Linear Technology
Lifting columns and electric cylinders for the new control generation MultiControl II
As a subsidiary of the global Phoenix Mecano AG, we offer an unrivalled range of products in the fields of linear, profile, connecting and module technology. With decades of experience and expertise in a huge range of industrial applications, you need look no further for a highly competent partner. From the first point of contact through to delivery, we focus entirely on your requirements. Individual advice and short delivery periods are two central priorities in our customer-focused corporate philosophy. Our aim is your success, and we look forward to being your strategic partner.
Our product range

LINEAR TECHNOLOGY

✓ Linear actuators
✓ Manual guide units
✓ Electric cylinders
✓ Lifting columns
✓ We can move loads for you of up to 3 t and up to 12 m dynamically, reliably and with great precision

CONNECTING TECHNOLOGY

✓ Fittings for the secure clamp connection of round and square profiles
✓ Elements made of aluminium, stainless steel and plastic
✓ Sizes from 8 mm to 80 mm

PROFILE TECHNOLOGY

✓ The proven and tested BLOCAN® aluminium assembly system, with profiles offering cross-sections from 20 mm to 320 mm, for a broad spectrum of applications
✓ Connection techniques with an unsurpassed combination of flexibility and reliability

MODULE TECHNOLOGY

✓ We develop, manufacture and assemble
✓ Machine frames
✓ Workstations
✓ Machine guards
✓ Multidimensional linear actuator modules
✓ Complete drive solutions
How to use this catalogue

Depending on your level of experience, we suggest you proceed as follows

If you are new to linear technology

Please use our selection guide from page 9 onwards. We will guide you to the right product for your particular application.

If you know all about linear technology

You know exactly what you require and can go straight to the right product category, where you will find a product overview on the first pages.

Specific search

...if you are looking for a specific product, we suggest you start in our index on the last pages of this catalogue.

If you have any questions, do not hesitate to contact one of our product consultants.
The RK linear circle
- Lifting columns
- Electric cylinders
- Controls & Accessories

Areas of application
- Workplace ergonomics
- Industrial technology
- Medical technology
- Media technology

Lifting columns
- Product selection
- Multilift II
- RK Powerlift M
- Multilift II telescope

Controls & Accessories
- MultiControl II duo
- Compact-e-3-EU

Appendix
- Inquiry form
- Glossary
- Index
The RK linear circle

Features:

- Fully integrated technology / maintenance-free
- Self-locking, even under max. load
- Withstands torsional and bending moments
- Clear anodised aluminium profile surface
- Special versions available on request

Lifting columns

Electric cylinder

Your application takes centre stage

Controls & Accessories

from page 26

from page 74
Features:

- Fully integrated technology / maintenance-free
- Self-locking, even under max. load
- Can be installed in any position
- Various stroke lengths and speeds
- Special versions available on request

Features:

- Connection for up to 16 drives (bus system)
- Duty cycle monitoring as overload protection (can be activated as standard)
- Memory function
- Mains-independent battery mode
- Wide-range input
Electromotive modules for height adjustment are both contemporary and efficient.

**Technology that adapts to your needs**

- ✔ As assembly aids that assist with heavy loads
- ✔ As height adjustable standing or sitting workstations
- ✔ As an effective support that enables greater independence for the physically challenged
- ✔ Application options in the field of medical technology
- ✔ For the adjustment of audio/video devices in the business and luxury segment for the sophisticated demands of your customers

Reliable technology and easy installation in your application are essential. In the pages that follow, we would like to inspire you and introduce you to the individual lifting column modules. Entrust your individual and unique applications to our experienced specialists.
Overview / fields of application

The applications on the following pages show a selection of customer applications which were achieved with our products.

Compliance with applicable standards and safety requirements for the end product were ensured by our customers.

**Workplace ergonomics** from page 11
- ✓ Control rooms (power plant, police, fire service, radio, locks)
- ✓ Assembly workstations
- ✓ Laboratory workstations
- ✓ Control cabinet installation
- ✓ RK LEAN assembly workstation systems
- ✓ Office workstations

**Industrial technology** from page 15
- ✓ Table press machine
- ✓ Polishing machines
- ✓ Equipment carrier systems
- ✓ Scissor lift adjustment
- ✓ Conveyor adjustment
- ✓ Mobile transfer system
- ✓ Industrial scanner

**Medical technology** from page 19
- ✓ Wellness couches
- ✓ Incubators
- ✓ X-ray couches
- ✓ Rehabilitation technology
- ✓ Mammography
- ✓ Chair applications
- ✓ Instrument tables

**Media technology** from page 23
- ✓ Media screen
- ✓ TV height adjustment
- ✓ Presentation technology
- ✓ Projector adjustment
- ✓ Information board
- ✓ Lectern
Areas of application

Advantages

- Fewer absences due to illness
- Mobilises the locomotor system
- Increases concentration
- Dynamic working helps prevent work fatigue
**Workplace ergonomics**

**Control system (radio)**

**Alternating between standing and sitting**

When asked which is the best working posture, orthopaedists generally answer: “The one you’re about to switch to.” Cardiologists constantly criticise the sedentary nature of most people’s working days, stating we need to move more. Varying the burden on the locomotor and cardiovascular system and increasing activity has proven to be extremely effective.

Our modular lifting columns are extremely convenient and easy to use. Depending on the application, they can be implemented as single-column or two-leg table concepts. Extremely quiet operation and fast movement characterise the high quality of our lifting columns. The simple operation via manual push-button encourages frequent use of the functions.

**Assembly workstations**
Multi-shift operation in particular calls for great adaptability and durability.

Control cabinet installation

Production processes are arranged section by section in so-called islands. Where the operator changes frequently (e.g. in shift operation), individual adjustment of the working height makes good ergonomic sense and increases productivity.

Laboratory workstation

With the RK modular system, almost any workstation design can be realised and subsequent extensions or modifications can be easily implemented.
Workplace ergonomics

Laboratory workstation

Office workstation
Areas of application

Advantages

- Stable guidance
- Integrated technology
- Guided start-up
- Multiple synchronisation possible
- Simple process connection
Industrial technology

Lifting columns

Technical power packs

RK Rose+Krieger has been operating in the field of industrial automation technology for more than 40 years. Lifting columns and electric cylinders are a speciality.

The lifting columns are ideal for the linear adjustment of mounting devices, conveyors, equipment carriers and handling equipment, enabling working platforms and assembly aids to be positioned ergonomically.

The electric cylinders are a very good alternative to pneumatic cylinders.

Polishing machines
Areas of application

The lifting columns can also be fitted with support arm and equipment carrier systems from the RK Connecting Technology range.

Equipment carrier systems

Scissor lift adjustment

The electric cylinders are a very good alternative to pneumatic cylinders. Motor arrangement in parallel (LZ 60 P) or rod-shaped (LZ 60 S) means space requirements are variable and optimum integration is possible.

Conveyor adjustment

A complete system consisting of electrically powered Powerlift columns and MultiControl controls ensures even height adjustment in the printer logistics system.
Industrial technology

Mobile transfer system

Lifting column: RK Multilift with internal carriage

Industrial scanner

Lifting column: Alpha Colonne
Areas of application

Advantages

✓ Approved acc. to standards for medical technical equipment
✓ Quiet operation and smooth mechanics
✓ Smooth surfaces - easy to clean
✓ Resistant to disinfectants
Areas of application

Introduction

Lifting columns

Controls & Accessories

Appendix

Areas of application

**Silent helper**

In the field of diagnostics, therapy and for general set-ups, lifting columns are often an integral part of medical systems. In the fields of human and veterinary medicine, it is essential to be able to adjust and adapt devices to specific situations. Height adjustable examination couches, adjustable optics in eye exams and the precise adjustment of x-ray devices are just some examples of the huge range of application options.

**Wellness couch**

Many of our lifting columns are approved for medical applications in compliance with EN60601. The sleek design, reliability, stability and long service life all combine to provide maximum cost-effectiveness and create a feeling of safety. The areas of application for RK lifting columns are almost as exciting and diverse as the world of medicine itself.

Tell us what you want to achieve.

**Incubators**
Areas of application

X-ray couch

The “floating” carbon-fibre table tops allow for outstanding stability and durability coupled with optimum translucency. **Advantage:** X-rays with less impact on patient and tubes.

The attractive design not only offers personalised table height and adjustability, but is also specially designed for universal use with a swivel arm system e.g. the **PROTEC PEDS 600** for digital or classic X-rays.

Rehabilitation technology

The **eXcio Pelvic Trainer** is the world’s first ergonomically adaptive trainer that measures pelvic floor function and exercises it in a simple and comfortable way.

Mammography

The Akrus patient chair for the transport and accommodation of patients for mammography examination and stereotactic interventions is based on a **RK Powerlift M**
Medical technology

Chair application

Lifting columns

Controls & Accessories

Appendix

Areas of application

Lifting column: RK Powerlift

Instrument table

Lifting column: RK Powerlift
Areas of application

Advantages

✔ Precise and safe
✔ Easy-to-assemble
✔ Simple and intuitive operation
✔ Visually attractive integration
Luxury that’s worthwhile

The expensive media technology is cleverly concealed and only activated as and when required. This protects projectors, plasma screens and hi-fi systems against dust and keeps the high-quality equipment securely hidden from view. The sleek appearance of the stylish furnishings is not impaired by obtrusive entertainment technology.

TV height adjustment

Seminar rooms are transformed into interactive training centres. Private rooms are transformed into luxurious oases teeming with individuality. One could almost say, the sky's the limit – all you require is the support of an experienced and reliable partner from the drive technology sector. Our experience is our key asset – tell us all about your requirements and we will find a solution.
Areas of application

The design and function are to the fore. The technology is hidden in the background.

TV height adjustment

Presentation technology

The height-adjustable mobile video wall lift system is so versatile it leaves almost nothing to be desired.

Projector adjustment

Modern entertainment requires peripherals that enhance the overall experience.
Media technology

Information board

Lifting column: RK Multilift

Lectern

Lifting column: RK Powerlift

Areas of application

Introduction

Lifting columns

Controls & Accessories

Appendix
Lifting columns

are the ideal drive elements when stable guidance is required in addition to motorised adjustment. Electrotechnical knowledge is not generally necessary for putting them into operation. Combinations forming multiple synchronisations open up an impressive range of applications.
Contents

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RK Powerlift M ................................. Page 56
Multilift II telescope ........................ Page 64

Lifting columns
Finding the right lifting column

Depending on technical and optical requirements, it takes just 2 steps to find the lifting column that matches your needs.

