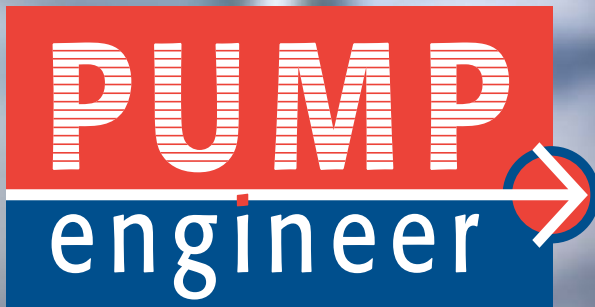


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relaunches LP disc pack
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R+W Coupling Technology relaunches LP disc pack couplings

Dynamic, reliable, innovative, versatile, and expanding are the key elements to R+W Coupling Technology's philosophy drive to succeed. Since 1990, R+W has put the customer first, helping them carve out a name for themselves in the couplings market. Pump Engineer spoke with North American Sales and Marketing Manager, Andy Lechner, to learn more about how R+W's close customer relationships helped shape the LP disc pack couplings relaunch.

By Sarah Schroer, Editor, Pump Engineer



After a successful launch several years ago, R+W Coupling Technology have relaunched their popular LP disc pack couplings line that not only features additional sizes, but has been updated to meet the latest API 610 standards. Andy Lechner, who is based out of the R+W America office within the Greater Chicago area, shares how the new line differs from the original, along with R+W's process for creating products that are best aligned with their customers' needs.

Growing off of the success of the original line

The design of the LP series disc pack couplings consist of two precision-machined coupling hubs and

a precision spacer tube mounted to the disc packs by means of high strength screws and bushings for alignment and frictional clamping of the assembly. The disc packs are highly elastic, corrosion-resistant spring steel materials, while the hubs and spacer are made from high strength steel materials. The LPAI model also meets all the requirements of API 610, ISO G6.3, and AGMA class 9 for minimum balance quality. It features an intermediate tube that is removable without disturbing adjacent equipment and has an integral safety catch in case of disc pack rupture.

With the re-launch of the new line, there are certain aspects — that no doubt contributed to the original success of the line — that are carried over into the

new re-launched line. Lechner expands:

“The product line carries over our well-proven principle of driving on pure face friction to transmit rotary power, which is important to us because a lot of disc couplings allow some of the torque to be carried through a shear load in the assembly bolts, rather than having the faces pressed together with enough force to transmit purely by friction. Since R+W has a lot of experience with backlash free couplings and design for reliability in applications with alternating and reversing loads, we consider ourselves to be specialists in this area. The pure friction drive design distributes forces more evenly without concentrating stress on the shanks of the assembly bolts and it prevents relative movement inside the coupling system that can lead to wear or premature failure. So, it’s a truly maintenance free coupling designed for fatigue resistance and maximum reliability.”

Coupling up with customers

The changes surrounding the new line were informed by the close relationship R+W has with their customers. “After the initial launch of the product line several years ago as a part of our new industrial drive couplings division, we gained really good experience based on customer requests and special designs,” explains Lechner. “A lot of our existing customers had considered R+W to be a company that’s easy to collaborate with, so our first product line represented a blank canvas for our customers to work with.”

Lechner expands that after the launch of the initial line, R+W was able to take that experience and knowledge and put it into standard designs based on feedback from their customers. “We recognized an opportunity to further flesh out the product range and optimize the sizing versus torque capacities. We were also able to more closely align the associated materials and costs with the dimensional requirements for our customers’ applications.”

Lechner gives some insight into the type of feedback R+W received from their customer base that helped influence the changes in the new line. “We deal a lot with customers’ space constraints in mechanical situations where they don’t always have room for the biggest coupling. So, based on our experience of having to re-design our own product to fit a specific set of dimensional space constraints, we were able to profile what was needed to optimize sizing in the re-launch of the line.”

Changes to the line: Expanded sizes, FEA, and LPAI

The new product line is different from the original because it is now available in sizes that more closely reflect customers’ needs. The re-launched line has doubled the sizes on offer, but all within the same torque capacity range from the original line, with ranges from



An assembly technician checks the fit of a new LPAI disc coupling for a centrifugal pumping application. The LPAI drives the disc packs by pure face friction, within an easily removable spacer cartridge.

300 to 12,000 (Nm) rated torque and maximum torque ranging from 700 to 24,000 (Nm). “We’ve added one step in between every size, keeping in mind things like common motor shaft diameters for those intermediate sizes,” says Lechner. “We don’t want the customer to have to oversize the coupling in terms of torque capacity based on a motor shaft dimension, for example. We are also showing more options for customization in the product literature, including shorter intermediate spacers, fully-split clamping hubs, longer drive shaft versions, and more. About half of what our company produces is outside of what is shown in the catalogue, and we expect that to continue, but this new design should provide a better starting point for a larger number of customers.”

Finite element analysis

R+W engineers are using finite element analysis (FEA) to supplement empirical data in terms of ratings and performance. Such a technique is beneficial for minimizing associated error function. “Based on the engineering and qualification technologies used, we have a very clear idea of what our couplings are capable of. We know what our individual components can or cannot handle, which helps with designing the optimal end product for our customers.”

