✓ Can be attached to almost all machining centres
✓ Side or front loading of machine tool possible
✓ Small space requirements, flexible positioning towards machine tool
✓ No additional medium inside of the machine tool necessary
✓ Simple and user-friendly functional principle
✓ Favourable purchase pricing, quick amortisation
Large, medium and even small companies are asking themselves if automation is right for them. Here are some reasons why all companies should consider a reasonable level of automation.

**Automation increases machine run time**  
With automation, unproductive times such as breaks, other tasks and mainly the evening and night hours can be reduced. Most times, tasks and responsibilities can be restructured or even extended (e.g. immediate quality control of manufactured parts).

**Automation raises production efficiency**  
By increasing machining hours, production efficiency is raised. Nothing is as costly as an expensive machining centre that does not run. The goal of every business should be to utilise the maximum capacity of their machining centres.

**Automation reduces costs**  
With automation, machines can run during the night and can utilise less expensive night electricity (where applicable). In addition, the company can save or reduce unproductive times, late or night shift but still keep production running without the presence of a machine operator.

**Automation reduces costs per piece**  
Thanks to the savings achieved through automated manufacturing and optimised productivity, the reduced costs per piece can result in more competitive pricing without sacrificing quality.

**Automation increases your competitiveness**  
Reduced pricing while maintaining high quality and consistency allows you to remain competitive, even in the hard-fought international markets.

In closing, automated manufacturing is almost a must-have for all machining companies today and in near future. The level and scope of the automation goal has to fit the company structure. Keeping this in mind, we have developed different automation solutions in order to satisfy the different requirements and needs of all of our customers.

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**Machine tools we already have equipped:**  
Alzmetall, Bridgeport, Brother, Chiron, DMG, Doosan, Emco, Fanuc, Feeler, Fehlmann, Grob, GMC, Haas, Hedelius, Hermle, Hitachi Seiki, Hurco, Hyundai, Matec, Matsuura, Mazak, Mikron, Mitsui Seiki, Mori Seiki, OKK, Okuma, Quaser, Spinner, Stama, YCM, uvm.

We are sure your machine tool will look great with a LANG Automation, too!
The right solution for all needs and requirements!

<table>
<thead>
<tr>
<th>Model</th>
<th>Eco • Tower 60</th>
<th>Eco • Compact 20</th>
<th>Eco • Compact 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity of pallets:</td>
<td>60 (77 mm) bzw. 45 (125 mm)</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Max. handling weight:</td>
<td>30 kg</td>
<td>40 kg</td>
<td>30 kg</td>
</tr>
<tr>
<td>Max. size of workpieces:</td>
<td>350 x 200 x 200 mm</td>
<td>200 x 200 x 200 mm (fully loaded)</td>
<td>200 x 200 x 200 mm (fully loaded)</td>
</tr>
<tr>
<td></td>
<td>400 x 200 x 200 mm (every other pallet loaded)</td>
<td>400 x 200 x 200 mm (every other pallet loaded)</td>
<td></td>
</tr>
<tr>
<td>Footprint:</td>
<td>3.20 x 2.40 m</td>
<td>2.00 x 2.00 m</td>
<td>2.80 x 1.60 m</td>
</tr>
<tr>
<td>Height:</td>
<td>2.80 - 3.40 m (depends on height of table)</td>
<td>2.00 m</td>
<td>1.00 - 1.50 m (depends on height of table)</td>
</tr>
<tr>
<td>Total weight:</td>
<td>1.150 kg</td>
<td>1.400 kg</td>
<td>565 kg</td>
</tr>
<tr>
<td>Max. travel of y-axis:</td>
<td>850 mm / 1.050 mm (extended)</td>
<td>1.200 mm</td>
<td>850 mm / 1.050 mm (extended)</td>
</tr>
<tr>
<td>Linear guides applicable:</td>
<td>not necessary</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Recommended for:</td>
<td>small to big lot sizes</td>
<td>workpieces with excess width, higher weight of parts</td>
<td>Workpieces with excess width, individual parts, small lot sizes, parts with extended running time</td>
</tr>
</tbody>
</table>
Eco•Tower 60 Automation System

