Solutions for
your intralogistics

Requirements
of your intralogistics

MSK solutions
All from one source

The sustained trend toward automation because of rising productivity, 24-hour operation and increasing complexity, as well as interfaces to automated high-bay storage and driverless transport systems all influence how requirements and tolerances for pallet loads and pallet load securing are defined.

In the efforts towards securing loads, sustainability and cost reduction play an increasingly important role.
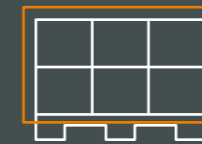
How you can profit from our solutions

MSK systems allow for fully automated pallet handling logistics, from receipt of goods to high-bay storage systems, the automated unpacking of received goods through pallet unwrapping or removal of pallet straps, the automation and preparation of shipping pallets, and all the way to the automated loading of shipping trucks.

- Automation of goods receiving
- Efficient load-securing by MSK palletizing and packaging lines
- Fully automated pallet conveyor systems
- Automated truck-loading or warehousing of palletized goods in high-bay storage systems
- Easy operation, data transfer and data security throughout the entire pallet handling logistics process, thanks to MSK EMSY software
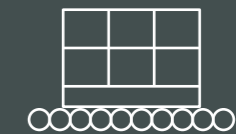
Through MSK you have access to the entire product range from a single source. Since the systems are fully planned, programmed and built by MSK, complete service for your overall system is possible too. Regular maintenance and 24/7 access to MSK technical support, ensure on site availability and performance.

Packaging
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Confidence in
MSK technology

MSK systems are used by a wide range of international
logistics companies and brand manufacturers.

BAYER

DURAVIT
Duralog Duravit Logistik

ECKART

franprix

Glashütte
Freital GmbH
seit 1962

HEMEYER

HWI HarbisonWalker International

KERAMAG

LANXESS
Energizing Chemistry

MM
KARTON AG

RITTAL

SAINT-GOBAIN
KIPFENBERG

verallia

vetropack

Wiegand-Glas

Xella

What do your needs look like?

We are curious about the packaging and logistics
requirements of your product. Get in touch with us!
We will be happy to advise you.

MSK solutions
Packaging systems
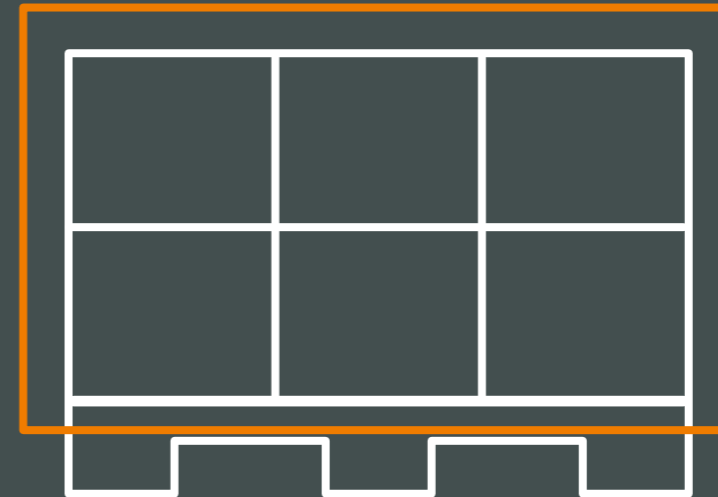
MSK Multitech
Fully automated
shrink-hood machine

MSK Tensiontech
Fully automated
stretch-hood machine

MSK Multitech
Fully automated shrink-hood machine

Highest possible load stability for products on a pallet, using homogeneous packaging

Enclosed hood for protection against theft and soiling

Readability of barcodes and logos through the film

Fully recyclable films, and films made of recycled materials available

Generally, allows for the reduction or elimination of additional packaging materials for securing the load

Ease of maintenance via lowerable machine head (EP 2 336 034)

Maintenance-free time-belt technology

Specializing in picked loads ▶
Shrink-hood packaging has been proven to be the most stable solution for under-palletized, heavy, or pressure-sensitive pallet loads. The shrink-hood is applied without making contact with the load during the hood application, and ultimately surrounds the load like a second skin, without exerting pressure on the products / load itself.

▲ **Enclosed film hoods for enhanced theft-protection and safe handling**
The enclosed film hood offers enhanced protection against theft, and reliably protects the load against soiling and moisture. Transparent films allow the products to remain clearly visible. Which has also proven to prevent damage during load handling, and barcodes and brand logos can be clearly read under the film. Valuable pallet loads can also be anonymized through the use of colored films.

▲ **Lasting film savings**
The MSK Multitech hood applicator fully automatically tailors film hoods for each pallet load individually. Thus reducing film consumption to a minimum. Loads are packaged in only one layer of film – an advantage over spiral stretch wrapping, which involves multiple layers of wrapping.

