UNIVERSAL PALLET HANDLING SYSTEMS – PERFECT AUTOMATION FOR MACHINE TOOLS

AUTOMATION　　FLEXIBILITY　　EFFICIENCY　　SAVINGS

Why is it worth to equipp a machine tool with an automation system?

AUTOMATION   FLEXIBILITY   EFFICIENCY   SAVINGS

Benefits of the Pallet Handling System

✓ **Flexibility** – different types of parts

✓ **Versatility** – integration with wide range of machines

✓ **Efficiency** – fully automated solution permitting machine operator to work on more than one machine tool

✓ **Minimal setting time** – standarized set of pallets combined with precise and repeatable clamping system

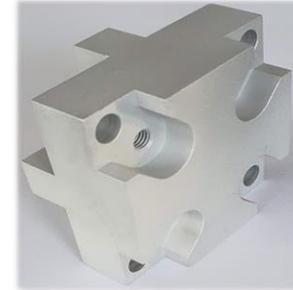✓ **Cost-effective solution** – quick utilization of the machine

Application example – single unit production

Part A, machining target: 6 pcs.

- Raw part: cube 78x78x40 mm, EN AW 6083

- Machining time: 10 min

- Manual replacement of part: 45 s.

👎 **Necessary manual action every 11 min.**
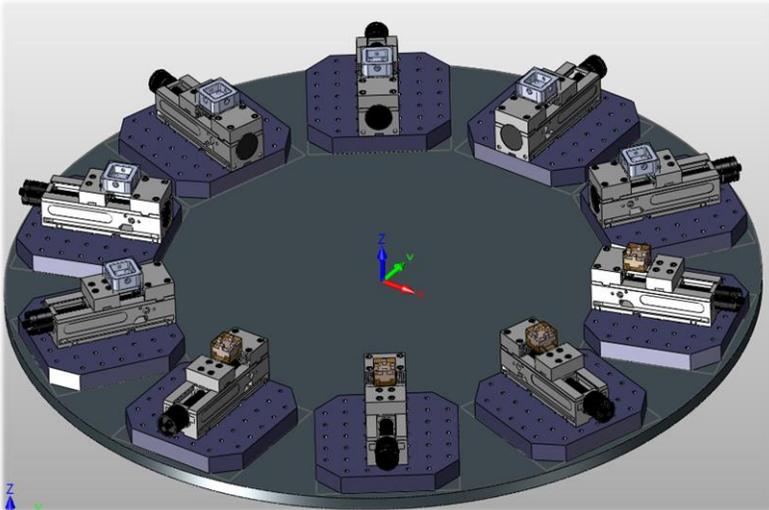

Part B, machining target: 4 pcs.

- Raw part: cube: 54x54x40 mm, EN AW 608

- Machining time: 11 min

- Manual replacement of part: 45 s.

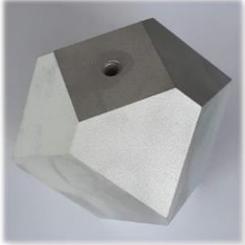👎 **Necessary manual action every 12 min.**

Optimization by implementation of the pallet changer:

- Fastening of the raw parts with use of vises on all 10 pallets.
- **Setting raw Parts type A on pallets 1 – 4 and raw Parts type B on pallets 5 – 10.**
- Part's setting repeatability in the machining area up to 0,02 mm.
- Cycle time of the automated repleacement: 55 s.