Step 1 - Determine the type of lifting column.
Step 2 - Choose the appropriate version.

Step 1

Select the lifting column on the right that meets your requirements.

Step 2

For step 2, please refer to the relevant catalogue page.
Lifting columns - Product selection

**Rodstyle | Drive + Guide**

Two-stage lifting columns (up to 500 mm travel)

Multi-stage lifting columns (more than 500 mm travel)

The data refer to the standard size

<table>
<thead>
<tr>
<th>Features</th>
<th>Multilift II page 30</th>
<th>RK Powerlift M page 56</th>
<th>Multilift II telescope page 64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. travel</td>
<td>498 mm</td>
<td>500 mm</td>
<td>650 mm</td>
</tr>
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<td>Max. push force</td>
<td>3000 N</td>
<td>3000 N</td>
<td>3000 N</td>
</tr>
<tr>
<td>Max. pull force</td>
<td>3000 N</td>
<td>1500 N</td>
<td>2000 N</td>
</tr>
<tr>
<td>Max. travel speed</td>
<td>8/16 mm/s</td>
<td>7/10 mm/s</td>
<td>8/16 mm/s</td>
</tr>
<tr>
<td>Protection rating</td>
<td>IP 30</td>
<td>IP 30</td>
<td>IP 30</td>
</tr>
<tr>
<td>Integrated limit switch</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Can be synchronised by means of control system</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Integ. control</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Manual version optional</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

Features:

- Quadruple bearings with POM slide bearing shells
- Enables high bending moments
- Optimum stroke/installation height ratio

Preferred field of application:

**Single columns**
(can be moved individually)

**Synchronised columns (2–16 units)**
(can be moved synchronously)

Single operation/ Mono operation

Synchronised operation

Multiple column system
Multilift II

Slimline design and an unbeatable price/performance ratio

✓ Sloping cap to minimize crushing
✓ Special stroke lengths (max. 1,000 mm) and installation height possible
✓ Covered slot geometry
✓ Fixed motor cable (3 m) with plug
✓ All versions with base plate for compressive and tensile forces
✓ Motor housing with impact-resistant plastic

Highlights / Features:
- Integrated limit switches
- Self-locking, even at max. load
- Lateral fixing slot in external profile
- Position feedback by hall sensor

Options:
- Special stroke lengths and installation height available on request
- With synchronous control:
  - Cascading of several columns
- Customised solutions on request
- Testet to:
  - IEC 60601-1:2005

Slimline design and an unbeatable price/performance ratio
Multilift II – Table of contents

<table>
<thead>
<tr>
<th>Versions</th>
<th>Lifting columns</th>
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</thead>
<tbody>
<tr>
<td>Multilift II</td>
<td>...</td>
</tr>
<tr>
<td>Multilift II ESD</td>
<td>...</td>
</tr>
<tr>
<td>Multilift II impact</td>
<td>...</td>
</tr>
<tr>
<td>Multilift II safety</td>
<td>...</td>
</tr>
<tr>
<td>Multilift II clean</td>
<td>...</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Fixing</th>
</tr>
</thead>
<tbody>
<tr>
<td>RK SyncFlex</td>
<td>...</td>
</tr>
<tr>
<td>Assembly plate</td>
<td>...</td>
</tr>
<tr>
<td>Support struts</td>
<td>...</td>
</tr>
<tr>
<td>Foot versions</td>
<td>...</td>
</tr>
</tbody>
</table>

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Versions:
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Accessories:
- RK SyncFlex ........................................... Page 52
- Assembly plate ....................................... Page 53
- Support struts ....................................... Page 53
- Foot versions ......................................... Page 54
Multilift II – Technical data

General information/operating conditions

<table>
<thead>
<tr>
<th>Type</th>
<th>Multilift II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Slim lifting column</td>
</tr>
<tr>
<td>Guide</td>
<td>Quadruple bearings with POM</td>
</tr>
<tr>
<td>Installation position</td>
<td>Any position / hanging only with drop protection provided by the customer</td>
</tr>
<tr>
<td>Push force</td>
<td>3.000 N or 1.000 N</td>
</tr>
<tr>
<td>Pull force</td>
<td>3.000 N or 1.000 N</td>
</tr>
<tr>
<td>Self-locking</td>
<td>3.000 N</td>
</tr>
<tr>
<td>Max. speed</td>
<td>8 mm/s or 16 mm/s</td>
</tr>
<tr>
<td>Max. Stroke</td>
<td>500 mm</td>
</tr>
<tr>
<td>Installation height</td>
<td>Stroke + 203 mm</td>
</tr>
<tr>
<td>Voltage</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Current output</td>
<td>4 A</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 30</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>+5°C to +40°C</td>
</tr>
<tr>
<td>Displacement during synchronous operation</td>
<td>0–2 mm</td>
</tr>
<tr>
<td>Duty cycle (Operation mode S 3)</td>
<td>At nominal load, 10% (2 min operating time, 18 mins rest time)</td>
</tr>
</tbody>
</table>

Note:
All information refers to the standard sizes. All data of push/pull forces are referring to the individual lifting column, for combined applications a safety factor of up to 0,6 has to be considered.
In medical applications, the maximum pull force of 500 N and, in the case of the version with a travel speed of 8 mm/s, the maximum push force of 2.500 N must not be exceeded.

Load data

Mx= 200 Nm (dynamic)
Support torque 300 Nm (static)

My= 130 Nm (dynamic)
Support torque 200 Nm (static)
The fixing slots on the side allow an easy attachment of accessories. For example, a screen, CPU bracket or system reinforcements can be fixed to the lifting columns by using slot stones. The 30 slot geometry is also compatible with the RK BLOCAN® aluminium profile system.
Multilift II – maximum versatility

Customer feedback formed the basis for a number of improvements to the design of the Multilift II. Our latest new feature is an assembly slot on both sides of the external profile of the electric lifting column, which is compatible with the RK Rose+Krieger aluminium profile system and can take corresponding slot stones. They allow additional attachments such as reinforcements, screening and so on to be mounted without any problems.

Special features:
- Lateral fixing slots
- Captive plug connections
- Suitable for both tensile and compressive loads

Ideal area of application:
- ✓ Workplace ergonomics
- ✓ Industrial technology
- ✓ Media technology
- ✓ Medical technology

Lifting column and control as individual components:
Multilift II can be used exclusively in combination with MultiControl II duo (see page 76)

Features:
- Supports configuration of systems with up to 16 drives
- Wide-range input
- High duty cycle
- Simple connection to master control system
- Intuitive operation

Lifting column and control as pre-assembled set:
Multilift II can be used exclusively in combination with Compact-e-3-EU (see page 88)

Features:
- Exclusively for a 2-column table system
- System is factory-initialised (Plug & Play)

Scope of delivery:
- 2 Multilifts II
- 1 Controller box Compact-e-3-EU
- 4 Cover profiles
- 4 Slot stones
### Individual components:
Lifting column Multilift II

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>max. push force [N]</th>
<th>max. pull force [N]</th>
<th>max. lifting speed [mm/s]</th>
<th>Total travel [mm]</th>
<th>Installation height [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM22B1C2C22CA0355</td>
<td>Multilift II</td>
<td>3,000 / 2,500 (med.)</td>
<td>3,000 / 500 (med.)</td>
<td>8</td>
<td>355</td>
<td>558</td>
<td>10.5</td>
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<tr>
<td>TM22B1C2C22CA0400</td>
<td>Multilift II</td>
<td>1,000 / 1,000 (med.)</td>
<td>1,000 / 500 (med.)</td>
<td>16</td>
<td>355</td>
<td>558</td>
<td>10.5</td>
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<tr>
<td>TM22B1C2C22CA0450</td>
<td>Multilift II</td>
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<td>355</td>
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</table>

### Set:
Multilift II in combination with Compact-e-3-EU control

<table>
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<tr>
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<th>Type</th>
<th>max. push force [N]</th>
<th>max. pull force [N]</th>
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<th>Total travel [mm]</th>
<th>Installation height [mm]</th>
<th>Weight [kg]</th>
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<tr>
<td>TS22B1C3C22CA0355</td>
<td>Multilift II Set 230V AC</td>
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<tr>
<td>TS22B1C3C22CA0400</td>
<td>Multilift II Set 230V AC</td>
<td>1,000</td>
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<td>16</td>
<td>355</td>
<td>558</td>
<td>21.5</td>
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</tbody>
</table>

### Note:
The load value information is referring to the individual lifting column. For combined applications a safety factor of up to 0.6 has to be considered.
General information/operating conditions

<table>
<thead>
<tr>
<th>Type</th>
<th>Multilift II ESD</th>
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<tbody>
<tr>
<td>Design</td>
<td>Slim lifting column</td>
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<td>Guide</td>
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  - Support torque 200 Nm (static)
The fixing slots on the side allow an easy attachment of accessories. For example, a screen, CPU bracket or system reinforcements can be fixed to the lifting columns by using slot stones. The 30 slot geometry is also compatible with the RK BLOCAN® aluminium profile system.
Multilift II ESD – discharging voltages via the lifting column

In the electronics and semiconductor manufacturing industry, electrostatic discharges can impair the function of components being assembled, or even destroy them. With the Multilift II ESD, RK Rose+Krieger has developed a patented electric height adjustment system that is able to dissipate voltages.

