

**R** RENOWNED  
KNOW-HOW

Automation Technology



**RK ROSE+KRIEGER**

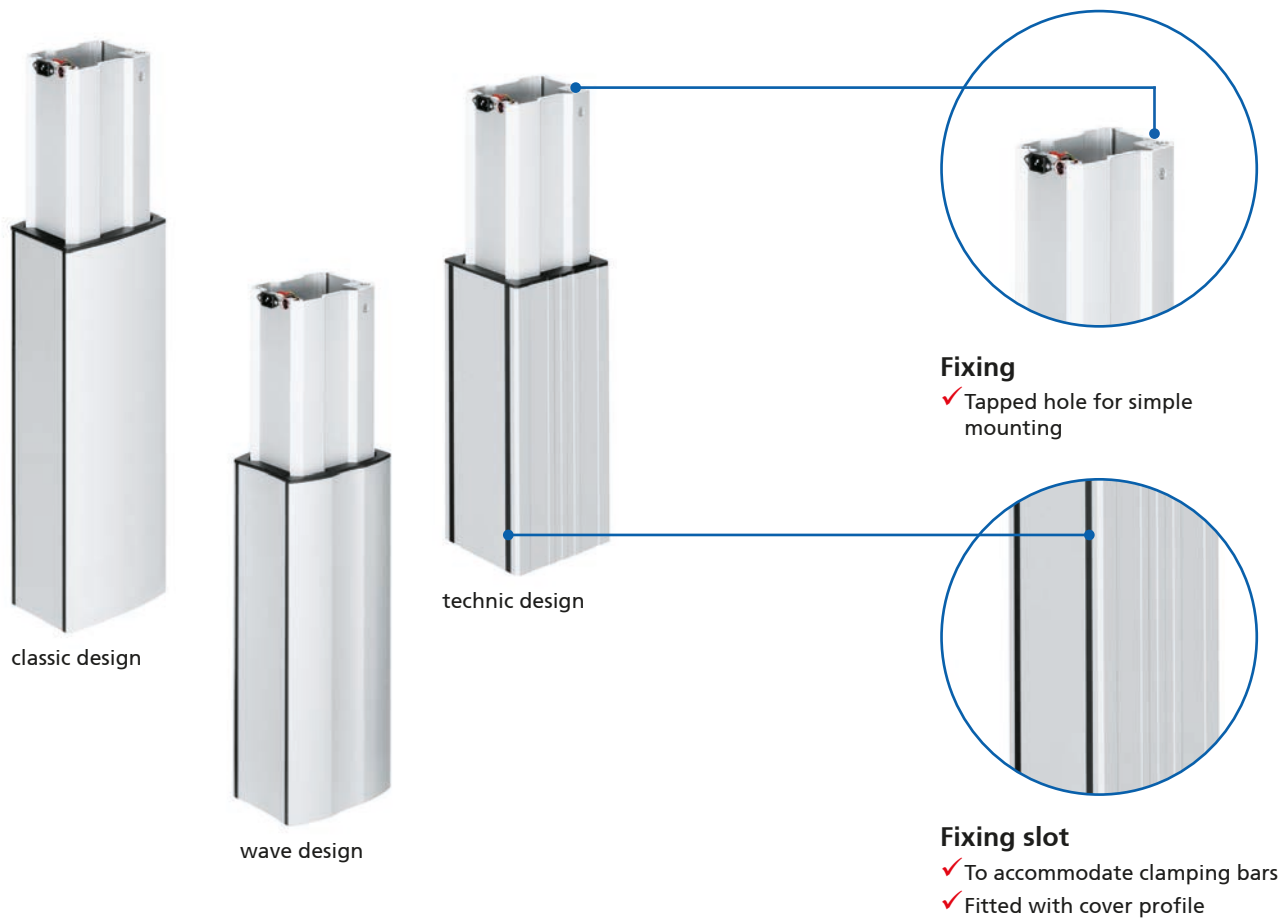
A Phoenix Mecano Company



***RK Powerlift***  
Two-stage lifting column

# Two-stage lifting column - *RKPowerlift Z*

## The power pack for high bending moments



### ***RKPowerlift* version Z**

- For push force
- High moment capacity
- High lifting speed

#### **Features:**

- Three design versions available
- Withstands high torsional and bending moments
- Integrated motor
- Choice of internal or external control
- Four fixing slots in external profile
- Adjustable stroke length
- Optimum installation height/stroke length ratio
- Extremely quiet operation

#### **Options:**

- Quadro control enables synchronisation of up to 32 columns
- Version with manual drive via crank handle on request

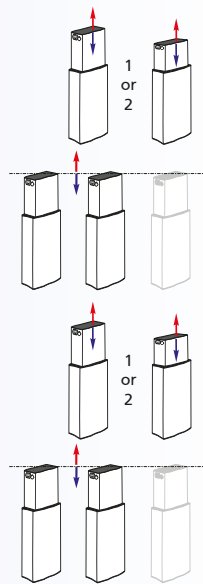
## RKPowerlift - Table of contents

### Properties/Technical data

- General information/operating conditions... Page 60
- Load data..... Page 60
- Parallel and synchronous operation ..... Page 61

### Versions

(Dimensions, order numbers)



- **RKPowerlift Z** ..... Page 62
- **RKPowerlift Z mono** ..... Page 64
- **RKPowerlift Z synchro** ..... Page 65

### Accessories

#### Fixing

- Clamping bar ..... Page 66
- Frame/fixing plate ..... Page 66
- Base plate ..... Page 67
- RK SyncFlex..... Page 68

#### Position determination

- Hand switch..... Page 69

# RKPowerlift Z – Technical data

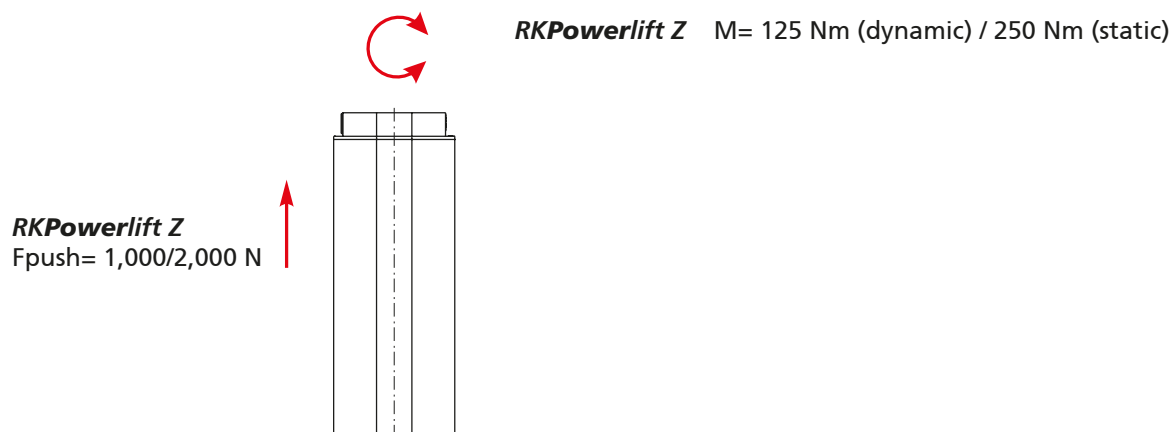
## General information/operating conditions