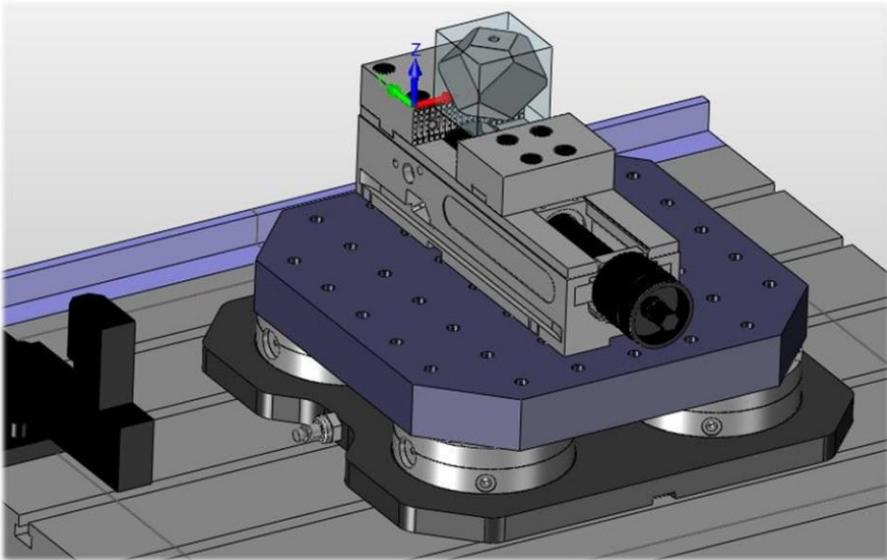**Necessary manual action after more than 2 hours** 👍

Application example – small series production

- Raw part: cube 62x62x66 mm, EN – AW 6083,
- Machining strategy: 3 – axis milling machine, 2 settings,
- Machining time: 26 min / side,
- Manual replacement of part: 45 s.

Necessary manual action every 26 min.

Optimization by implementation of the pallet changer:

- Fastening of the raw parts with **use of vises** on all 10 pallets.
- Part's setting repeatability in the machining area up to 0,02 mm.
- Cycle time of the automated repleacement: 55 s.

Necessary manual action after more than 4 hours

Application example – medium series production

- Raw part: cube 62x62x66 mm, EN – AW 6083,
- Machining strategy: 3 – axis milling machine, 2 settings,
- Machining time: 26 min / side,
- Manual replacement of part: 45 s.

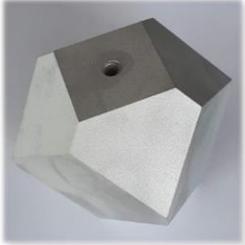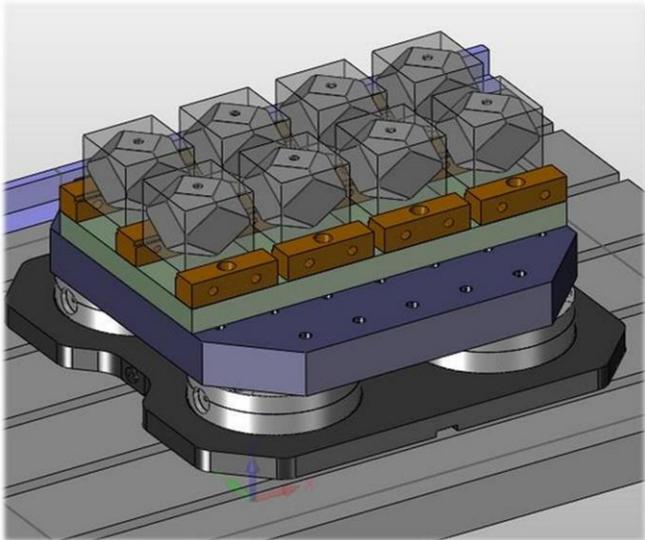**Necessary manual action every 26 min.**

Optimization by implementation of the pallet changer and dedicated machining fixtures (8 parts per fixture):

- Fastening of the raw parts with **use of dedicated machining fixtures (8 parts per fixture)** on all 10 pallets.
- Part's setting repeatability in the machining area up to 0,02 mm.
- Cycle time of the automated repleacement: 55 s.