Special feature:
- Outer and inner profile electrically connected to each other

Ideal area of application:
- Assembly workstations for the manufacture of electronic components

Lifting column and control as individual components:

Multilift II ESD can be used exclusively in combination with MultiControl II duo (see page 76)

Features:
- Supports configuration of systems with up to 16 drives
- Wide-range input
- High duty cycle
- Simple connection to master control system
- Intuitive operation
### Individual components: Lifting column Multilift II ESD

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>max. push force [N]</th>
<th>max. pull force [N]</th>
<th>max. lifting speed [mm/s]</th>
<th>Total travel [mm]</th>
<th>Installation height [mm]</th>
<th>Weight [kg]</th>
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<tr>
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<td>3,000 / 500 (med.)</td>
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<td>355</td>
<td>558</td>
<td>10.5</td>
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<td>658 / 658 (med.)</td>
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<td>497</td>
<td>703</td>
<td>13.0</td>
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<td>Multilift II ESD</td>
<td>1,000 / 1,000 (med.)</td>
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<td>16</td>
<td>355</td>
<td>558</td>
<td>10.5</td>
</tr>
<tr>
<td>TM22B1C2C22CC0400</td>
<td>Multilift II ESD</td>
<td>400 / 400 (med.)</td>
<td>603 / 603 (med.)</td>
<td></td>
<td>400</td>
<td>603</td>
<td>11.5</td>
</tr>
<tr>
<td>TM22B1C2C22CC0450</td>
<td>Multilift II ESD</td>
<td>452 / 452 (med.)</td>
<td>658 / 658 (med.)</td>
<td></td>
<td>452</td>
<td>658</td>
<td>12.0</td>
</tr>
<tr>
<td>TM22B1C2C22CC0500</td>
<td>Multilift II ESD</td>
<td>497 / 497 (med.)</td>
<td>703 / 703 (med.)</td>
<td></td>
<td>497</td>
<td>703</td>
<td>13.0</td>
</tr>
</tbody>
</table>
Multilift II impact – Technical data

General information/operating conditions

<table>
<thead>
<tr>
<th>Type</th>
<th>Multilift II impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Slim lifting column</td>
</tr>
<tr>
<td>Guide</td>
<td>Quadruple bearings with POM</td>
</tr>
<tr>
<td>Installation position</td>
<td>Any position / hanging only with drop protection provided by the customer</td>
</tr>
<tr>
<td>Push force</td>
<td>3.000 N</td>
</tr>
<tr>
<td>Pull force</td>
<td>3.000 N</td>
</tr>
<tr>
<td>Self-locking</td>
<td>3.000 N</td>
</tr>
<tr>
<td>Max. speed</td>
<td>8 mm/s</td>
</tr>
<tr>
<td>Max. Stroke</td>
<td>500 mm</td>
</tr>
<tr>
<td>Installation height</td>
<td>Stroke + 203 mm</td>
</tr>
<tr>
<td>Voltage</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Current output</td>
<td>4 A</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 30</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>+5°C to +40°C</td>
</tr>
<tr>
<td>Displacement during synchronous operation</td>
<td>0–2 mm</td>
</tr>
<tr>
<td>Duty cycle (Operation mode S 3)</td>
<td>At nominal load, 10% (2 min operating time, 18 mins rest time)</td>
</tr>
</tbody>
</table>

Note:
All information refers to the standard sizes. All data of push/pull forces are referring to the individual lifting column, for combined applications a safety factor of up to 0,6 has to be considered.
In medical applications, the maximum pull force of 500 N and, in the case of the version with a travel speed of 8 mm/s, the maximum push force of 2.500 N must not be exceeded.

Load data

Performance diagram Multilift II impact

Possible setting velocity in relation to the weight of the workpiece in consideration of the different stroke lengths

Exemplary force progression at an impact of a workpiece with \( v = 260 \) [mm/s] and \( m = 300 \) [Kg]
Multilift II impact

- The fixing slots on the side allow an easy attachment of accessories. For example, a screen, CPU bracket or system reinforcements can be fixed to the lifting columns by using slot stones. The 30 slot geometry is also compatible with the RK BLOCAN® aluminium profile system.
Multilift II impact – integrated damping absorbs high impact forces

The slim electric height adjustment system has an integrated damping system that is able to absorb high impact forces, such as those that occur when unloading a workpiece.

Special feature:
- Allows impact forces due to an internal damping system

Ideal area of application:
- Workplace ergonomics
- Industrial technology

Lifting column and control as individual components:

Multilift II impact can be used exclusively in combination with MultiControl II duo (see page 76)

Features:
- Supports configuration of systems with up to 16 drives
- Wide-range input
- High duty cycle
- Simple connection to master control system
- Intuitive operation
**Individual components:**
Lifting column Multilift II impact

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>max. push force [N]</th>
<th>max. pull force [N]</th>
<th>max. lifting speed [mm/s]</th>
<th>Total travel [mm]</th>
<th>Installation height [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM22B1C3C22CB0355</td>
<td>Multilift II impact</td>
<td>3,000 / 2,500 (med.)</td>
<td>3,000 / 500 (med.)</td>
<td>8</td>
<td>355</td>
<td>567</td>
<td>10.5</td>
</tr>
<tr>
<td>TM22B1C3C22CB0400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>400</td>
<td>612</td>
<td>11.5</td>
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<tr>
<td>TM22B1C3C22CB0450</td>
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<td></td>
<td></td>
<td></td>
<td>452</td>
<td>667</td>
<td>12.0</td>
</tr>
<tr>
<td>TM22B1C3C22CB0500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>497</td>
<td>712</td>
<td>13.0</td>
</tr>
</tbody>
</table>
General information/operating conditions

<table>
<thead>
<tr>
<th>Type</th>
<th>Multilift II safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Slim lifting column</td>
</tr>
<tr>
<td>Guide</td>
<td>Quadruple bearings with POM</td>
</tr>
<tr>
<td>Installation position</td>
<td>hanging</td>
</tr>
<tr>
<td>Push force</td>
<td>3.000 N</td>
</tr>
<tr>
<td>Pull force</td>
<td>3.000 N</td>
</tr>
<tr>
<td>Self-locking</td>
<td>3.000 N</td>
</tr>
<tr>
<td>Max. speed</td>
<td>8 mm/s</td>
</tr>
<tr>
<td>Max. Stroke</td>
<td>500 mm</td>
</tr>
<tr>
<td>Installation height</td>
<td>Stroke + 203 mm</td>
</tr>
<tr>
<td>Voltage</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Current output</td>
<td>4 A</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 30</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>+5°C to +40°C</td>
</tr>
<tr>
<td>Displacement during</td>
<td>0–2 mm</td>
</tr>
<tr>
<td>synchronous operation</td>
<td></td>
</tr>
<tr>
<td>Duty cycle (Operation mode S 3)</td>
<td>At nominal load, 10% (2 min operating time, 18 mins rest time)</td>
</tr>
</tbody>
</table>

Note:
All information refers to the standard sizes. All data of push/pull forces are referring to the individual lifting column, for combined applications a safety factor of up to 0.6 has to be considered.

The Multilift II safety is only designed for centric load.⚠️

In cases of eccentric load
please contact RK Rose+Krieger.
https://www.rk-rose-krieger.com/english/contact/
Multilift II safety

- The fixing slots on the side allow an easy attachment of accessories. For example, a screen, CPU bracket or system reinforcements can be fixed to the lifting columns by using slot stones. The 30 slot geometry is also compatible with the RK BLOCAN® aluminium profile system.
Multilift II safety – turning things on their head

RK Rose+Krieger has developed this column specially for overhead applications in media technology. Its uses include the correct positioning of projectors and monitors, whereby the lifting column is mounted upside down on the ceiling.

Special feature:
- Integrated fall protection

Ideal area of application:
- Media technology

Lifting column and control as individual components:

Multilift II safety can be used exclusively in combination with MultiControl II duo (see page 76)

Features:
- Wide-range input
- High duty cycle
- Simple connection to master control system
- Intuitive operation
### Individual components:
Lifting column Multilift II safety

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>max. push force [N]</th>
<th>max. pull force [N]</th>
<th>max. lifting speed [mm/s]</th>
<th>Total travel [mm]</th>
<th>Installation height [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM22B1C2C22CD0355</td>
<td>Multilift II safety</td>
<td>–</td>
<td>600</td>
<td>16</td>
<td>355</td>
<td>558</td>
<td>11.5</td>
</tr>
<tr>
<td>TM22B1C2C22CD0400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>400</td>
<td>603</td>
<td>12.0</td>
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<tr>
<td>TM22B1C2C22CD0450</td>
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<td></td>
<td></td>
<td></td>
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<td>658</td>
<td>13.0</td>
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<tr>
<td>TM22B1C2C22CD0500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>497</td>
<td>703</td>
<td>13.5</td>
</tr>
</tbody>
</table>
## General information/operating conditions

<table>
<thead>
<tr>
<th>Type</th>
<th>Multilift II clean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design</strong></td>
<td>Slim lifting column</td>
</tr>
<tr>
<td><strong>Guide</strong></td>
<td>Quadruple bearings with POM</td>
</tr>
<tr>
<td><strong>Installation position</strong></td>
<td>Any position / hanging only with drop protection provided by the customer</td>
</tr>
<tr>
<td><strong>Push force</strong></td>
<td>3.000 N o 1.000 N</td>
</tr>
<tr>
<td><strong>Pull force</strong></td>
<td>3.000 N o 1.000 N</td>
</tr>
<tr>
<td><strong>Self-locking</strong></td>
<td>3.000 N</td>
</tr>
<tr>
<td><strong>Max. speed</strong></td>
<td>8 mm/s o 16 mm/s</td>
</tr>
<tr>
<td><strong>Max. Stroke</strong></td>
<td>500 mm</td>
</tr>
<tr>
<td><strong>Installation height</strong></td>
<td>Stroke + 203 mm</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>24 V DC</td>
</tr>
<tr>
<td><strong>Current output</strong></td>
<td>4 A</td>
</tr>
<tr>
<td><strong>Protection class</strong></td>
<td>IP 30</td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>+5°C to +40°C</td>
</tr>
<tr>
<td><strong>Displacement during synchronous operation</strong></td>
<td>0–2 mm</td>
</tr>
<tr>
<td><strong>Duty cycle (Operation mode S 3)</strong></td>
<td>At nominal load, 10% (2 min operating time, 18 mins rest time)</td>
</tr>
</tbody>
</table>

**Note:**
All information refers to the standard sizes. All data of push/pull forces are referring to the individual lifting column, for combined applications a safety factor of up to 0.6 has to be considered.

## Load data

- **Mx= 200 Nm (dynamic)**
  - Support torque 300 Nm (static)

- **My= 130 Nm (dynamic)**
  - Support torque 200 Nm (static)
Multilift – Versions

Multilift II clean

- The fixing slots on the side allow easy attachment of accessories. For example, a screen, CPU bracket or system reinforcements can be fixed to the lifting columns by using slot stones. The 30 slot geometry is also compatible with the RK BLOCAN® aluminium profile system.