Design	Rectangular lifting column in compact design
Guide	Multiple roller/slide bearings
Installation position	External profile vertical to the floor stand surface, internal profile extending
Push force	Choice of 1,000 N, 2,000 N
Pull force	-
Voltage	36 V DC
Power input	120 W / 210 W
Protection class	IP 30
Self-locking	Yes
Ambient temperature	+5°C to +40°C
Max. displacement with synchronous operation	0-3 mm rack drive
Duty cycle	At nominal load, 15% (max. 1.5 mins operating time, 10 mins rest time)

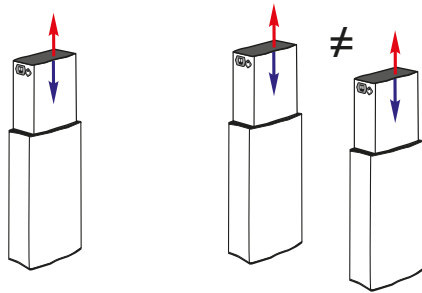
### Note:

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



## RKPowerlift Mono

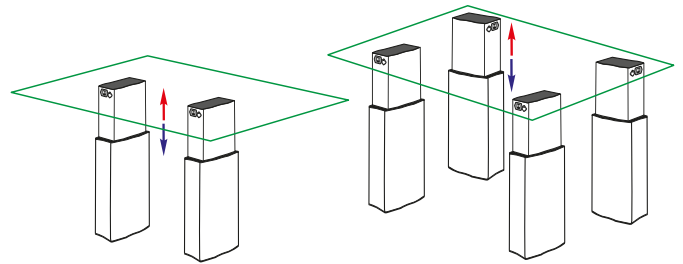


1-2 **RKPowerlifts** in single or parallel operation

### Parallel operation

The standard version also supports parallel operation of two **RKPowerlifts** (no synchronisation). This may produce different lifting positions during operation, which can be levelled out by moving to the end positions.

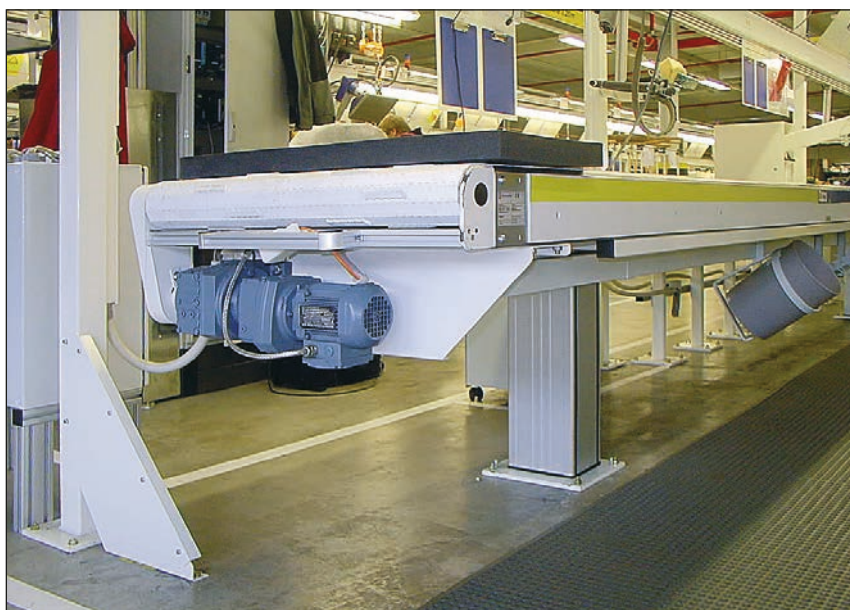
## RKPowerlift Synchro



2-4 **RKPowerlifts** in synchronous operation

### Synchronous operation

Synchronous operation of two or more columns. In conjunction with the integrated sensors, the control (see page 146) ensures synchronisation, and thus constant alignment of all the columns in both directions of travel, even if subject to different loads. The synchronous operation tolerance depends on the lifting speed and is max. 3 mm. A memory function is also available.



