

Meter S.p.A.

Meter S.p.A. use RomaxDESIGNER Enterprise for effective innovation of customized bearings



Image © Meter S.p.A.

“RomaxDESIGNER Enterprise allows us to meet the needs of our customers quickly, effectively, and professionally.”

Xane Plascencia,
Engineering Department, Meter S.p.A.

A global organization, Meter Bearings comprises offices and production centres in China, Germany, and the US, with their headquarters in Italy. Their Italian office, Meter S.p.A., is the centre of product development, and is involved in all aspects of their work: sales, product development, production and logistics.

Meter Bearings take pride in their international presence, their ISO certified quality, their personalized and flexible product line, and their expert people. For over 30 years, they have maintained a strong focus in designing and producing roller and ball bearings that tolerate both heat and extreme stress, drawing from the experience and creative talent of their team. Firm believers in the uniqueness of tailored products, they create custom bearings free from the restrictions of catalogs. Their product line includes: ball bearings, roller bearings, treatments and metalworking, and special products (e.g. seal rings and sliding bushes).

Client

Meter Bearings manufacture bearings for applications ranging from power transmissions, motors and hydraulic pumps, wind systems, industrial machines, robotics and automation. Their solutions are innovative, personalized and sustainable.

Challenge

Designing innovative bearings, customized for a particular client requirement and application.

Solution

RomaxDESIGNER Enterprise, for automated and integrated bearing analysis within a whole system simulation context.

Benefits

Delivering optimized designs to customers more quickly, supported with high quality reports that instill confidence and facilitate correct decision-making.

Meter S.p.A. use several software tools within their development process, including RomaxDESIGNER. Xane Plascencia, Engineering Department at Meter S.p.A., comments, “We use the latest software tools to determine a bearing’s geometric characteristics, required thermal treatment, and appropriate lubricants for individual applications.”

Romax Technology as a consultancy partner

Romax have worked with Meter S.p.A. for several years to ensure optimum bearing performance and help prevent unwanted issues. Plascencia says, “We chose Romax as our consultancy partner for several reasons. Firstly, we needed a complete analysis including static and life rating calculations, with iterative calculations at each parameter variation. Secondly, we knew that RomaxDESIGNER could simulate the most realistic loading conditions, including crucial shaft deflections and subsequent load distribution at the rollers. Finally, it was important that we could present our customer with good quality reporting and graphics, and we knew that Romax could provide that.

“When considering bearing applications, tribology analysis is very important. The operative conditions have a great impact on the bearing performance, which RomaxDESIGNER is able to evaluate. In this way, under certain conditions such as mixed lubrication regime, RomaxDESIGNER helps us to focus on the best solution according to that particular application.”

Completely customized bearings

Following successful completion of a Romax consultancy project, Meter S.p.A. invested in RomaxDESIGNER, as Plascencia comments: “The consultancy service showed us that the software was suitable for optimizing bearing internal geometry. RomaxDESIGNER allows us to design completely customized bearings because: we can consider

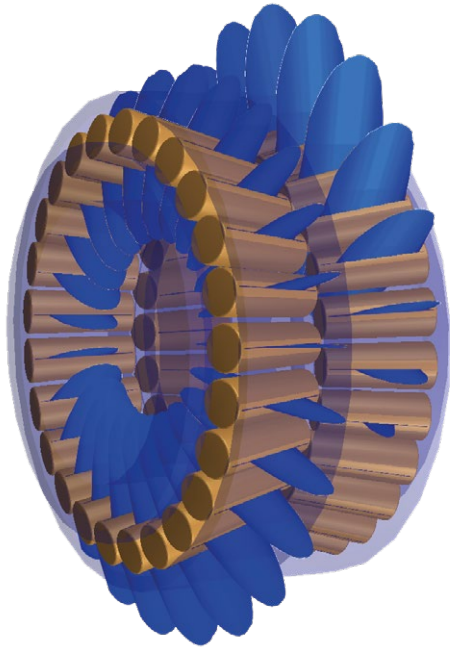
the whole system, including shaft/housing deflections, misalignments etc.; we can optimize the internal bearing geometry and analyze the effect of varying particular parameters on the rating life and contact stress; and we can create very good quality reports, which help us to either support or disregard design options.

“Our customers are happy when they can rely on us to design customized bearings for a particular application, optimize existing designs, and suggest effective solutions. The most important thing for us is that we can trust the results that RomaxDESIGNER gives us, which means we can confidently implement geometric optimizations and design a product suitable for its application.”

RomaxDESIGNER Enterprise edition

The Enterprise edition of RomaxDESIGNER offers extended functionality in integration and automation, including batch running and customized reporting – features used widely by Meter S.p.A.

Plascencia comments: “Romax helped us to create custom reports, which means that we can quickly and easily output results from different models in consistent templates, to supply our customers with the information they want to see. We have also used batch running for several projects now.” Batch running allows the running of RomaxDESIGNER to be automated either through the command line, or through an external program (for example Isight, Optimus, Comet, modeFRONTIER, or programs like Microsoft Excel). Plascencia continues: “Batch running makes our response to clients faster as it replaces manual operations with automatic running. This also reduces the probability of introducing errors. We’ve started to implement this for all analyses where we require many runs, as it can considerably reduce calculation time – offering us an incredibly important time saving in the development phase of a new product. RomaxDESIGNER Enterprise allows us to meet the needs of our customers quickly, effectively, and professionally.”



Double row taper roller bearing 3D loads reported in RomaxDESIGNER
Image © Meter S.p.A.

R17 and Future Plans with Romax

Meter S.p.A. have several projects planned in the near future which will use Romax software. For example, developing a customized bearing for a heavy duty application, determining the optimal preload conditions for a tapered roller bearing under all its various loading conditions, and, as a general rule applicable to all of their projects, to select the optimum bearing design according to the theoretical calculation results provided by Romax software.

Plascencia concludes “One of the advantages to using RomaxDESIGNER is that Romax are always developing new and useful features. The new roller edge stress feature in R17 is a very important development for us, as we can now more accurately account for the impact of stress and material yield on bearing life. These improvements to the bearing analysis feature all contribute to us being able to provide our customers with the most accurate results possible.”

Since the time of writing this case study, the Romax product offering has evolved. The features and benefits described here most clearly map onto our new product Romax Spin.

- Create truly innovative, customized bearings appropriate for a given application through accurate optimization of internal geometry within a whole-system simulation
- Save time in product development using RomaxDESIGNER’s Enterprise features
- Instill confidence in customers by providing consistent, customized reports



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Xane Plascencia,
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Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications.

Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future.

Romax, part of Hexagon's Manufacturing Intelligence division, provides world-leading solutions for the design, analysis, testing and manufacture of gearboxes, drivetrains and bearings. Learn more at romaxtech.com. Hexagon's Manufacturing Intelligence division provides solutions that utilise data from design and engineering, production and metrology to make manufacturing smarter.

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