MECHA
ENGINEERING & MASCHINENBAU

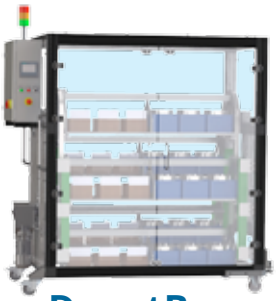
# MECHA Depot-Line 7000

## Flexible and economical workpiece storage systems

- Workpiece separation and storage
- Damage-free workpiece storage
- Enables statistical process control (SPC), since the traceability of parts is guaranteed
- Minimises part loss of micro-parts
- Minimises inspection work for quality control, as the parts are split into production parts and control parts
- Production of part families autonomously overnight (night shift)
- Enables 7000 production hours per year
- Mecha Depot-Line 7000 – your road to Industry 4.0

DepotMax with Okuma LT3000

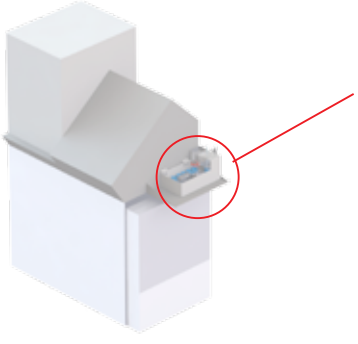
**DepotMax**



**DepotBox**

**DepotVacuum**

**DepotMini**



DepotMini S

DepotMax with Citizen L20

# Optimise your capability by using Mecha Depot-Line 7000

## Benefit from huge productivity potential with Depot-Line 7000 in:

- Swiss-type lathes, multi-spindles, lathes
- Bar, milling and turning centers
- Circular and centerless grinding machines

**Depot-Line 7000 protects:**

**Perfect surfaces of workpieces**

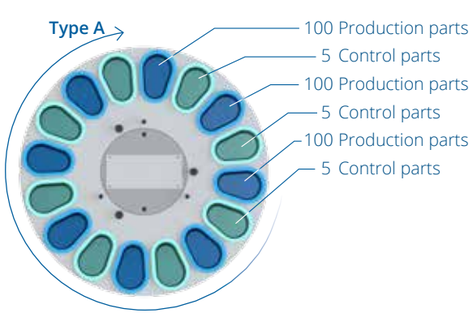
- Parts are placed non-contact in single or defined batch sizes in oil to limit the risk of material damage

**Depot-Line 7000 enables:**

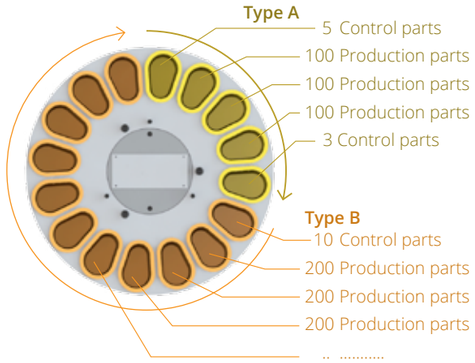
**Automatic implementation of statistical process controls (SPC)**

- Guarantees the separation of parts with no human factor
- Number of control parts and interval can be individually programmed

Example 1




Example 2

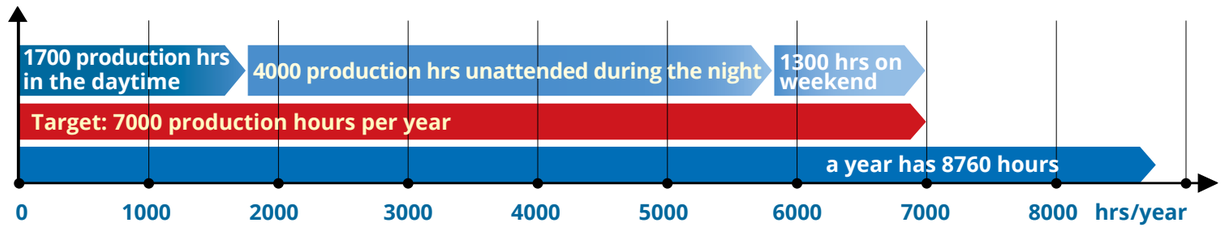



**Depot-Line 7000 enables:**

**Autonomous operation of the Mecha part separators**

- Simply retrofit to existing machines, as the part separators are operating electrically and autonomously
- Optional machine interface (ready for operation, storage full)
- Same workpiece storage can be used on multiple machines