![Diagram of Multilift II clean with dimensions and markings]
Multilift II clean – ideally suited to use in the clean room

The Multilift II clean has now been added to the range. It has been deliberately developed for use in the clean room. A special shroud for the DC motor with brushes of the lifting column means discharge of particles is kept to a minimum. To verify its suitability for use in clean rooms, the Fraunhofer Institute for Manufacturing Engineering and Automation IPA carried out a particle emissions test as per DIN EN ISO 14644-1 and certified the lifting column for use in clean rooms up to a globally valid class 4.

Multilift II clean – Versions

Lifting column and control as individual components:

Multilift II clean can be used exclusively in combination with MultiControl II duo (see page 76)

Features:

- Supports configuration of systems with up to 16 drives
- Wide-range input
- High duty cycle
- Simple connection to master control system
- Intuitive operation
## Individual components:

**Lifting column Multilift II clean**

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>max. push force [N]</th>
<th>max. pull force [N]</th>
<th>max. lifting speed [mm/s]</th>
<th>Total travel [mm]</th>
<th>Installation height [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM22B1C3C22CE0355</td>
<td>Multilift II clean</td>
<td>3,000</td>
<td>3,000</td>
<td>8</td>
<td>355</td>
<td>558</td>
<td>10.5</td>
</tr>
<tr>
<td>TM22B1C3C22CE0400</td>
<td>Multilift II clean</td>
<td>400</td>
<td>603</td>
<td>11.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM22B1C3C22CE0450</td>
<td>Multilift II clean</td>
<td>452</td>
<td>658</td>
<td>12.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM22B1C3C22CE0500</td>
<td>Multilift II clean</td>
<td>497</td>
<td>703</td>
<td>13.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM22B1C2C22CE0355</td>
<td>Multilift II clean</td>
<td>1,000</td>
<td>1,000</td>
<td>16</td>
<td>355</td>
<td>558</td>
<td>10.5</td>
</tr>
<tr>
<td>TM22B1C2C22CE0400</td>
<td>Multilift II clean</td>
<td>400</td>
<td>603</td>
<td>11.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM22B1C2C22CE0450</td>
<td>Multilift II clean</td>
<td>452</td>
<td>658</td>
<td>12.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TM22B1C2C22CE0500</td>
<td>Multilift II clean</td>
<td>497</td>
<td>703</td>
<td>13.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Multilift II – Accessories

RK SyncFlex H

Scope of delivery:
Adjuster plate, incl. fixing material

Horizontal alignment

- To prevent locked-up stress in mechanically overdefined bearing systems (more than one fixed bearing) around the horizontal axis. With RK SyncFlex H, defined floating bearings supplement the application.

- The horizontal compensation in the Z-axis enables the mobility required when moving the lifting columns.

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD020471</td>
<td>Multilift II product line</td>
<td>70</td>
<td>280</td>
<td>36</td>
<td>40</td>
<td>260</td>
<td>M10</td>
</tr>
</tbody>
</table>

RK SyncFlex V

Scope of delivery:
Adjuster plate, incl. fixing material

Option:
Pressure plate (see table) can be ordered separately

Vertical alignment

- If the lifting columns are not parallel, the distance between the two upper fixing points will change during the movement. However, a rigid connection keeps this distance constant, which means that the lifting columns are subject to very strong forces.

- RK SyncFlex V enables the compensation of unevenness in the mounting environment.

- The lifting columns can be aligned via the vertical adjustment around the X-Y axes.

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>RK SyncFlex V Adjusting plate</td>
<td>Multilift II product line</td>
<td>110</td>
<td>328</td>
<td>90</td>
<td>280</td>
<td>–</td>
<td>10-15</td>
<td>–</td>
<td>M10</td>
</tr>
<tr>
<td>QZD020620</td>
<td>Multilift II product line</td>
<td>110</td>
<td>–</td>
<td>90</td>
<td>280</td>
<td>15-20</td>
<td>–</td>
<td>300</td>
<td>–</td>
</tr>
</tbody>
</table>
Assembly plates

- The assembly plates are for easy assembling in customer applications.

**Type 2**

- Counterbore DIN 74 - F8

**Type 3**

- Counterbore DIN 74 - F8

**Support struts**

- For stabilisation of column structures.
- Available for all Multilift II / Multilift II telescope variants.

**Material:**
- Aluminium not anodized

**Scope of delivery:**
- Two support struts including fastenings

---

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>for drive</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD020549</td>
<td>2</td>
<td>Multilift II / clean</td>
<td>Zinc die cast</td>
</tr>
<tr>
<td>QZD020671</td>
<td>2</td>
<td>Multilift II ESD</td>
<td>Zinc die cast</td>
</tr>
<tr>
<td>QZD020552</td>
<td>3</td>
<td>Multilift II / impact/safety/clean / ESD</td>
<td>Steel</td>
</tr>
</tbody>
</table>

---

**Support struts**

- Counterbore DIN 74 - F8
  - Top assembly plate for internal profile

**Support struts**

- Counterbore DIN 74 - F8
  - Top assembly plate for internal profile

---

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type for drive</th>
<th>Basic length (minimum length)</th>
<th>Max. total length (width)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD020734</td>
<td>Support struts RK ML II</td>
<td>750 mm</td>
<td>2000 mm</td>
</tr>
</tbody>
</table>

---

**Distance between the slot centerpoints [mm]**

**Width (Distance between the slot centerpoints) [mm]**

---

**Distance between the slot centerpoints [mm]**

---

**Distance between the slot centerpoints [mm]**
Foot versions

- Different foot versions for the Multilift
- No modifications of the Multilift required

Material:
Type 1/2 GK-AlSi12/3.2583.02, black powder-coated
Type 3/4 steel tube, ends capped black powder-coated

Scope of delivery:
one foot with fixing set

Type 1

External profile
Internal profile

Type 2

Type 3
**Order instruction:**
The application example shown – internal profile mounted on Type 6, 7, 8 – is only in combination with an assembly plate possible (see page 53)

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>Max. load</th>
<th>Multilift II / Multilift II clean</th>
<th>Multilift II ESD</th>
<th>Multilift II impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Internal profile</td>
<td>External profile</td>
<td>Internal profile</td>
</tr>
<tr>
<td>QZD020252</td>
<td>1</td>
<td>1,000 N</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QZD020253</td>
<td>2</td>
<td>1,000 N</td>
<td>●</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QZD020254</td>
<td>3</td>
<td>1,000 N</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>QZD020255</td>
<td>4</td>
<td>1,000 N</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>QZD020256</td>
<td>6</td>
<td>3,000 N</td>
<td>●*</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>QZD020257</td>
<td>7</td>
<td>3,000 N</td>
<td>●*</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>QZD020258</td>
<td>8</td>
<td>3,000 N</td>
<td>●*</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
RK Powerlift M

The mini version of the RK Powerlift – the RK Powerlift M

**Highlights / Features:**
- Withstands high torsional and bending moments
- Integrated motor
- Extremely quiet operation
- Choice of internal or external control
- Four fixing slots in external profile
- Power receptacle at top or bottom, as preferred
- Testet to: IEC 60601-1 (ed.3) EN 60601-1:2006/A1:2013

**Options:**
- Special stroke lengths and installations height available on request
- With synchronous control: Cascading of several columns
- Specific solutions on request

**Standard**
- Hand switch receptacle, power receptacle with integrated fuse
- Fixed motor cable (3 m) with plug

**Soft control versions are available with SMPS technology** (Switched-Mode Power Supply technology)
- Wide range input (100 - 240 V ~ 50 / 60 Hz)
- Soft start and stop process
- Overcurrent-monitoring
- Temperature-monitoring
- Single-fault protection
- Energy-efficient
- Weight-optimised

**Optional**
- Power supply/output versions

**Hand switch receptacle, power receptacle with integrated fuse**

**Fixed motor cable (3 m) with plug**
RK Powerlift M - Table of contents

Versions

<table>
<thead>
<tr>
<th>Versions</th>
<th>Lifting columns</th>
</tr>
</thead>
</table>

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Accessories

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Fixing</th>
</tr>
</thead>
</table>

| RK SyncFlex | Page 62 |
| Square nut   | Page 62 |
| Assembly plate | Page 63 |
| Base plate   | Page 63 |
# RK Powerlift M – Technical data

## General information/operating conditions

<table>
<thead>
<tr>
<th>Type</th>
<th>RK Powerlift M for external control</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design</strong></td>
<td>Rectangular lifting column in compact design</td>
</tr>
<tr>
<td><strong>Guide</strong></td>
<td>16 POM slide bearings</td>
</tr>
<tr>
<td><strong>Installation position</strong></td>
<td>Any position/suspended with drop protection provided by the customer</td>
</tr>
<tr>
<td><strong>Push force</strong></td>
<td>3,000 N or 1,500 N</td>
</tr>
<tr>
<td><strong>Pull force</strong></td>
<td>1,500 N</td>
</tr>
<tr>
<td><strong>Self-locking</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Max. speed</strong></td>
<td>7 mm/s or 10 mm/s</td>
</tr>
<tr>
<td><strong>Max. Stroke</strong></td>
<td>500 mm</td>
</tr>
<tr>
<td><strong>Installation height</strong></td>
<td>710 mm</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>24 V DC</td>
</tr>
<tr>
<td><strong>Current output</strong></td>
<td>4,5 A</td>
</tr>
<tr>
<td><strong>Protection class</strong></td>
<td>IP 30</td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>+5°C to +40°C</td>
</tr>
<tr>
<td><strong>Displacement during synchronous operation</strong></td>
<td>0-2 mm</td>
</tr>
<tr>
<td><strong>Duty cycle (Operation mode S 3)</strong></td>
<td>At nominal load, 15% (max. 1.5 mins operating time, 8.5 mins rest time)</td>
</tr>
</tbody>
</table>

*Note:*
All information refers to the standard sizes. All data of push/pull forces are referring to the individual lifting column, for combined applications a safety factor of up to 0.6 has to be considered. In medical applications, the maximum pull force of 750 N must not be exceeded.

## Load data RK Powerlift M

- \( M = 200 \text{ Nm (dynamic)} \)
- \( F_{\text{push}} = 1,500 \text{ N / 3000 N} \)
- \( F_{\text{pull}} = 1,500 \text{ N} \)
- Support torque 400 Nm (static)
RK Powerlift M for external control

Installation height - 37 mm

Straight connecting cable

4x Ø7,45 (M8)
RK Powerlift M for external control

The design of the RK Powerlift M is impressive, with its high torque support and its compact form. As a result, this lifting column is often used as a mono column. In addition to the existing 1,500 N version, the range has been extended to include the RK Powerlift M for compressive forces of 3,000 N. The combination of high compressive force and torque support makes the RK Powerlift M a powerful lifting column with many different applications.

