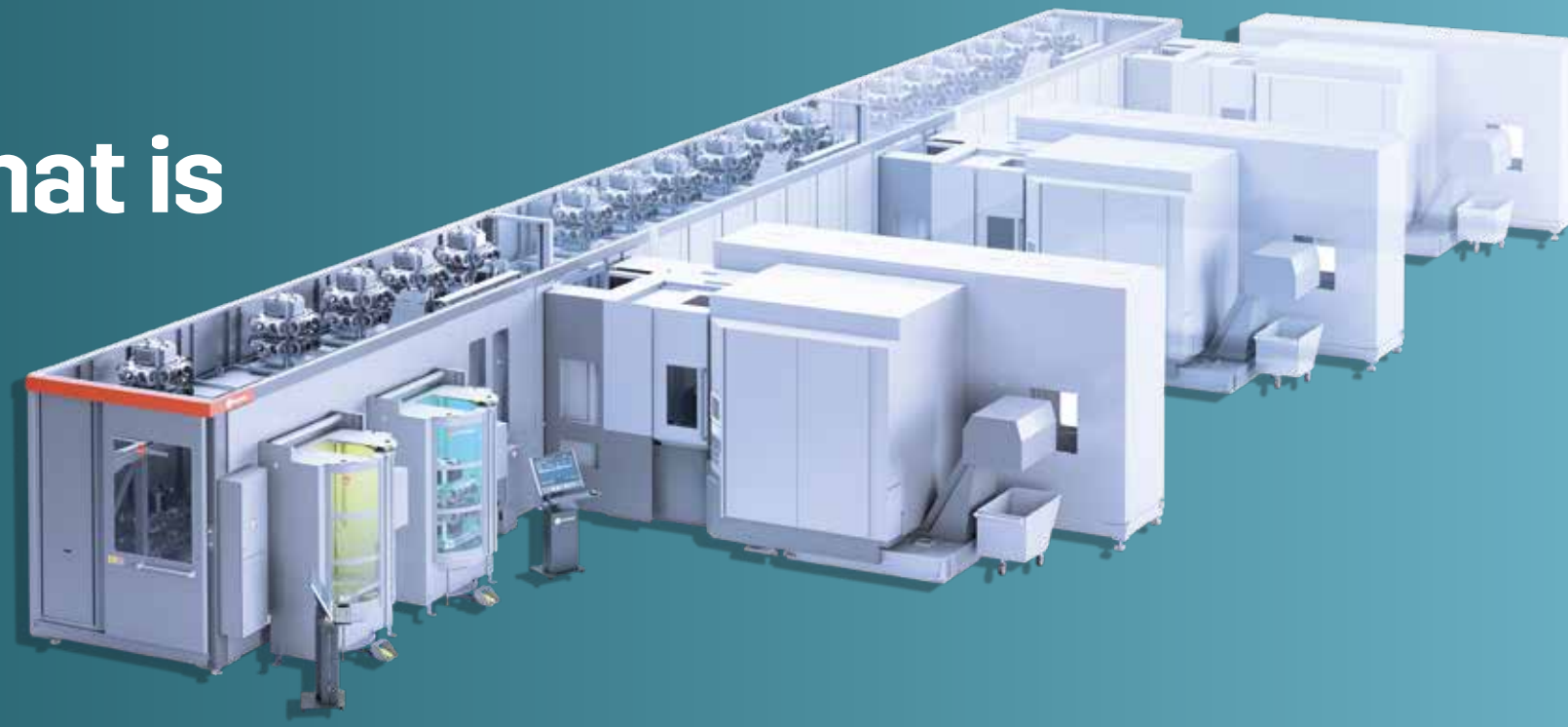




Easy and extendable automation.

Flexible Pallet Container FPC

Investment that is never lost.



- **FAST INSTALLATION**
with standardized solution
- **EASILY SCALABLE**
from 1 to 3 machine tools
- **LEAN MANUFACTURING**
production just in time
- **FAST PAYBACK**
over 2 times faster payback

Automating machining processes and enabling continuous, unattended operation are proven ways to improve productivity and profits. Make the most out of 8,760 hours a year with the compact and versatile Flexible Pallet Container that is easy to use and can be extended later with a minor investment.