## Use your time bands productively with Depot-Line 7000!




**Increase your unattended production time with Mecha Depot-Line 7000**

- During the night and at the weekend
- Up to 16 hours autonomic work
- Target 7000 hours per year
- Individually adjustable number of Depot-Line 7000 storage spaces
- Optimised production planning for Depot-Line 7000
- Single parts and small serie production during the day
- Long-running parts overnight

**Depot-Line 7000 offers:**

**Parts separation and temporary workpiece storage**

- Container DepotMax: Parts are stored individually

- Container DepotMini: Parts are stored in oil in defined batch sizes

**Depot-Line 7000 prevents:**

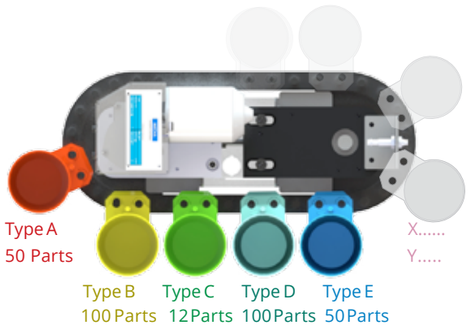
**The loss of workpieces**

- Loss-free parts unloading from the machine using vacuum

**Depot-Line 7000 provides all prerequisites:**

**For the production of part families**

- Separated storage of different parts families
- When switching program to CNC control; container change with M code



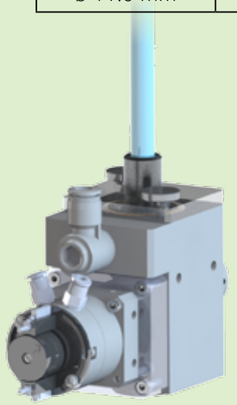
# MECHA Depot-Line 7000

## DepotVacuum

- **For micro-parts**
- **The solution for loss-free micro-parts unloading from the machine using a vacuum generator**
- **No mixing of different types of parts by safe unloading**

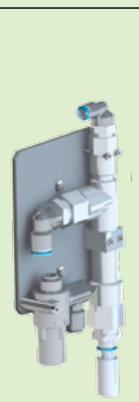
| Inner tube-Ø | Part-Ø (depends on lenght of part) | DepotVacuum XS | DepotVacuum S | DepotVacuum M |
|---|---|---|---|---|
| ø 1.2 mm | ø 1.0 mm | (X) | – | – |
| ø 2.5 mm | ø 1.5 mm | X | (X) | – |
| ø 4.0 mm | ø 3.0 mm | X | X | (X) |
| ø 5.5 mm | ø 5.0 mm | X | X | X |
| ø 7.0 mm | ø 6.5 mm | (X) | X | X |
| ø 9.0 mm | ø 8.0 mm | – | – | X |
| ø 11.0 mm | ø 10.0 mm | – | – | (X) |

DepotVacuum XS



DepotVacuum S

DepotVacuum M



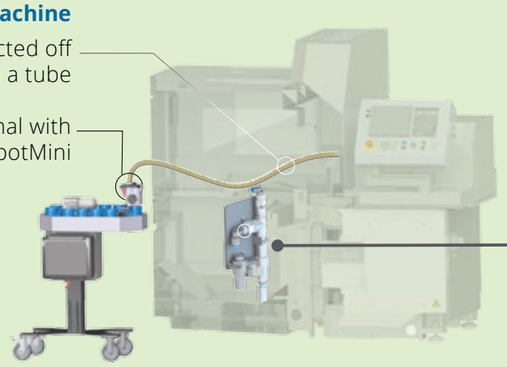
Vacuum Generator

Valve Unit

### Installation in the machine

Parts are extracted off the spindle with a tube

DepotVacuum optional with DepotMini

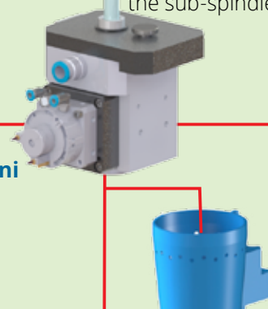


Tube from DepotMini into the machine

Tube in machine opposite the sub-spindle

Vacuum generator installed inside the machine

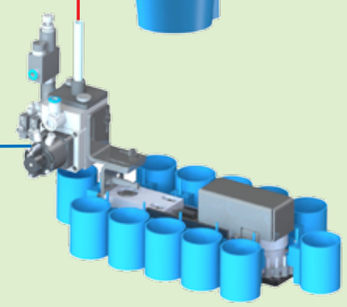
**Combinable with DepotMini for SPC control**



