

DRIVE

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New Guide Books

R+W
A POPPE + POTTHOFF COMPANY

Time Flies When There's So Much Going On

Dear Readers,

You know the moment when the first Christmas decorations appear on the shelves and you ask yourself where the year has gone? At R+W, we know this feeling all too well because a lot has happened in the last twelve months. For instance, we have revised and supplemented our coupling ranges so that you now have an even more tailored selection of standard products.

We have also changed their "presence", so that they are easier to find: Industrial couplings are now in black, precision couplings in white – in our new guide books, for example.

In this issue, we introduce these new features along with an exciting user report from the world of the test benches. Get inspired for next year, which is sure to have many more surprising innovations in store.

We wish you a Merry Christmas and a good start to the New Year!



Jörg Stang

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Jörg Stang, Sales Manager

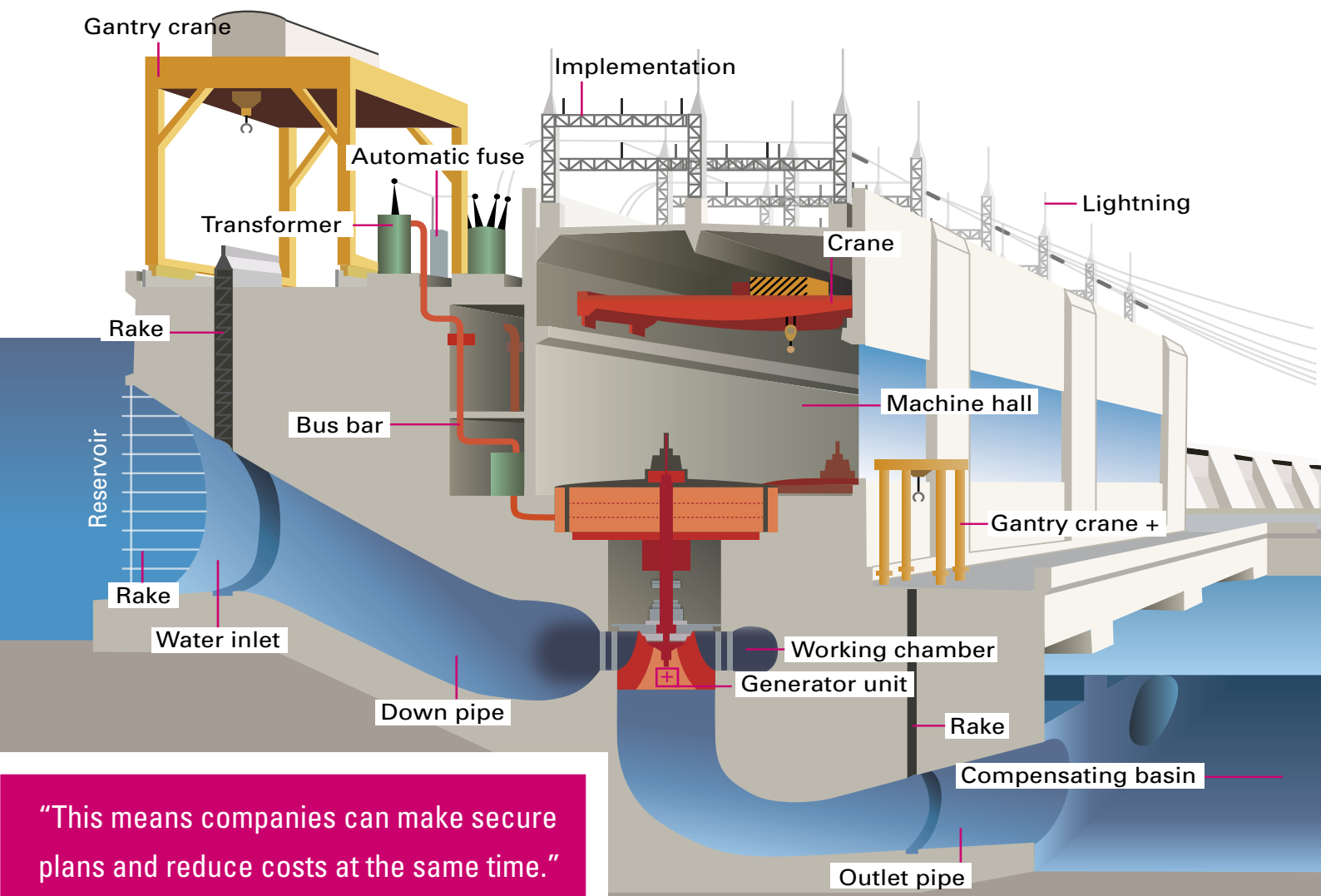
Tests On a Small Scale

Complex large-scale industrial projects, such as the construction of a hydroelectric power plant, entail enormous costs. To maximize planning security, operators perform tests as accurately as possible in advance and calculate, for example, the potential output of a power plant turbine on the basis of a scaled model test bench.