Necessary manual action after more than 33 hours

AUTOMATION   **FLEXIBILITY**   **EFFICIENCY**   **SAVINGS**

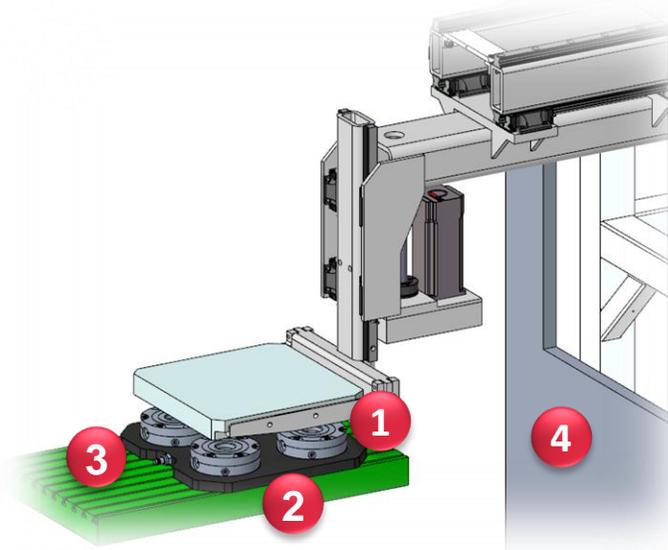# Automation Systems operating with single machine tool

ZP-10 – Universal Pallet Changer

✓ **Flexibility**
✓ **Versatility**
✓ **Eficiency**
✓ **Minimised setting time**
✓ **Cost – efective solution**

✓ **Max. workpiece size φ350 x 380 mm**
✓ **Pallet loading capacity max. 250 kg**
✓ **Max. number of pallets 10 pcs.**
✓ **User friendly interface PLC Beckhoff**

Automation system technical details

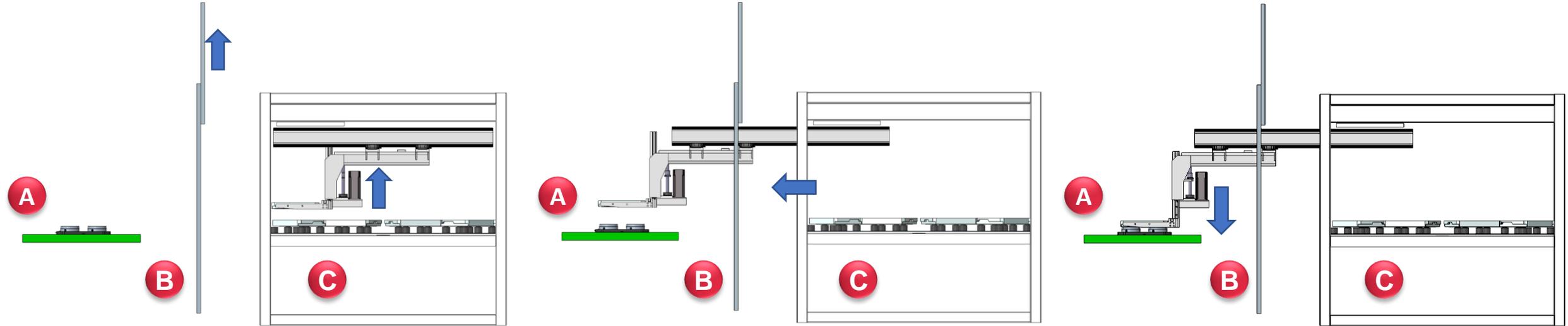|		ZP-10
Pallet stock drive	type	servo
X axis	type	servo
Z axis	type	servo
Pallet loading capacity	kg	250
Workpiece size	mm	φ350 x 380
Pallet size	mm	350 x 350
Number of pallets	pcs.	10
Fastening system	type	Zero - point
Cycle time	s	ok. 55
Stock loading capacity	kg	1 600
Overall dimensions	m	S = 2.0 / G = 2.1 / H = 1.9
Software	-	BECKHOFF
Tooling	-	innotool / Schunk

