



**PM.nl**  
DISCOVER PRECISION

OVER  
**50**  
YEARS

*of success*



# PRODUCT OVERVIEW



**PM IS AN INDEPENDENT, FAMILY-RUN DUTCH COMPANY WITH OVER 50 YEARS OF HIGHLY SPECIALISED EXPERIENCE IN THE DESIGN AND MANUFACTURING OF PRECISION LINEAR BEARINGS, FRICTIONLESS SLIDES AND ENGINEERED-TO-SPEC MOTION SYSTEMS.**

Serving a global client base on the cutting edge of high tech industries, our products are an integral part of the market's constant push to develop the most innovative solutions. We are proud of our continued success in attaining our position as a trusted partner and architect of high performance linear bearing systems, positioning stages and integrated motion solutions.

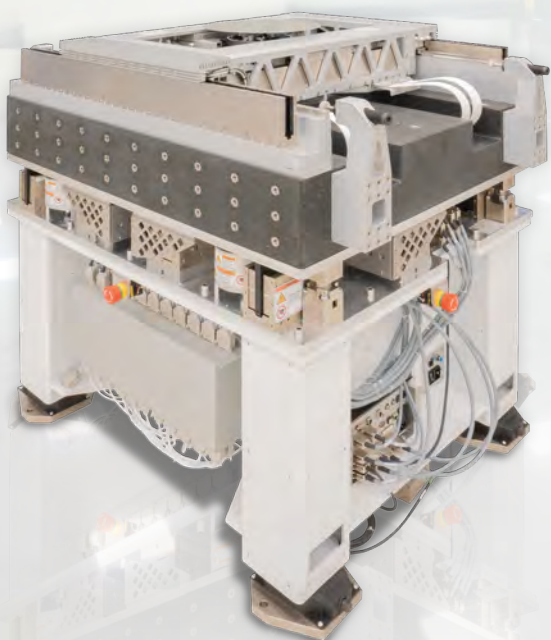
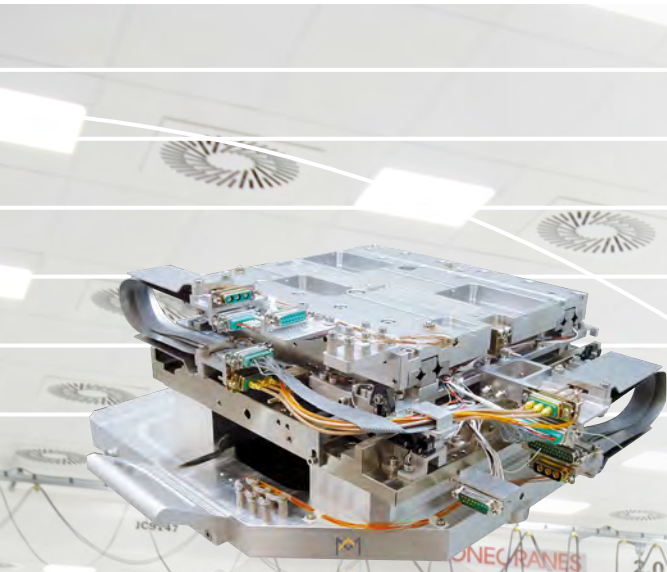
We are masters in solving complex technical problems. We apply deep mechatronic expertise and the latest manufacturing know-how to our clients' specific industry challenges.

PM developed solutions find their way into various highly specialised markets. These include, but are not limited to:

- **SEMICONDUCTOR INDUSTRY**
- **NON-DESTRUCTIVE ANALYSIS TECHNIQUES**
- **MEDICAL SCIENCE**
- **PRECISION OPTICAL LENSES**
- **TECHNICAL AND INDUSTRIAL METROLOGY**

View our positioning system competences

[www.PM.nl/products/motion-systems](http://www.PM.nl/products/motion-systems)



## LINEAR BEARINGS

PM's linear bearings are suitable for applications where high precision, compact design and repetitive motion are required. Mounted as a preloaded set, these bearings offer high stiffness in any constrained direction and a virtually friction-free motion. Available in a wide range of sizes, the engineer is offered maximum design latitude and flexibility. Our Anti Cage Creep (ACC) option is available for high-acceleration applications.

### OPTIONS:

- Accuracy grade Q8 (=standard), Q4 and Q2
- All linear bearings can be supplied in stainless steel
- Special raceway finishing with SF-class, surface roughness <math><0.05\text{ Ra}</math>
- Customised designs

The standard crossed roller bearing (**RSD**) is available with either cylindrical rollers or balls, with sizes ranging from 1.5 to 24 mm.