Depending on the project and test, turbine runners of different sizes and performance categories can be employed in such a model test. The shaft distance as well as the torque to be transmitted which bypasses between flow machine/turbine and generator

or that must be transmitted can vary depending on the installed turbine impeller and test parameters. In such cases, the R+W coupling specialist should optimise the drive train. The order came from a company that deals with power supply from renewable energy sources.

In an assembled model system, in which, among other things, a turbine impeller had to be recreated and tested in the scale 10:1, the torque between the impeller and the coupled generator was transferred through a series of rigidly-bolted intermediate pipes. These were also to bridge the various shaft distances. >>



Due to their unwieldy nature and weight, they could only be installed and aligned after an enormous amount of time and with the use of cranes. Two employees were required for each adaptation or modification of the experimental design, and both worked on the respective task for at least two days.

Better results due to pivot shaft

The use of a variable and infinitely lengthadjustable drive shaft from R+W provided a significant reduction in both workload and cost. The special production, developed on the basis of the EZV model series, has two speciallyadapted precision tubes pushed into each other which can be moved with the help of a pipe clamping hub. The vertically-installed elastomer drive shaft can be flange-mounted to the lower turbine impeller using the centred flange connection. The connection to the generator installed above is implemented using a pin and a further R+W coupling.

Due to the vibration-reducing elastomer element in Shore hardness 98 Sh A, which is located between the flange hub and variable intermediate pipe, possible shocks can be reduced and axial, angular and radial offsets are compensated. In this way, the entire drive train was optimised in reference to its torsional vibration behaviour and better and more accurate measuring results could be achieved.

Faster and more accurate

By loosening the pipe clamp hub, the EZV type drive shaft can be infinitely adjusted in a specified range, which brings huge advantages with it. This allows for the various shaft distances between the turbine and the generator of the model system necessary for the different experimental setups can be implemented simply and in a straightforward manner. This means the operator can save significant amounts of time as he only has to assign one employee for adjustment and renovation work and for just half a day.

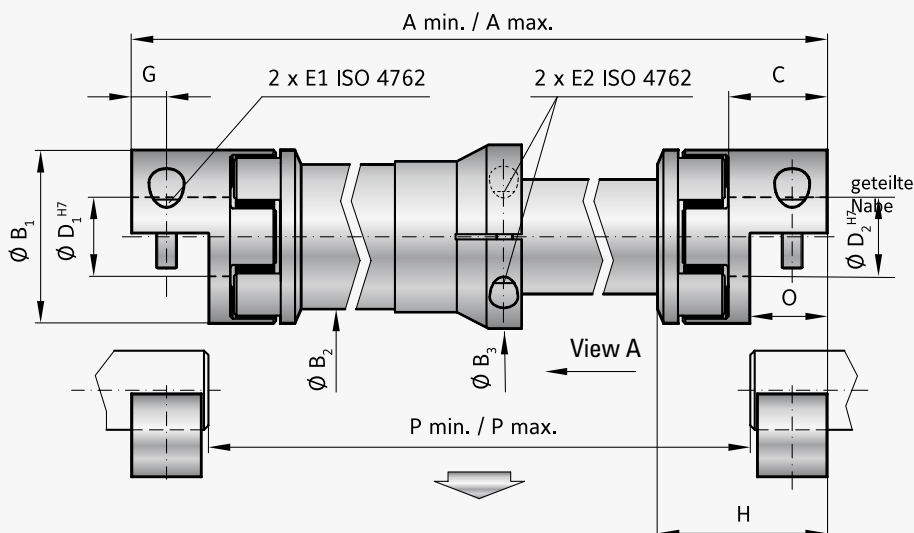
Through the use of precision intermediate tubes, the concentricity of the drive train improved significantly. This is an essential condition in order to be able to determine the axial forces of the wheel bearings as precisely as possible.

The special drive shaft installed in this unit can be flexibly installed in its length between 1.200 and 1.700 millimetres and can be operated with a maximum rpm of up to 1.000 rotations per minute and up to 5.000 Nm.

