ANDRITZ Atro

Hydrodynamic screws

www.andritz.com

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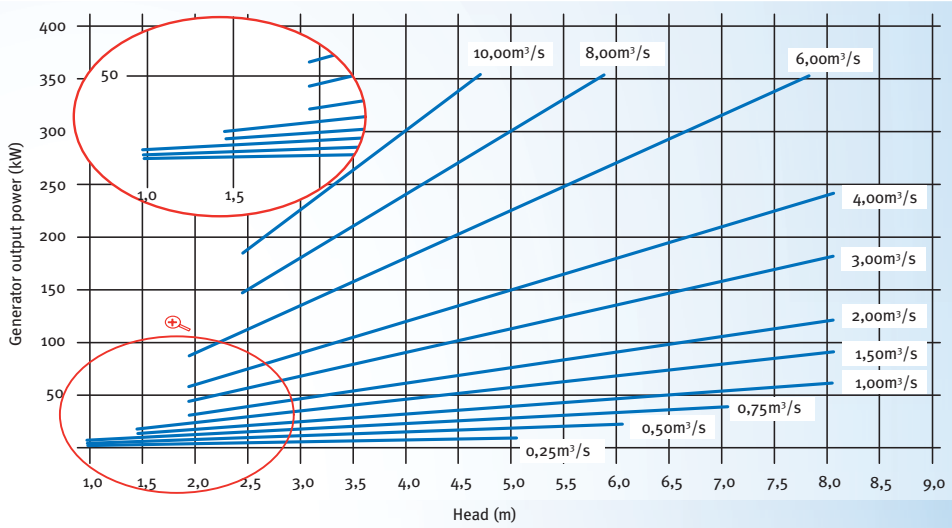
Efficient, rugged, and environmentally friendly

Do you own water rights as an individual, a company or a local authority? Then a lucrative source of energy is available to you at no cost. Do not let this potential flow down the drain any longer.

An ingenious idea from Greek antiquity was the source of inspiration for this technology: The Archimedean screw made water flow uphill. The hydrodynamic screw turns that principle around and uses the position and energy difference of falling water to generate power.



The facts:

- **Water flow: up to 10 m³/s**
- **Head: up to 10 m**
- **Efficiency: up to 92%**
- **Output: up to 500 kW**

Sustainability

Every kilowatt-hour generated by a hydrodynamic screw means around 1 kg less CO_2 polluting the environment.