Technical Data

1 Pallet with loading capacity up to 250 kg

2 Fastening system Zero - point

3 Pneumatic interface
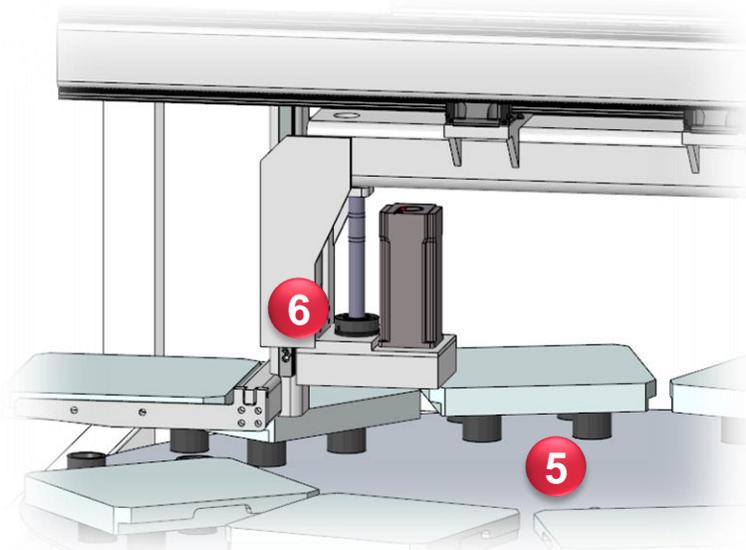
4 Machine tool preparation

5 Rotary storage

6 Manipulator with gripper

Automation systems increasing the efficiency of the machining center

1. Selection of the chosen pallet.

2. Automated opening of the side wall.

3. Handling up of the pallet.

4. Entering the machining area with use of the manipulator.

5. Fastening of the pallet on the machine table with use of the Zero – Point system.

6. Leaving the machining area and starting the machining program.

A Machine table with the Zero – Point fastening system   **B** Automated side wall   **C** Pallet changer
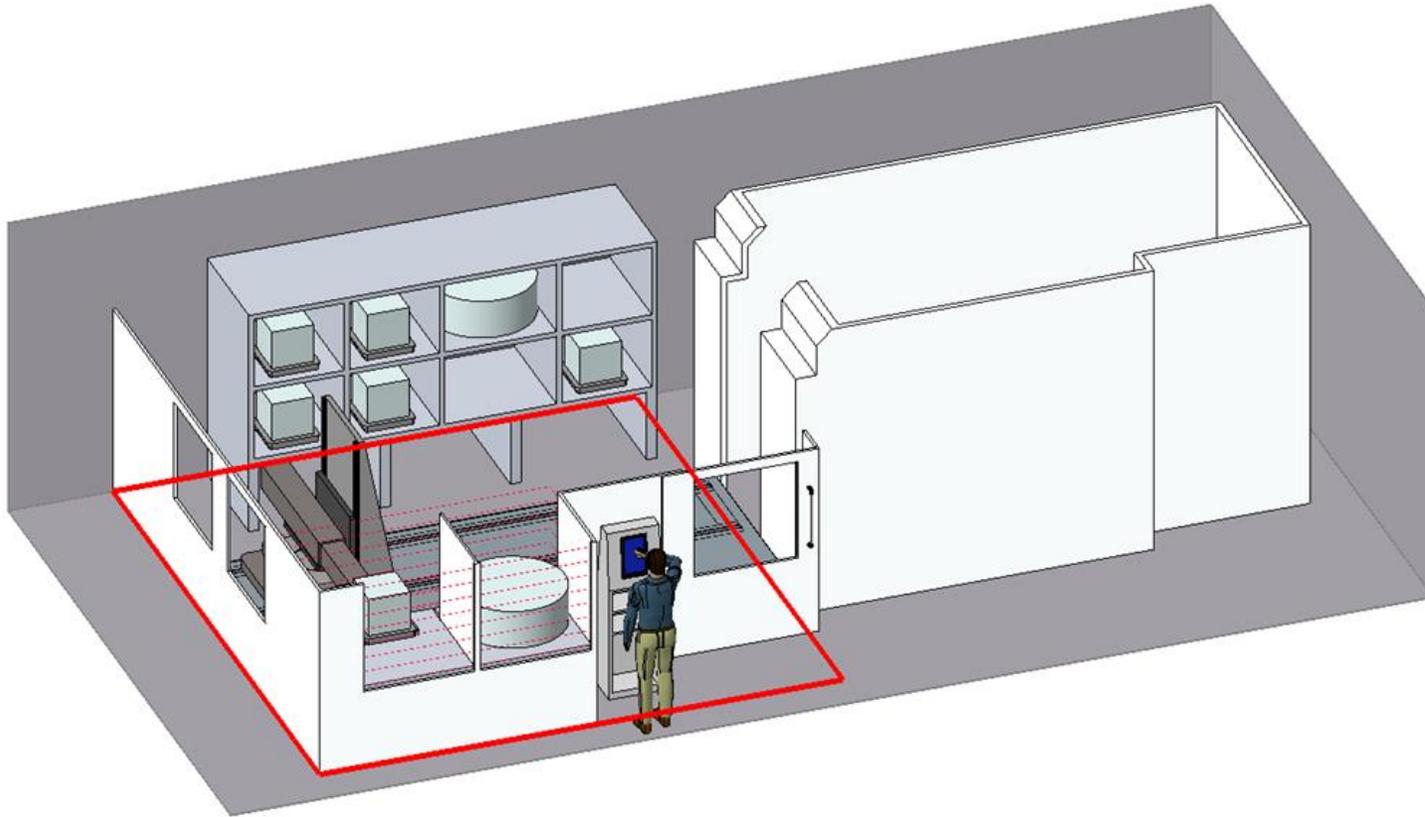
AUTOMATION   FLEXIBILITY   EFFICIENCY   SAVINGS