Typical payback with 2 machine tools

215 %
faster
payback

	No automation	with automation
Investment cost*	800,000 €	1,170,000 €
Machining hours/year **	3,200 h	10,200 h
Machine tool utilization rate	40 %	85 % ***
Total income per year (machining sales price 100 € / h)	320,000 €	1,020,000 €
Payback time	2 y 6 m	1 y 2 m

* calculated with a 2 x 5-axis HMC and 24 pallets

** 50 weeks, 5 days per week, 2 manned shifts (+1 unmanned when automated) per day

*** no spindle time loss due manual setup changes + unmanned night shift

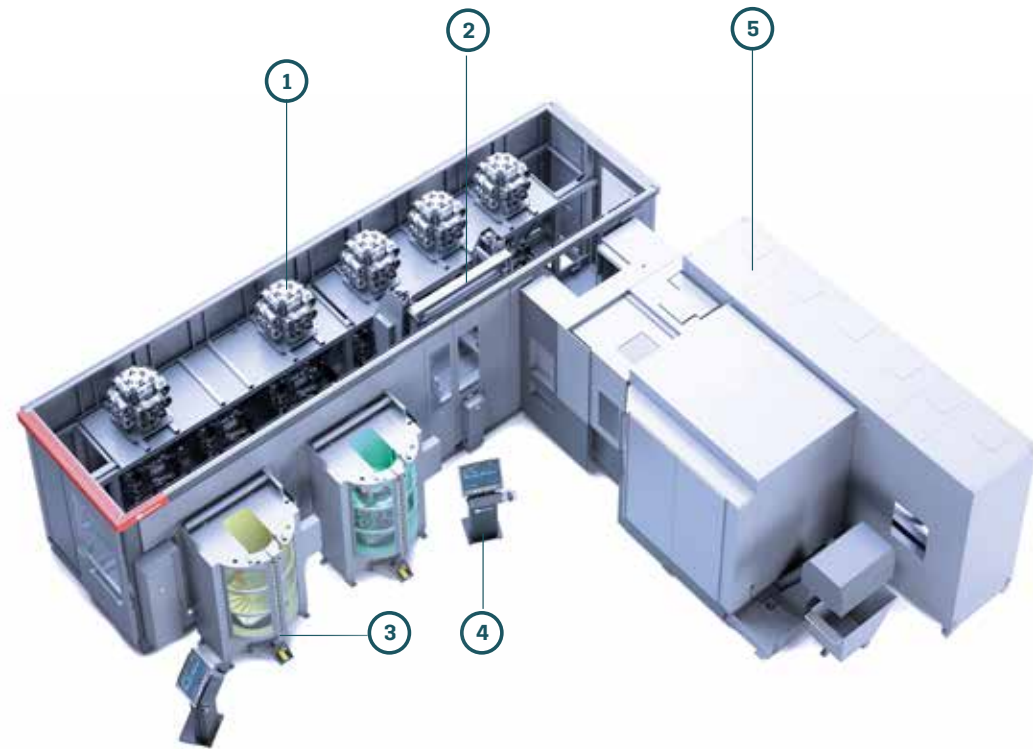


Comparison on 3 types of standardized automation systems

	Machine tool with APC	Pallet pool	Flexible pallet container
Pallets per machine tool	2	6	12
Production hours per year *	4,000	5,000 + 35 %	6,000 + 50 %
Average machine utilization	40 %	65 %	85 %
Machine tools controlled by 1 operator	1	1	3
Shared fixtures between machine tools	–	–	✓
Extendable system	–	–	✓
Cost of extension	Buy a new system	Buy a new system	Low cost
Unmanned production capacity (pallets)	1	6	Up to 36
Production reports	No	Per machine	Entire system
Real-time automatic KPI reports	–	–	✓
Order priority	Manual	Manual	Automatic
Auto-scheduling	–	–	✓
Production order management	–	–	✓
System availability	Low	High	High

* 50 weeks, 5 days per week, 3-shift operation (2 manned)

Basic components of Flexible Pallet Container (FPC)



- 1 Pallet storage**
- Buffer storage for machining pallets
 - High pallet capacity - long unmanned periods
 - Automatic coolant handling - clean factory floor