1. Spiral storage (3.5 loops) – great capacity/footprint ratio (max. 60 pallets)

2. Assembly place: Convenient change over of workpieces in the vices

3. Loading place: The pneumatic elevator carries the pallets up into the spiral storage securely

4. Pallets slide down by gravity. Special guides prevent the pallets from tilting over. Pneumatic brakes provide an equal and smooth movement of pallets

5. Unloading place of pallets by the handling system

6. Handling system driven by low pneumatic forces, various set-up types possible

7. The handling system loads and unloads the machine tool with pallets.

8. The gripper actuates the zero-point clamping system inside the machine tool with a pneumatic interface

---

<table>
<thead>
<tr>
<th>Eco•Tower 60 Automation System</th>
<th>Max. quantity of pallets</th>
<th>Weight</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item No.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automation Vice 77</td>
<td>Automation Vice 125</td>
<td></td>
<td></td>
</tr>
<tr>
<td>69260</td>
<td>60</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Storage: 700 kg Handling: 450 kg</td>
<td></td>
</tr>
</tbody>
</table>
Keeps it going... all night long!

At a glance:

- Ideal storage/footprint ratio
- Increased efficiency thanks to low purchasing and operating costs
- Very simple and user-friendly functional principle
- Manual operation of machine tool remains possible
- Simple communication with machine tool via max. 2 M-codes
- Various set-up options to utilise floor space efficiently

Possible degree of capacity utilisation with automated manufacturing processes:

The diagram below is based on customer’s and own manufacturing experiences.

Downtimes (4 hours)
Average value! Depending on batch sizes and running time of manufactured parts the unmanned shift can not always be completey covered.

One-Shift Operation (approx. 8 hours)
Thereof: Downtimes (approx. 1 hour) due to tool adjustment and other logistic tasks

Sample calculation with common parameters:

Assuming an hourly machine rate of 60 EUR and a realistic, additional machine running time of 12 hours in the evening and night hours a gain of 720 EUR is created daily.

Calculated using 46 working weeks a year, 5 days per week, within only 6-7 months a return on investment would be realised on our automation system Eco•Tower 60!

Even with considerably less machining time, you can achieve enormous gains. We would appreciate the opportunity to prepare you a customised, personal return on investment calculation – just ask your sales representative!
Eco Tower 60 – Selection of realised applications:

Grob G350
Mikron HPM 450 U
Hermle C 42 U
Matsuura MX-520
DMU 60 monoBlock
DMU 50
Automation

Stamping Technology

Workholding

Zero-Point Clamping

Cleaning Fan

Eco•Tower 60 – Selection of realised applications:

Automation
Eco•Compact 20 Automation System

1. Loading weight for y-axis: 40 kg, travel up to 1,200 mm
2. Storage table with a capacity of 20 pallets
3. Large loading door for great accessibility, also suitable for crane loading
4. Customised position of loading door according to requirements.
5. Elaborated operation panel
6. Remarkably small footprint: 2 x 2 m
7. Optionally available with slide rails to ensure accessibility to machine tool even when loaded through the front door
8. Transportation by fork lift or crane
9. Right or left loading position can be chosen
10. The loading arm (standard position: 0°) can be shifted and fixed in an angle of 9° or 18° in order to load machine tables that are hard to reach

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Max. quantity of pallets</th>
<th>Weight</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>68820</td>
<td>20</td>
<td>1,400 kg</td>
<td></td>
</tr>
</tbody>
</table>
The powerful space saving miracle!

At a glance:

- Minimal space requirements: 20 pallets storage capacity at a footprint of 2 x 2 m
- Max. handling weight: 40 kg
- Long travel of handling system (up to 1,200 mm) allows loading of large machine tools
- Convenient loading of storage table by hand or crane
- Quick and easy installation as the system is supplied as a complete and pre-adjusted unit

Choose the colour of the operation panel frame, the window stickers as well as the corner cappings individually! Adapt the design of your Eco•Compact 20 to the design of your machine tool without any surcharge! Further colour combinations on request.
Eco•Tower 20 – Selection of realised applications:
Eco•Compact 10 Automation System

Exceptional accessibility towards the storage table. Capacity: 10 pallets or LANG automation vices.

