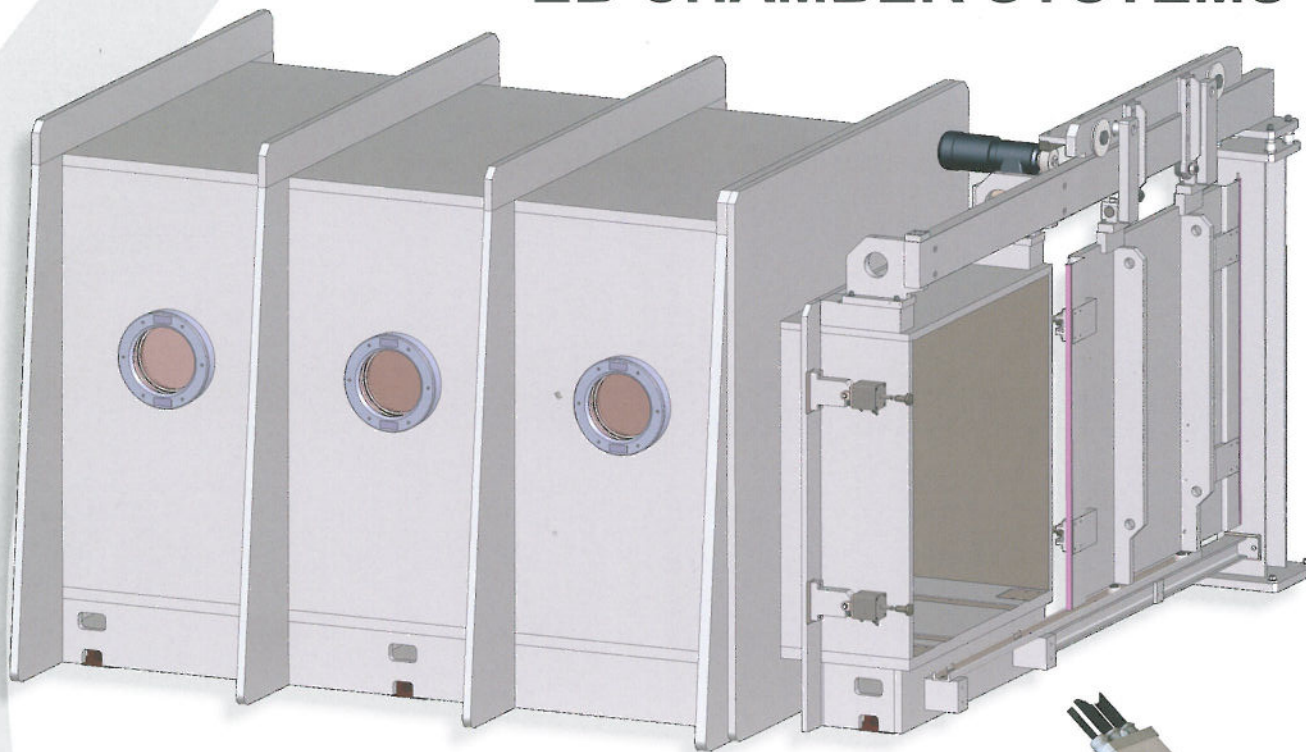
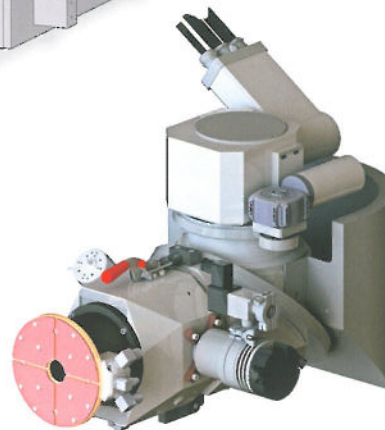


# **EBOMOVE**

## **EB CHAMBER SYSTEMS**



**WITH**  
**GENERATORS**  
**MOBILGEN**



# **STEIGERWALD**

# **STRAHLTECHNIK**

**THE PIONEERS OF**  
**ELECTRON BEAM**  
**TECHNOLOGY**

A company of



## THE NEW GENERATORS

### MOBILGEN MG 60

with built-in axes for rotating and tilting:

The generators of the **MOBILGEN** series with its rotating high-voltage connections were developed for the chamber machines of our **EBODISC** series.

Adding built-in rotating and tilting axes has made them just right for mounting on all slide systems in tight spaces.

That means that chambers can be designed with a minimum volume and optimal cable routing.