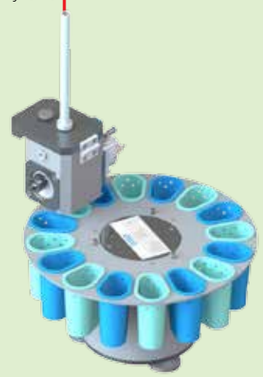
DepotMini CM



DepotVacuum can be used also with only one container

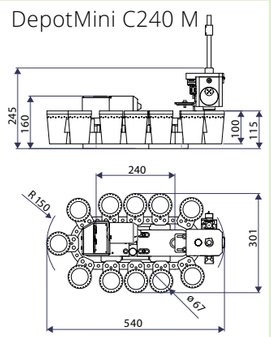


DepotMini CS

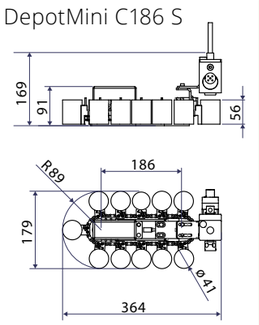


DepotMini R

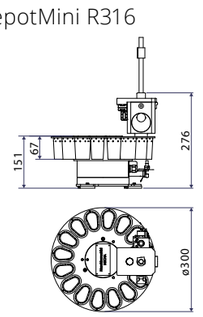
DepotMini C240 M




DepotMini C186 S




DepotMini R316



# DepotBox

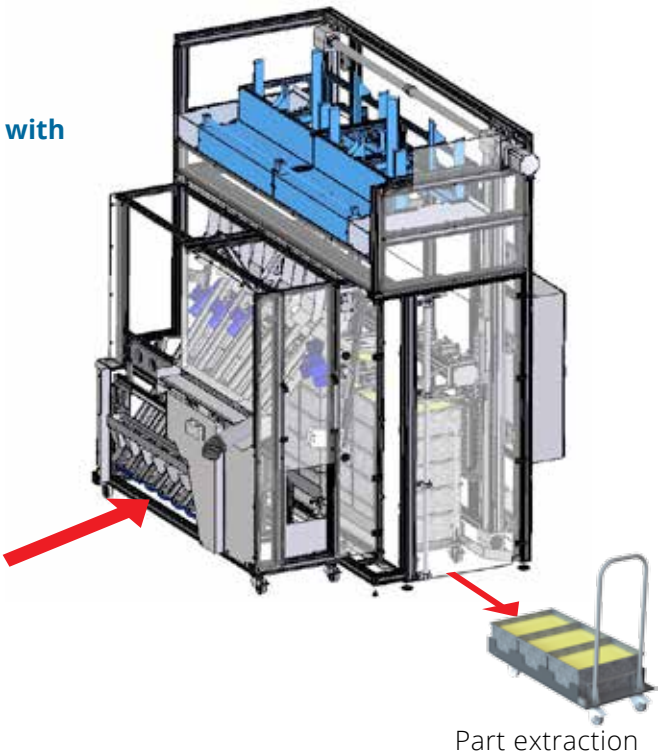
## Enables new productivity potential by:
## Parts separation for bulk parts using the principle of Paternoster:

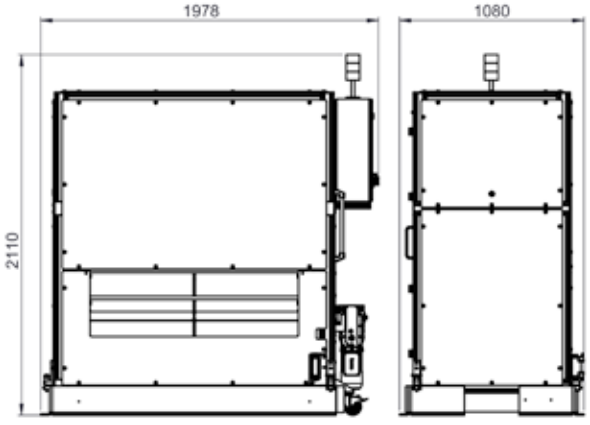
- Multi-spindles
- Punching presses
- Test machines