Automation Systems operating with one or two machine tools

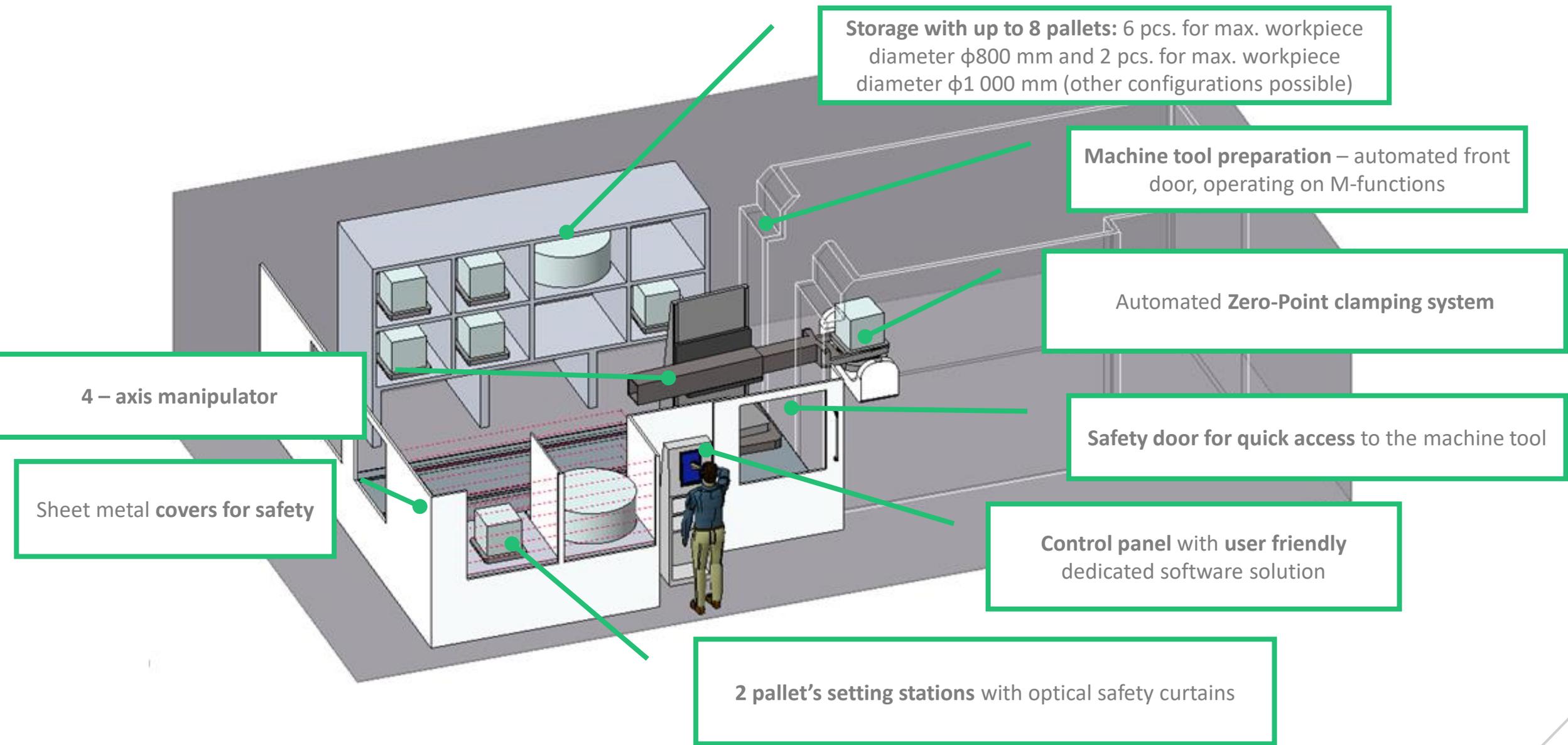# Universal pallet handling system with loading unit operating through machine door – one system that allows to automate two machine tools!