Lifting column and control as individual components:

RK Powerlift M can be used exclusively in combination with MultiControl II duo (see page 76)

Features:
- Supports configuration of systems with up to 16 drives
- Wide-range input
- High duty cycle
- Simple connection to master control system
- Intuitive operation

Special features:
- Withstands high torsional and bending moments
- Compact form

Ideal area of application:
- Workplace ergonomics
- Industrial technology
- Media technology
- Medical technology
## RK Powerlift M

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>max. push force [N]</th>
<th>max. pull force [N]</th>
<th>max. lifting speed [mm/s]</th>
<th>Total travel [mm]</th>
<th>Installation height [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>QPM08EE490300</td>
<td>RK Powerlift M</td>
<td>3000 / 3000 (med.)</td>
<td>1500 / 750 (med.)</td>
<td>7</td>
<td>300</td>
<td>510</td>
<td>-12.0</td>
</tr>
<tr>
<td>QPM08EE490400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>400</td>
<td>610</td>
<td>-13.5</td>
</tr>
<tr>
<td>QPM13EC490300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>300</td>
<td>510</td>
<td>-12.0</td>
</tr>
<tr>
<td>QPM13EC490400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>400</td>
<td>610</td>
<td>-13.5</td>
</tr>
<tr>
<td>QPM13EC490500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>500</td>
<td>710</td>
<td>-15.0</td>
</tr>
</tbody>
</table>
RK Powerlift M – Accessories

**RK SyncFlex H**

**Scope of delivery:**
Adjuster plate, incl. fixing material

**Horizontal alignment**
- To prevent locked-up stress in mechanically overdefined bearing systems (more than one fixed bearing) around the horizontal axis. With RK SyncFlex H defined loose bearings supplement the application.

**RK Powerlift M**

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD100453</td>
<td>RK Powerlift M</td>
<td>200</td>
<td>250</td>
<td>36</td>
<td>180</td>
<td>230</td>
<td>M 10</td>
</tr>
</tbody>
</table>

**Without pressure plate**

**Vertikale Ausrichtung**

**RK SyncFlex V**

**Scope of delivery:**
Adjuster plate, incl. fixing material

**Option:**
 Optionally available with or without pressure plate (see table)

**Vertical alignment**
- The horizontal compensation in the Z-axis enables the freedom of movement required when moving the lifting columns.

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD100446</td>
<td>RK Powerlift M</td>
<td>200</td>
<td>250</td>
<td>-</td>
<td>180</td>
<td>230</td>
<td>10-15</td>
<td>M 10</td>
</tr>
</tbody>
</table>

**With pressure plate**

**RK SyncFlex V enables the compensation of unevenness in the mounting environment.**

**Square nut**

- For connecting accessories to the external profile

<table>
<thead>
<tr>
<th>Code No.</th>
<th>lot sizes</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>qzd1003261</td>
<td></td>
<td>Square nut M4, DIN 562</td>
</tr>
</tbody>
</table>
Assembly plate

- These mounting plates are fitted using the mounting kits supplied and fixed directly into the screw channels in the RK Powerlift M. A further 4 holes, in the mounting plate, allow easy connection, to brackets or corresponding fixture assembly work etc.

Material: S 235 JR, black powder-coated, zinc plated fixing set
Scope of delivery: Plate, incl. fixing set

For internal profile

For external profile

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD100541</td>
<td>Top assembly plate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD100542</td>
<td>Bottom assembly plate</td>
</tr>
</tbody>
</table>

Base plate

Scope of delivery: complete with fastenings

Material
steel, black powder-coated (RAL 9005), zinc plated fastenings

Base plate, with plastic foot, adjusting screw M10

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD100546</td>
<td>Base plate for RK Powerlift M</td>
</tr>
</tbody>
</table>
### Multilift II telescope

**Highlights/Features:**
- Integrated limit switches
- Self-locking, even at max. load
- Lateral fixing slot in external profile
- Position feedback by hall sensor
- Optimised height/stroke length ratio conforms to the ergonomic standard for workbenches (DIN EN 527-1:2011)

**Options:**
- Special stroke lengths and installation height available on request
- With synchronous control:
  - Cascading of several columns
- Specific solutions on request

- Sloping cap to minimize crushing
- Covered slot geometry
- All versions with base plate for compressive and tensile forces
- Special stroke lengths (max. 1,000 mm) and installation height possible
- Fixed motor cable (3 m) with plug
- Motor housing with impact-resistant plastic
## General information/operating conditions

<table>
<thead>
<tr>
<th>Type</th>
<th>Multilift II telescope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>Slim lifting column</td>
</tr>
<tr>
<td>Guide</td>
<td>Quadruple bearings with POM slide bearing shells</td>
</tr>
<tr>
<td>Installation position</td>
<td>Any position / hanging only with drop protection provided by the customer</td>
</tr>
<tr>
<td>Push force</td>
<td>3,000 N or 1,000 N</td>
</tr>
<tr>
<td>Pull force</td>
<td>2,000 N or 1,000 N</td>
</tr>
<tr>
<td>Self-locking</td>
<td>3,000 N</td>
</tr>
<tr>
<td>Max. speed</td>
<td>8 mm/s or 16 mm/s</td>
</tr>
<tr>
<td>Max. Stroke</td>
<td>650 mm</td>
</tr>
<tr>
<td>Installation height</td>
<td>560 mm</td>
</tr>
<tr>
<td>Voltage</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Current output</td>
<td>4 A</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 30</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>+5°C to +40°C</td>
</tr>
<tr>
<td>Displacement during synchronous operation</td>
<td>0 – 2 mm</td>
</tr>
<tr>
<td>Duty cycle (Operation mode S 3)</td>
<td>At nominal load, 10% (2 min operating time, 18 mins rest time)</td>
</tr>
</tbody>
</table>

**Note:**
All information refers to the standard sizes. All data of push/pull forces are referring to the individual lifting column, for combined applications a safety factor of up to 0.6 has to be considered. In medical applications, the maximum pull force of 500 N and, in the case of the version with a travel speed of 8 mm/s, the maximum push force of 1,500 N must not be exceeded.

## Load data Multilift II telescope

![Support torque load 300 Nm (static)](image)

**Mx= 200 Nm (dynamic)**
Support torque load 300 Nm (static)

![Support torque load 150 Nm (static)](image)

**My= 100 Nm (dynamic)**
Support torque load 150 Nm (static)
Multilift II telescope

- The fixing slots on the side allow an easy attachment of accessories. For example, a screen, CPU bracket or system reinforcements can be fixed to the lifting columns by using slot stones. The 30 slot geometry is also compatible with the RK BLOCAN® aluminium profile system.
Multilift II telescope – unique installation height / stroke ratio

The three-stage lifting column conforms to the ergonomics standard for workbenches (DIN EN 527-1:2011) and features an optimum height / stroke length ratio: the installation dimension in a retracted position is just 560 mm. The maximum stroke is 650 mm with a maximum lifting force of up to 3,000 N per drive.

**Special feature:**
- Optimised height / stroke length ratio conforms to the ergonomic standard for workbenches (DIN EN 527-1:2011)

**Ideal area of application:**
- Especially for seated and standing workplaces in the production
- LEAN-Workplaces

---

**Lifting column and control as individual components:**

Multilift II telescope can be used exclusively in combination with MultiControl II duo (see page 76)

**Features:**
- Supports configuration of systems with up to 16 drives
- Wide-range input
- High duty cycle
- Simple connection to master control system
- Intuitive operation

**Lifting column and control as pre-assembled set:**

Multilift II telescope can be used exclusively in combination with Compact-e-3-EU (see page 88)

**Features:**
- Exclusively for a 2-column table system
- System is factory-initialised (Plug & Play)

**Scope of delivery:**
- 2 Multilifts II
- 1 Controller box Compact-e-3-EU
- 4 Cover profiles
- 4 Slot stones
**Individual components:**
Lifting column Multilift II telescope

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>max. push force [N]</th>
<th>max. pull force [N]</th>
<th>max. lifting speed [mm/s]</th>
<th>Total travel [mm]</th>
<th>Installation height [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM13B1C3C22CA0650</td>
<td>Multilift II telescope</td>
<td>3,000 / 1,500 (med.)</td>
<td>2,000 / 500 (med.)</td>
<td>8</td>
<td>650</td>
<td>560</td>
<td>15.0</td>
</tr>
<tr>
<td>TM13B1C2C22CA0650</td>
<td>Multilift II telescope</td>
<td>1,000 / 1,000 (med.)</td>
<td>1,000 / 500 (med.)</td>
<td>16</td>
<td>650</td>
<td>560</td>
<td>15.0</td>
</tr>
</tbody>
</table>

**Set:**
Multilift II telescope in combination with Compact-e-3-EU control

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>max. push force [N]</th>
<th>max. pull force [N]</th>
<th>max. lifting speed [mm/s]</th>
<th>Total travel [mm]</th>
<th>Installation height [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS13B1C3C22CA0650</td>
<td>Multilift II telescope Set 230V AC</td>
<td>3,000</td>
<td>2,000</td>
<td>8</td>
<td>650</td>
<td>560</td>
<td>31.0</td>
</tr>
<tr>
<td>TS13B1C2C22CA0650</td>
<td>Multilift II telescope Set 230V AC</td>
<td>1,000</td>
<td>1,000</td>
<td>16</td>
<td>650</td>
<td>560</td>
<td>31.0</td>
</tr>
</tbody>
</table>

**Order instruction:**
Please select mains cable and hand switch separately (see page 84)

**Note:**
The load value information is referring to the individual lifting column. For combined applications a safety factor of up to 0.6 has to be considered.
**Multilift II telescope – Accessories**

### RK SyncFlex H

**Scope of delivery:**
Adjuster plate, incl. fixing material

**Horizontal alignment**
- To prevent locked-up stress in mechanically overdefined bearing systems (more than one fixed bearing) around the horizontal axis. With RK SyncFlex H, defined floating bearings supplement the application.