### Advantages with DepotBox:

- Traceability of parts is guaranteed
- Defined production quantity per container
- Autonomy during night shifts and weekends
- Adjustable number and size of plastic boxes/ washing boxes/cardboard boxes
- Control is independent of the processing machine
- Low space requirements

**DepotBox with lift unit**



# Controls for DepotMini

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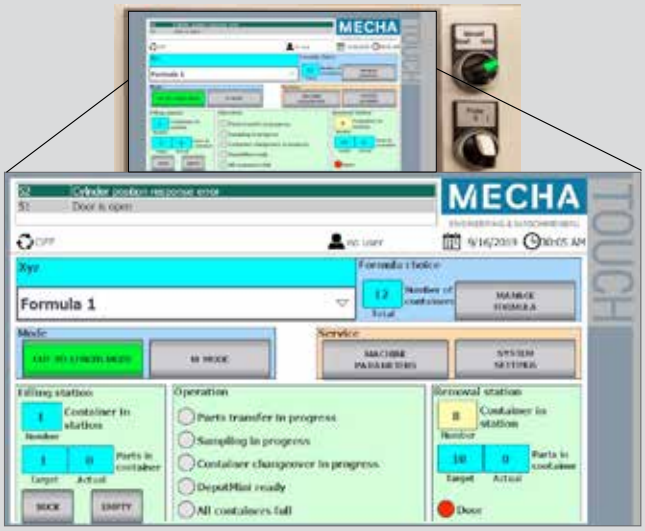
## Standard Control


## Touch Control




## Time Control


| | Standard Control | Touch Control | Time Control |
|---|---|---|---|
| Time-mode | x | | x |
| Counter-mode | x | x | |
| M-mode | x | x | x |
| Quantity in counter-mode | Fixed quantity of control parts and production parts | Any quantity of control parts and production parts per container | |
| Quantity recipes | 1 | 10 | 1 |
| Differentiation production parts and control parts | x | x | x |
| Single container emptying | | x | |
| Available with DepotVacuum | x | x | |
| Available with DepotMini C | x | | |
| Available with DepotMini R | x | | x |
| Sampling in mode automatic | x | x | x |
| Touchscreen | | x | |
| Login | | x | |
| Languages (ger., fr., eng.) | 1 language can be selected | Languages can be changed | english |

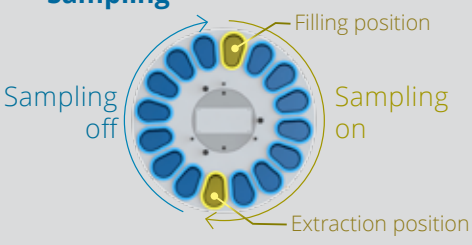
### Operating modes

- Time mode: The production and control containers are switched further after a fixed time.
- Counter mode: The production and control containers are switched further after a certain number of parts
- M mode: The production and control containers are switched further using a M code.

### Machine interface

- **DepotMini full** in automatic mode, if all containers are full
- **DepotMini ready** in automatic mode

### Sampling




### Automatic mode

In automatic mode, the following signals are issued:

- DepotMini ready for operation
- DepotMini full

### Emptying containers

Manual switched further for emptying the containers.

# **DepotMini / DepotMax:** The part separators for the automation of parts removal on CNC machines

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**Target:** 1. Increase the machine autonomy, automatic unloading
2. Improve the quality and traceability, no mess with produced parts
3. Simplify interfaces for follow-up processes

## Loading Bar feeder

- LNS
- FMB
- IRCO Breuning
- Top Automazione
- IEMCA
- Haas
- INDEX
- TRAUB
- SAMSYS (SAMECA)

## Machine tool

**Swiss-type lathes**
- Citizen
- Manurhin
- Tornos
- Star

**Multi spindles**
- Index
- Tornos
- Schütte
- MORY-SEIKI

**Bar, milling and turning centers**
- Chiron
- Willemin-Macodel
- Tornos
- Bumotec

**Short turning lathes**
- EMCO
- OKUMA
- MAZAK
- INDEX
- Miyano

## Operating modes

**• Time-mode:**
The production and control containers are switched further after a fixed time.

**• Counter- mode:**
The production and control containers are switched further after a certain number of parts.

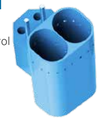
**• M-mode:**
The production and control containers are switched further using a M code.

