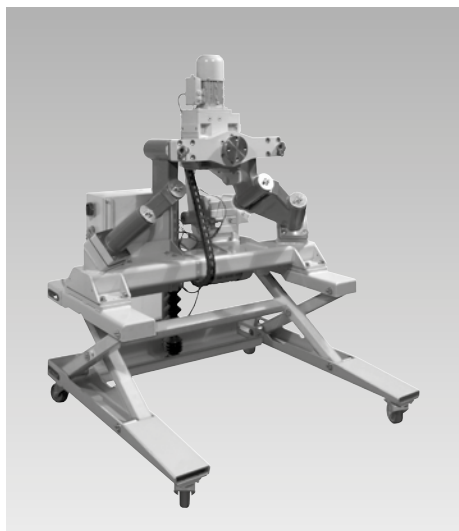# Centrick Rotating and Tilting Manipulator
Electrically operated tilting, rotating and lifting of workpieces max. loads 500 and 2000 kg

Application

Centrick manipulators are used for electrically operated tilting, rotating and lifting of heavy workpieces or fixtures in the assembly.
Workpieces or fixtures can be easily placed in the optimum position and working is facilitated.

Typical applications are assembly and welding works on:
- motors
- gears
- vehicle cabs
- chassis components of commercial and rail vehicles
- pumps and compressors

Versions

Two basic versions are available: **A500** and **A2000** for loads up to 500 kg or 2000 kg.
The 90° tilting function is a standard feature, the rotating and lifting function can be optionally selected.

Advantages

- Tilting (0…90°) and rotating (continuously) products of any shape around their centre of gravity!
- Ergonomic, space-saving and efficient handling of the component
- Low space requirement for integration in existing work/assembly areas
- Mobile and tilt resistant by movement and positioning of the workpiece near its centre of gravity
- Lowest drive performance of the low-noise electric drives (230V)
- Stable working/assembly positions by holding brakes
- Very clean operation – no leakages
- Drastic working / assembly time reduction
- Reduction of handling accidents resulting in costly downtimes
- Increased motivation of employees
- Integration in line and cycle assembly processes is possible (Industry 4.0)

Description

Centrick is an innovative manipulator for optimum positioning workpieces in up to 3 axis.

Tilting by 90°

The patented tilting kinematics with virtual centre of rotation is unique. The workpiece centre of gravity remains virtually unchanged in its position during tilting
Thus, tilting is balanced and can be effected with a small power rating in an energy-saving way.
In addition, less work space is required and the stability is increased.
Increased safety at work is the result.

Rotating by 360°

The rotating function enables the continuous rotation of workpieces. Media supply through the rotating plate is available as an option.

Lifting

The version A500 has a compact scissors lifting adjustment with a stroke of 310 mm, the version A2000 is equipped with a stable column lifting adjustment with a stroke of 700 mm.

Tilting function
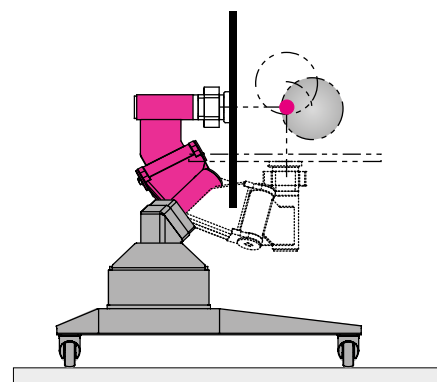
Centrick changes the workpiece side. The workpiece remains in unchanged position in space, but the assembly side is tilted by 90°.

- high stability
- mobile application on rollers is possible
- less space required
- no compensation stroke required

Adaptation of the working height

Also without lifting function, the basic variants can be delivered with customised basic height.