LPAI variation within the disc pack couplings line

There is also an important variation within the product line of the LPAI disc pack couplings for API 610 requirements. “The standard is specifically for centrifugal pumping applications but also has a segment on couplings,” explains Lechner. “There are certain balance and handling requirements that need to be met. These standards are really well-defined for smooth running and high performance couplings.”

Lechner goes on to explain that after the initial launch





R+W Antriebsysteme GmbH headquarters in Klingenberg am Main, Germany.

of the line, they were able to work more closely with customers to understand these specific requirements in order to re-launch the line with this new LPAL variation. He explains the LPAL is a wear and maintenance-free coupling that allows for easy-handling to access pumps and motors without having to disturb the adjacent equipment. The LPAL is the first product line R+W has ever launched with an imperial rating and dimension system.

Keeping up with the latest certifications for all applications

“R+W has been ISO 9001 certified for many years,” says Lechner. “We also meet a number of additional certification and standard requirements on a per customer basis. As an example here in North America, we just attained an AS 9120 quality certification for delivery of our products into aerospace applications. We also have all of our couplings available with ATEX certification. We are registered with Bureau Veritas for our safety couplings. We are ready to go through whatever approval processes that are necessary for a customer to be able to use our product.”

Customized couplings: Working from the ground up

R+W’s coupling products stand out as a preferred choice in the market because instead of working with select customers when it comes to specializing couplings, R+W’s company-wide philosophy prefers to give each and every customer that special treatment.

Lechner explains how R+W enjoys working with new customers. “It’s a nice opportunity for our company to address the needs of other customers that haven’t had the opportunity to work with us before. We have a reputation of being flexible when it comes to meeting customer requirements. We come from a newer school of thought about coupling design and development, so industry veterans who have used this type of coupling for decades could definitely benefit from working with our company as a new supplier.”

Unlike at R+W, customers that deal with older or more established suppliers of disc couplings, might find it difficult to obtain customizations for off-the-shelf products. R+W has a new approach altogether, since a large portion of products are already customized from the get-go. For example, Lechner references how, in addition to having a full API 610 compliant line, R+W has also delivered a number of API 671 couplings based on exclusive collaboration with their customers. He explains that in addition to customizing an existing product, R+W will also start from scratch. “It has always been important to have one-on-one relationships with customers, especially at the design and engineering level to make sure we are able to supply exactly the right product for their needs.”

Made-in-Germany, customized worldwide

The couplings are manufactured out of the R+W headquarters in Klingenberg am Main, Germany. From

“The product line carries over our well-proven principle of driving on pure face friction to transmit rotary power, which distributes forces more evenly without concentrating stress on the shanks of the assembly bolts and also prevents relative movement inside the coupling system that can lead to wear or premature failure.”

Andy Lechner

there, the product is shipped to one of R+W’s satellite offices around the world for warehousing and design customization — for example, their North American facility is located just outside of Chicago. “At our North America location, we have a large number of component pieces in stock, along with a design team that collaborates with the headquarters in Germany.” The facility is also equipped with all the necessary tools for modification of power transmission couplings. Additional facilities are located in China and Italy.

At the beginning of April, the re-launched product line was released in Germany. Following that, the North American launch will take place in June, 2016, at which point it will also be available worldwide.

Applications for all

Lechner explains which industries have most positively received the original disc pack coupling series. “There was a lot of immediate appeal in driveline component testing applications. There is a robust economic niche of companies who are testing motors, pumps, transmissions, axles, along with anything else that rotates, which already knew R+W well for its ability to customize. They need a coupling that is not going to interfere with the characteristics of the rotation in their test stands. This is a great product for that because it has zero backlash and can cover large distances while running at high speeds. Our coupling can also transmit the motion from the equipment to the actual device doing the measuring without absorbing that motion or adding vibration, for example.”

Lechner says that the couplings are a suitable product for API pump packages for obvious reasons. However, he also adds that anyone packaging motors and centrifugal pumps could benefit from the lack of maintenance requirements. “There are no moving parts to replace, no lubrication needed, and they have the capability of surviving for a theoretically infinite service life.”

Besides being designed for zero maintenance, Lechner expands that the product is a very well-balanced and smooth running coupling. “Vibration is a concern in just about any application and this is a coupling design that is also intended to keep vibration to an absolute minimum.”

Staying fresh and keeping an eye on the future

When asked how R+W stays competitive in the coupling market, Lechner replied: “I think it comes down to our focus on customer service and on customization. We are a relatively young company, having started in 1990, and that’s given us a newer perspective on the industry. It’s allowed us to be a company that can really focus on cycle times and customer service requirements. The time that an engineer has to bring out a design to market is getting shorter and shorter. It’s been important to our company from the beginning to be a responsive and customer service friendly company. I think a lot of our customers have benefited from that.”

R+W has their eye on the future. They are already working on redesigning another one of their product lines, the heavy duty ball-detent safety couplings. “This product is designed to de-couple drive lines in case of an overload or an emergency. We are doing a similar process as we did with the LP disc pack couplings in that we are using the experience we have garnered in the first several years following the initial launch, in order to go back and flesh out the product line for future needs.”

Visit R+W Coupling Technology at Pump Summit Americas

BOOTH # 2025

“We are excited to be a part of Pump Summit Americas 2016 and I think that’s going to be a great place to go take a first look at the re-launched LP disc pack couplings product line at the R+W booth.”

Andy Lechner
Sales & Marketing Manager, R+W America