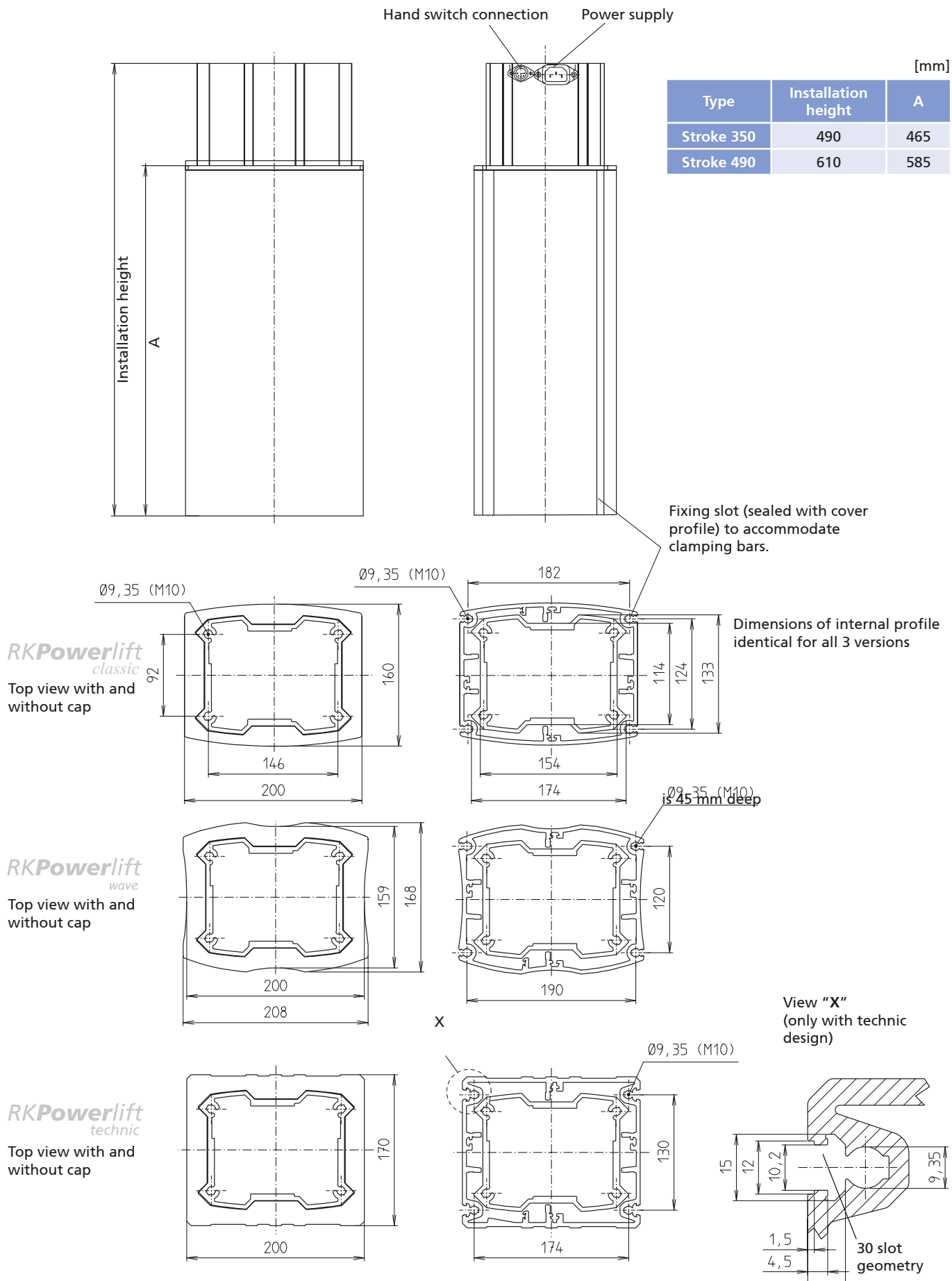
Conveyor adjustment

# RKPowerlift Z - Versions

**RKPowerlift Z**  
(for push force)

■ with internal  
control



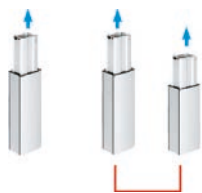


For order table, see next page



# RKPowerlift Z - Versions

## RKPowerlift Z (for push load)



### RKPowerlift mono

Code No.	Type	Push force [N]	Lifting speed [mm/s]	Stroke length [mm]	Installation height [mm]	Weight [kg]
With internal control/standard (start and stop)						
QPL35BA_20350	<b>RKPowerlift 35</b>	1,000	35	350	490	~18
QPL35BA_20490	<b>RKPowerlift 35</b>	1,000	35	490	610	~21
With internal control/soft-control (soft start and braking)						
QPL28BB_40490	<b>RKPowerlift 28</b>	2,000	28	490	610	~21
QPL35BA_40350	<b>RKPowerlift 35</b>	1,000	35	350	490	~18
QPL35BA_40490	<b>RKPowerlift 35</b>	1,000	35	490	610	~21
QPL50BA_40350	<b>RKPowerlift 50</b>	1,000	50	350	490	~18
QPL50BA_40490	<b>RKPowerlift 50</b>	1,000	50	490	610	~21
With internal control/memory (9 positions can be stored)						
QPL28BB_60490	<b>RKPowerlift 28</b>	2,000	28	490	610	~21
QPL50BA_60350	<b>RKPowerlift 50</b>	1,000	50	350	490	~18
QPL50BA_60490	<b>RKPowerlift 50</b>	1,000	50	490	610	~21

Design:  
3 = classic  
4 = wave  
5 = technic

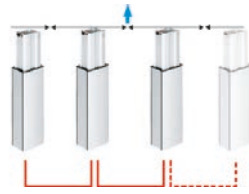


Polishing machine





## RKPowerlift Z (for push load)



### RKPowerlift synchro

Code No.	Type	Push force [N]	Lifting speed [mm/s]	Stroke length [mm]	Installation height [mm]	Weight [kg]
With internal control / synchro memory (9 positions can be stored)						
QPL28BB_30490	<b>RKPowerlift 28</b>	2,000	28	490	610	~21
QPL50BA_30350	<b>RKPowerlift 50</b>	1,000	50	350	490	~18
QPL50BA_30490	<b>RKPowerlift 50</b>	1,000	50	490	610	~21

Design:  
3 = classic  
4 = wave  
5 = technic

Code No.	Connecting cable (bus cable)
QZD100093	For synchronisation up to 8 <b>RKPowerlifts</b> , 6 m

### RKPowerlift internal control

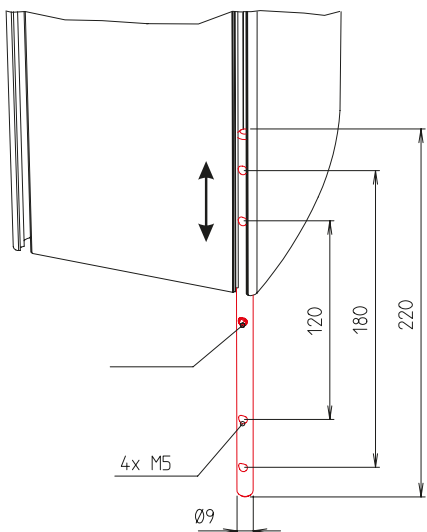


#### Note

Preferred installation orientation:  
External profile vertical to the floor stand surface, internal profile extending.  
Other installation orientations are available on request.

## RKPowerlift Z – Fixing

## Clamping bar



- The clamping bar enables the fitting of attachments to the RKPowerlift. The bar is inserted in the fixing slot and fixed by means of a clamping screw. The tapped holes enable the screw connection of attachments.

- In the case of the “technic” design version, attachments can also be secured using accessories (slot stones, etc.) from the catalogue BLOCAN® Profile Systems.

**Material:**

St37-2 k, zinc plated

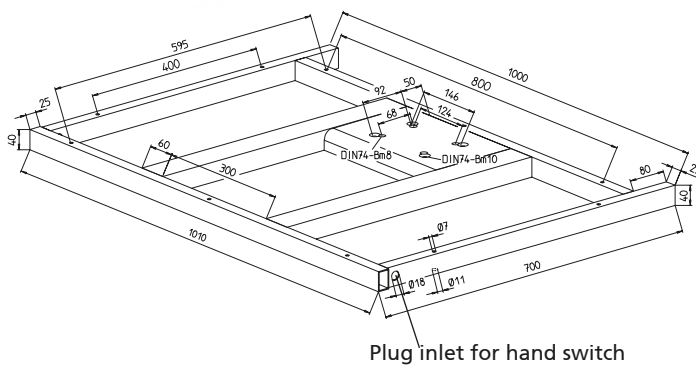
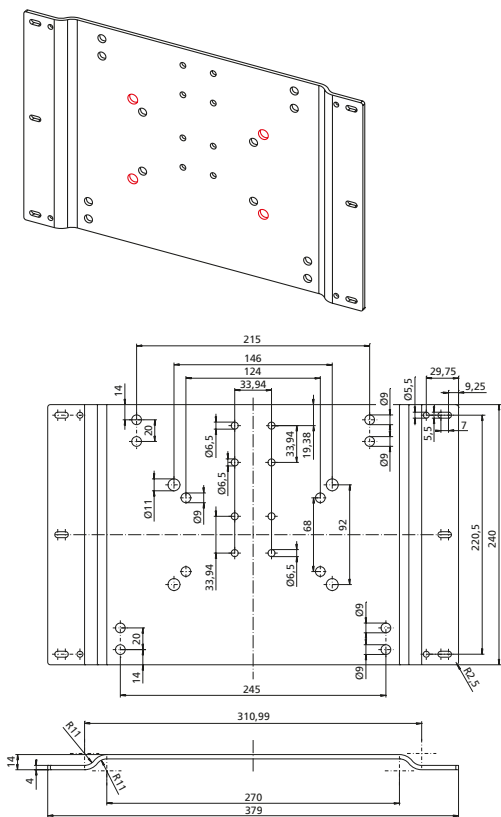


Code No.	Type
QZD000075	Clamping bar

## Frame/fixing plate for table top

- Our universal fixing plate and table frame provide two standard solutions for the attachment of table tops, brackets etc. to the lifting column without the need for any further modifications.