The standard crossed roller bearing with increased contact surface (**RSDE** or **RNG**) is equipped with cylindrical rollers and POM or PEEK cages and has a load rating three times that of standard **RSD** bearings. Available in roller diameter sizes 3, 4, 6 and 9 mm. Anti cage creep technology (ACC) is available as an option.



The **N/O** and **M/V** type needle roller bearings offer maximum stiffness and a significantly increased load rating when compared to crossed roller bearings.



Fully ceramic linear bearing (**CR**) for applications requiring absence of magnetism, absence of lubrication or low mass combined with high stiffness. Commonly used materials are  $\text{Si}_3\text{N}_4$ ,  $\text{ZrO}_2$  or  $\text{Al}_2\text{O}_3$ . Typical fields of use include electron microscopy, semiconductor industry and medical applications.



## FRICTIONLESS PRECISION SLIDES

PM frictionless slides are ready-to-install single-axis components for precise limited linear movements. The crossed roller slides are factory preloaded to assure high accuracy, an extremely low uniform friction coefficient friction (<math><0.003</math>) and long operational lifetime.

Each slide comes with mounting holes pre-drilled in a standardised pattern to aid easy assembly. The mounting surfaces are precision ground to achieve a superior degree of flatness in motion.

This steel crossed roller slide (**RT**) is also available in lightweight aluminium (**RTA**). Available with stroke ranges of 10 – 950 mm and a maximum load rating of 71.550 N.



The **RTNG** crossed roller slide offers protection against environmental contamination due to its narrow gap between table and base. Available with stroke ranges of 10 – 250 mm and a maximum load rating of 35.100 N.



The **RTS** slide is a low-profile steel crossed roller slide. Available with stroke ranges of 12 – 130 mm and a maximum load rating of 3.672 N.



**PMM** and **PMMR** are stainless steel miniature slides with equal dimensions. Three sizes are available: 05, 1 and 2 with stroke ranges of 5 - 70 mm. Weight specifications range from 2 to 80 grams. PMM is a ball slide while PMMR is crossed roller slide.



Miniature slide **MSR** offers crossed-roller bearings and anti cage creep solution. It is the smallest linear slide in the industry available. There are 7 sizes, and all are made from stainless steel. Stroke range 5 - 112 mm.



## ROTATION BEARINGS

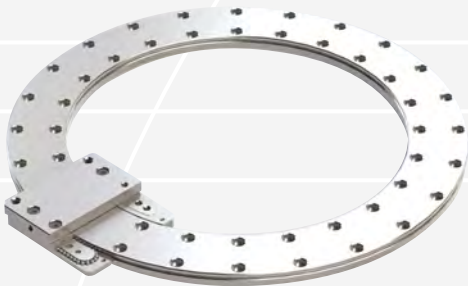
The gonio bearing (**RGB**) is available with either cylindrical rollers or cylindrical balls. These bearings allow the user to perform extremely accurate radial movement combined with virtually friction-free motion. Suitable for rotations up to  $\pm 5^\circ$ .



The flat mounted table bearing (**FMB**) is currently available in diameters up to 500 mm. This type of bearing combines high accuracy, repeatability and rigidity with a small footprint.



These stainless steel bearings allow virtually frictionless radial positioning and come as a factory-preloaded set. **RPM** bearings are available as an arc segment or full circular segment with 360° rotational freedom. The rail can be equipped with one or more preloaded carriages.

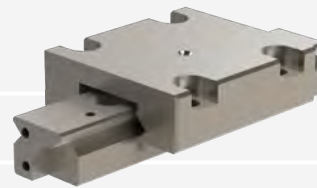


## CUSTOMISED SLIDES

Every application has its unique requirements, and industry developments are continuously pushing the limits of performance. In case that standard linear slides are not matching with your application, we are able to design special versions that meet specific needs. This can be a simple modification to a fully customised design.

