FASTEMS FPC & FPM

The most efficient way to improve productivity

8760 Fastems

FACTORY AUTOMATION

Fastems FMS

Fastems offers both modular and customized flexible manufacturing systems as well as lifecycle services. Our solutions help to maximize the productivity of machine tools no matter what the production goals are. Our mission is to help our customers get the most out of the yearly 8760 production hours.

Experienced partner

Fastems is a global supplier of flexible automation. We are located in Europe, North America, and Asia. We have over 550 automation professionals ready to improve your competitiveness.

- Over 30 years of experience and more than 1,500 delivered FMS systems
- Over 2,000 delivered robot applications
- Lifecycle services are available for all delivered systems

Fastems modular FMS

The purpose of the FMS is to maximize the productivity of machine tools. The FMS moves fixture set-ups and part clamping from machines to loading stations – valuable machine time is not used for non value-added operations. In addition, the FMS enables unmanned production and thus maximizes machine hours.

Modular FMS is configured from predefined modules according to the customer's needs. With quick installation and commissioning, modular FMS offers the most efficient way to improve productivity!

Basic components of modular FMS

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

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

Cell controller
- MMS control system – brains of the FMS
- Adaptable Just-in-time production control
- Control of multiple machine tools by one operator

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

Horizontal MC
- Extendable with additional machine tools whenever needed

Benefits of flexible automation

Flexible manufacturing system maximizes the efficiency of the machine tool. Whether you are aiming to small batch lean manufacturing, high volume mass production, or both of these simultaneously in the same system, the FMS is the right solution for every production need.

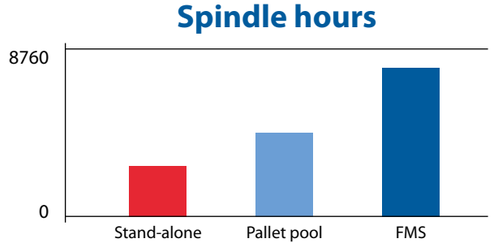
Spindle hours up!

Stand-alone machines can be used to manufacture either efficiently or flexibly. Furthermore, they always have to be manned. Pallet pools have limited pallet capacity and lack routing flexibility. With the FMS, there is no need for compromises!

High pallet capacity and setups in loading stations ensure high flexibility and short lead times together with high machine tool utilization – thanks to zero setup times and unmanned production.

Furthermore, the dynamic scheduling of MMS control system makes it possible to adapt to changes on the fly. Just load the parts into the system and they can be machined instantly when all fixtures are ready in the pallet storage.

A year has 8760 hours – with the FMS, all of them can be production hours!



The FMS enables zero setup times and long unmanned periods maximizing the spindle hours.

- With stand-alone machines, setups consume machine time and unmanned production cannot be pursued
- Pallet pools have low pallet capacity and unmanned hours are limited

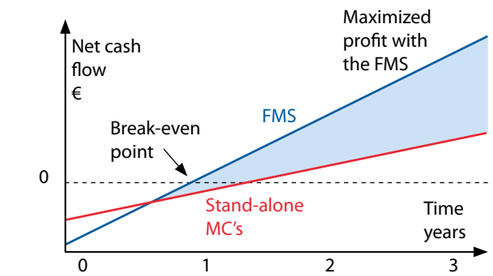
High return on investment

High machine tool utilization is essential for investment profitability – maximized output with the FMS shortens the payback period of the machine tools.

Together with high efficiency, low operating costs enable high profitability. The short lead times of the FMS free tied up capital and improved personnel efficiency decreases operating costs.

With automation, there are fewer human factors affecting the production. This means better quality and customer satisfaction – the FMS decreases rework costs and increases sales.

Thanks to the increased output and cost savings, payback period of the FMS is typically less than two years!



- Higher productivity and lower operating costs increase net cash flows
- Maximize return on investment!

Fastems FPC

Cost-effective and high productive alternative to conventional pallet pools

Flexible Pallet Container is a fast and cost-effective way to increase productivity. The FPC offers the benefits of pallet pool systems and much more.

The FPC provides high pallet capacity, zero setup times, good ergonomics and advanced control system with dynamic fine scheduling instead of first in, first out operation.

Due to its high pallet capacity, the FPC is an optimal solution for manufacturing a moderate number of different part types – from continuously changing small batches to high volume production series.