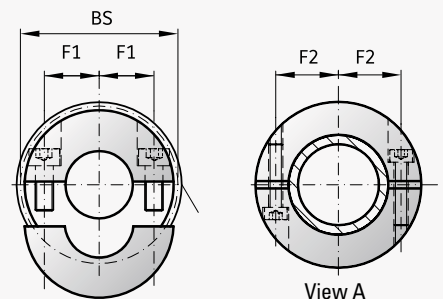
More Tests, fewer costs

Positive result: In contrast to the original test design, the significantly-accelerated and simplified handling of the test bench allows a significant capacity increase of the same. By reducing set-up times, many more tests could be carried out so that one test bench was adequate and further tests could be dispensed with. This means cost savings worth millions.

EZV drive shaft (variable length)



Divided hub



Further information



But how does this affect the planned hydroelectric power plant? The improved measurement results brought about a significant increase in efficiency. With the precise results of the model experiment, the real turbine wheel with a diameter of 11 metres could be upgraded, so that “only” 740 cubic meters of water per second volume flow is required for a rated turbine outlet of a total one gigawatt. In addition, the mass of the wheel could be reduced to 22 tonnes. With these results, the drive shaft has paid itself off several times.

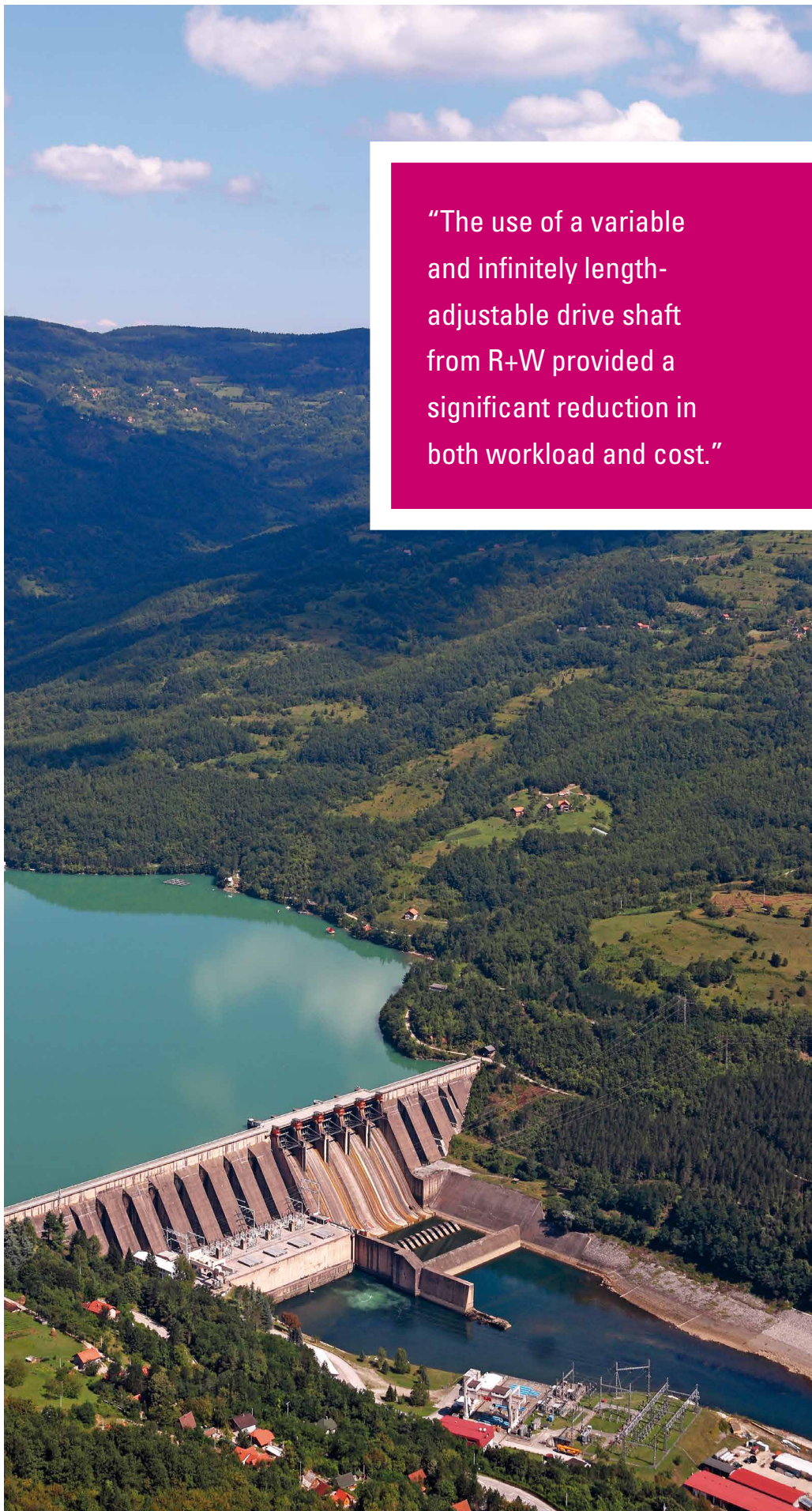
Test benches help to optimize applications and to test them in advance (even under extreme conditions). Couplings and shafts in turn help to use test benches in an optimal manner: flexibly, with no errors and with minimal time and expense. R+W has the necessary knowledge and experience to optimise test benches of all types by using the ideal coupling or drive shaft. This means companies can make secure plans and reduce costs at the same time.