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

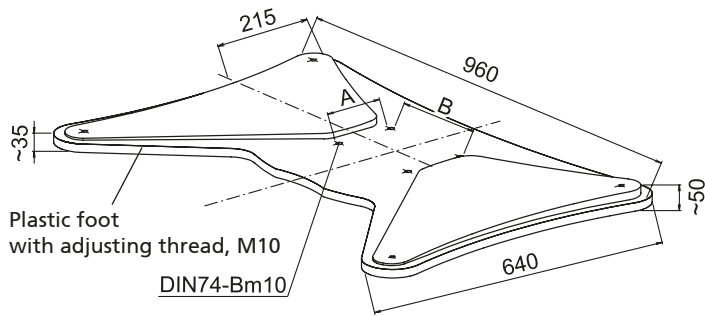
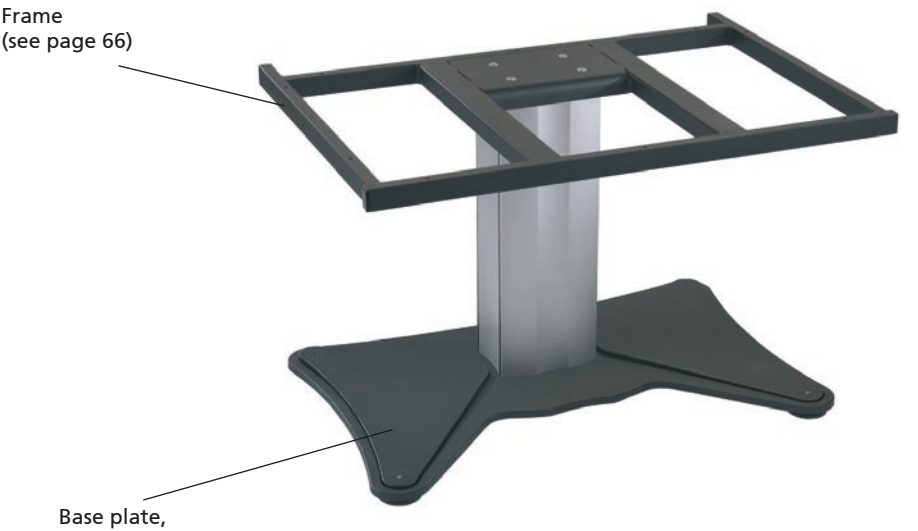


Code No.	Type
QZD100085	Frame for <b>RKPowerlift</b> , incl. fastenings
QZD100313	Fixing plate
QZD100337	Fixing set for fixing plate <b>RKPowerlift</b> , M10 x 30 DIN 7984

**Base plate**

**Material:** steel,  
black powder-coated RAL 9005,  
zinc plated fastenings

**Scope of delivery:** complete with  
fastenings



Code No.	Type	A	B
for <b>RKPowerlift Z</b>			
QZD100092	Base plate for <b>RKPowerlift</b> classic	124	182
QZD100084	Base plate for <b>RKPowerlift</b> wave	120	190
QZD100090	Base plate for <b>RKPowerlift</b> technic	130	174

[mm]

# RKPowerlift Z – Fixing

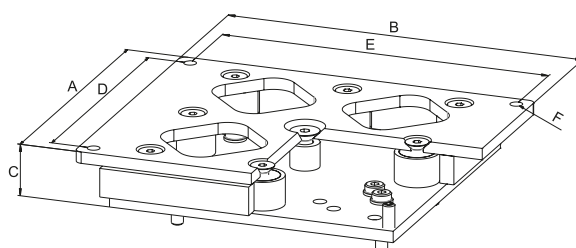
## RK SyncFlex H

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



Code No.	Type	A	B	C	D	E	F
QZD100455	<i>RKPowerlift Z</i>	200	250	36	180	230	M 10

[mm]

## RK SyncFlex V

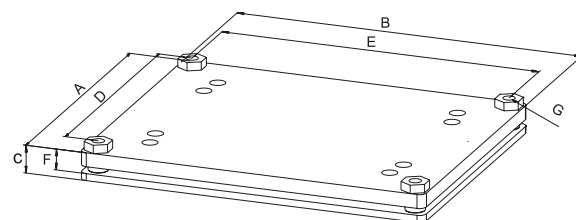
**Scope of delivery:**  
Adjuster plate, incl.  
fixing material

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



### Vertical alignment

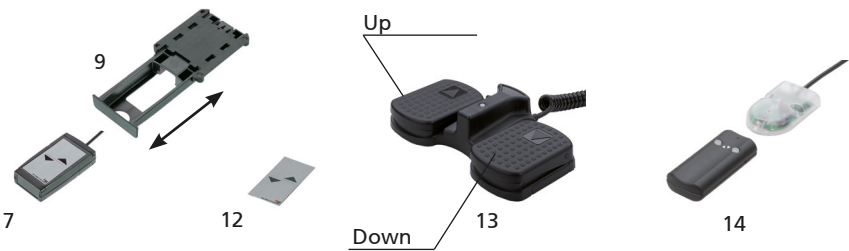
- If the lifting columns are not parallel, the distance between the two upper fixing points will change during the movement. However, a rigid connection keeps this distance constant, and this means that the lifting columns are subject to very strong forces.
- RK SyncFlex V enables the compensation of unevenness in the mounting environment.
- The lifting columns can be aligned via the vertical adjustment around the X-Y axes.



Code No.	Type	A	B	C	D	E	F	G
Without pressure plate								
QZD100449	<i>RKPowerlift Z-classic</i>	200	250	-	180	230	10-15	M 10
QZD100450	<i>RKPowerlift Z-wave</i>	200	250	-	180	230	10-15	M 10
With pressure plate								
QZD100465	<i>RKPowerlift Z-classic</i>	200	250	15-20	180	230	10-15	M 10
QZD100466	<i>RKPowerlift Z-wave</i>	200	250	15-20	180	230	10-15	M 10

[mm]

**Hand switches/accessories**  
**RKPowerlift mono**  
 (Standard, Soft-Control)



Code No.	Version	Fig.
Hand switch for <b>RKPowerlift mono</b> (Standard, Soft-Control)		
QZB00A00BC011	Membrane keyboard with 1 m spiral cable – 2 function keys	12
QZB02C01AE114GS	Foot switch – 2 function keys	13
QZB00D04AB041	Hand switch with 1 m spiral cable – 2 function keys	7
Hand switch for <b>RKPowerlift Standard</b> (Start and Stop)		
QZB00D07BK141	Wireless hand switch – 2 function keys	14
Accessories for hand switches		
QZD000074	Hand switch drawer: Fig. 7 + 8	9

**RKPowerlift memory**



Code No.	Version	Fig.
Hand switch for <b>RKPowerlift synchro memory</b>		
QZB00D04AD041	Hand switch with 1 m spiral cable – 6 function keys	8

# Two-stage lifting column - *RKPowerlift M*

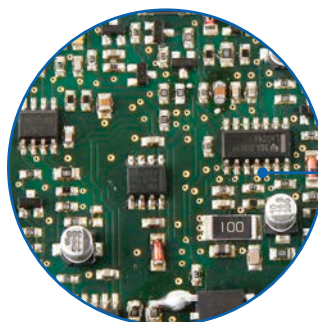


The mini version of the *RKPowerlift* – the *RKPowerlift M*



## Standard

- ✓ Hand switch receptacle, power receptacle with integrated fuse

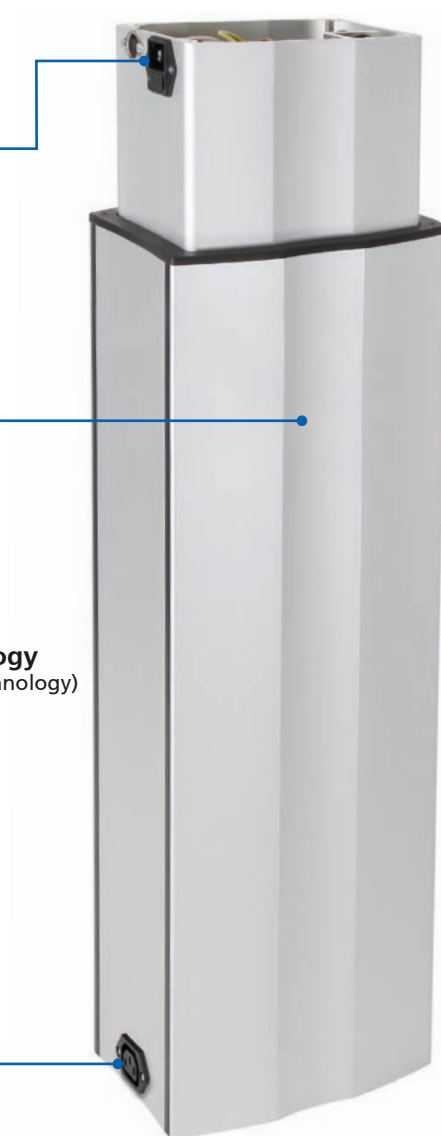
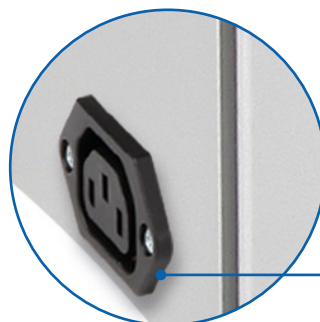