Extending the system takes the productivity to even higher level. With multiple machine tools, personnel efficiency is increased since one operator can control multiple machine tools. Flexibility is also increased since the same fixtures can be used in multiple machine tools without the need for setup.

The FPC is pre-assembled and tested at the factory, and thus it is fast to take into use. The FPC can easily be extended to a 3-container system.

The FPC is an easy and cost-effective step into the FMS automation!

Benefits of the FPC

- Large pallet storage allowing unmanned production
- Ergonomic operator environment
- Adaptive production scheduling
- Pre-assembled and tested system – quick installation and start-up
- Easy to extend to a 2- or 3-machine system
- Easy to move in case of factory layout changes
- Proven technology – more than 400 delivered FPC's

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Choose your system

Technical data	FPC-750	FPC-1000	FPC-1500	FPC-3000	FPC-7500
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	800 x 800 or 1,000 x 1,000	1,000 x 1,000 or 1,250 x 1,250
Load size (X x Z) (mm)	750 x 750	950 x 950	1,050 x 1,000	1,600 x 1,600	2,300 x 2,300
Load rotational diameter (Ø) (mm)	800	1,250	1,250	1,600	2,300
Load height , including pallet (mm)	900	1,100	1,200	1,800	2,000
Load weight, including pallet (kg)	750	1,000	1,500	3,000	7,500
Storage capacity by container unit	12	10	10	6	4
Length, base container (mm)	7,200	7,530	9,240	11,500	11,200
Length, extension container (mm)	6,880	7,270	8,980	11,500	11,000
Width (mm)	2,250	2,380	2,380	3,600	5,050
Height, container (mm)	2,800	2,800	2,800	2,900	3,500
Maximum height * (mm)	3,850	4,050	4,150	2,900	4,240
Control system	MMS-5				

* Height in the area of stacker crane (FPC-750—1500) or loading station door (FPC-7500)