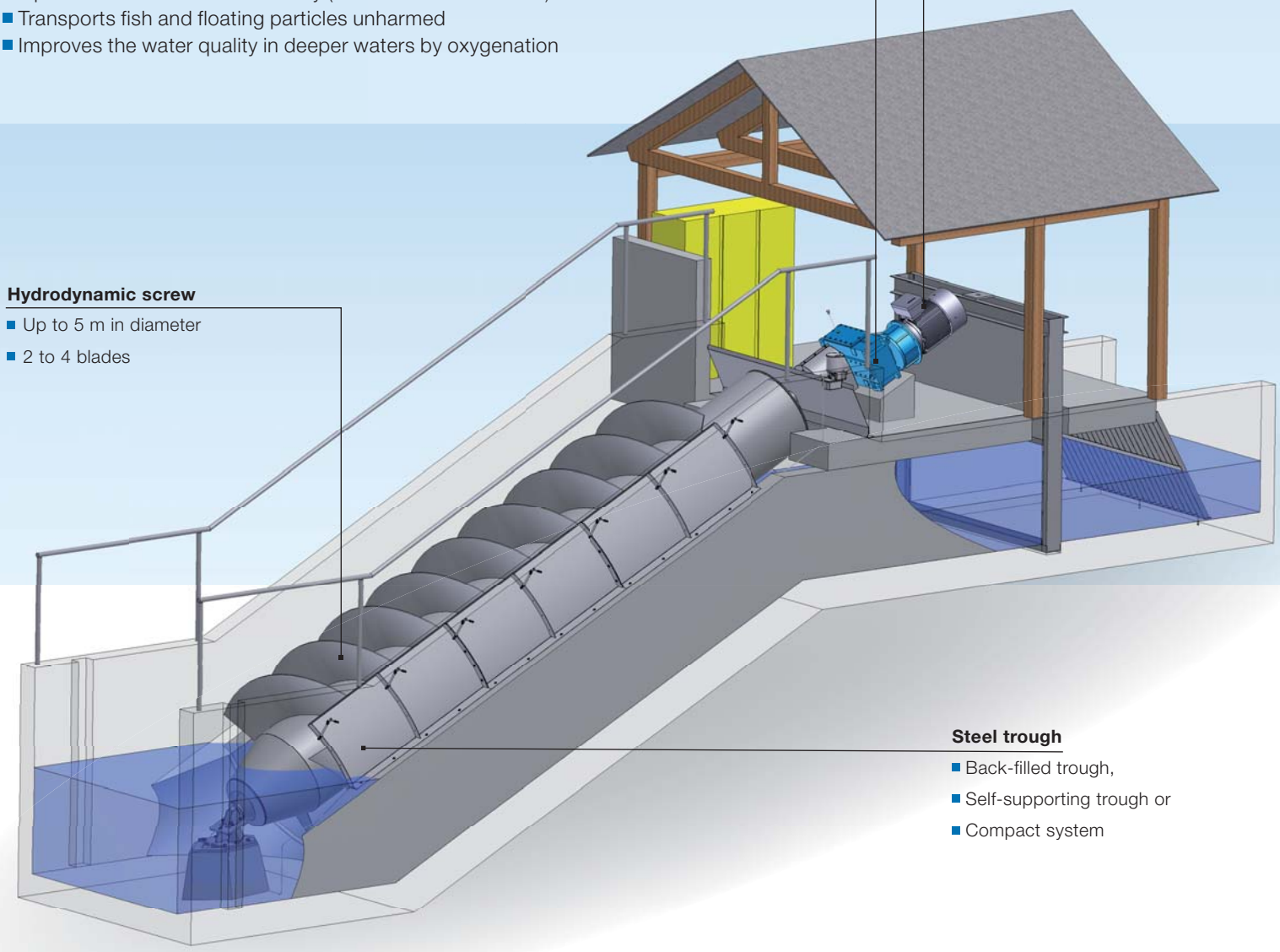
Fish, other creatures, and floating particles pass through the hydrodynamic screw untouched.

Fields of application

- As substitute for waterwheels
- As residual water screw in an existing spillway or in a weir system
- In place of small, antiquated turbines
- At former irrigation weirs
- At the clear water outlet from sewage treatment plants

Your advantages:

