revolving Bank Austria symbol on top of the Danube Tower in Vienna and thus made it into the Guinness Book of Records. Moreover, the specialists from Upper Austria also showed their special class with the modernisation of the “Schlossbergbahn” in Graz and the assembly lines for the Airbus A380, A320 and A350, not to mention many other challenging projects.

Winches and transportation systems for hydro power plants

Motivated installation personnel for general plant constructions
Albatros has its own team, which has global experience in the areas of construction site management, welding and production control, supervising and plant construction. Welders are trained in cooperation with our partner companies and possess certification. Our specialists are used to rolling up their sleeves in order to reach established goals with our clients.

Albatros is a specialized welding company with DIN 18800 – Class D accreditation (comprehensive qualification certificate).