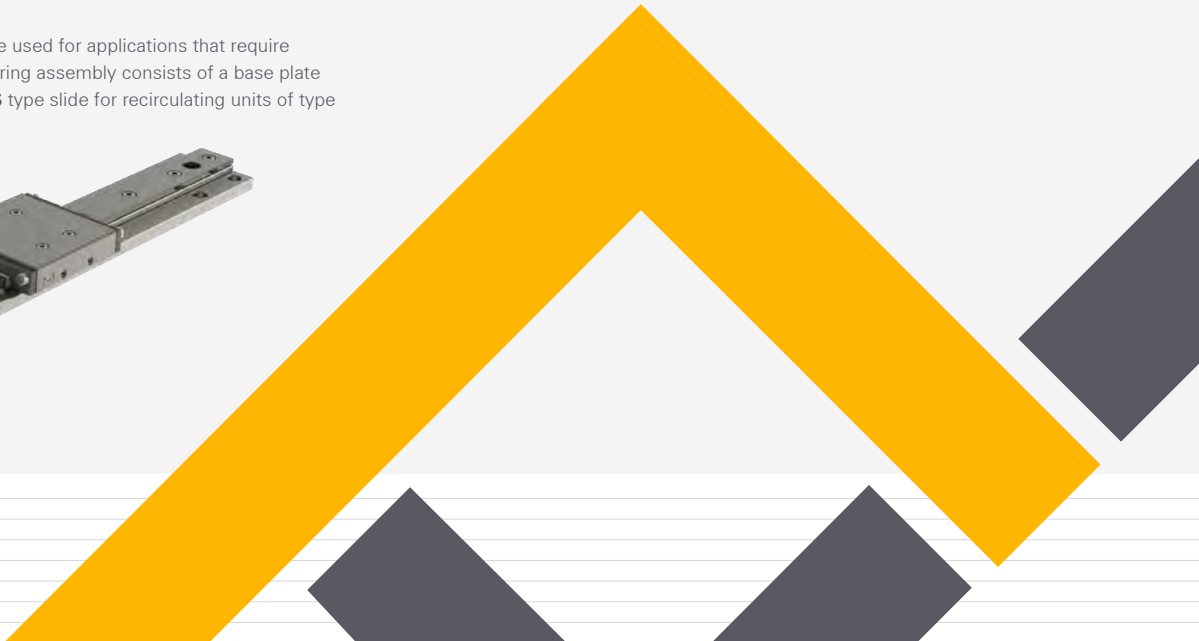
### Some examples:

- Alternative lubricant
- Specified pushing force
- Specific table part design
- Customised holes
- Alternative materials
- Weight saving design
- Cleanroom or vacuum compatible



## RECIRCULATING BEARINGS

Recirculating linear bearings can be used for applications that require unlimited travel. The complete bearing assembly consists of a base plate (**UT**), double-sided rail (**DS**) and **US** type slide for recirculating units of type **UK** (balls) and type **UR** (rollers).



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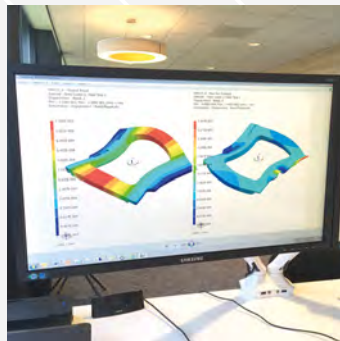
# CUSTOMER-CENTRIC APPROACH

PM provide full lifetime product support no matter what the specific needs are in your field of industry. You can expect a customer-centric approach in all aspects of how we do business, in all of our product groups and from the prototype stage through to large volume production.

## EXPERT ADVICE AND CONSULTING



## DESIGN TO CLIENT SPECIFICATION



## STATE-OF-THE-ART MILLING



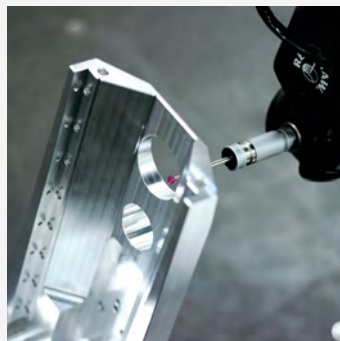
## IN-HOUSE HEAT TREATMENT



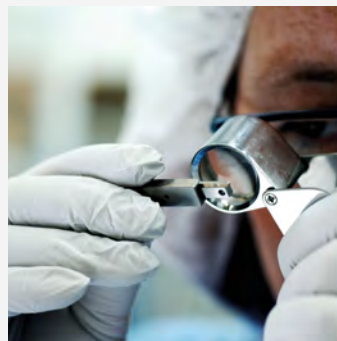
## HIGH PRECISION GRINDING



## FULL QUALITY CONTROL



## ASSEMBLY TO THE HIGHEST STANDARD OF PRECISION



## THE HIGHEST STANDARDS FOR PACKAGING AND DELIVERY



# PM RESEARCH AND PRODUCTION FACILITIES



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