**Code No.** | **Type** | **A** | **B** | **C** | **D** | **E** | **F**  
--- | --- | --- | --- | --- | --- | --- | ---  
QZD020471 | Multilift II product line | 70 | 280 | 36 | 40 | 260 | M10

### RK SyncFlex V

**Scope of delivery:**
Adjuster plate, incl. fixing material

**Option:**
Pressure plate (see table) can be ordered separately

**Vertical alignment**
- If the lifting columns are not parallel, the distance between the two upper fixing points will change during the movement. However, a rigid connection keeps this distance constant, which means that the lifting columns are subject to very strong forces.

**Code No.** | **Type** | **A** | **B** | **C** | **D** | **E** | **F** | **G** | **H**  
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---  
RK SyncFlex V Adjusting plate  
QZD020620 | Multilift II product line | 110 | 328 | 90 | 280 | – | 10-15 | – | M10  
Pressure Plate  
QZD020621 | Multilift II product line | 110 | – | 90 | 280 | 15-20 | – | 300 | –
Assembly plates

- The assembly plates are for easy assembling in customer applications.

Type 2
- Counterbore DIN 74 - F8

Type 3
- Counterbore DIN 74 - F8

Material:
Option of black-powdered die cast zinc or black-powdered steel, zinc plated fixing set

Scope of delivery:
Plate with fixing set

Support struts

- For stabilisation of column structures.
- Available for all Multilift II / Multilift II telescope variants.

Material:
Aluminium not anodized

Scope of delivery:
Two support struts including fastenings

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>for drive</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD020549</td>
<td>2</td>
<td>Multilift II telescope</td>
<td>Zinc die cast</td>
</tr>
<tr>
<td>QZD020552</td>
<td>3</td>
<td>Multilift II telescope</td>
<td>Steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>Basic length (minimum length)</th>
<th>Max. total length (with)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD020734</td>
<td>Support struts RK ML II</td>
<td>750 mm</td>
<td>2000 mm</td>
</tr>
</tbody>
</table>
Foot versions

- Different foot versions for the Multilift
- No modifications of the Multilift required

Material:
Type 1/2 GK-AlSi12/3.2583.02, black powder-coated
Type 3/4 steel tube, ends capped black powder-coated

Scope of delivery:
one foot with fixing set
Order instruction:
The application example shown – internal profile mounted on Type 6 – is only in combination with an assembly plate possible (see page 71)

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>Max. load</th>
<th>Multilift II telescope</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Internal profile</td>
<td>External profile</td>
</tr>
<tr>
<td>QZD020252</td>
<td>1</td>
<td>1,000 N</td>
<td>●</td>
</tr>
<tr>
<td>QZD020253</td>
<td>2</td>
<td>1,000 N</td>
<td>●</td>
</tr>
<tr>
<td>QZD020254</td>
<td>3</td>
<td>1,000 N</td>
<td>●</td>
</tr>
<tr>
<td>QZD020255</td>
<td>4</td>
<td>1,000 N</td>
<td>●</td>
</tr>
<tr>
<td>QZD020256</td>
<td>6</td>
<td>3,000 N</td>
<td>●*</td>
</tr>
</tbody>
</table>
The mono and multiple synchronous controls are the powerhouses for lifting columns and electric cylinders. The MultiControl control family makes it easier to choose while increasing the level of diversity. Both convenient manual push-button operation and integration in master control systems are possible via PLC module.
MultiControl II duo

- LED for visual status indication
- Worldwide use thanks to wide-range input
- High-performance and energy-efficient switched-mode power supply
- Intuitive operation thanks to hand switch with graphics-capable display
- Simple connection to master control system
- Simple connection of external sensor equipment
- Synchronous control of up to two drives
- Up to 8 controllers, and thus 16 drives possible, using BUS cable networking

Highlights / Features:
- Dynamic duty cycle calculation
- Duty cycle, overcurrent and temperature monitoring for overload protection as standard
- Intuitive operation thanks to hand switch with graphics-capable display
- The hand switch with 6 function keys can be used to perform multiple functions, such as the storage of intermediate positions or user changeovers

Option:
- Special functions available on request

Simple connection to the master control system level using serial interface (RS-485) and standardised bus protocol (Modbus ASCII)
- Energy-efficient overall system (control incl. hand switch) thanks to switched-mode power supply with wide-range input (standby consumption <0.5 watts)
- Controller available in Basic and Premium versions
## MultiControl II duo – Table of contents

<table>
<thead>
<tr>
<th>Controls</th>
<th>MultiControl II duo</th>
<th>Accessories</th>
<th>IEC cable</th>
<th>Page 84</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cabel</td>
<td>Page 84</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hand switch</td>
<td>Page 85</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hand switch drawer</td>
<td>Page 85</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>I/O-Interface</td>
<td>Page 86</td>
</tr>
</tbody>
</table>

| Controls & Accessories | | | General information | Page 78 |
|------------------------|-------------------------------------------------|
| Lifting columns | Introduction | Appendix | Areas of application | Controls & Accessories | 77 |
## General information / operating conditions

<table>
<thead>
<tr>
<th>Type</th>
<th>MultiControl II duo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatible</td>
<td>All versions of Multilift II product line</td>
</tr>
<tr>
<td>Input voltage</td>
<td>100 – 240 V ~ 50 / 60 Hz</td>
</tr>
<tr>
<td>Output voltage</td>
<td>28 V DC</td>
</tr>
<tr>
<td>Current output</td>
<td>max. 10 A</td>
</tr>
<tr>
<td>Power</td>
<td>285 VA</td>
</tr>
<tr>
<td>Standby-power</td>
<td>≤ 0,5 W</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>+5 °C to +40 °C</td>
</tr>
<tr>
<td>Relative humidity (for operation)</td>
<td>30 % to 75 %</td>
</tr>
<tr>
<td>Protection class (with earth terminal)</td>
<td>I</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 20</td>
</tr>
<tr>
<td>Dimensions (L, B, H) [mm]</td>
<td>240 x 105 x 56</td>
</tr>
<tr>
<td>Weight</td>
<td>880 g</td>
</tr>
<tr>
<td>Duty cycle (Operation mode S 3)</td>
<td>At nominal load, 20% (4 min operating time, 16 mins rest time)</td>
</tr>
</tbody>
</table>

Supports configuration of systems with up to 16 drives
MultiControl II duo

1 HS = Hand switch connector
2 DATA = Interface for sensors
   (e.g. safety edge and synchronisation bus)
3 M2 = Motor connector 2
4 M1 = Motor connector 1
   (must always be assigned)
P = Power socket
MultiControl II duo – Versions

MultiControl II duo basic/premium

The MultiControl II duo controller is available in a Basic and a Premium version.

<table>
<thead>
<tr>
<th>Feature/software function</th>
<th>Basic</th>
<th>Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low standby consumption</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Wide-range input</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Dynamic duty cycle calculation</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Temperature monitoring</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Visual status indication</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Networking of multiple controllers*</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Stroke limitation*</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Memory positions*</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Change/set stroke display/base height*</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>View error history</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>View current consumption of drives</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Transfer parameter settings to other systems*</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Serial interface (RS-485)</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Standardised bus protocol (Modbus ASCII)</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>I/O interface compatibility</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Connection of external sensor equipment (e.g. safety edge)</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Integrated collision detection (SPP)</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Absolute positioning*</td>
<td></td>
<td>●</td>
</tr>
<tr>
<td>Relative positioning*</td>
<td></td>
<td>●</td>
</tr>
</tbody>
</table>

*Note: Hand switch with 6 function keys required for functionality

The Premium version includes three additional software functions compared to the Basic version. These are described on the following pages.
SPP – Smart Product Protection (integrated collision detection)

Function description

The Premium version of the MultiControl II control unit includes RK Rose+Krieger GmbH’s own in-house developed SPP technology. This technology makes for a considerable reduction of the risk of product damage in the customer’s application. In the process, protection is not just provided for the connected drives, but also for the connecting construction as a whole.

When adjusting the height of tables or machine frames, for instance, there is a latent risk of collisions as a result of the raising and lowering of a load. If they occur, these collisions can cause hitches and damage to drives (reduction of the service life, possible complete failure) and even to the connecting construction.

SPP is a software-based solution for collision detection. A major benefit is the fact that the technology is fully integrated into the control system. This way, it is not necessary to equip the customer application with additional external sensor equipment.

A further special feature is the option of the user to adjust the sensitivity of the system (triggering force when a collision is detected) specifically to the application.

The following is a further summary of the significant benefits of integrated collision detection.

Highlights / Features:

- Higher product safety – SPP detects obstacles, both during upward and downward movement
- No external obstructing contour – the technology is fully integrated into the control system and works with all compatible drives
- High process reliability – SPP functions regardless of the load or other ambient parameters, e.g. ambient temperature
- Plug & Play – no further installation steps are required for the collision protection thanks to integration into the control system
- Flexibility – sensitivity can be adjusted using the hand switch with 6 function keys
MultiControl II duo – Versions

Relative and absolute positioning

Alongside the integrated collision detection (SPP), the Premium version has two further functions which relate to the type of drive positioning.

In addition to moving to previously stored memory positions, it is also possible to carry out relative or absolute positioning. The first variant refers to positioning relative to the current position of the lifting column. This way, the operating control can be used to set a defined value (e.g. 30% or 30 mm) by which the drive further retracts or extends.

Absolute positioning, on the other hand, refers to the complete scale of the adjustment range. Thus it is also possible to use the operating control to move the drive precisely to a predefined position. This function can be very significant, for instance, for applications in which components are measured.