Operation

Three electrical operating units are available to operate the Centrick:
- two-hand enabling switch with cable
- touch panel (automatic control)
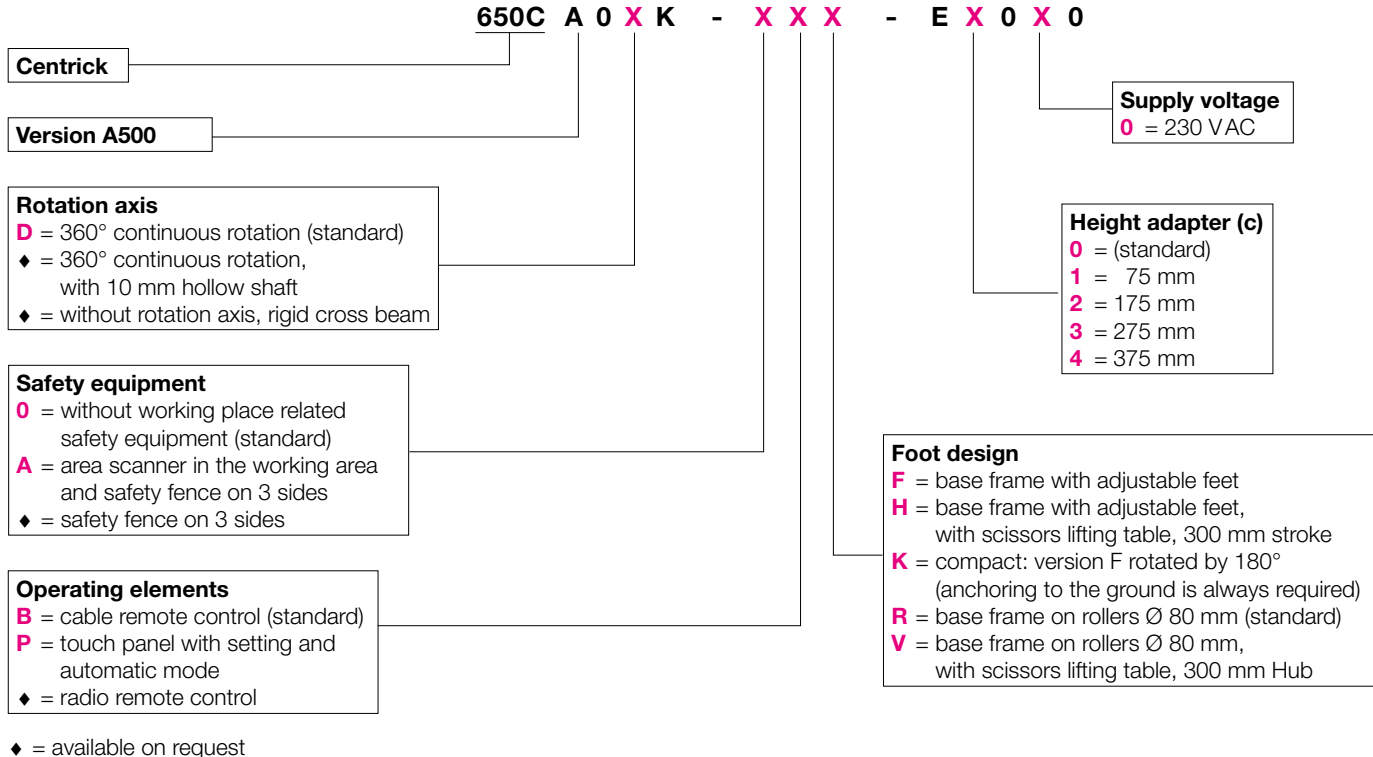- remote control

Variants

Centrick manipulators are available in many variants as presented on the following pages. On request, customised adaptations can be carried out.
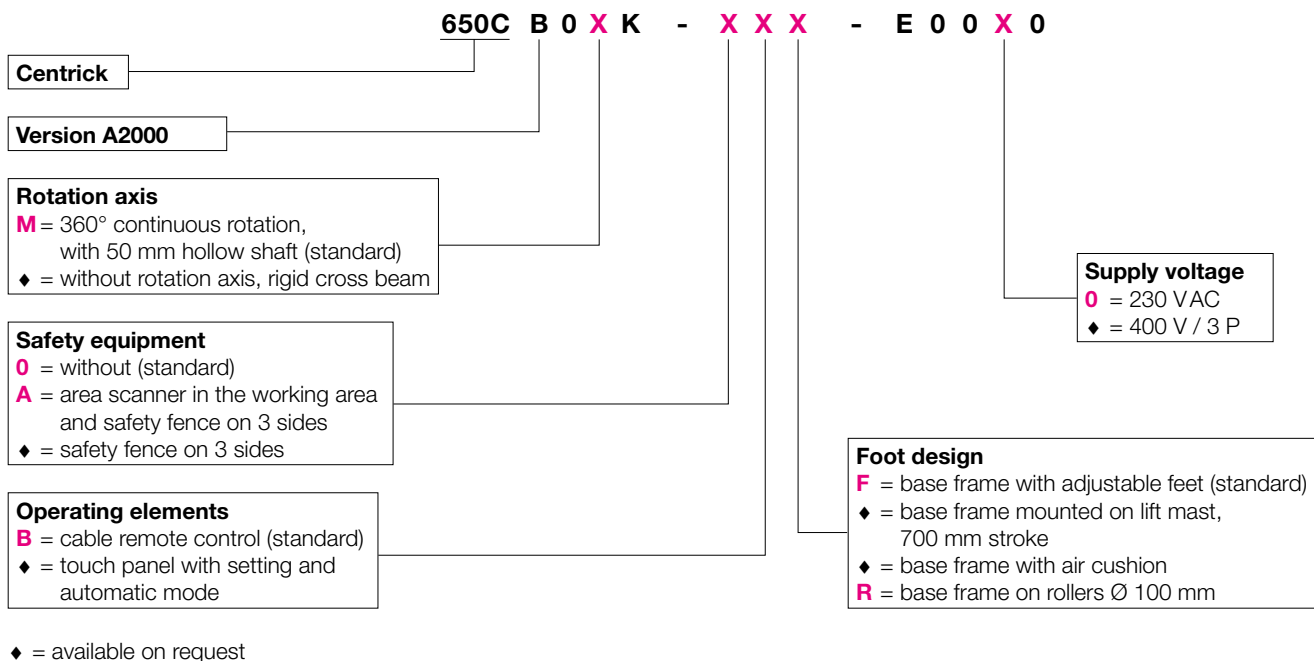
Römheld GmbH · Postfach 1253 · 35317 Laubach, Germany · Tel.: +49 (0) 6405 / 89-0 · Fax: +49 (0) 6405 / 89-211 · info@roemheld.de