- ✓ Flexibility
- ✓ Versatility
- ✓ Eficiency
- ✓ Minimised setting time
- ✓ Cost – efective solution

- ✓ Max. workpiece size φ1 000 x 500 mm
- ✓ Pallet loading capacity max. 500 kg
- ✓ Max. number of pallets 8 pcs.
- ✓ User friendly interface PLC Beckhoff

Automation systems increasing the efficiency of the machining center

Storage with up to 8 pallets: 6 pcs. for max. workpiece diameter φ800 mm and 2 pcs. for max. workpiece diameter φ1 000 mm (other configurations possible)

Machine tool preparation – automated front door, operating on M-functions

Automated **Zero-Point clamping system**

4 – axis manipulator

Safety door for quick access to the machine tool

Sheet metal **covers for safety**

Control panel with **user friendly** dedicated software solution

2 pallet's setting stations with optical safety curtains

Automation systems increasing the efficiency of the machining center
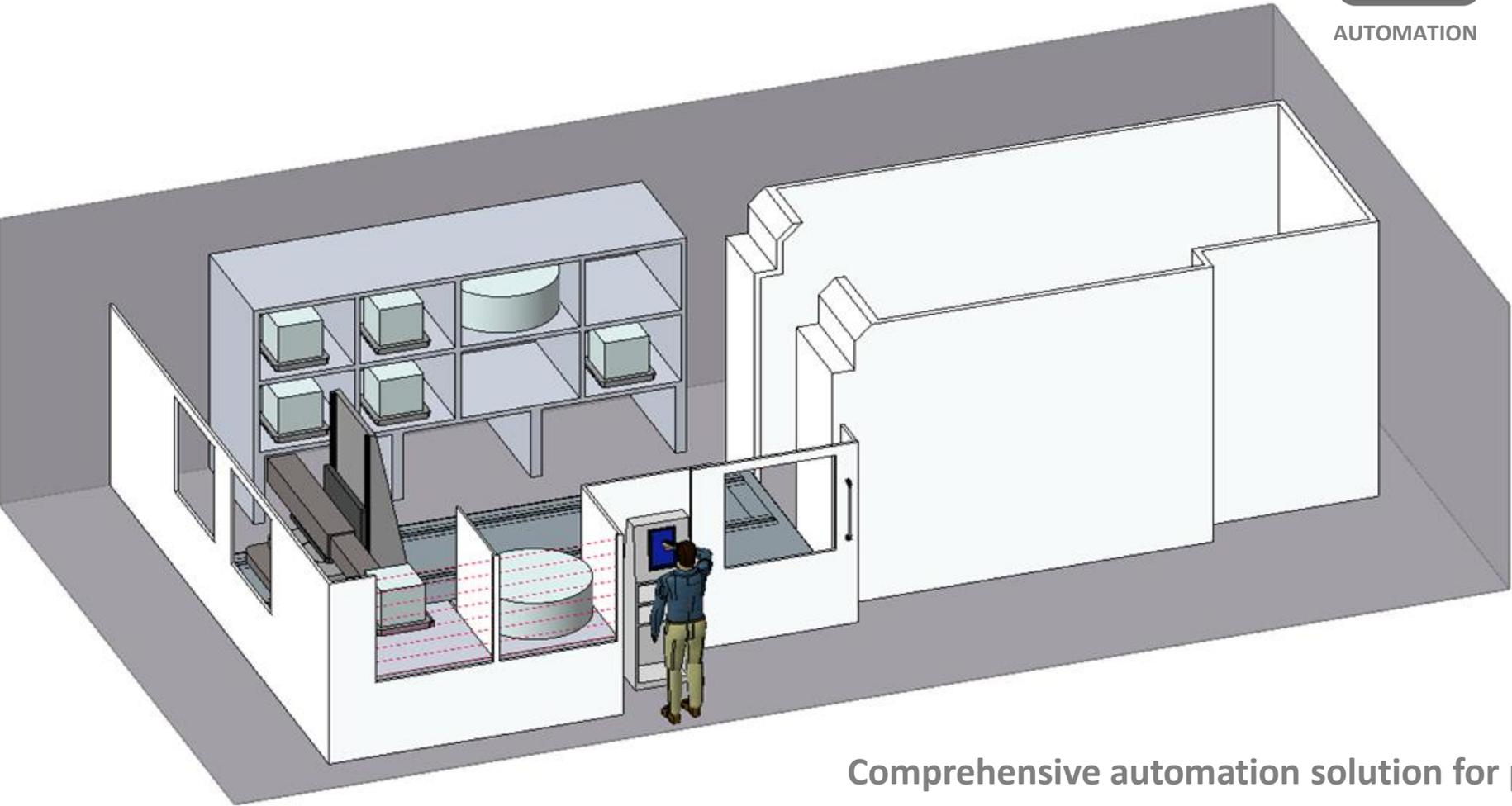

AUTOMATION