Highlights / Features:
- Absolute positioning – precise positioning to a defined position in relation to the complete adjustment range of the drive
- Relative positioning – gradual positioning in relation to the current position of the drive
- Positioning accuracy – both software functions allow positioning to predefined positions which is accurate to the millimetre
## Controls

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Softwareversion</th>
<th>for drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>QST11H12AA000</td>
<td>Basic</td>
<td>Multilift II, Multilift II ESD, Multilift II safety, Multilift II clean</td>
</tr>
<tr>
<td>QST11H12AA022</td>
<td>Premium</td>
<td></td>
</tr>
<tr>
<td>QST12H12AA000</td>
<td>Basic</td>
<td>Multilift II telescope</td>
</tr>
<tr>
<td>QST12H12AA022</td>
<td>Premium</td>
<td></td>
</tr>
<tr>
<td>QST13H12AA000</td>
<td>Basic</td>
<td>Multilift II impact</td>
</tr>
<tr>
<td>QST13H12AA022</td>
<td>Premium</td>
<td></td>
</tr>
<tr>
<td>QST44H12AA000</td>
<td>Basic</td>
<td>Powerlift M</td>
</tr>
<tr>
<td>QST44H12AA022</td>
<td>Premium</td>
<td></td>
</tr>
</tbody>
</table>
Control MultiControl II duo

IEC cable

<table>
<thead>
<tr>
<th>Code No</th>
<th>Version</th>
<th>Typ</th>
<th>Cable length</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD070618</td>
<td>IEC cable (Europe version, earthed plug)</td>
<td>F</td>
<td>1.80 m</td>
</tr>
<tr>
<td>QZD020159</td>
<td>IEC cable (Switzerland version, earthed plug)</td>
<td>J</td>
<td>1.80 m</td>
</tr>
<tr>
<td>QZD070619</td>
<td>IEC cable (Great Britain version, earthed plug)</td>
<td>G</td>
<td>1.80 m</td>
</tr>
<tr>
<td>QZD070631</td>
<td>IEC cable (Japan, version earthed plug)</td>
<td>B</td>
<td>1.80 m</td>
</tr>
<tr>
<td>QZD070622</td>
<td>IEC cable (USA, version earthed plug)</td>
<td>B</td>
<td>2.00 m</td>
</tr>
</tbody>
</table>

*Note: If there are more than two connected controllers, the overall system always requires two terminating resistors at the beginning and end of the BUS system.

Code No. | Accessories                                      | Fig. |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD070693</td>
<td>BUS cable 6 m for networking of up to 8 synchronous control</td>
<td>4</td>
</tr>
<tr>
<td>QZD070717</td>
<td>BUS cable 1 m for networking of 2 synchronous control</td>
<td>5</td>
</tr>
<tr>
<td>QZD070694</td>
<td>Terminating resistor (only necessary when more than 2 synchronous controls are connected) *</td>
<td>6</td>
</tr>
<tr>
<td>QZD070700</td>
<td>Hand switch extension cable – 2.5 m straight</td>
<td>7</td>
</tr>
<tr>
<td>QZD070710</td>
<td>Hand switch cable (open cable end) – 4 m straight</td>
<td>8</td>
</tr>
<tr>
<td>QZD070718</td>
<td>BUS cable with open cable end – 4 m straight</td>
<td>9</td>
</tr>
</tbody>
</table>
Hand switches with 6 function keys

1

Hand switches with 2 function keys

2

Hand switch drawer

3

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Version</th>
<th>Fig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZB11G07AV041</td>
<td>Hand switch with 6 function keys and display – 1 m cable length</td>
<td>1</td>
</tr>
<tr>
<td>QZB11G07AB041</td>
<td>Hand switch with 2 function keys – 1 m cable length</td>
<td>2</td>
</tr>
<tr>
<td>QZD000074</td>
<td>Hand switch drawer for hand switches with 6 and 2 function keys</td>
<td>3</td>
</tr>
</tbody>
</table>
I/O-Interface

The RK Rose + Krieger lifting column range supports a wide range of workflows in a wide range of assembly and manufacturing processes. A special data interface has now been developed in order to further optimise these workflows and increase the level of automation.

A lifting column for user-friendly setting up, for instance, can be operated using a hand switch. The ongoing production process is then controlled by PLC.

Features:
- An interface for the connection to a master control system (e.g. PLC)
- Quick and easy installation in the control cabinet thanks to support rail housing (TS35)
- Bidirectional communication between controller and master control system via 16 digital inputs and outputs
- Standard functions reduce and simplify the programming requirement

Options:
- Quick and easy storage and assumption of memory positions using hand switch with 6 function keys

Standard functions of digital inputs:
- Up/Down
- Initialisation
- Memory positions
- Selection of travel speed
- Acknowledgement of status messages

Standard functions of digital outputs:
- Status message
- Initialisation complete
- Memory position reached
- Movement active
- Retracted status
- Encoder simulation
Connection of a PLC

The I/O interface is used to activate the MultiControl II via digital inputs and outputs (e.g. of a PLC). For this purpose the module forwards the digital inputs to the MultiControl II as commands. The feedback signals from the controller are in turn transferred via the digital outputs.

The I/O interface thus transmits the serial RS485 interface of the MultiControl II to the digital inputs and outputs bidirectionally. All the inputs and outputs of the module are configured with standard functions. Thus the digital inputs 4, 5 and 6, for instance, are intended for saving the memory positions of the lifting column.

It is important to mention that the hand switch with 6 function keys simplifies the saving of memory positions considerably. It can be used to save and assume memory positions.

Please refer to the installation instructions for detailed information on the I/O interface.

General information/operating conditions

<table>
<thead>
<tr>
<th>The voltage supply for the logic of the I/O module</th>
<th>is provided by connecting the MultiControl II control system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage supply for the digital inputs</td>
<td>High level: 5 V DC – 30 V DC</td>
</tr>
<tr>
<td></td>
<td>Low level: 0 V DC – 2 V DC</td>
</tr>
<tr>
<td>Voltage supply for the digital outputs</td>
<td>10-30 V DC, max. 4 A</td>
</tr>
<tr>
<td>Protection class</td>
<td>III</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>0 °C to +50°C</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP20</td>
</tr>
<tr>
<td>Dimensions</td>
<td>B x H x L: 67 x 50 x 75 mm</td>
</tr>
</tbody>
</table>

Scope of delivery:

- Data interface with housing
- Connecting cable to control
- Documentation

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Type</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD070690</td>
<td>I/O-Interface</td>
<td>for MultiControl II duo</td>
</tr>
</tbody>
</table>
Features:

- Synchronous control of up to two drives
- Duty cycle monitoring as overload protection
- Highly efficient switched-mode power supply (SMPS)
- The hand switches with display support storage of four different intermediate positions (memory) which can be called up at the touch of a button
- Acoustic status massage thanks to Click Codes

Additional functions:

- Adjustable by customer
- Relative or absolute height display on hand switch with display
- Programmable software end positions
### General information / operating conditions

<table>
<thead>
<tr>
<th>Description</th>
<th>Compact-e-3-EU</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compatible</strong></td>
<td>Set Multilift II/Set Multilift II telescope</td>
</tr>
<tr>
<td><strong>Input voltage</strong></td>
<td>EU: 230V / 50Hz</td>
</tr>
<tr>
<td></td>
<td>US: 120V / 60Hz (on request)</td>
</tr>
<tr>
<td></td>
<td>JP: 100V / 60 Hz (on request)</td>
</tr>
<tr>
<td><strong>Output voltage</strong></td>
<td>33 V</td>
</tr>
<tr>
<td><strong>Current output</strong></td>
<td>7 A</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>231 VA</td>
</tr>
<tr>
<td><strong>Standby-power</strong></td>
<td>0,5 W</td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>0 °C to +30 °C</td>
</tr>
<tr>
<td><strong>Relative humidity (for operation)</strong></td>
<td>5 to 90% (non-condensing)</td>
</tr>
<tr>
<td><strong>Protection class (with earth terminal)</strong></td>
<td>IP 20</td>
</tr>
<tr>
<td><strong>Protection class</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions (L, B, H) [mm]</strong></td>
<td>264 x 103 x 37</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>523 g</td>
</tr>
<tr>
<td><strong>Duty cycle (Operation mode S 3)</strong></td>
<td>At nominal load, 10% (2 min operating time, 18 mins rest time)</td>
</tr>
</tbody>
</table>

#### IEC cable

<table>
<thead>
<tr>
<th>Code No</th>
<th>Version Description / information</th>
<th>Typ</th>
<th>Cable length</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZD070618</td>
<td>IEC cable (Europe version, earthed plug)</td>
<td>F</td>
<td>1.80 m</td>
</tr>
<tr>
<td>QZD020159</td>
<td>IEC cable (Switzerland version, earthed plug)</td>
<td>J</td>
<td>1.80 m</td>
</tr>
<tr>
<td>QZD070619</td>
<td>IEC cable (Great Britain version, earthed plug)</td>
<td>G</td>
<td>1.80 m</td>
</tr>
</tbody>
</table>

#### Hand switches / Accessories

<table>
<thead>
<tr>
<th>Code No</th>
<th>Version Description / information</th>
<th>Additional functions (see page 88)</th>
<th>Cable length</th>
<th>Fig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>QZB30E07BM126</td>
<td>HSU-OD-2 2 Up-Down function</td>
<td></td>
<td>1.90 m</td>
<td>1</td>
</tr>
<tr>
<td>QZB30E07BR126</td>
<td>HSU-MDF-4M2 Up to 4 memory positions/Display</td>
<td>●</td>
<td>1.90 m</td>
<td>2</td>
</tr>
<tr>
<td>QZB30E07BN126</td>
<td>TOUCHbasic UD 2 Up-Down function</td>
<td></td>
<td>1.80 m</td>
<td>3</td>
</tr>
<tr>
<td>QZB30E07BP126</td>
<td>TOUCH UD Up to 4 memory positions/Display</td>
<td>●</td>
<td>2.00 m</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Features:

- **HSU-OD-2**
  - 2 Up-Down function
  - Membran key pad
  - Robust and slim

- **HSU-MDF-4M2**
  - Up to 4 memory positions
  - 2 Up-Down function
  - 3-digit display
  - Membrane key pad slim design

- **TOUCHbasic UD**
  - 2 Up-Down function
  - Large keys

- **TOUCH UD**
  - Up to 4 memory positions
  - 2 Up-Down function
  - 4-digit display for „inch“ or „cm“
  - Key Lock

- **TOUCH UD (retractable)**
  - Mounting under table top
  - Ultra-flat design
Contents

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Glossary ............................Seite 94
Index .................................Seite 98
Enquiry form Lifting columns

Fax: +49 (0)571 9335-119
Telephone: +49 (0)571 9335-0
e-mail: anfrage.vertrieb@rk-online.de

Company .................................................................................................................. Cust. No. .................................................................
Street ......................................................................................................................... City .................................................................
Telephone .................................................................................................................. Fax .................................................................
Contact ...................................................................................................................... Dept. .................................................................
Remarks .......................................................................................................................

☐ Lifting column

1.) Where is the lifting column to be positioned? .............................................................