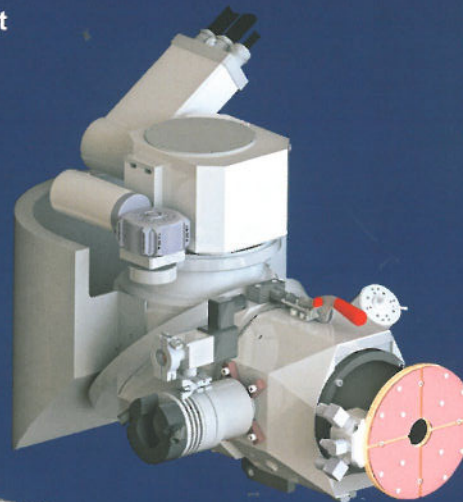
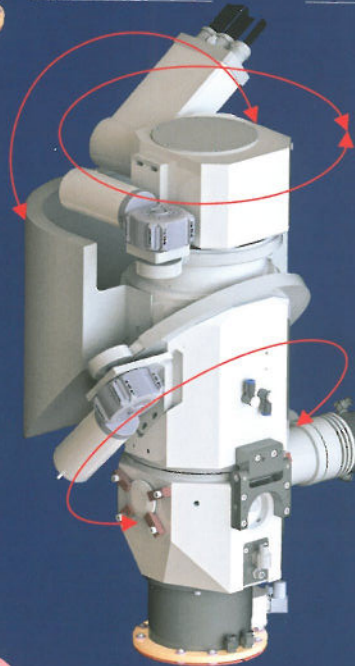
We can add the following functions and features to the generators with fast beam deflection:

- **EBO Jump** multi-pool welding
- **EBO View** optical electron viewing
- **EBO Scan** joint scanning
- **EBO Set** automatic beam adjustment



**MOBILGEN MG 60V**  
with a tilting 60 kV  
connection

**MOBILGEN MG 60TR**  
Generator with a  
rotating axis  $\pm 180^\circ$  and  
horizontal axis  $90^\circ$  and  
tilting 60 kV connection



**MOBILGEN** -  
the heart of the **EBOMOVE**  
chamber machines

BEAM TECHNOLOGY  
WORLDWIDE



## EB CHAMBER MACHINES

### EBOMOVE SERIES

New designs of modularly constructed EB machining centres with a generator that can be moved inside for processing large-scale components.

All chamber modules are prepared for installing the travelling gears described. Oversized chamber modules are engineered to be suited to normal truck transport.

The modular structure of vacuum chambers and travelling gear components provides a space-saving design of systems with 2-7 movement axes optimized for applicable work in our standardised high level quality.

Just one more innovation



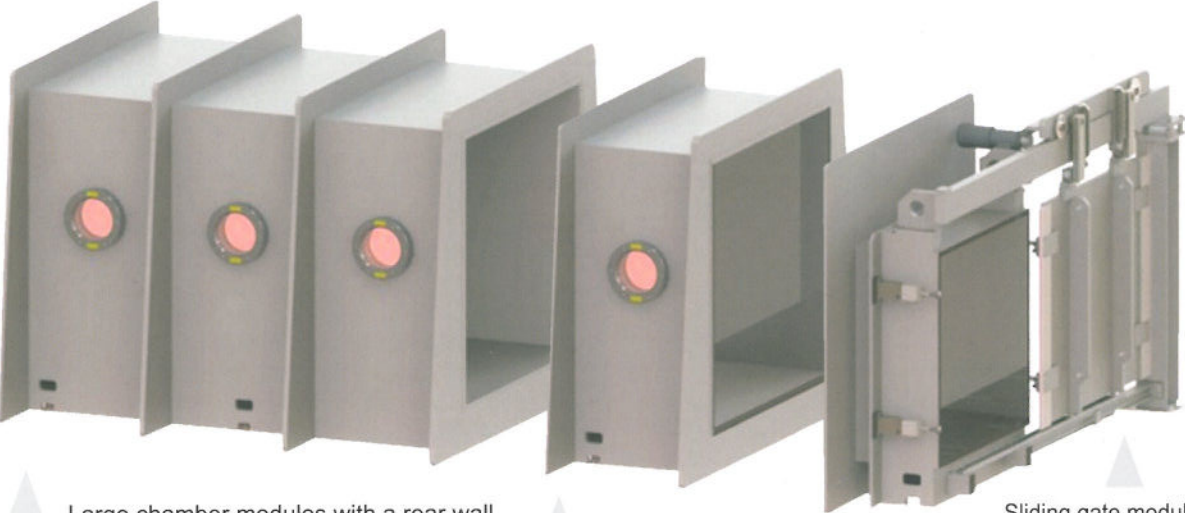
Technical data for the **MOBILGEN** generator

Dimensions		MG 60 V	MG 60 TR
Vertical beam outlet			
Height	mm	550	750
Horizontal beam outlet			
Height	mm	-	470
Width	mm	-	740

# THE CHAMBER MODULES



We offer **STANDARD LARGE CHAMBER MODULES** in 5 standard widths each and a wide variety of heights and lengths.