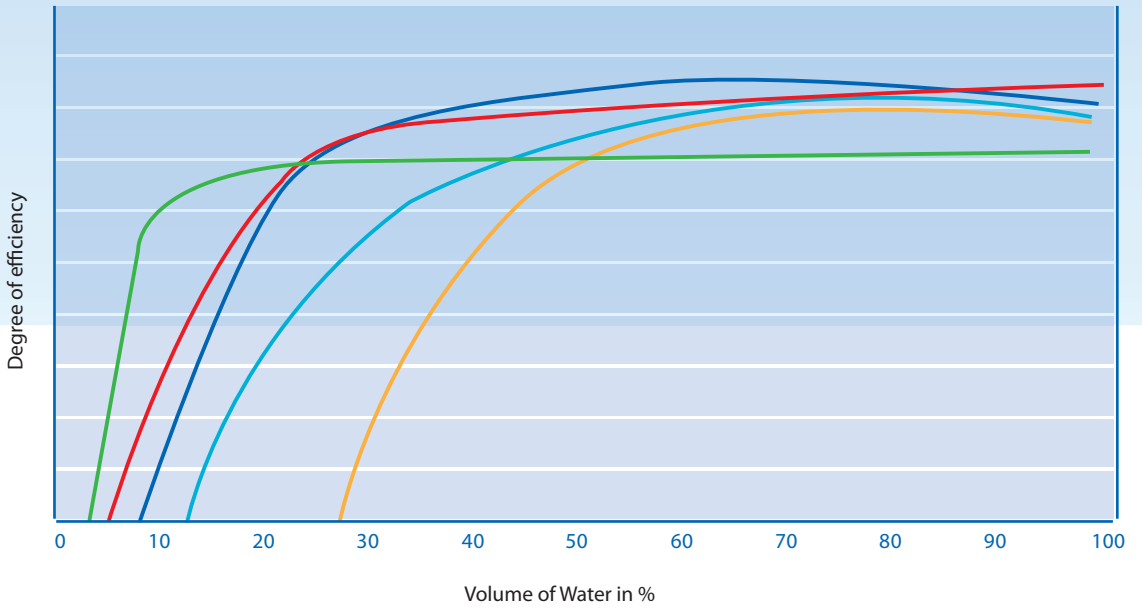
- Rapid amortization thanks to small investment and low operating costs
- High efficiency, even with fluctuating water levels and volumes
- Efficient use – even with low hydropower potential – as from an output of 1 kW
- Rugged, wear-resistant, trouble-free, and durable technology
- Self-regulating system that adapts automatically to the water volume and mains frequency
- Low-maintenance plant that requires no cleaning whatsoever
- Operates with coarse screen only (no fine screens needed)
- Transports fish and floating particles unharmed
- Improves the water quality in deeper waters by oxygenation



Conclusion by the experts

„The efficiency of the hydrodynamic screw compared to other small hydropower systems of this magnitude (turbines, waterwheels) is [...] similar or better. However, the partial load efficiency can be considered a special advantage that still makes very efficient use of the hydraulic energy available, even at low inflow volume. This is not easy to achieve in plants of a comparable size.“

Source: Extract from a professional opinion on efficiency testing by the Technical University of Kaiserslautern



First-class manufacturing
at European locations

The blades of the screw pumps are curved and aligned precisely. . .

Extensive experience and great flexibility in accommodating our customers' needs have made ANDRITZ a preferred partner on a global scale. Beginning with R&D, continuing with design and manufacture, and then on to installation, start-up, and after-sales-service, our customers find the optimum solution for all requirements under one roof at ANDRITZ.

We guarantee the high technical level of our screw pumps and hydrodynamic pumps with the highest of manufacturing standards, systematic organization, clearly defined processes, and well-trained staff.

Our manufacturing is synonymous with a complete first-class process. We use manual or automated techniques depending on the type of product and the given requirements in each stage of manufacturing. This applies to all manufacturing processes, from metal forming, cutting, and jointing, to coating and heat treatment. Well-trained, experienced, and motivated specialists form the basis, particularly when manual skills are required, but also for economic use of machining centers.

ANDRITZ Atro has been manufacturing screw bodies as the basis of our screw trough pumps and hydrodynamic screws for over 40 years.

