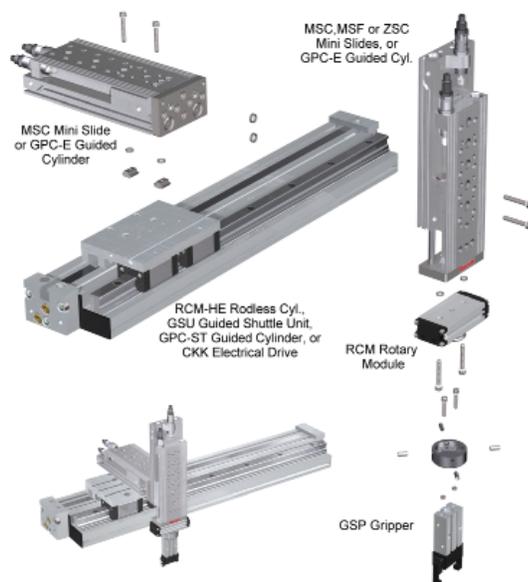


# Drive & Control profile

## “Ease of Use” - More Than Easy Operation



The Rexroth Easy-2-Combine system offers a simple solution for creating custom handling systems.

“Ease of use” is a phrase we often use when discussing the design and integration qualities of motion systems and their components. When you hear the phrase you might think of a simplified piece of equipment that requires little training to operate, but for innovative, forward-thinking manufacturers that embrace a solution-oriented approach, a much broader definition exists. This definition includes the more thoughtful aspects of ease of use - features such as pre-engineering, cross-business collaboration, online configuration software and before and after sale service and

support. Each of these features shares the same goal. That goal is not only to simplify use of the product but also to save the user time and money throughout ownership.

### Ease-of-use

Many factors can impact a component’s ease of use qualities. The most obvious factor is literally that the product is easy to use, or, to use another phrase, it is “user-friendly.” This means the product is easy to handle and assemble. In the design phase of a pneumatic system, for example,

### Bosch Rexroth’s Easy-2-Combine Exemplifies “Ease of Use”

Bosch Rexroth’s Easy-2-Combine system represents a family of individual components that exemplify ease of use qualities. Components of the system, including pneumatic cylinders, slides, and grippers, can be combined in simple, time-saving assembly steps in which centering rings elements are used for interlocking and alignment. Many components also feature easily adjusted end position settings, which drastically reduce final commissioning and maintenance time.

The result of collaboration between pneumatic and electrical Rexroth technology groups, Easy-2-Combine components can perform linear movements, pneumatically driven rotation movements, and gripper functions. The thoughtful design and pre-engineering of all Easy-2-Combine products reflects a broader trend toward a more comprehensive definition of ease of use in which the ultimate goal is to save the customer time and money throughout ownership.

each component, such as cylinders, slides, rotary actuators, grippers, etc., should be designed to quickly and easily connect to another component with limited need for additional parts like adapter plates.

Many owners and operators are troubled with aligning components. For instance, two components from the same vendor may need adapter plates or sometimes the vendor offers no adapter plate, which places the burden on the customer to design their own. As you might imagine, the time, effort, and money involved in acquiring something as simple as an adapter plate causes manufacturers a number of headaches. On the other hand, a simplified design feature like centering rings or pin locations on each of the pneumatic components can significantly reduce and even eliminate the difficulty associated with combining components. The user simply puts the components together and fastens them with a pair of bolts.

A second demonstration of basic ease of use would be push-in pneumatic fittings that can be used with pneumatic components. For example, some fittings are equipped with a plastic release ring that enables fast connection and release of compressed air tubing. The easiest to use fittings are characterized by an oval release ring, making it simpler to use than standard push-in fittings with a circular release ring. Even the smallest fittings are easy to handle using a raised gripping surface on the oval release ring.



The QR1 series push-in fittings from Rexroth have an oval release ring for ease of use.