## SPC automatic statistical process control

Because of the individual part separation a control part can be placed in the control container also during fully automatic and unattended night operation.

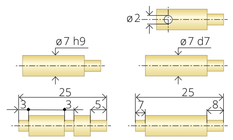
## A double container for separately control parts with DepotMini

For control measurement a control part is separated after a defined time or quantity also during autonomous nigth operation.



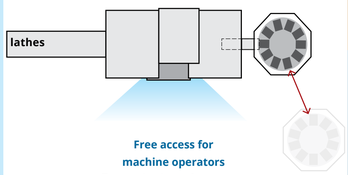
## DepotMini specific for night shifts

For production of part families or separation of control and production parts. E.g. automatic production of 5 parts of a family separated in containers.




## DepotMax allows scratch free part surfaces of high quality

Because of the part separation with **DepotMax** it is possible to produce absolutely scratch free parts.




**Free access for machine operators**

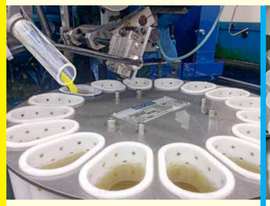
To remain always free access for the machine operator to the machine, DepotMax can be placed flexible.

**Suitable range**
- **Parts ø**
- **Batch size**

**From about ø 30 mm to micro parts about ø 0.1 mm**
**Batch sizes from 100-10000 parts per day**

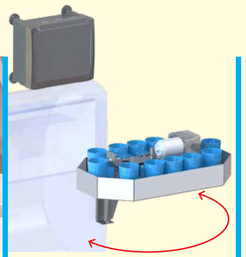
# DepotMini

**A compact fixed or mobile parts separation for turning machines. The parts are placed in production and control containers in defined quantity.**



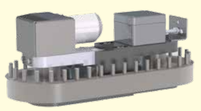
**DepotMini R316**
Parts are rinsed directly into containers.

**DepotMini C240 M**
Integrated in the machine

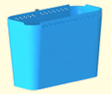


**DepotMini C240 M**
Integrated in the machine

**DepotMini C240 M on Trolley**
- with drip tray
- attached control system
- single or double containers



Containers of stainless steel or PA



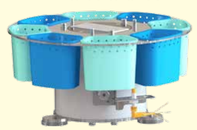
**Standardised containers**

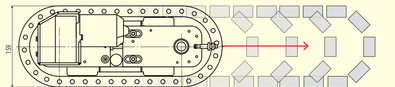
Cylindrical or rectangular containers, double containers for control parts and production parts, containers with grids, etc. Depending on branch of industry and type of parts selectable.

**DepotMini R212**
Ø200, 6 part containers
6 control containers

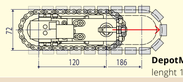
**DepotMini R316**
Ø300, 16 containers
e.g. 8 part containers,
8 control containers

**DepotMini R308**
Ø300, 8 containers
e.g. 4 part containers,
4 control containers



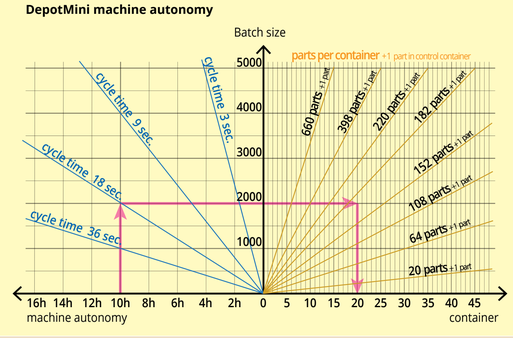



**DepotMini CM** lenghts 240/316/596/697/925 mm
from 12 to 24 containers




**DepotMini CS**
lenght 186 mm with 12 containers

**DepotMini machine autonomy**




**From about ø 100 mm to small parts about ø 15 mm**
**Batch sizes from 10-1000 parts per day**

# DepotMax

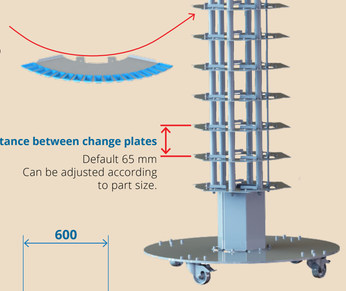
**A compact and mobile solution for automatic removal of workpieces on each processing machine using a feed conveyor belt. Each workpiece individually, gently and traceable.**