- 2 Stacker crane**
- Transports pallets within the system
 - Decreases factory floor forklift traffic

- 3 Loading station**
- Part and fixture set-ups
 - Ergonomic and safe operator environment

- 4 Cell controller**
- MMS automation software to plan, run and monitor production
 - Adaptable just-in-time production control
 - Control of multiple machine tools

- 5 Horizontal machining center**
- Extendable with additional machine tools whenever needed



1 machine + 12 pallets



2 machines + 24 pallets



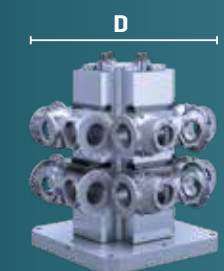
3 machines + 36 pallets



	FPC-750* XL	FPC-1000*	FPC-1500*	FPC-1800*	FPC-3000*
Load weight incl. pallet (kg)	750	1,000	1,500	1,800	3,000
Nominal machine pallet size (mm)	400 x 400 or 500 x 500	500 x 500 or 630 x 630	630 x 630 or 630 x 800	630 x 630 or 800 x 800	800 x 800 or 1,000 x 1,000
Load size (X x Z mm)	750 x 750	950 x 950	1,050 x 1,000	1,050 x 1,000	Ø 1,600
Load rotational diameter (Ø mm)	800	1,250	1,250	1,250	1,600
Load height, incl. pallet (H mm)	900	1,100	1,200	1,325	1,800
Storage capacity by container unit	12 16	10	10	12	6
Length, base container (mm)	7,200	9,235	7,530	9,240	11,500
Length, extension container (mm)	6,880	8,980	7,270	8,980	11,500
Width (mm)	2,250	2,380	2,380	2,380	3,600
Height, container (mm)	2,800	2,800	2,800	2,880	2,900
Maximum height (mm)**	3,850	4,050	4,150	4,280	2,900
Control system	Fastems MMS	Fastems MMS	Fastems MMS	Fastems MMS	Fastems MMS

* Ask for compact XS versions for tight spaces

** Height in the area of stacker crane (FPC-750-1800)



FEATURES

- 1-3 containers per system
- 1-3 machine tools per system ¹
- 1-2 loading stations per system
- Integrated coolant handling
- MMS cell controller with touch panel
- Can be installed next to a wall

¹ One machine control and pallet size per system.

Manufacturing Management Software MMS

- Drag-and-drop production order
- Ready-made interfaces for hundreds of machine tools
- Recognizes resource bottlenecks in advance
- Automatic KPI reporting



Easy production control

FPC is controlled by Fastems Manufacturing Management Software (MMS). With hundreds of ready-made machine tool interfaces you can enjoy the MMS benefits right from the day one.

MMS offers a single-view user interface with drag-and-drop production ordering and allows bringing new workpieces into the system in under 60 seconds. MMS also automatically tracks and reports the key performance indicators in real time.

Choose from 3 MMS plans

STANDARD

Easy to operate - enabling continuous, unattended production for you.

- Pallets are machined based on order-based work queue or FIFO.
- Intuitive user interface with guidance helps operator to focus on the most important tasks.
- Optional ERP interface.

ADVANCED

Offers transparent and predictive ways to keep you in control.

- Fine scheduling includes production order and resource simulation for up to 96 hours in advance.
- The MMS checks that all the needed NC programs and tools are available via machine tool integration.
- Order completion dates are calculated up to 6 months ahead.

ULTIMATE

Utilize your existing manufacturing data.

- Define your key performance indicators and view them at a glance with customizable Dashboard.
- Real-time machine status monitoring for continuous production optimization.
- Real-time remote monitoring with alarm functionality for unmanned production.