Soft control versions are available with **SMPS technology** (Switched-Mode Power Supply technology)

- ✓ 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



## *RKPowerlift M*

- Compressive forces to 3,000 N
- Tensile forces 1,500 N
- Lifting speed 13 mm/s

## 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
- Tested to:  
IEC 60601-1 (ed.3)  
EN 60601-1:2006/A1:2013

## Options:

- Special stroke lengths available on request
- Special installation lengths available on request

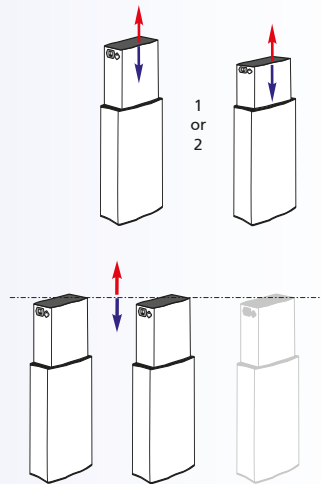
## RKPowerlift M - Table of contents

### Properties/Technical data

- General information/operating conditions... Page 72
- Load data..... Page 72
- Parallel and synchronous operation ..... Page 73

### Versions

(Dimensions, order numbers)



- *RKPowerlift M* ..... Page 74
- *RKPowerlift M* mono ..... Page 76
- *RKPowerlift M* synchro ..... Page 77

### Accessories

#### Fixing

- Assembly plate ..... Page 78
- Base plate ..... Page 79
- Square nut ..... Page 79
- RK SyncFlex ..... Page 81

#### Position determination

- Controls ..... Page 76
- Hand switches ..... Page 82
- IEC cable ..... Page 83



# RKPowerlift M – Technical data

## General information/operating conditions

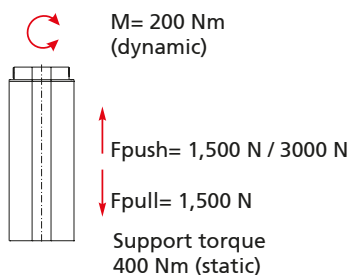
Type	RKPowerlift M for external control		RKPowerlift M for internal control	
Design	Rectangular lifting column in compact design			
Guide	16 POM slide bearings			
Installation position	Any position/suspended with drop protection provided by the customer			
Push force	3,000 N			
Pull force*	1,500 N			
Max. speed	13 mm/s			
Voltage	24 V DC		230 V AC / 100 - 240 V AC	
Power input	120 W		150 W	
Protection class	IP 30			
Self-locking	Yes			
Ambient temperature	+5°C to +40°C			
Max. displacement with synchronous operation	0-2 mm			
Duty cycle	At nominal load, 15% (max. 1.5 mins operating time, 8.5 mins rest time)			

### \*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.

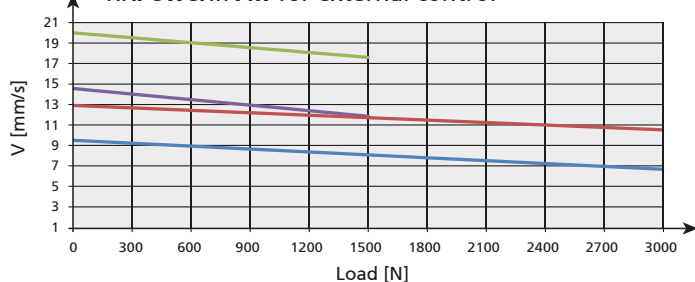
In medical applications, the maximum pull force of 750 N must not be exceeded.

## Load data



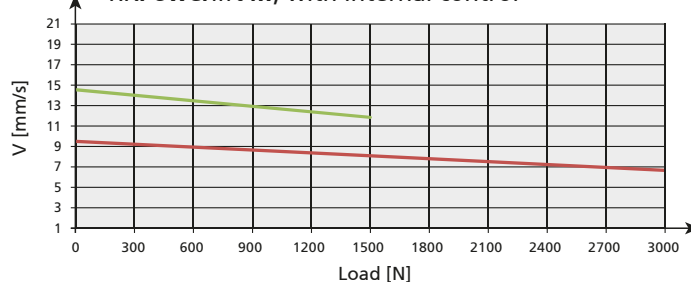
### Speed/Force diagram

RKPowerlift M for external control



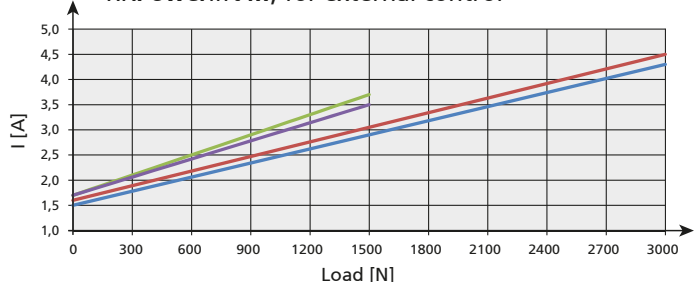
### Speed/Force diagram

RKPowerlift M, with internal control



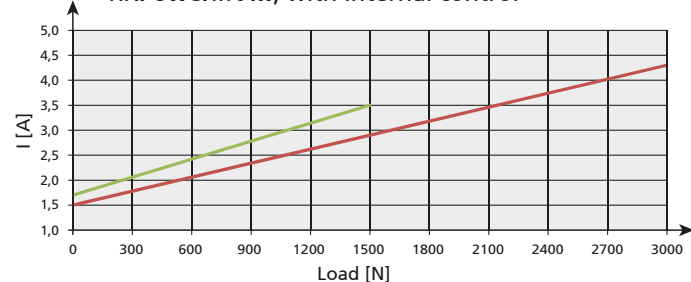
### Current output/Force diagram

RKPowerlift M, for external control



### Current output/Force diagram

RKPowerlift M, with internal control

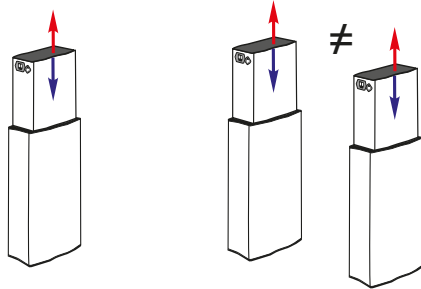


— Powerlift M 3,000N at 36V\*2 — Powerlift M 1,500N at 36V\*2  
— Powerlift M 3,000N at 24V\*1 — Powerlift M 1,500N at 24V\*1

— Powerlift M 3,000N internal control  
— Powerlift M 1,500N internal control

24 V\*1 determined with a transformer control 120 VA — 36 V\*2 determined with a MultiControl duo

## RKPowerlift M Mono

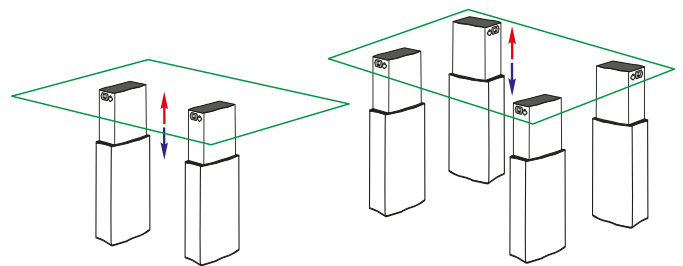


1-2 **RKPowerlifts** in single or parallel operation

### Parallel operation

The standard version also supports parallel operation of two **RKPowerlifts** (no synchronisation). This may produce different lifting positions during operation, which can be levelled out by moving to the end positions.