Actual issue see www.roemheld-group.com

Subject to modifications

Technical data
Code for part numbers

		A500	A2000
Max. working load	[kg]	500	2000
Rating - rotating and tilting	[kW]	2 x 0.25	1.1 and 0.55
Rating - lifting	[kW]	1.5	2.2
Supply voltage	[VAC]	230	230
Lifting speed	[mm/s]	9.2	11.7
Tilting angle	[°]	0 – 90	0 – 90
Tilting speed	[°/s]	approx. 10	approx. 3.5
Rotation angle	[°]	360 continuously	360 continuously
Rotation speed	[r.p.m.]	approx. 3	approx. 1.5
Positioning accuracy*	[°]	± 1	± 1
Empty weight (without lifting function)	[kg]	350	750
Empty weight (with lifting function)	[kg]	400	on request

* only relevant for version with touch panel (code letter P)

Code for part number of version A A 500

650C A 0 X K - X X X - E X 0 X 0

Centrick

Version A500

Rotation axis
D = 360° continuous rotation (standard)
♦ = 360° continuous rotation,
    with 10 mm hollow shaft
♦ = without rotation axis, rigid cross beam

Safety equipment
0 = without working place related
    safety equipment (standard)
A = area scanner in the working area
    and safety fence on 3 sides
♦ = safety fence on 3 sides

Operating elements
B = cable remote control (standard)
P = touch panel with setting and
    automatic mode
♦ = radio remote control

Supply voltage
0 = 230 V AC

Height adapter (c)
0 = (standard)
1 =   75 mm
2 = 175 mm
3 = 275 mm
4 = 375 mm

Foot design
F = base frame with adjustable feet
H = base frame with adjustable feet,
    with scissors lifting table, 300 mm stroke
K = compact: version F rotated by 180°
    (anchoring to the ground is always required)
R = base frame on rollers Ø 80 mm (standard)
V = base frame on rollers Ø 80 mm,
    with scissors lifting table, 300 mm Hub

♦ = available on request

Code for part number of version A A 2000

650C B 0 X K - X X X - E 0 0 X 0

Centrick

Version A2000

Rotation axis
M = 360° continuous rotation,
    with 50 mm hollow shaft (standard)
♦ = without rotation axis, rigid cross beam

Safety equipment
0 = without (standard)
A = area scanner in the working area
    and safety fence on 3 sides
♦ = safety fence on 3 sides

Operating elements
B = cable remote control (standard)
♦ = touch panel with setting and
    automatic mode

Supply voltage
0 = 230 V AC
♦ = 400 V / 3 P

Foot design
F = base frame with adjustable feet (standard)
♦ = base frame mounted on lift mast,
    700 mm stroke
♦ = base frame with air cushion
R = base frame on rollers Ø 100 mm

♦ = available on request

Dimensions

	Front view	Side view	Top view

A500

Motion centre tilting axis

217 (a)
438 (b)
559 + c
130 121 (e) (d) (c)