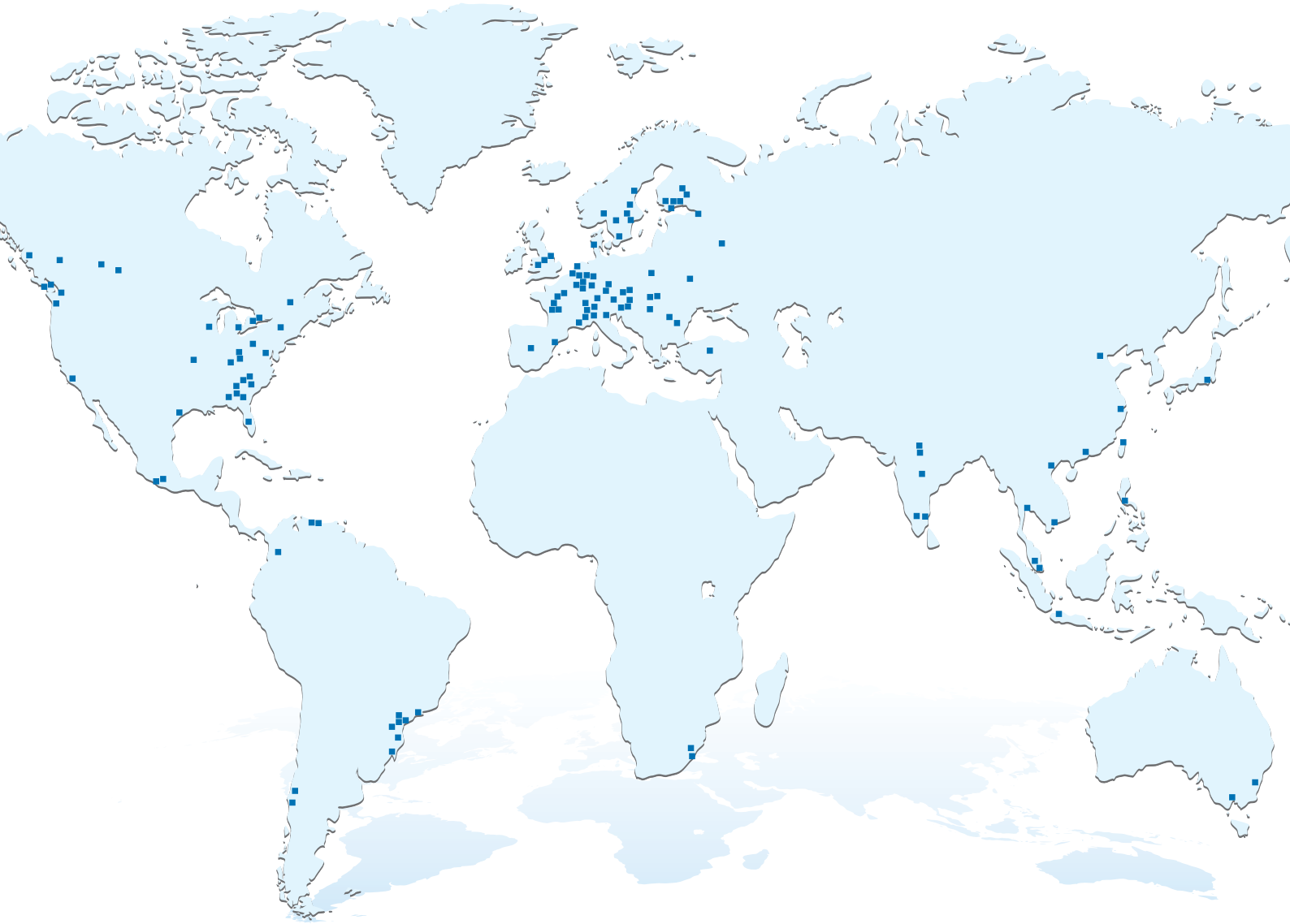
. . . then welded onto the body of the screw, and . . .

. . . ground off to guarantee the optimum hydraulic shape.

This experience is incorporated into machining of the components and provides the basis for further development of all manufacturing methods and technologies.

The quality of the products is assured in continuous monitoring and inspections. Independent manufacturing groups are the basis of the high product quality, on-time delivery, and customer satisfaction that have provided the key to ANDRITZ Atro's success for several decades. The quality assurance and process requirements are defined uniformly in line with the highest standards worldwide, as is the product quality.

Close to our customers



ANDRITZ Atro GmbH
Max-Brod Straße 2
90471 Nürnberg, Deutschland
Tel.: +49 (911) 998120
Fax: +49 (911) 8137646
andritz-atro@andritz.com

www.andritz.com

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