At a glance

- 1 **Pallet storage overview**
- Drag and drop the pallet for machining
- 2 **Stacker crane status**
- 3 **Machine tool view**
- Current NC program and machined part details
- 4 **Loading station status**
- 5 **Operator loading/unloading backlog tasks**

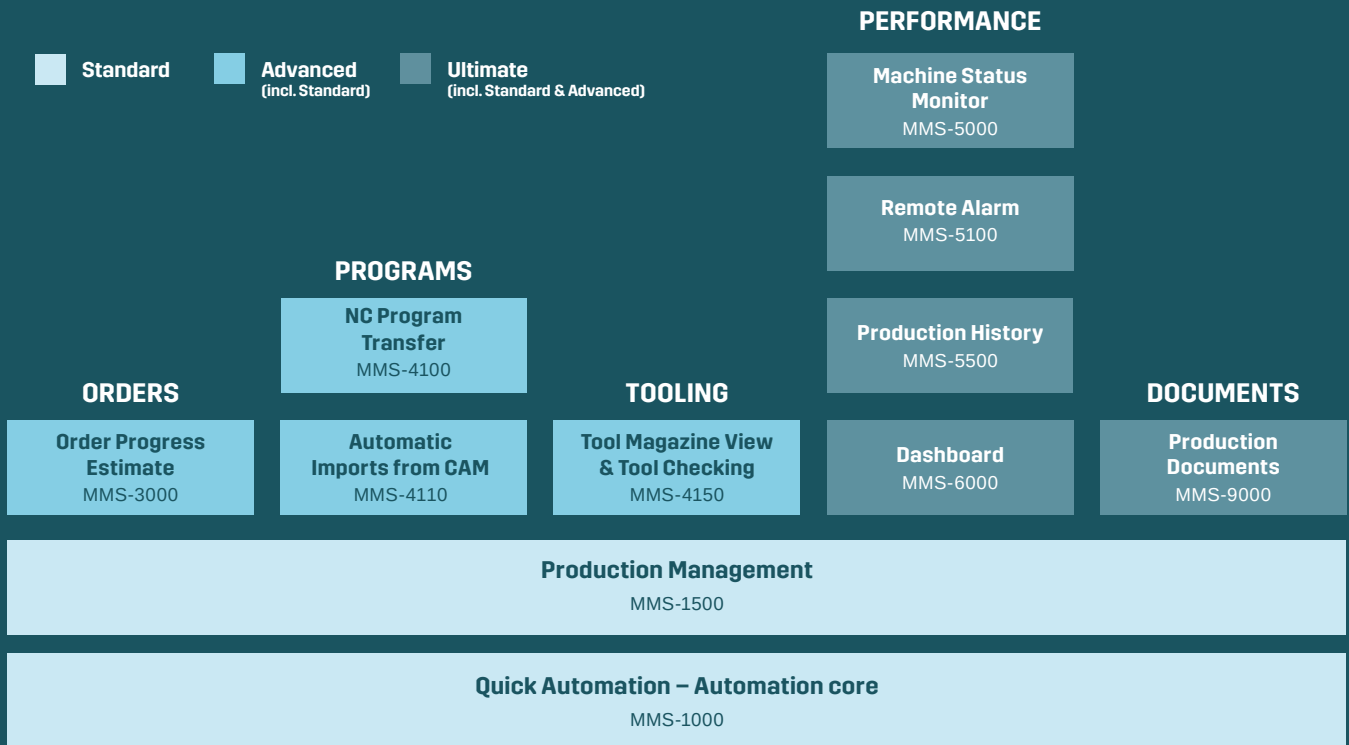


MMS can schedule production automatically based on production orders or FIFO.

WHEN	TOOL	REQUIRED	MISSING LIFE
2:38 PM	6001 Shoulder milling tool CoroMill 390	1 pcs	00:00:55
2:38 PM	6044 Ball nose cutter for roughing CoroMill® 216	16 pcs	05:40:05
2:38 PM	6056 Deep and narrow grooving CoroMill QD	3 pcs	02:10:10
4:41 PM	3006	3 pcs	03:07:16

MMS Advanced package enables tool planning and status views for the easier cutting tool maintenance.

MMS variants



Services for FPC

Basics of FPC

Training for a efficient ramp-up

Gather your team together to learn how to use FPC and MMS.

Preventive Maintenance & Spare Packages

For minimum downtimes

With preventive maintenance program you don't have to worry about scheduling of maintenance or changing parts – we will make sure your system runs smoothly at all times.

8760 Support

Call us any time

We are here for you 24/7. You can call or send us a support request any time - we are able to solve 85 % of issues remotely and our local service is there for you as well.

Subject to technical changes



www.fastems.com