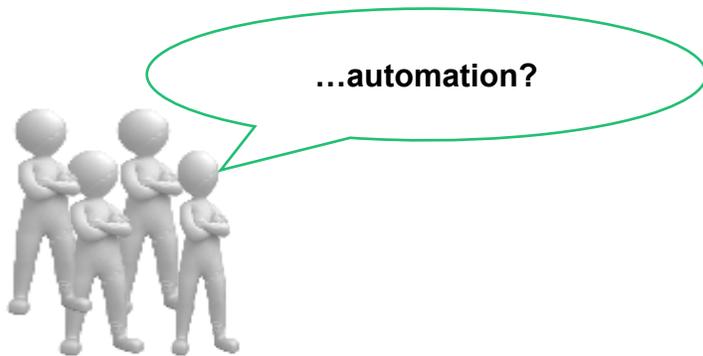**FLEXIBILITY**

EFFICIENCY

SAVINGS

Comprehensive automation solution for pallet handling

Why is it worth to trust us?

✓ **One comprehensive supplier of the full package solutions –** design, manufacturing, assembly, implementation, maintenance.

✓ **Team of highly qualified and experienced engineers.**

✓ **Together with automation systems we deliver complete technical support for maximum efficiency of the implemented solution.**

…automation?

If you would like to:

AUTOMATION **FLEXIBILITY** **EFFICIENCY** **SAVINGS**

1. receive an offer and more details about chosen automation system?
2. learn more about us and our other automations solutions?
3. increase efficiency of your toolshop?
4. receive a technical analysis of your processes and proposal for its optimization with return of investment calculation?

I kindly ask to get in touch with us!

ZP-10

Modulare Werkstück Spanntechnik
Modular workholding fixtures