Large chamber modules with a rear wall

Extension modules

Sliding gate modules (reduced to the component part size)

All of the chamber components are engineered to be so dimensionally stable and precisely machined to guarantee exact mounting of all of the installed travelling gear components.

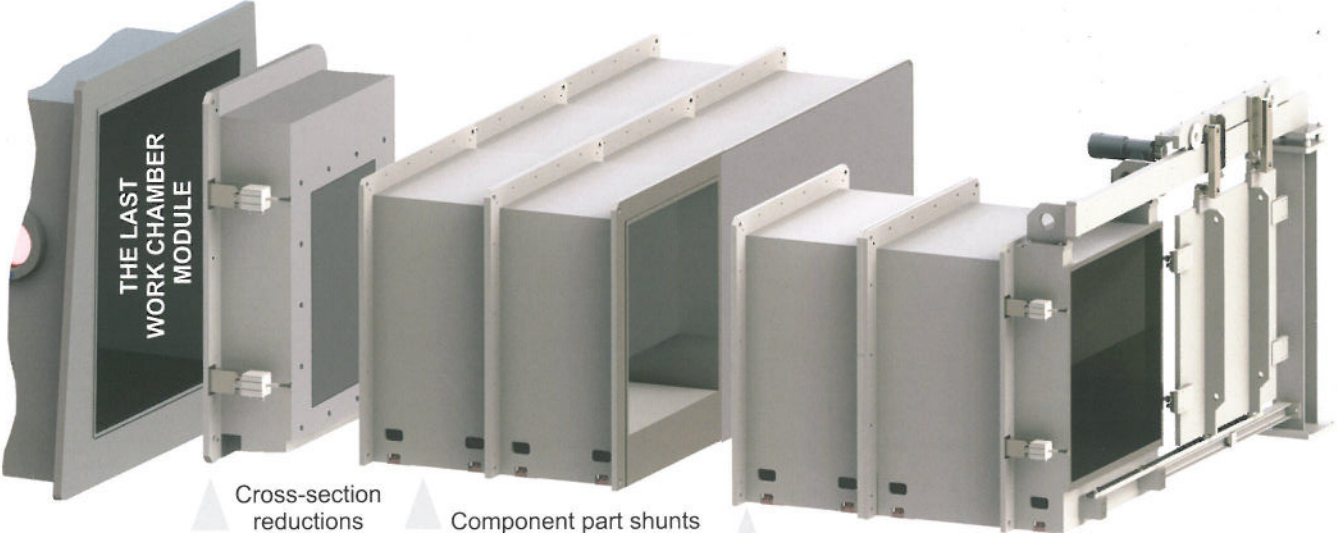
The exact generator guidance through the standardised travelling gears also ensures high-precision machining of complex component parts.

We offer oversized chambers engineered according to standardised schemes and in accordance with the required dimensions while taking the transport options into account with horizontally partitioned chamber modules.

For example: a horizontally partitioned chamber module

## SPECIAL MODULES

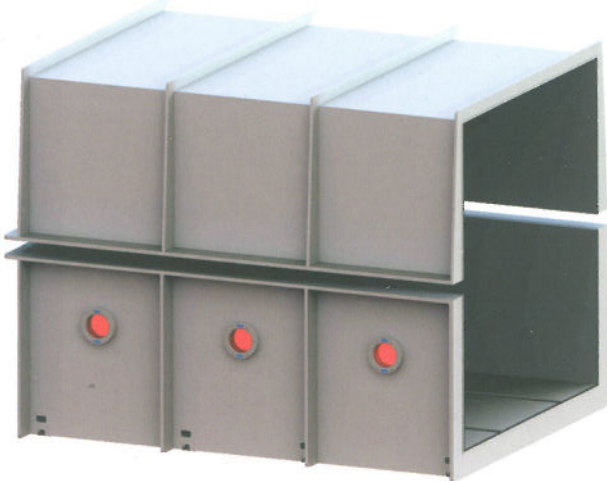
We also offer modules developed for a wide range of pallet transport systems for building flexible production lines of the **EBODISC** series for all dimensions of the **EBOMOVE** series.