The pneumatic gripper provides secure handling of workholding devices. An integrated interface below the gripper actuates the Quick•Point® Base Tower.

Simple operation of the automation system with the hand operation panel.

Drip plate

Linear guides available as an option.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Max. quantity of pallets</th>
<th>Weight</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>68810</td>
<td>10</td>
<td>565 kg</td>
<td></td>
</tr>
</tbody>
</table>
Brilliantly simple – simple flexible!

At a glance:

- Ideal for small lot sizes and workpieces with long cycle times
- Loading the storage table with pallets is possible at any time
- Parts with excess width can be automated by loading every other pallet
- Favourable purchasing costs
- If needed the entire unit can be applied on linear guides to be moved away from the machine tool (optionally available)

10 is not the end...

Unit mounted on linear guides provides highest flexibility!

Increase capacity of your Eco•Compact 10 by using Quick•Point® Tri•Top or Automation Dual (4-fold) Vices.

Eco•Compact 10 optionally mounted on linear guides to ensure accessibility to machining centre. The whole unit can be moved away easily for manual operations.
Eco•Tower 10 – Selection of realised applications:

DMU 50

Alzmetall G800-5

Fanuc/Stama Robodrill

OMV HSC 1700

Mazak Variaxis j-500

DMC 635V
Universal Gripper Kit for handling systems and indus

1. Pneumatic gripper with locking system for secure handling of pallets
2. z-axis for positioning of pallets in the Quick•Point® Base Tower
3. Solid back plate allows individual assembly to different robots by using existing M8 counterbores (135 x 135 mm) or inserting additional holes
4. Pneumatic interface for actuating Quick•Point® base tower
5. Compatible with Quick•Point® Base Tower (Item No. 46080)

Universal Gripper Kit including Automation Base Tower

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Weight</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>46080-1162</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gripper:</td>
<td>17.0 kg</td>
<td></td>
</tr>
<tr>
<td>Automation Base Tower:</td>
<td>12.6 kg</td>
<td></td>
</tr>
</tbody>
</table>

Pneumatic interface for clamping and unclamping the base tower, raised position for best accessibility

Highest clamping force due to the patented wedge closing device

Grinded, even surface, very easy to clean

Guide rails guarantee trouble-free loading with pallets – independent of the weight

Adaptor device for manual operation of the base tower. It can be conducted with an air pressure pistol or even more convenient it can connected to a pneumatic hose
trial robots
Makro•Grip® Mobile Storage Unit – Space-saving storage solution for pallets and fixtures

1. Space to hold up to 60 devices (30 devices on each side)
2. Convenient handle for pushing and pulling the unit
3. Non-corrosive galvanised sheet steel
4. Base dimensions 1200 x 1800 mm: Ideal for transport on Euro pallets
5. Easy moving of the storage unit with rubberised casters
6. Powder coated coolant collecting tray with integrated coolant drain screw

<table>
<thead>
<tr>
<th>Makro•Grip® Mobile Storage Unit</th>
<th>Item No.</th>
<th>Capacity</th>
<th>Dimensions</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>61060</td>
<td></td>
<td>max. 60 clamping devices</td>
<td>1200 x 800 x 1500 mm</td>
<td></td>
</tr>
</tbody>
</table>
Makro•Grip® Mobile Storage Unit next to two Eco•Tower 60 Automation Systems.

Storage Unit fully loaded with 60 vices (30 vices on each side).

Different pallets (Automation Vices 77 and 125) stored in the Mobile Storage Unit next to another Eco•Tower 60.

For all LANG workholding and fixtures with Quick•Point® grid system 52 and 96 mm.
Automation Pallets and Vices – The best automation system

Makro•Grip® Automation Vice 77

Makro•Grip® Automation Vice 125

Ino•Grip® Compact 3-jaw chuck

Makro•Grip® Automation Dual Vice 77
is worthless without the best workholding equipment!

Quick•Point®
Automation Base Tower

Quick•Point®
Tri-Top 3-face Tombstone

Quick•Point®
Automation support pallets

Quick•Point®
Zero-Point support pallet

Automation pallet with mounting bores
Automation pallet without mounting bores

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