## RKPowerlift M Synchro



2-4 **RKPowerlifts** in synchronous operation

### Synchronous operation

Synchronous operation of two or more columns. In conjunction with the integrated sensors, the control (page 148) ensures synchronisation, and this constant alignment of all the columns in both directions of travel, even if subject to different loads. The synchronous operation tolerance is max. 2 mm.

A memory function is also available.



Movable measuring table, table adjustment via RK Powerlift, adjustment of measuring equipment via EPX/PL linear actuator

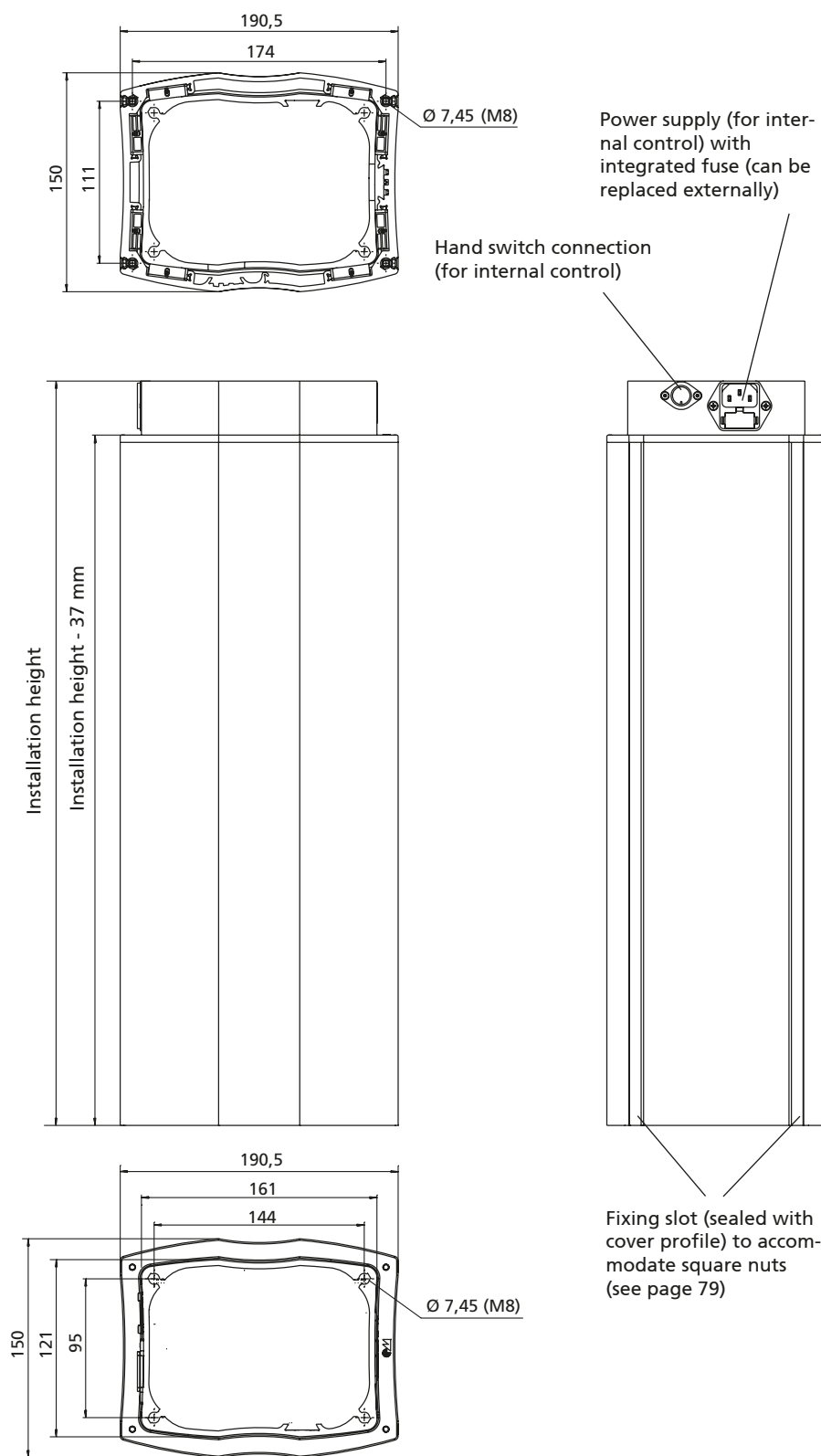
# RKPowerlift M - Versions

## Versions

■ with internal control

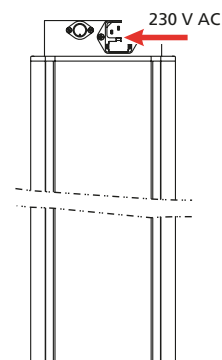
■ for external control



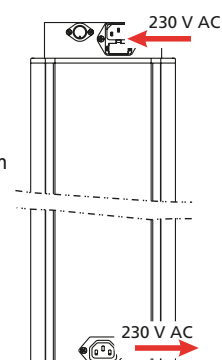


### Power supply - versions:

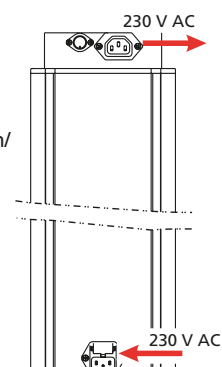
Type 0:  
Standard,  
Power supply, top



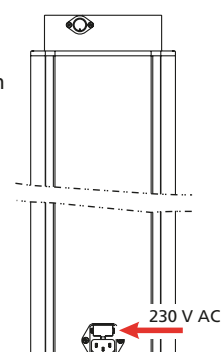
Type 1  
(cable feedthrough):  
Power supply, top/  
power output, bottom



Type 3  
(cable feedthrough):  
Power supply, bottom/  
power output, top

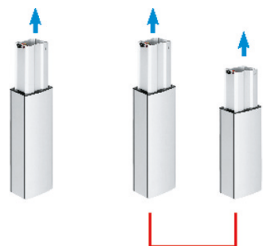


Type 4:  
Power supply, bottom



# RKPowerlift M - Versions

## RKPowerlift M mono




1-2 single or parallel operation

### \* Order information:


Soft control versions are now available with SMPS technology.

Only for Soft-Control-Versions please select IEC cable separately (page 83).