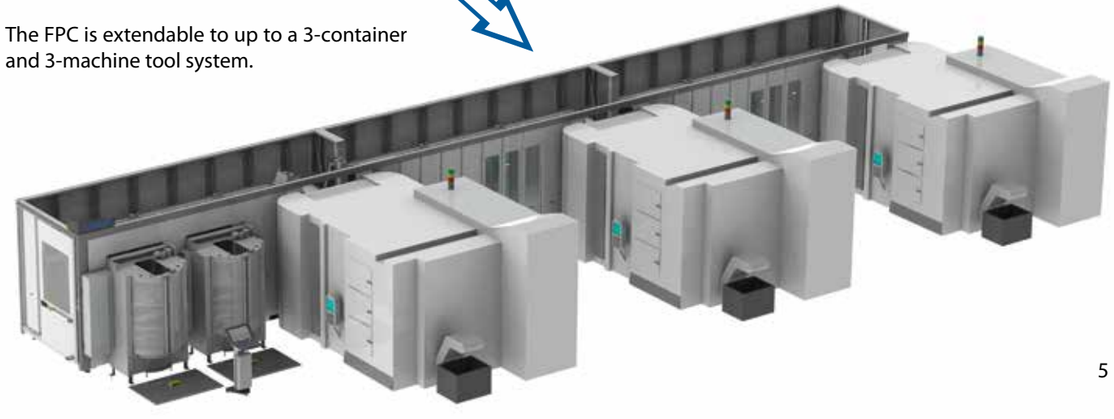
FPC features

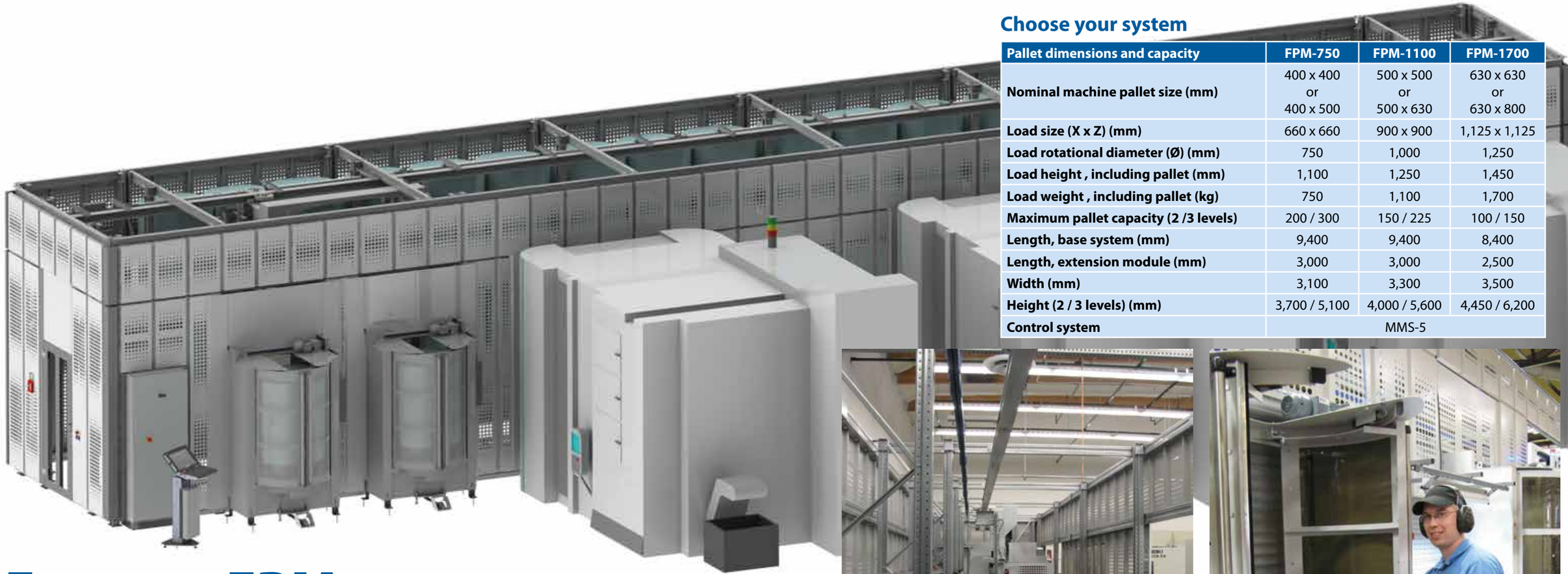
- 1–3 containers per system
- 1–3 machine tools per system *
- 1–2 loading stations per system
- Integrated coolant handling
- MMS cell controller with touch panel
- Can be installed next to a wall

* One machine control and pallet size per system

A wide range of options is available for the FPC. For more information, contact your machine tool dealer.

The FPC is extendable to up to a 3-container and 3-machine tool system.





Fastems FPM

High pallet capacity FMS for ultimate flexibility

Flexible Pallet Magazine is a full scale FMS with high pallet capacity and modular design. Thanks fast crane the FPM can be integrated with up to 10 machines.

The FPM increases the production flexibility even more than the FPC and enables higher number of unmanned hours.

The FPM is an optimal solution for long periods of unmanned production and producing large number of different parts in one system without fixture setups. The large scale system also allows for even higher personnel efficiency and high class productivity with low operating costs.

The high, 2- or 3-level storage saves floor space. The location of the loading stations and machine tools is flexible and thus, the system can be optimally configured according to the factory layout.

The FPM offers superior flexibility and extremely high number of unmanned hours!

Benefits of the FPM

- Up to 10 machines per system – take the flexibility to the next level
- Large storage capacity – extremely high number of unmanned hours
- High and compact storage – save floor space
- MMS control system ensuring efficient production
- Modular design – fast to take into use and easy to extend

Choose your system

Pallet dimensions and capacity	FPM-750	FPM-1100	FPM-1700
Nominal machine pallet size (mm)	400 x 400 or 400 x 500	500 x 500 or 500 x 630	630 x 630 or 630 x 800
Load size (X x Z) (mm)	660 x 660	900 x 900	1,125 x 1,125
Load rotational diameter (Ø) (mm)	750	1,000	1,250
Load height , including pallet (mm)	1,100	1,250	1,450
Load weight , including pallet (kg)	750	1,100	1,700
Maximum pallet capacity (2 /3 levels)	200 / 300	150 / 225	100 / 150
Length, base system (mm)	9,400	9,400	8,400
Length, extension module (mm)	3,000	3,000	2,500
Width (mm)	3,100	3,300	3,500
Height (2 / 3 levels) (mm)	3,700 / 5,100	4,000 / 5,600	4,450 / 6,200
Control system	MMS-5		

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FPM Features

- Fast stacker crane
- 2–25 storage modules per system
- 1–10 machine tools *
- 1 or more loading stations
- 2 or 3 level storage
- Integrated coolant handling
- MMS cell controller with touch panel

* One machine control and pallet size per system

A wide range of options is available for the FPM. For more information, contact your machine tool dealer!