1315 = B
1210 = T
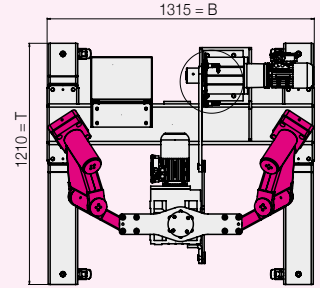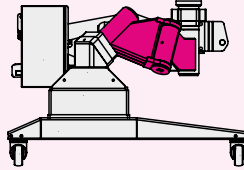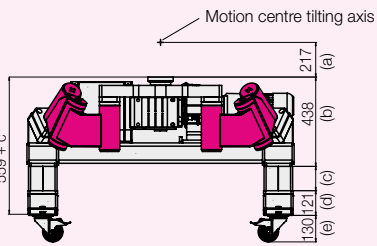
A500 with scissors lifting table: A500H

Stroke 310
Motion centre tilting axis
217 (a)
559 + c
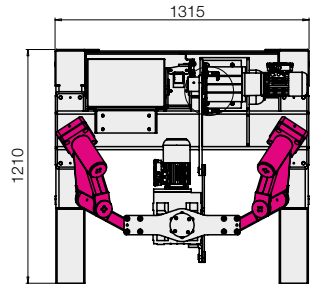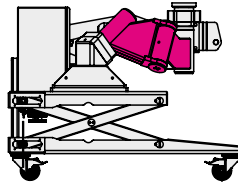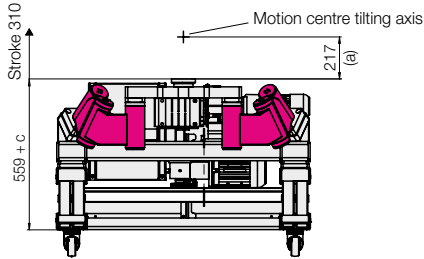
1315
1210

A500 with automatic control: A500P

Touch panel
Safety fence
Motion centre tilting axis
217 (a)
826 + c
1600
1656
c
50 (e)

1536
1400
1400
1536

A2000

Motion centre tilting axis
303 (a)
572
50 (e)
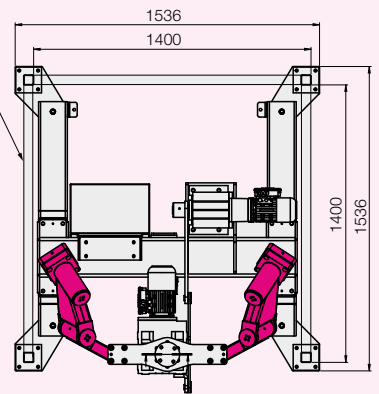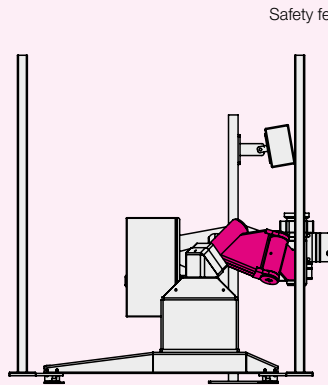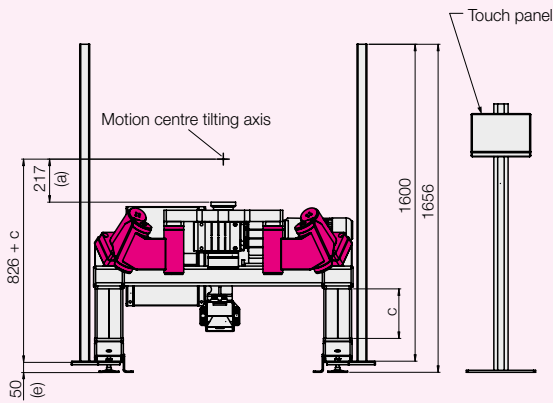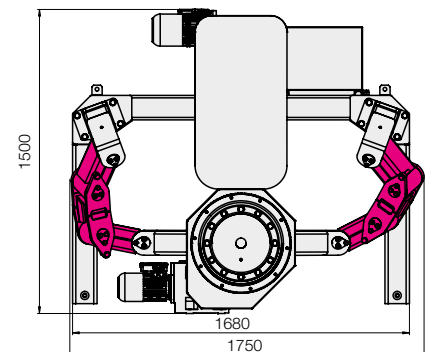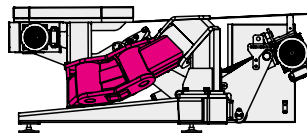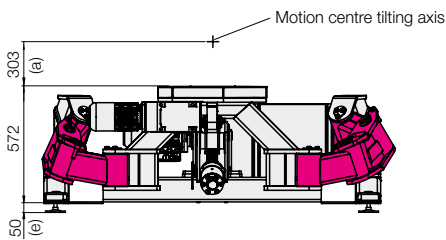
1500
1680
1750