Cross-section reductions

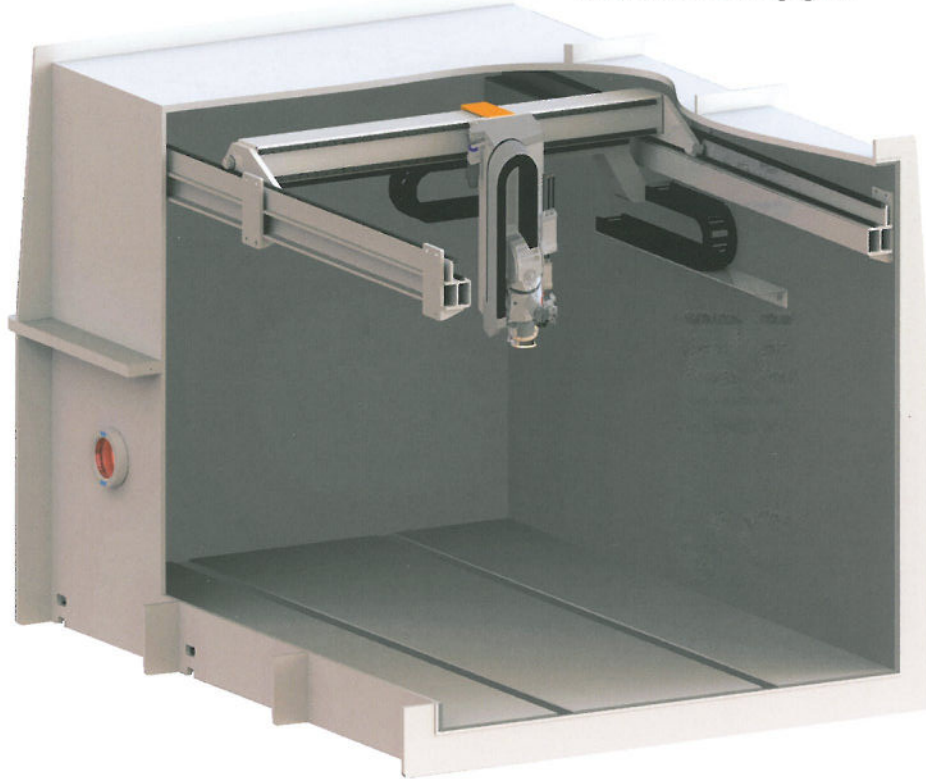
Component part shunts

Vacuum sluices



## A series

Bridge longitudinal travelling gear on a running path near the ceiling with a cross travelling gear



### Model EM A2 800C-30

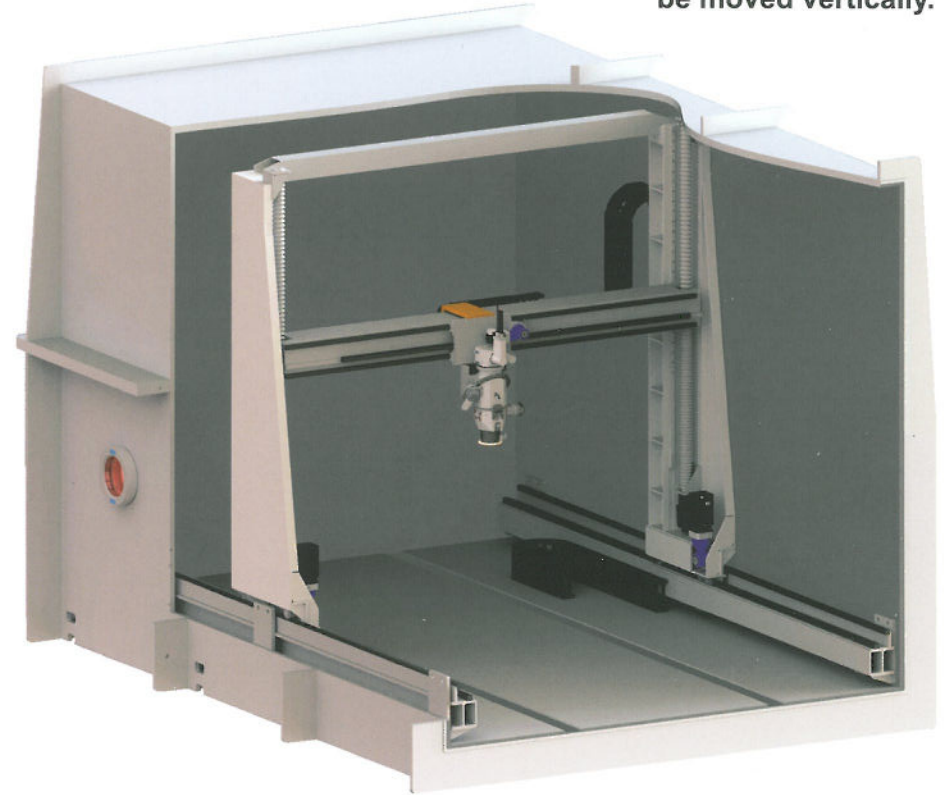
Figure with vertical telescopic travelling gear and the generator **MOBILGEN MG 60V** in a 80 m<sup>3</sup> chamber system