Fastems MMS

Manufacturing management system – the brains of FMS

The MMS ensures that the right parts are manufactured when needed. Dynamic scheduling and capacity planning adapt to constantly changing production status. Just give the due dates for production orders and the MMS takes care of the rest.

The MMS tells the operator which parts to load and when. It is easy and intuitive to use – the system is controlled via a web-based interface and touch screen control panel. All production floor operations are available in one user interface.

Choose your configuration

MMS options

- MMS-4100 NC-program transfer and tool checking *
- MMS-5100 Remote monitor
- MMS-3010 Production order interface
- MMS-4010 CAD/CAM interface
- MMS-5000 Status monitor
- MMS-8100 Random pallet positioning *

MMS basic functions

- Master data management
- Production scheduling
- Standard device interface
- Program and tool data libraries
- Production order management
- Fine scheduling
- Diagnostics and reporting

Basic functions are included in every MMS delivery – options can be chosen according to the need

* Available only for Fastems-certified machine tool interfaces

Touch of intelligence

The web-based interface allows access from remote computers – all system operations, including production statistics, are available directly from the office.

The MMS includes a recovery wizard which allows easy and guided recovery from error situations. When professional help is needed, Fastems Teleservice is always ready to solve the problems remotely.

The MMS ensures that you get the most out of your FMS and machine tools!

Benefits of MMS

- Predictable and flexible production with dynamic scheduling
- A user-friendly system – tells the operator which parts to load and when
- All user interfaces are browser-based – can be used anywhere with a laptop or tablet
- Easy recovery from error situations with the recovery wizard
- Online, real-time production reporting – better knowledge to enhance productivity

Fastems Teleservice
Remote problem solving

- On-call support with a remote connection to the system

MMS Dashboard
For production managers

- On-line monitoring
- Performance visualization
- Production key figures

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MMS Data Manager
For production planners

- Master data management: production orders, parts, and fixtures
- Production schedule management
- Production logs

MMS Station Commander
For shop floor operators

- Intuitive touch screen interface
- Instructions on which parts to load and when
- Advanced error recovery

Lifecycle services

More value for your time

The productivity of a workshop is directly proportional to the availability of its systems and devices. High availability is a prerequisite for efficient production. Fastems services help you utilize as many of the yearly 8760 hours as possible.

Fastems offers services for partners and end users. Our services include training, supervision packages for installation and commissioning, preventive maintenance, spare parts, Teleservice and fault services.

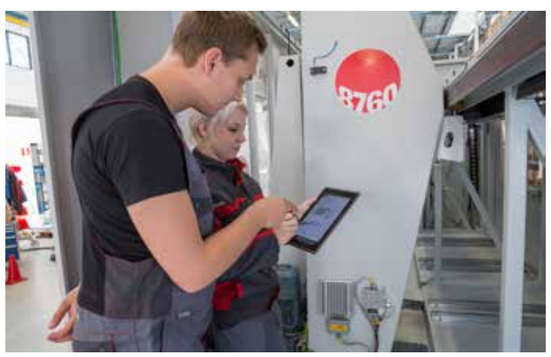
Our services ensure that FPC and FPM systems are installed and operated correctly and remain in highly productive condition.

The foundation of Fastems services is Teleservice which is available just by plugging the internet cable to the system. Teleservice provides fast and easy remote problem solving – over 80% of the error situations can be solved remotely! Fastems call center is available 8760 hours per year.

For further information on the available services, contact your machine tool dealer!

Benefits of Fastems services

- Fastems services ensure that systems are installed correctly.
- Preventive maintenance keeps the systems in highly productive condition.
- Teleservice keeps your system running 8760 hours per year.



System comparison

Find out your benefits

See how Fastems FMS can increase your production efficiency!

The following example demonstrates the benefits of Fastems FMS. It is assumed that there are 24 operating days in a month and one manned shift in a day. It is assumed that average pallet time is 40 minutes and pallet contains 2 identical pieces. The required volume in a month is 3,600 pieces with total cycle time of 1,200 hours.

