



## Press-information

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### Modular Linear Guides from the MB Building Kit



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*Many engineering applications today make frequent use of modular aluminium systems. These entail the various functional elements, e.g. actuators or linear guides, being fitted in place in the basic elements. With its Dynamic Elements and MB Building Kit System, item have taken a different approach. They have integrated the linear guides into the original design by employing, to a large extent, components from the basic elements.*

The item MB Building Kit System provides not only a wide range of Basic Elements enabling designers to construct load-bearing machines and equipment, but also, by including the Dynamic Elements product group, they can integrate Linear Guides in their designs from the start. The modular design of the Building Kit Elements means that the profile grooves, uniform Line dimensions and perfectly matched fasteners simplify assembly and considerably reduce the time and effort required for construction. Depending on the requirements of the specific project, the choice of the most suitable Guide system is determined by three points and the Line sizes available:

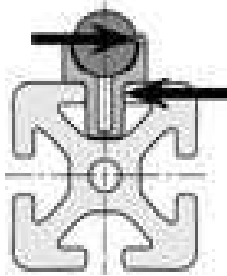
- Roller Guides on Guide Shafts
- Ball-bearing guide bush sets mounted on shafts within the system profiles
- Linear guidance systems with recirculating linear ball bearings mounted on Guide Rails specially adapted for attaching to system profiles.

For handling systems and linear motion at high speeds we recommend **Roller Guides** mounted on Guide Shafts. This combination permits speeds of up to 10 m/s and guarantees high static and dynamic load capacities for the Bearing Units.



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A special fastening system enables the Profiles of the Basic Elements to be used directly as Support Profiles for the Shafts. This means that neither special profiles nor machining of the shafts are required. The fasteners are, in this case, the Shaft Clamp Profiles, that locate in the profile groove of the Support Profile. The patented shaft clamping system has a two-for-the-price-of-one effect: as the Shaft is pressed into the Shaft Clamp Profile, it automatically locks the clamp profile in place in the groove of the Support Profile. In this manner, a power-lock joint is created which is further enhanced by an undercut in the Shaft Clamp Profile.



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The item MB Building Kit System offers various sizes of Roller Guides designed for differing load capacities. In order to make the correct selection, details of load, direction of load and the Line size used are required, which, in conjunction with an easy-to-read table show which Roller Guides are required. The shape of the Shaft Clamp Profiles has been calculated in such a way that the tensile strength of the shaft clamp corresponds to the permissible loading of the Guides. In this way, the space available for the construction is used to the full and, at the same time, the material required kept to a minimum.

As a result of the modular design of the Roller Guides mounted on the shafts, virtually endless linear units can be constructed: the supporting Profiles, Shaft Clamp Profiles and Shafts can be butt jointed end-to-end creating linear guides of any length.

Use of the **ball-bearing guide bush sets** in the item MB Building Kit System opens up a whole new range of possible applications. The main feature of this Guide System is a Linear Ball-Bearing of which the bearings themselves are in contact with a hardened Guide Shaft. The main argument in favour of this enclosed design is the unbeatably compact construction resulting from the fact that the Guide Shafts and Ball-Bearing Guide Bushes are mounted within the selected system profile using only a few additional components. This system makes use of

the hollow spaces necessarily existing in such a profile arrangement. Depending on the load requirements, there is a choice of two systems.

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A further variation on the theme of Ball-bearing guide bushes and one which incorporates even more construction versatility is the Ball-Bearing Guide Block system which uses special profiles to provide shaft bearings and bearing blocks. Higher load ratings are possible by increasing the number of guide supports used and a wider choice of Guide Shafts.

The Ball-bearing guide bush sets are particularly suited to linear motion at speeds of up to 2 m/s. Where horizontal linear axes are to be included in the design, ensure the deflection in the Guide Shafts is taken into consideration.

A further type of linear guides available within the item MB Building Kit System are the **linear guidance systems with recirculating linear ball bearings**. With this system, a four-track linear ball-bearing block, the guide carriage, is mounted on a shaped, ground guide rail. This linear guide features extremely good rigidity and load-bearing characteristics while remaining, at the same time, highly compact. The system can be subjected to loads and inertia from all sides and axes. A particular feature of the item Linear guidance systems with recirculating linear ball bearings is the patented integration of the guide elements in the Building Kit System: the foot of the guide rail is specially ground to enable it to be quickly and easily centred on the profile surface. This is aided by special fastening elements in the shape of clamping profiles: the process of bolting the rail-mounts automatically aligns the guide rail directly on the profile of the basic elements.



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The Linear guidance systems with recirculating linear ball bearings can be used individually or in pairs, which provides considerably increased inertia stability.

Thanks to their complete integration in the item MB Building Kit System, these linear guides dramatically reduce the amount of drive-side modification required in design and assembly. These drives can be connected using either timing belts or spindle units as modular units requiring no machining enabling the guide systems to be implemented as complete linear axes.