The travelling gear consists of running paths arranged overhead and on both sides over the chamber's entire length. A cross running path similar to a bridge is moved on it with a slide. The generator can be firmly mounted on a slide (model A1) or flanged on an additionally constructed 2- to 4-part telescopic travelling gear (model A2).

Depending upon your needs, you can select any MG model generator with or without a rotating and tilting axis. That means that the beam can be moved in as many as 5 degrees of freedom for component machining when implementing the work program. The cables are always fed through the tilting 60 kV connection to the travelling gear constructions so that the generator can also be "immersed" into the workpiece.

## B series

Longitudinal portal travelling gear on a running path near the floor. The cross travelling gear is either built in or can be moved vertically.



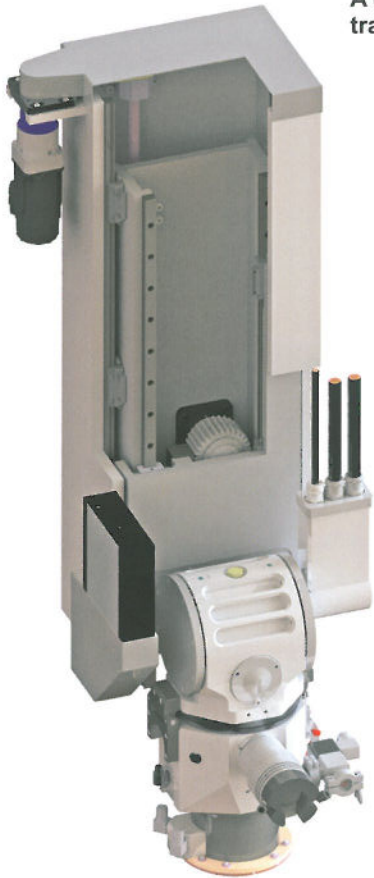
### Model EM B2 1500C-32

Figure with a cross travelling gear that can be moved vertically including a **MOBILGEN MG 60TR** generator with a rotating and tilting axis in a 150 m<sup>3</sup> chamber system.

A portal with a moveable cross travelling gear (B2 design) firmly mounted on top (model B1) or on vertical guides on a running path near the floor. It can be moved over the entire chamber length. The generator (with or without a rotating and tilting axis) can be firmly mounted on the slide of the cross travelling gear or flanged onto an additionally constructed telescopic travelling gear (model B3).

This provides the same generator movements as with the bridge travelling gear, although the structural shape B3 is better for "immersing" into the component part.

A detail of a vertical travelling gear



The vertical travelling gear can be mounted on the cross slides of all types to get the **MOBILGEN MG 60V** generator or the **MOBILGEN MG 60TR** generator, that is rotating and tilting on its own axes, into hard-to-get locations and even in the openings of the components.

The vertical travelling gears are constructed in a telescope design from 2 to 4 reinforced segments. They are simultaneously moved out or drawn in by one single servomotor.

The mounting base on the lower travelling gear end is suited to fitting all EB generators of the **MOBILGEN** series in different working positions.