System	Machine tool with APC	Pallet Pool	FPC-750 - 2 machines	FPM-750 - 3 machines
Pallet places	2	6	24	72
Pallet places per machine	2	6	12	24
Total investment price per pallet place	1 1 1 1 1	1 1 1	1 1	1
Operating time per day (manned + unmanned)	8 + 1,3 = 9,3 hours	8 + 4 = 12 hours	8 + 8 = 16 hours	8 + 16 = 24 hours
Machine utilization	70 %	85 %	85 %	85 %
Productive time per day (operating time x utilization)	6,5 hours	10,2 hours	13,6 hours	20,4 hours
Machines required to run 1200 hours per month				
Operators required to operate machines				
Floor space required	2.0 x	1.6 x	1.3 x	1.0 x

Furthermore, MMS control system gives you greater process control and maximum flexibility – all you need to do is tell what you need and when you need it. Regardless of the production batch size, efficiency is at the same high level, no matter if it is day or night.

The operator environment is ergonomic and easy to keep clean which ensures that working conditions remain safe and healthy. Automation reduces the human factors affecting the production – improve quality and minimize unproductive work.

Why choose Fastems?

- Hardware and software from one supplier
- Quick delivery and installation of modular FMS's
- Lifecycle services available for all delivered systems
- Experience of 30 years and more than 1,500 FMS's – the first Fastems FMS is still up and running

www.fastems.com

Your dealer:

Fastems Oy Ab
Tuotekatu 4
FI-33840 Tampere, Finland
Tel. +358 (0)3 268 5111
Fax +358 (0)3 268 5000

Perintötie 2B
FI-01510 Vantaa, Finland
Tel. +358 (0)3 268 5111
Fax +358 (0)9 3450 5623

Muottitie 1 A
FI-65320 Vaasa, Finland
Tel. +358 (0)3 268 5880

Fastems AB
Bultgatan 40
(BOX 513)
S-44240 Kungälv, Sweden
Tel. +46 (0)303 246 900
Fax +46 (0)303 246 910

Fastems GmbH
Heilbronner Straße 17/1
D-73037 Göppingen, Germany
Tel. +49 (0)7161-963 800
Fax +49 (0)7161 -963 8049

PNEUMOTEC GmbH & Co. KG
Gewerbering 5
D-47661 Issum
Tel. +49 2835 9244 0
Fax. +49 2835 9244 444

Fastems GmbH France
99, rue de Gerland
F-69007 Lyon, France
Tel. +33 (0)4 3765 2000
Fax +33 (0)4 3765 2001

Fastems Shanghai Office
Room 401 & 402, #2 Building,
690 Bibo Road, Zhangjiang
Hi-Tech Park,
Shanghai 201203, P.R. China
Tel. +86 21 6104 2214
Fax +86 21 6104 2200

Fastems K.K.
Office La Mer 2F
Sagami-Ono 8-4-2,
Minami-Ku, Sagamihara City
Kanagawa Prefecture,
252-0303 Japan
Tel. +81 (0)80 3555 1283

Fastems LLC
9850 Windisch Road
West Chester,
Ohio 45069, USA.
Tel. 1 513 779 4614
Fax +1 513 779 4638

Fastems Ltd
Hawley Mill-Hawley Road
Dartford, Kent DA2 7SY
United Kingdom
Tel. +44 (0)7818 427133
Fax +44 (0)1322 282250

Liverpool Science Park
131 Mount Pleasant
Liverpool, L3 5TF
United Kingdom
Tel: +44 (0)151 705 3645
Fax +44 (0)151 705 3410

Fastems S.r.l
Via Bruno Buozzi, 61
I-20097 San Donato
Milan (MI), Italy
Tel. +39 02 365727.23
Fax +39 02 365727.24

Fastems UAB
Kalvarijos str. 38
LT-46346 Kaunas, Lithuania
Tel. +370 37 291567
Fax +370 37 291589

Fastems authorized dealers

Spain
DTC Tecnología S.L.
Eduardo Matesanz
Tel. 943 376050
616470460
E-mail: edu@dtctecnologia.com

Netherlands
Henk Kremers
Tel. +31 (0)40 7875625,
(0) 653210172
Fax: +31 (0)40 2045647
E-mail: henk@valkworks.nl

Russia
Pumori-North-West Ltd
Dimitri Verigin
Tel. +7 812 622 05 46
Fax: +7 812 622 05 47
E-mail: verigin.dmitrij@pumori.ru

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