Code No.	Type	Push force [N]	Pull force [N]	Lifting speed [mm/s]	Stroke length [mm]	Installation height [mm]	Weight [kg]
With internal control / SMPS mono – Soft Control*							
QPM08DE42_300	<div>RKPowerlift M</div> <div></div>	3000 / 3000 (med.)	1500 / 750 (med.)	9	300	510	~11,0
QPM08DE42_400					400	610	~12,5
QPM13DC42_300		1500 / 1500 (med.)	1500 / 750 (med.)	13	300	510	~11,0
QPM13DC42_400					400	610	~12,5
QPM13DC42_500					500	710	~14,0
With internal control/memory (9 positions can be stored)							
QPM13BC46_300	RKPowerlift M	1500	1500	13	300	510	~12,0
QPM13BC46_400					400	610	~13,5
QPM13BC46_500					500	710	~15,0

For mains supply versions see page 75

0 = Standard  
1 = Type 1  
3 = Type 3  
4 = Type 4

Code No.	Type	Push force [N]	Pull force [N]	Lifting speed [mm/s]	Stroke length [mm]	Installation height [mm]	Weight [kg]
For external control							
QPM08EE480300	<b>RKPowerlift M</b> 	3000 / 3000 (med.)	1500 / 750 (med.)	9	300	510	~12,0
QPM08EE480400					400	610	~13,5
QPM13EC480300		1500 / 1500 (med.)	1500 / 750 (med.)	13	300	510	~12,0
QPM13EC480400					400	610	~13,5
QPM13EC480500					500	710	~15,0



Transformer control 120 VA  
approx. 24 V DC



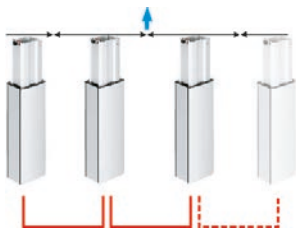
MultiControl mono  
approx. 36 V DC

### Order information:

Observe the current output of the drives when selecting the control.

Code No.	External control mono	
QZA09C13BH031	Transformer control 120 VA connection C, up to max. I= 3 A, 24 V DC	Controls up to 1 drives
QSTACCA1AA000	MultiControl mono connection C, up to max. I= 12 A current output, 36 V DC	Controls up to 2 drives

**RKPowerlift M synchro**



2-4 in synchronous operation

Code No.	Type	Push force [N]	Pull force [N]	Lifting speed [mm/s]	Stroke length mm	Installation height [mm]	Weight [kg]
With internal control/synchro memory (9 positions can be stored)							
QPM13BC47_300	RKPowerlift M	1500	1500	13	300	510	~12,0
QPM13BC47_400					400	610	~13,5
QPM13BC47_500					500	710	~15,0


For mains supply versions see page 75

0 = Standard

1 = Type 1

3 = Type 3

4 = Type 4

Code No.	Type	Push force [N]	Pull force [N]	Lifting speed [mm/s]	Stroke length mm	Installation height [mm]	Weight [kg]
For external control							
QPM08EE480300		3000 / 3000 (med.)	1500 / 750 (med.)	9	300	510	~12,0
QPM08EE480400					400	610	~13,5
QPM13EC480300		1500 / 1500 (med.)	1500 / 750 (med.)	13	300	510	~12,0
QPM13EC480400					400	610	~13,5
QPM13EC480500					500	710	~15,0



MultiControl duo  
approx. 36 V DC



MultiControl quadro  
approx. 36 V DC

**Order information:**

Observe the current output of the drives when selecting the control.

Code No.	External control synchro	
QST44C02AA000	MultiControl duo connection C, up to max. I = 12 A current output, 36 V DC	for synchronous control up to 2 drives
QST44C04AA000	MultiControl quadro connection C, up to max. I = 12 A current output, 36 V DC	for synchronous control up to 4 drives

# RKPowerlift M - Fixing

## Assembly plate

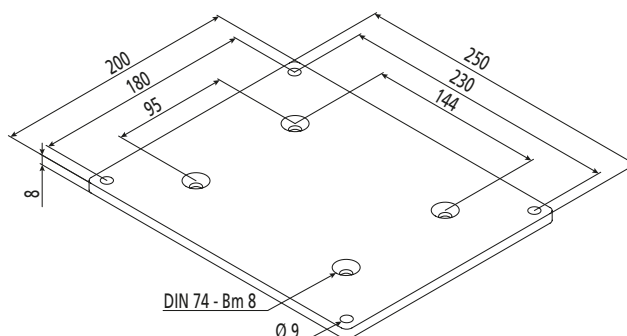
- These mounting plates are fitted using the mounting kits supplied and fixed directly into the screw channels in the Powerlift „M“. A further 4 holes, in the mounting plate, allow easy connection, to brackets or corresponding fixture assembly work etc.