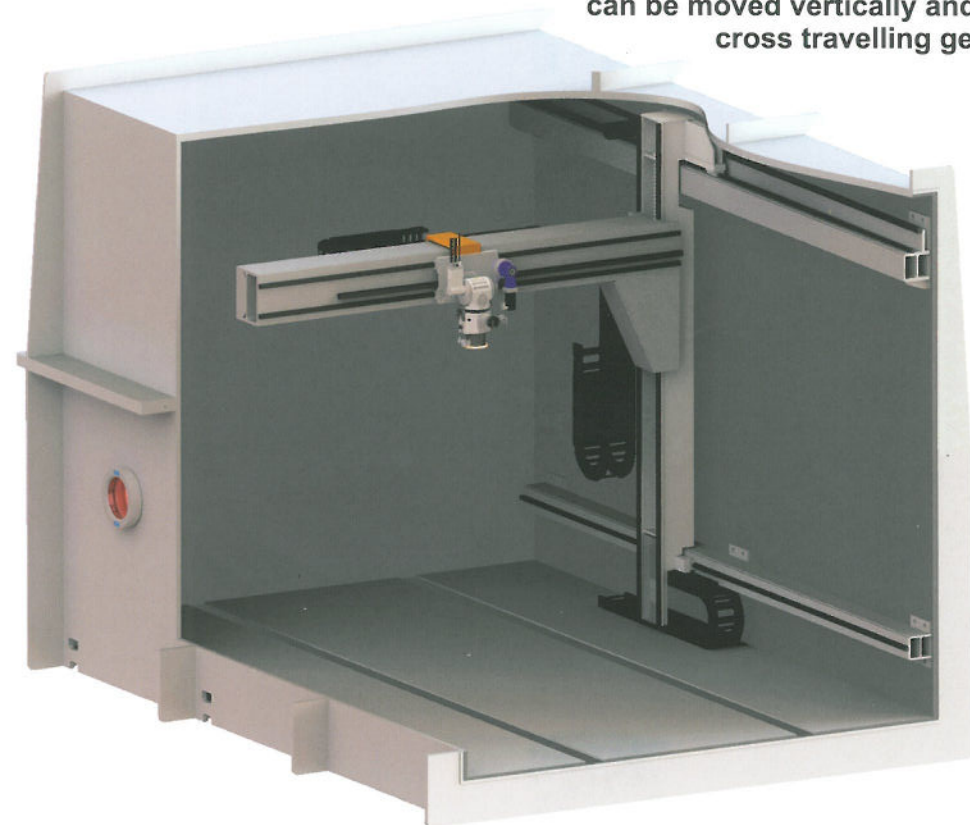
The sturdy design and precise guides for all travelling gear segments guarantee the high level of path precision for generator movement at maximum smooth running.

This makes it possible to build the optimum system for any application with its wide range of module combinations.

Furthermore, the modular structure allows subsequent retrofitting at a low price in case of production changes.

## C series

A longitudinal sidewall travelling gear with an extension arm that can be moved vertically and a cross travelling gear



### Model EM C 750C-32

Figure with an extension arm that can be moved vertically with a cross travelling gear with **MOBILGEN MG 60V** generator in a 75 m<sup>3</sup> chamber system

The vertical travelling gear is moved over the entire length of the chamber on running rails. It is mounted on reinforced receptacles on a chamber sidewall. This travelling gear carries an extension arm with a cross travelling gear for mounting the EB generator.

This system is especially suited to systems with component parts mounted on rotating equipment, although it may also offer substantial benefits for special jobs.

# SLIDE AND WORKPIECE MANIPULATORS

## The longitudinal slide

with the workpiece receptacle moves through all chamber and added modules. It is only used for loading and unloading the chamber with the standard system design. However, it can also be used as the axis of motion during machining. The slide guides are extended beyond the chamber doors so that the component part can be changed outside of the chamber.

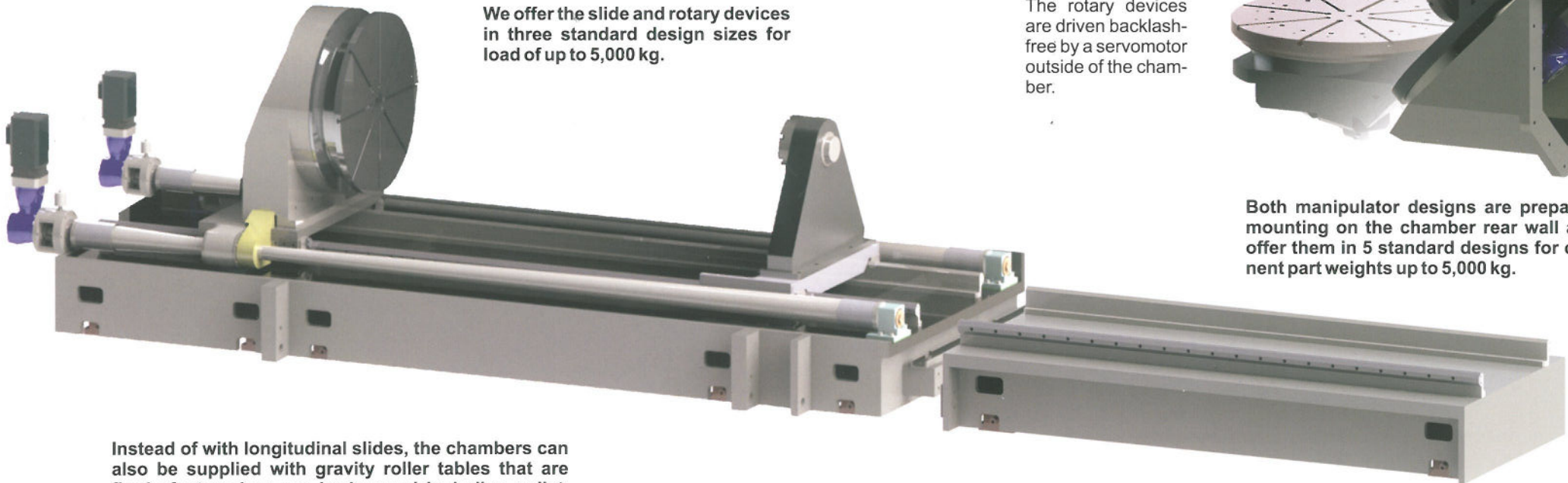
This construction consists of rails on both sides of the chamber floor on that the component holding device, a pallet receptacle or workpiece rotary device is bedded on. To avoid cable routing in the chamber, the drive motor is outside of the rear wall of the chamber with systems of up to 3,000 mm of running path. Power is then transferred through a ball spindle. The motor is mounted on the slide with even larger running paths.