			A500	**A500H**	**A500P**	**A2000**
Exterior dimensions:	(BxT)	[mm]	1315x1210	1315x1210	1536x1536	1750x1500
Tilting radius:	(a)	[mm]	217	217	217	303
Height - core unit:	(b)	[mm]	438	438	438	417
Height - height adapter:	(c)	[mm]	0-375	0-375	0-375	0
Height - foot (base frame):	(d)	[mm]	121	121	121	121
Height - roller or adjustable foot:	(e)	[mm]	roller 130; adjustable foot 50	roller 130; adjustable foot 50	roller 130; adjustable foot 50	roller 130; adjustable foot 50
Basic height - upper edge: Horizontal flange:	Σ (b − e)	[mm]	= Σ (b − e)	= Σ (b − e)	= Σ (b − e)	= Σ (b − e)
Basic height - axle centre: vertically tilted rotation axis:	Σ (a − e)	[mm]	= Σ (a − e)	= Σ (a − e)	= Σ (a − e)	= Σ (a − e)

Flange A500

Ø 124
Ø 94,75
67
M16
67

Flange A2000

M12
R227,5
Ø 410
Ø 482
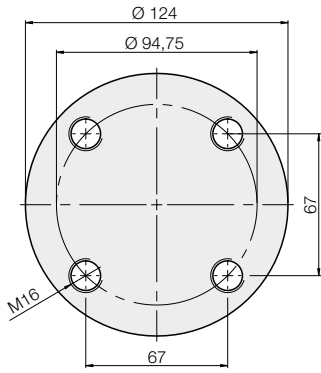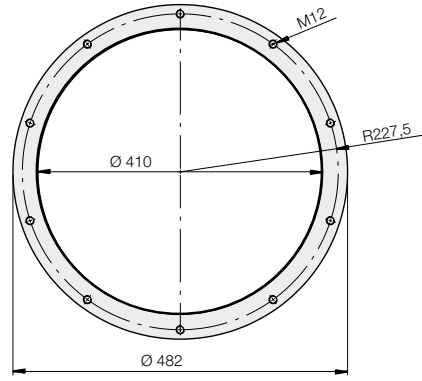
Centrick A500
Admissible working load as a function of the height
of the working load's centre of gravity over the connecting flange
Tilting

Working load [kg] vs Height of the working load's centre of gravity [mm]

Centrick A2000
Admissible working load as a function of the distance
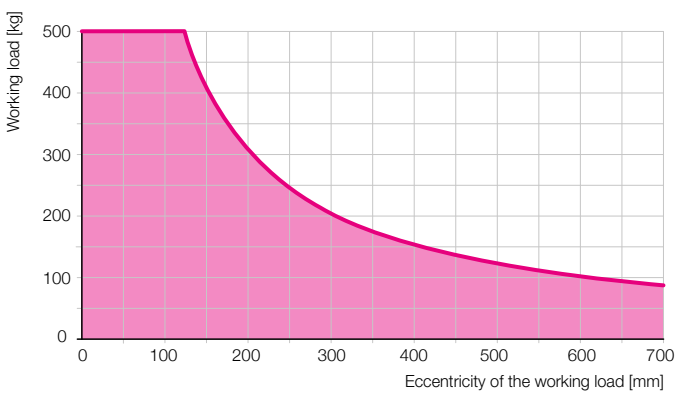of the working load's centre of gravity over the gear rim
Tilting

Working load [kg] vs Distance of the working load's centre of gravity over the gear rim [mm]

Centrick A500
Maximum admissible eccentricity of the working load with reference to
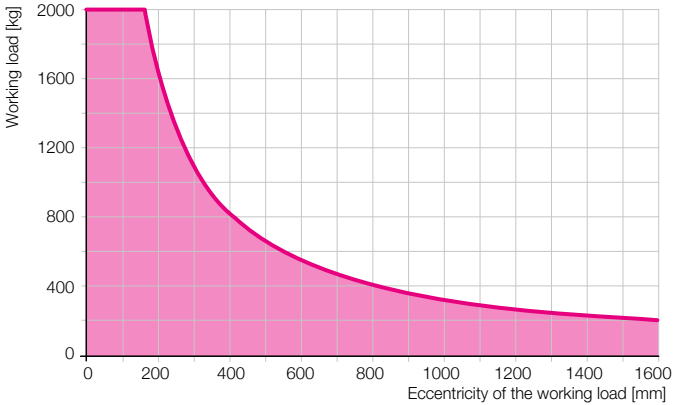the rotation axis
Rotating

Working load [kg] vs Eccentricity of the working load [mm]

Centrick A2000
Maximum admissible eccentricity of the working load with reference
to the rotation axis
Rotating

Working load [kg] vs Eccentricity of the working load [mm]

Application examples