...........................................................................................................................................................................

2.) Lifting force [N] .............................. Load on during 2.1 pushing ☐ and/or 2.2 pulling ☐

3.) Travel [mm] ............................... Lifting speed desired ........................ mm/s

4.) Lifetime [DH] ..............................

5.) Operating cycles = No. of double strokes (forwards and backwards movement)
   per ☐ minute ☐ hour ☐ day average .................../max. .....................

6.) Voltage ........................................ volt direct-current (DC)

7.) Position indication
   7.1 in the limit positions ☐ yes ☐ no
   7.2 continuously by potentiometers ☐ yes ☐ no

8.) Parallel connection
   8.1 Do you wish to operate two or more systems
       with a single switch/protection device? ☐ yes ☐ no
   8.2 Do you require synchronous operation of two or more systems?
       ☐ yes, quantity .......................................... ☐ no

9.) Environment
   9.1 ☐ dry ☐ dusty ☐ damp
   9.2 IP protection class .........../temperature ........... °C

10.) Endlagerbegrenzung
    Limit positions
    10.1 Do you require in-built limit switches? ☐ yes ☐ no
    10.2 Do you want to limit the travel by means of external limit switches?
         ☐ yes ☐ no
    10.3 Do you want the limit switch(es) to be adjustable? ☐ yes ☐ no
    10.4 Do you require additional switches for intermediate positions?
         ☐ yes ☐ no

11.) Limited installation dimensions?
    If yes, please enclose sketch showing installation situation. ☐ yes ☐ no

12.) No. of units required ............

13.) Are you already using similar systems? ☐ yes ☐ no

Submission of offer/date: ..........................................................................

Remarks: .............................................................................................................

..............................................................................................................................................................

RK Rose+Krieger GmbH • Connecting and positioning systems • Postfach 1564 • 32375 Minden
Enquiry form E-cylinders

Fax: +49 (0)571 9335-119

Company ........................................................................................................ Cust. No. ...........................................................
Street ................................................................................................................. City ..................................................................................................
Telephone ......................................................................................................... Fax .................................................................................................
Contact ........................................................................................................... Dept. .........................................................................................
Remarks ...........................................................................................................

☐ E-cylinders

1.) Where is the e-cylinders to be positioned? ...............................................

2.) Lifting force [N] ......................... Load on during 2.1 pushing ☐ and/or 2.2 pulling ☐

3.) Travel [mm] .............................. Lifting speed desired ........................ mm/s

4.) Lifetime [DH] .........................

5.) Operating cycles = No. of double strokes (forwards and backwards movement)
   per ☐ minute ☐ hour ☐ day average .................../max. .......................

6.) Voltage ................................. volt direct-current (DC)

7.) Position indication
   7.1 in the limit positions ☐ yes ☐ no
   7.2 continuously by potentiometers ☐ yes ☐ no

8.) Parallel connection
   8.1 Do you wish to operate two or more systems
       with a single switch/protection device? ☐ yes ☐ no
   8.2 Do you require synchronous operation of two or more systems?
       ☐ yes, quantity .................... ☐ no

9.) Environment
   9.1 ☐ dry ☐ dusty ☐ damp
   9.2 IP protection class ........../temperature ........... °C

10.) Endlagerbegrenzung
    Limit positions
    10.1 Do you require in-built limit switches? ☐ yes ☐ no
    10.2 Do you want to limit the travel by means of external limit switches? ☐ yes ☐ no
    10.3 Do you want the limit switch(es) to be adjustable? ☐ yes ☐ no
    10.4 Do you require additional switches for intermediate positions? ☐ yes ☐ no
    10.5 Do you require closing pressure? ☐ yes ☐ no

11.) Limited installation dimensions?
    If yes, please enclose sketch showing installation situation. ☐ yes ☐ no

12.) No. of units required ............

13.) Are you already using similar systems? ☐ yes ☐ no

Submission of offer/date: ..............................................................................
Remarks: ........................................................................................................

RK Rose+Krieger GmbH • Connecting and positioning systems • Postfach 1564 • 32375 Minden
Adjustment load: Each drive type has a different, structurally-dependent, adjustment load. This variable defines the maximum push and tractive force that a drive can handle (for linear drives). The adjustment load is always a so-called dynamic load. The drive still performs reliable adjusting movements under the specified maximum load. The adjustment load is defined in terms of Newtons (N), whereby the following applies: 1 kg » 10 N.

BLOCAN: Product name of the RK Rose+Krieger aluminium profile system with patented connection system, which permits the quick and easy assembly of very different structures. These profiles are available in a wide range of cross-sections and sizes.

Checkout signal: A technical means for the detection of the current position and speed of the drive. A distinction is made between the relative (incremental) and absolute (analogue) method.

Incremental (relative): A so-called Hall sensor generates a fixed number of electrical impulses for each distance travelled. The control then calculates up-to-date information on the current position and speed relative to a defined reference point. In order to ensure the reliable operation of the drive, it is essential that a correct reference value is always available. However, if this reference value is lost, such as in the unlikely event of a power failure or a malfunction, it is essential to specify a new reference point.

Analogue (absolute): In this case, the position/speed is detected using a so-called potentiometer. This electronic component is permanently coupled to the drive movement and adjusts its resistance value according to the current position. The control uses this information to calculate the current position and speed. This type of position determination does not require a reference point as all potentiometer values are constantly available.

Control: The control combines the various functions required to operate the drive. The switching signals of a hand switch are converted to control functions for the connected drives. At the same time, the control contains facilities for power supply and various protection devices to protect against overloads and short-circuits.

Transformer control: The hand switch controls electromechanical relays, which, in turn, control the drive currents (the most common control technology).

Customer applications: The responsibility for RK Rose+Krieger products (in the specific application) and compliance with the applicable directives, standards and laws lies with the manufacturer of the complete system in which the RK Rose+Krieger products are installed.

Duty cycle (max): This technical variable defines the maximum time period that a drive can be operated continuously. This maximum period must be followed by a specified idle time. Both values are defined in the specified duty cycle (DC) in relation to one another. In the case of drive systems, 2/18 min has become standard in the field of drive technology, i.e. 2 minutes of continuous operation must be followed by 18 minutes idle time. It therefore follows that if the unit is operated for a shorter period, the idle time can also be shortened respectively. It is essential to ensure adherence to these specifications for periodic duty; failure to do so may cause the unit to overload and trigger protection equipment.

Earthing conductor cable: The Multicontrol Care power cable with earth connection on the control side is for connecting the application to the earthing conductor. Install the control-side earthing conductor cable in your application in accordance with the applicable standards and current practice.
**Hand switch:** The operator can use this operating device to control the full range of drive functions. A press of the button generates switching signals, which are converted to corresponding control signals in the control system.

**Standard:**
The hand switch is directly connected to the control system via a connecting cable; transmission of the switching signals is hard-wired.

**Radio:**
Instead of the standard hand switch, a radio receiver is connected to the control interface. The switching signals sent by the radio remote control are picked up by the receiver and relayed on to the control.

**Installation dimension:** This dimension specifies the installation length of the respective drive. Installation length = basic length + travel.


**Lifting column:** Single actuator with a special, often design-oriented linear guide. This actuator is able to reliably withstand lateral forces and ensure the necessary stability even in a fully extended position while taking the maximum torques into account.

**Memory synchronous drive:** This kind of actuator is equipped with a position and stroke detection system. Information on the current position of the drive is continuously transmitted back to a synchronised control system. This memory drive is generally used in applications where the stored positions can be retrieved with the simple press of a button. They are also required in applications with synchronous/memory controls.

**Power cable feedthrough:** Additional voltage tap for the supply of external devices.

**Protection class:** The impermeability of electronic devices against the penetration of foreign bodies and liquids is defined by means of a two-digit IP code. The first number refers to the level of ingress protection against solid materials, such as dust, and the second to ingress protection against liquids. The most common protection classes are IP 20 (touch protection); IP 44 (water spray protection); IP 66 (water jet protection).

**Repeatability:** Repeatability is the ability of the linear unit drive to return to a once reached position within the given tolerance limits under identical conditions. Factors that influence repeatability (and positioning accuracy) include: load, speed, delay, direction of movement and temperature.

**Stroke:** In the case of lifting columns and electric cylinders, the maximum travel is referred to as stroke.

**Service life of drives:** The lifetime depends on the drives used and the application. Depending on the system, there is a considerable difference between the lifetime of ball screw drives and acme screw drives. The lifetime of the drives is also affected by the control systems used and the associated duty cycles. As a guideline for acme screw drives, a stroke of 500 mm, with adherence to the permitted loads and duty cycles, we estimate a lifetime of 10,000 double strokes. Any changes of application will effect a corresponding change in the expected lifetime of the drive. Ball screw drives are expected to have a considerably longer lifetime. Please contact us if you require any further advice and we will be happy to assist.

**Synchronous control:**
The synchronous operation of several drives at the same speed is possible even in the case of widely ranging loads. This technology is always used if a single adjusting movement is implemented via more than one drive (such as the height adjustment of workstations).
Synchronous operation: Synchronised drives are used for the simultaneous movement of several mechanically connected columns. “Standard” single drives are generally not able to meet the requirements of such applications. The following section contains some brief information on the best way to set up a synchronous system. More detailed information on this subject can be found in the respective technical instructions on our website www.rk-rose-krieger.com/english/service/download-documents/technical-manuals/linear-technology.

The following errors can occur during set-up:

Different heights:

A rigid connection between the lifting columns aligns them at the same height. Fixing the table frame in place may cause the lifting columns to distort.

Parallel alignment:

If the lifting columns are not parallel, the distance between the two upper fixing points will change during the movement. However, a rigid connection keeps this distance constant, and this means that the lifting columns are subject to very strong forces.

Distorted table frame:

Table frames are generally made of welded steel tubes and connecting plates that connect to the lifting columns. If the connecting plates are not lying flat on the lifting column, the synchronous system will distort during screw attachment. Failure to address these mechanical errors may impair the running properties of the drive, shorten lifetime or damage the lifting column. If using an electronic control system, this may cause the output of error messages and render the system inoperable.

Ideal set-up:

Surfaces at the foot and top of the columns must be at the same height, parallel to one another and as flat and even as possible, the columns themselves must also be aligned so that they are completely parallel. Existing tolerances and height differences due to control deviations are offset by means of a customer-provided floating bearing.
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