## The component rotary device

has separately based drive and tailstock receptacles that are coupled by means of detachable connecting rods to make fast space change possible. Another option is pneumatically shortening this connection for clamping workpieces. The drive motor is also mounted outside on systems up to 3,000 mm of running path where power is transferred with a splined shaft.

Another option is a rotary-tilt manipulator with a separately based tailstock.

**We offer the slide and rotary devices in three standard design sizes for load of up to 5,000 kg.**

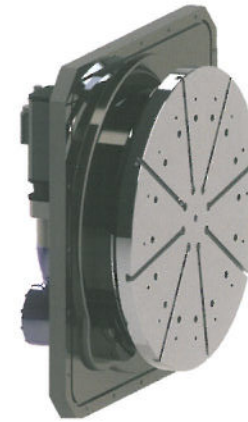


Instead of with longitudinal slides, the chambers can also be supplied with gravity roller tables that are firmly fastened or can be lowered including pallet, lifting and positioning equipment.

## Workpiece manipulators for systems with pallet conveying systems

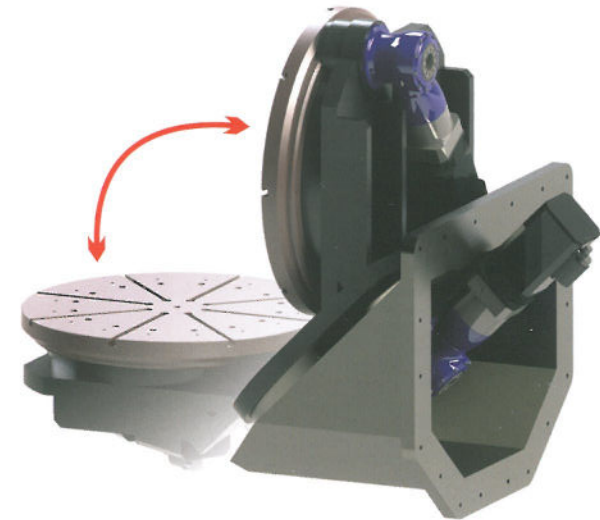
### ROTARY-TILT MANIPULATORS

The workpiece rotary device is set up on a sturdy swivel arm rotating around a 45° axis.