Benefits of using the EZV drive shaft in the test stand

- Error-free test benches and reliable planning
- Flexible
- Less time spent thanks to accelerated and simplified handling
- Cost reduction



“The use of a variable and infinitely length-adjustable drive shaft from R+W provided a significant reduction in both workload and cost.”





More Models, Lots of New Sizes

Numerous new couplings and additional sizes in the series broaden the R+W range.



TORQSET® Safety couplings ST

There are numerous new intermediate sizes for the strong and compact ST couplings for both direct and indirect drives. The STR series, with parallel key connection, is completely new, with an extremely robust and compact design for demanding applications. The model is in a torsionally rigid design with precise torque limiting and integrated storage for toothed belt pulley or sprocket.

The new STF series has the same characteristics but has a double-sided flange connection. The STF is ready for mounting to a torque measuring flange with a client-specific interface. A further new addition to the range is the STE coupling series with parallel key connection and elastomer core. It has vibration-reducing properties and can balance out alignment errors.



BZ tooth couplings

New model series for the flexible tooth couplings (BZ) allow much higher rated torques – up to maximum torque of 2.080.000 Nm. The BZA model is new to the portfolio. It has a client-specific spacer between the two hubs and can be used for the construction of various size shafts.



Torsional stiffness multi-disc couplings LP

Numerous new series for LP1 and LP2 offer designers a selection that is even more tailored to requirements. The LP4 is new in the series. It looks very similar to the LP1, but has a conical clamping hub instead of a feather key connection. The LPZ innovation is a connection plate with multi-disc packs in a double cardanic design. It can be combined with different hub types on both sides and is thus ideal as a basis for special solutions.



Couplings for highspeed applications

R+W has also increased the number of products in the precision range. Two series are now available with the SP3 and SP6 models which have been specially-developed for high speed spindle applications.

Certified For Marine Applications

The R+W shaft coupling reviewed by Bureau Veritas protects drive shafts in ship engines.

The “Marine & Offshore Division” of Bureau Veritas in Essen analysed and certified a shaft coupling for marine applications in December 2015. The coupling measures 600 millimetres in diameter, is 500 millimetres long and weighs a massive 500 kilograms. It can bear up to 12 tonnes of load and is designed for torques of up to 55.000 Nm. This special coupling protects the drive shaft which combines the propeller to the ship engine and could be severely damaged without this limiter.

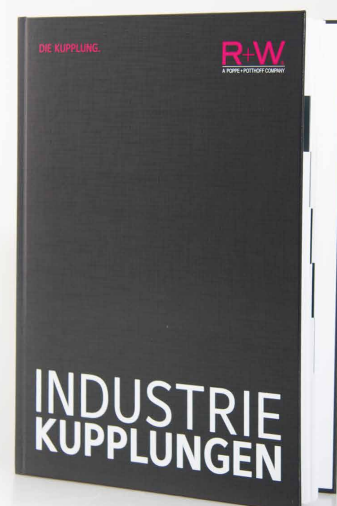
Bureau Veritas was founded in 1828 “in order to find the truth and announce it without fear or favour” and is today one of the leading global inspection, classification and certification companies. Bureau Veritas audits, certifies and verifies systems, products and processes to almost all national and international standards and for various industries, such as automotive, food, transport, construction, etc. either in general, industry-related or in the private sector.



New Guide Books

You can find out anything you have ever wanted to know about our couplings in our new guide books.

Cool on the outside, strong on the inside. With their new design, our new guide books are not only beautiful on the outside, but all the way through. They include all new models with technical data at a glance. This way, you will always find the right coupling. Order online now:



Thank you for your cooperation,
Merry Christmas and a Happy New Year!



Your R+W-Team

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