**Operating panel with control**

The touchscreen control panel is independent of the machining system. No interface to the machine tool is required. A sensor independently detects the parts to be stored and saves the filled container positions.

**Change plates**

The magazine levels consist of 3 individual removable change plates. Those can be placed on a trolley and used for follow-up operations.



**Distance between change plates**
Default 65 mm
Can be adjusted according to part size.

**Removable change plates**
with different container sizes

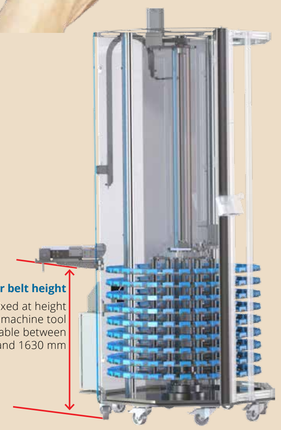
Container size 60 x 22 mm

Container size 46 x 46 mm

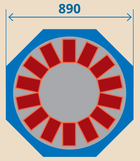
Container size 183 x 37 mm

Container size 99 x 96 mm

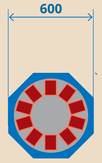
**From about ø 100 mm to small parts about ø 15 mm**
**Batch sizes from 10-1000 parts per day**



**Conveyer belt height**
- Standard: fixed at height of machine tool
- Adjustable between 336 mm and 1630 mm



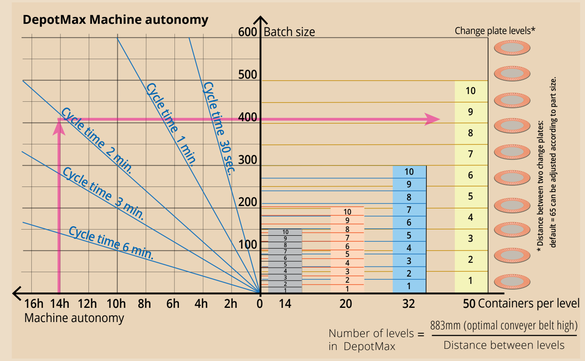

**Cabine standard 890**




**Option cabine 600**

| Container size | per level |
|---|---|
| 22 mm x 60 mm | 50 |
| 22 mm x 120 mm | 35 |
| 37 mm x 90 mm | 32 |
| 37 mm x 183 mm | 20 |
| 46 mm x 46 mm | 32 |
| 46 mm x 110 mm | 23 |
| 70 mm x 110 mm | 17 |
| 70 mm x 160 mm | 14 |
| 96 mm x 99 mm | 14 |

**DepotMax Machine autonomy**




Number of levels in DepotMax = 883mm (optimal conveyer belt high) / Distance between levels

**Parts over about ø 20 – 100 mm Robots**
**Batch sizes over 1000 parts per day**

## Robots with pallet rack

**Disadvantage:**
- The effort to setup is high
- Product specific pallets are necessary
- Investment in robots and pallets are high
- Pick off parts from spindle results loss of time
- A camera is necessary to pick up parts from the conveyer belt
- Free access to the machine is not guaranteed for the operator

**Advantage:**
- Is tightly palletised
- Cheaper for large batches and mass production


## MECHA is an established SME based in the region of Berne.

### We are a competent partner offering customized solutions from engineering through to commissioning.

We use our knowledge and flexibility to supply you with premium quality products. We place great value on personal consulting.

We serve customers all over Switzerland, and the systems we supply are used around the world. For us, a systematic approach to mechanical engineering means that we always set ourselves the very highest standards – from the production and delivery of your products to the continued training and professional development of our apprentices and staff.

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