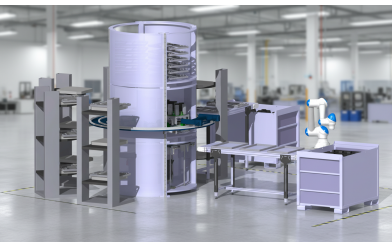


Smart modular manufacturing tower

Conventional production machines require substantial floor space and are therefore often separated from downstream assembly processes. This spatial separation increases the need for buffers, storage areas, material provision and transport. The Manufacturing Tower transfers the SML architecture to the single machine by arranging machine functions vertically, reducing footprint and enabling direct integration into the O-cell. (See our Invention B80022).



Flexible automation, maximized floor space.

This innovative tower design optimizes manufacturing by building vertically, significantly reducing the factory floor footprint. Its conveyor system provides flexibility for material flow, while the modular structure allows for easy scaling and customization to meet evolving production demands. This boosts overall efficiency and adaptability.

- 01 Reduced machine footprint through vertical machine architecture
- 02 Reduced buffering, storage and internal logistics effort
- 03 Modular concept supports scalable production layouts
- 04 SML architecture applied at machine level

REFERENCES:

-  Smart Manufacturing O-Cell
-  View patent application



Thanks to the modular design, multiple elements can be easily stacked and automatically supplied via the external ring-shaped supply ports.

This invention is part of the Next-Generation Manufacturing Patent Portfolio.

IP RIGHTS

Patent granted in DE, FR, GB

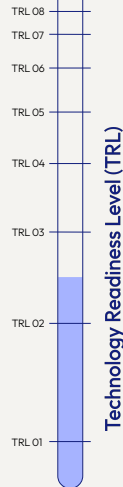
2021

CHALLENGE

Conventional machines are typically designed with functions arranged side by side, resulting in a comparatively large footprint. As a consequence, manufacturing processes are often spatially separated from assembly cells. This separation creates additional demand for material staging, intermediate buffers, storage space and transport. The overall production system therefore loses space efficiency and value creation density.

INNOVATION

The Manufacturing Tower applies the SML architecture to the level of the individual machine. Its key innovation is the consistent three-dimensional arrangement of machine functions and components to reduce footprint and enable direct integration into the O-cell (see invention B80022). This allows manufacturing to become part of the immediate value creation system rather than a separate upstream process. A novel 3D conveyor concept serves as an important enabler of this compact machine architecture.



01 Basic principles observed · 02 Technology concept formulated · 03 Experimental proof of concept · 04 Technology validated in lab · 05 Technology validated in relevant environment · 06 Technology demonstrated in relevant environment · 07 System prototype demonstrated in operational environment · 08 System complete and qualified