**Material:** S 235 JR, black powder-coated, zinc plated fixing set

**Scope of delivery:**  
Plate, incl. fixing set



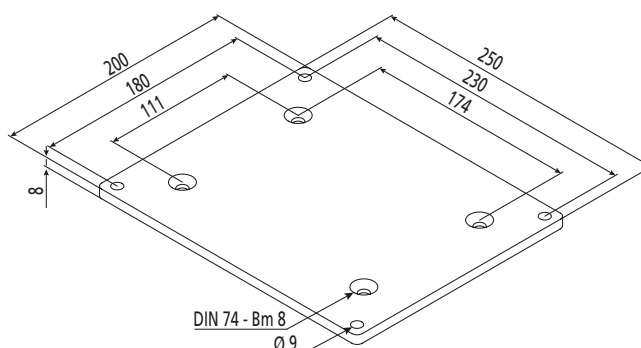
For internal profile



Code No.	Type
QZD100541	Top assembly plate



For external profile



Code No.	Type
QZD100542	Bottom assembly plate

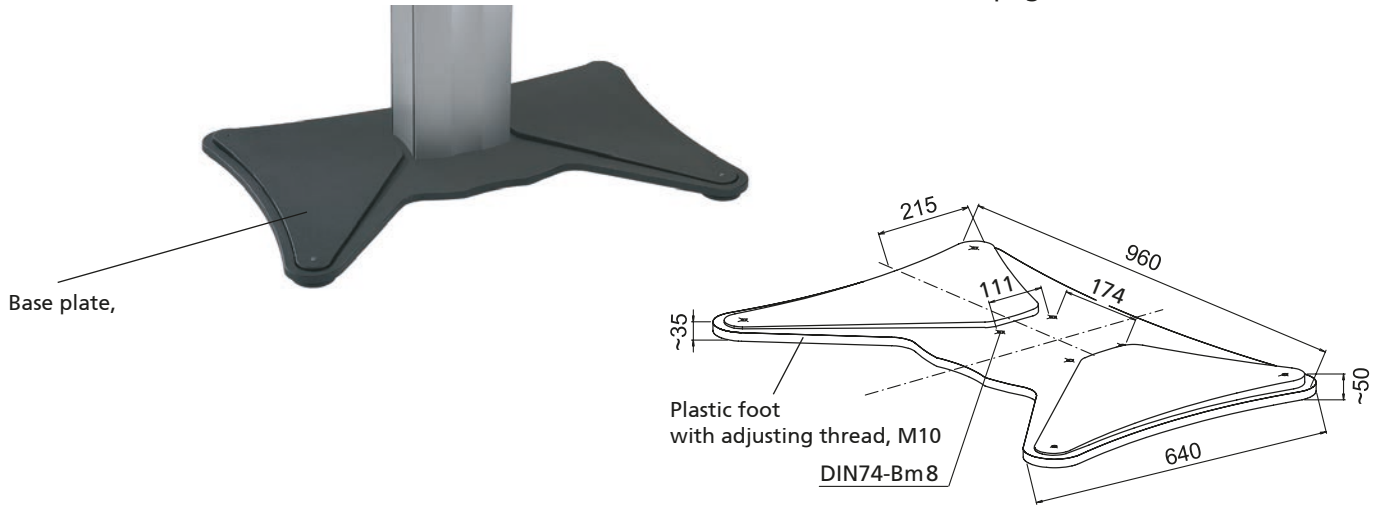


## Base plate

**Material:** steel,  
black powder-coated (RAL 9005),  
zink plated fastenings.

**Scope of delivery:**  
complete with  
fastenings

**Order information:**  
Base plate only in combination  
with "Type 0" possible  
(see page 75)



Code No.	Type
QZD100546	Base plate for <i>RKPowerlift M</i>

## Order instruction square nut:

- Purchase only in lot sizes and a multiple of that, see product table below

- For connecting accessories to the external profile

## Square nut

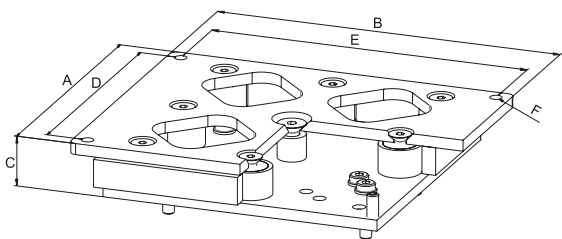


Code No.	lot sizes	Type
qzd1003261	10, 20, 30... pcs	Square nut M4, DIN 562

## RK SyncFlex H

### 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.
  - The horizontal compensation in the Z-axis enables the freedom of movement required when moving the lifting columns.
- Scope of delivery:**  
Adjuster plate,  
incl. fixing material



[mm]

Code No.	Type	A	B	C	D	E	F
QZD100453	<i>RKPowerlift M</i>	200	250	36	180	230	M 10



RK SyncFlex V

Vertikale Ausrichtung

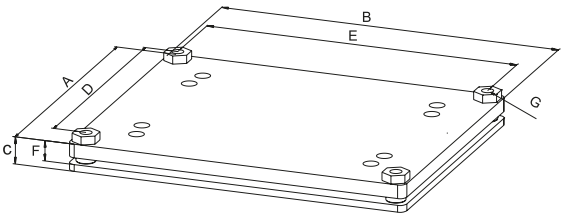
■ If the lifting columns are not parallel, the distance between the two upper fixing points will change during the movement. However, a rigid connection keeps this distance constant, and this means that the lifting columns are subject to very strong forces.

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.

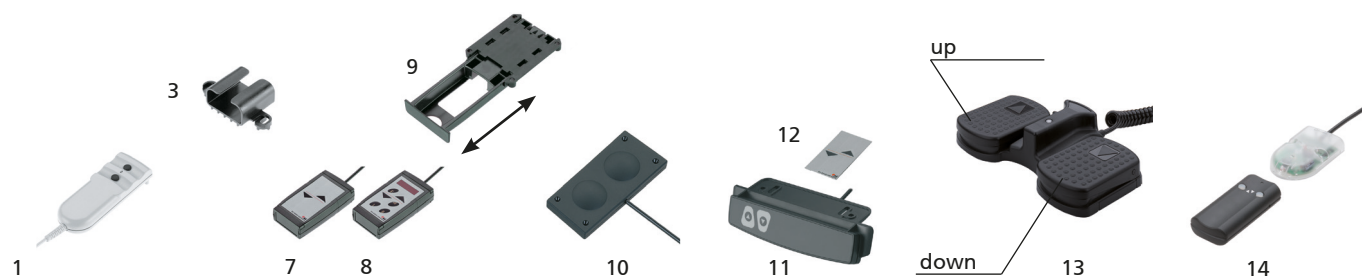
**Scope of delivery:**  
Adjuster plate,  
incl. fixing material

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



[mm]								
Code No.	Type	A	B	C	D	E	F	G
Without pressure plate								
QZD100446	RKPowerlift M	200	250	-	180	230	10-15	M 10
With pressure plate								
QZD100463	RKPowerlift M	200	250	15-20	180	230	10-15	M 10

## Hand switches/accessories



Code No.	Version	For internal control			For external control		Fig.
		SMPS mono - Soft Control	Memory	Synchro Memory	Mono	Synchro	
QZB02C03AB031	Hand switch 2 function keys – 1 m spiral cable –				•	•	1
QZB00D04AB041	Hand switch 2 function keys – 1 m spiral cable –	•			•	•	7
QZB00D04AD041	Hand switch 6 function keys / display – 1 m spiral cable –		•	•		•	8
QZB02A03AB041	Hand switch 2 function keys – 1 m cable –				•	•	10
QZB00A00AB051	Table hand switch 2 function keys – 1 m spiral cable –				•	•	11
QZB00A00BC011	Membrane keyboard 2 function keys – 1 m spiral cable –	•			•	•	12
QZB02C01AE114GS	Foot switch – 2 function keys – 2 m cable –	•			•	•	13
QZB00D07BK141	Wireless hand switch – 2 function keys – 1 m spiral cable –	•			•	•	14
Accessories							
QZD000072	Bracket for hand switch						3
QZD000074	Drawer for hand switch						9

## Optional accessories

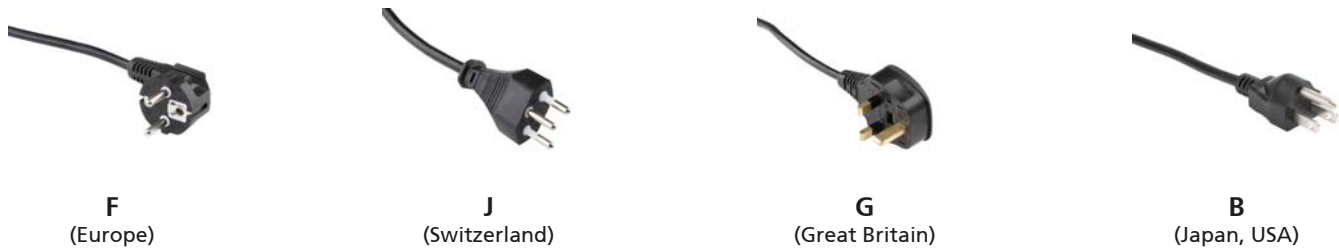


Code No.	Versions	For internal control			For external control		Fig.
		SMPS mono - Soft Control	Memory	Synchro Memory	Mono	Synchro	
QZD100093	Bus cable for networking of up to 8 synchronous control with 6 m cable			•		•	
QZD070308*	Hand switch cable / open cable end with helix cable 1m	•			•	•	
QZD0702844000*	Connecting cable with 5- pin connector and open cable end with 4 m cable				•	•	3
QZD070526	Extension cable drive for connector C / 8 - pin DIN - socket with cable 2,5m				•	•	4

\*for the connection of customer's hand switch or an external potentiometer (in the case of the MultiControl mono)

IEC cable

■ Only for Soft-Control-Versions  
please select IEC cable separately



Code No	Version	Typ	Cable lenth
QZD070618	IEC cable (Europe version, earthed plug)	F	1.80 m
QZD020159	IEC cable (Switzerland version, earthed plug)	J	1.80 m
QZD070619	IEC cable (Great Britain version, earthed plug)	G	1.80 m
QZD070631	IEC cable (Japan version, earthed plug)	B	1.80 m
QZD070622	IEC cable (USA version, earthed plug)	B	2.00 m