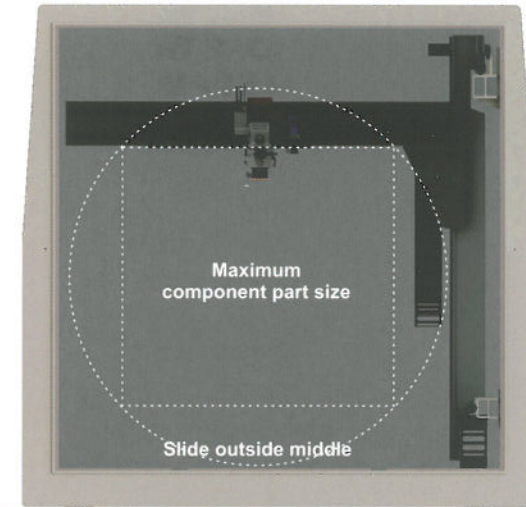
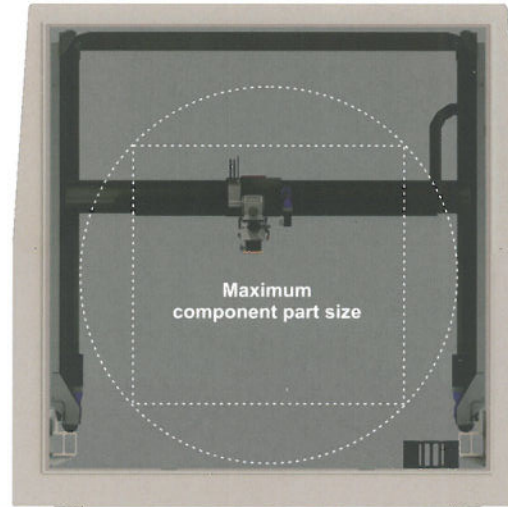
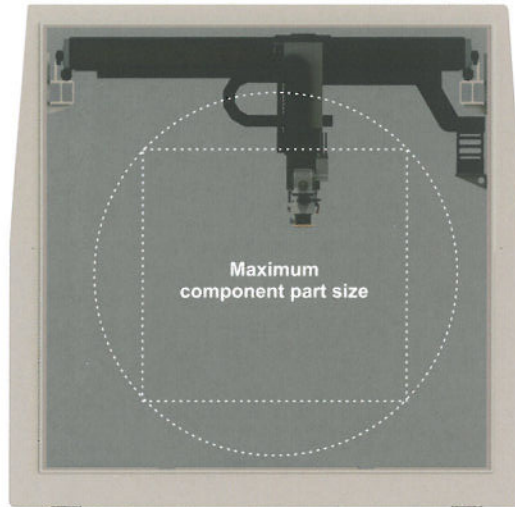


### ROTARY DEVICES

The rotary devices are driven backlash-free by a servomotor outside of the chamber.



Both manipulator designs are prepared for mounting on the chamber rear wall and we offer them in 5 standard designs for component part weights up to 5,000 kg.



**Design A:** Longitudinal bridge travelling gear with a cross travelling gear and generator including a built-in rotating and swivelling axis on a telescopic vertical travelling gear

**Design B:** Longitudinal portal travelling gear with a cross travelling gear that can be moved vertically and a generator with a built-in rotating and tilting axis

**Design C:** Longitudinal sidewall travelling gear with a cross travelling gear that can be moved vertically and a generator with a built-in rotating and tilting axis

## STANDARD WORK CHAMBER SERIES *EBOMOVE*

Design size	Clearance dimensions for chamber modules						Max. possible workpiece (mm) to bring in with generator MOBILGEN MG 60V (vertical beam outlet)		
	length	width	height	Extensions		Structural shape	length	width	height
				short	long				
1	2500	2500	3000	1000	2000	A/B	1480/1420	1500/1300	1400/1700
2	3000	3000	3500	1000	2000	A/B	1980/1920	2000/1800	1900/2200
3	3500	3500	4000	1000	2000	A/B	2480/2420	2500/2300	2400/2700
4	4000	4000	4500	1000	2000	A/B	2980/3420	3000/3300	2900/3200
5	4500	4500	5000	1000	2000	A/B	3480/3420	3500/3300	3400/3700
1	2500	2000	2000	1000	2000	C	1430	1025	700
2	3000	2500	2500	1000	2000	C	1930	1525	1200
3	3500	3000	3000	1000	2000	C	2430	2025	1700

## THE CONTROL MECHANISM *EBCON-SINUMERIK 840D SL*

Maximum CNC performance and unmatched flexibility with its open control architecture form the basis for applying 840D SL in EB technology.

### General data:

- drive-based modular CNC
- multitechnology CNC
- as many as 93 axes/spindles (due to NCU LINK)
- as many as 30 machining channels (due to NCU LINK)
- modular panel design
- up to 19" colour display
- SIMATIC S7-300 PLASTIC

All travelling gear and manipulator axes are built into the continuous path control including the generator rotating and tilting axes.

Send us your workpiece spectrum and we offer the optimum chamber system taking into account the beam position (generator vertical, horizontal or tilting attached to any workpiece side).

## WE PLAN AND WORK FOR YOU

OUR PROJECT ENGINEERS HAVE STATE-OF-THE-ART TRAINING IN ALL OF THE LATEST CHAMBER SYSTEM APPLICATIONS AND WILL BE GLAD TO DEVELOP TOGETHER WITH YOU THE BEST CHAMBER DESIGN SOLUTION FOR YOUR PROJECTS:



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