### Reducing commissioning steps

Another way to enhance a product's ease of use qualities is by reducing the number of commissioning steps. It goes without saying that the fewer the number of steps required to install and maintain a system or component, the less time and money an operator will invest in ownership. This quality is reflected in a concept called intelligent stroke setting. Typically, during commissioning it is not uncommon for an operator to use

a wrench to adjust shock absorbers to fine-tune the stop/start motion of a cylinder or mini slide. Instead, intelligent stroke setting places the shock absorber inside the hard stop, allowing deceleration of the load without ever requiring the operator to re-tune the end positioning during shock absorber maintenance.

### Collaboration

Collaboration among product groups is another important



Mini slides such as the MSC from Rexroth allows shock absorber maintenance without having to re-tune end of stroke position.

aspect when designing for ease of use. This is generally more evident in larger companies that have multiple, cross-over business units, but essentially it reflects an effort on the part of the company to ensure one product family works seamlessly with other relevant product families produced within the same company or even by competitors. For example, one technology group within a company could collaborate with another technology group to develop an electrical motion product that works seamlessly with a pneumatic product.

### Service and support

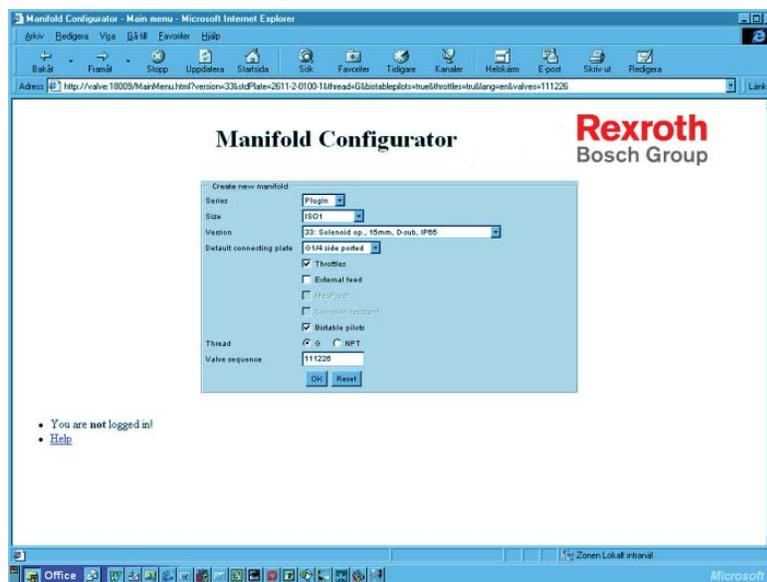
Finally, an exceptional level of service and support is the ultimate ease of use quality. Any company can sell components, but in order to truly provide solutions, companies must back their products with service and support. Interestingly, this doesn't only occur after the sale. Helping customers choose the right components and systems for their application is just as important as supporting the customer once they've made the purchase.

Software configuration tools are one way to enhance your service and support offering. These tools are typically available

online and allow customers to input technical data about their application and obtain product recommendations. For complete pneumatic systems, technical data can include information like workload, moment of inertia, stroke lengths, and time per stroke. From this data the configurator produces a bill of materials and a single part number to access the

together with a small guide unit, nor does the configurator pair the two. This gives the system a simple do-it-yourself quality while also protecting the designer from mismatching components.

Well thought-out products that exemplify ease of use have many qualities. They are user-friendly, require fewer commissioning



On-line product configurators reduce design time and eliminate errors.

entire package. In addition, the components selected are designed to work together within a load tolerance, for example the Y-axis will always support the Z-axis. Thus, pre-engineering efforts allow components to fit together when a calculation is sound. So, a large cylinder neither physically fits

steps, demonstrate collaboration with other relevant products, and are fully supported both before and after the sale. Remember, the goal of ease of use is not only to simplify the operation of a product or system but also to save the user time and money throughout ownership.