In-line systems: Alternatives ▶ for high packaging performance

With in-line systems, the hood covering and hood shrinking processes occur simultaneously in consecutive positions. With these processes operating in parallel, high packaging performances can be achieved.

> 200
pallets / hr.

As an in-line system, the MSK Multitech offers the highest packaging performance.

◀ **Compact model:**
Space-saving design
With the compact model, hood covering and shrinking take place in one spot, which means the model is optimally suited for limited space conditions and medium-level packaging performance.

Safe MSK shrink technology ▶
A special MSK mixed-air process gently heats the shrink-hood film with low temperatures in a targeted way. This helps maintain the resilience and fatigue strength of the film. A new flow-optimized design of the MSK shrink frames, with a new gas management system and the use of heat recovery, help ensure sustainable energy efficiency.

Special MSK process for ▶
reliable film welds
Using a special MSK process, the MSK Multitech assembles film hoods with a high-quality film weld seam.

▲ **Shrink-wrapping with**
electric heating system
The MSK Corritech electric shrink frame model works completely without the use of gas, helping companies on their way to climate neutrality. This allows highly stable shrink wrapping to be realized while sustainably waiving fossil fuels – without compromises.

▲ **Energy-saving**
MSK Covershrink module
The patented MSK Covershrink (EP 2 740 673 B1) reduces the gas consumption of an MSK shrink packaging system by up to 40 % depending on the film thickness and pallet format. In addition, it helps ensure noticeably reduced noise emissions.

◄ MSK Undershrink process

The MSK Undershrink process fixes the packaging film well below the runner boards of the pallet while the pallet is being shrink-wrapped. This gives the shrink film an optimal hold, and offers the greatest possible load stability for the packages on the pallet. With this method, the film thickness can be reduced by an average of up to 20 %.

MSK Anti-Collage process ▶

The MSK Anti-Collage process helps effectively prevent the film hood from sticking to possible film sub-packaging during the shrinking process, without requiring the use of a special "separating" film.

Film-free pallet feet with MSK Formtech ▶

The developed and patented MSK Formtech (EP 3 147 226) provides film forming between the pallet blocks, which allow for the automated pallet handling in high-bay storage systems, AGVs, and automated truck loading systems.

◄ Hybrid systems for maximum flexibility

MSK offers a hybrid solution that can package pallets with stretch-hood film, shrink-hood film, or even stretchable shrink-hood film. This way, depending on customer needs and production planning, different films can be processed using the same packaging system.

MSK Tensiontech
Fully automated stretch-hood machine

Enhanced theft-protection via enclosed hood

Drastically reduced film roll replacement frequency

Readability of barcodes and logos via transparent packaging

Reliably calculable film consumption

Suitable for film made with recycled material

Ease of maintenance thanks to lowerable machine head

Maintenance-free time-belt technology

Flexibility even for picked loads ▶

The stretch-hood packaging of the MSK Tensiontech adapts flexibly to the load properties of each picked pallet. With the thinnest films of a thickness as low as 20 µm, it is often an alternative to spiral stretch wrap packaging.

◀ Enlosed film hoods for enhanced theft-protection

Compared to spiral-stretch wrapping, an enclosed stretch hood offers better protection against theft. Additionally, the products are protected against soiling on five sides.

> 100
pallets / hr.

The picked pallets are packaged at high speed.

◀ **Individually tailored hoods**
With the use of an MSK stretch-hood system, the geometry of a load is precisely determined. The system then automatically calculates the right hood length, stretching parameters, and covering process. The result: film savings and optimum load stability.

◄ Calculable film consumption

Using a special MSK technique on the MSK Tensiontech stretch-hooder, the film is gently stretched around the load, with minimal consumption. In contrast to spiral stretch wrapping, barcodes and logos can be read through the transparent stretch-hood film, because only a single layer of film is wrapped around the load.

Stabilization of critical load areas ►

Through the MSK "belt" stretch process, an additional film "belt" can be added to any critical area of the load, by guiding the film up.

Special MSK process for reliable film welds ►

Thanks to a special MSK film welding process, considerably more time is available to create and cool down film welds than in conventional systems. The result: tight hoods with reliable welds. MSK systems are also furnished with wear-free, stainless steel tensioning corners.

20 µm

Processing the thinnest of films as low as 20 µm

◄ Patented MSK method

The patented MSK process for film gathering (EP 1 353 847) and the MSK Vertical stretch process (EP 1 717 148) were specifically developed to lower film consumption while at the same time enhancing load stability.

◄ Multi-format system
The machine processes up to four different film formats fully automatically. Film rolls can be quickly and easily replaced without having to enter the safety area. The hand-held fusing gripper ensures an optimum fusion of old and new film.

◄ Maintenance-free time-belt technology
The time-belt technology used in MSK equipment ensures a maintenance-free system, that offers hygienic handling, without lubricants over the packaged product load.
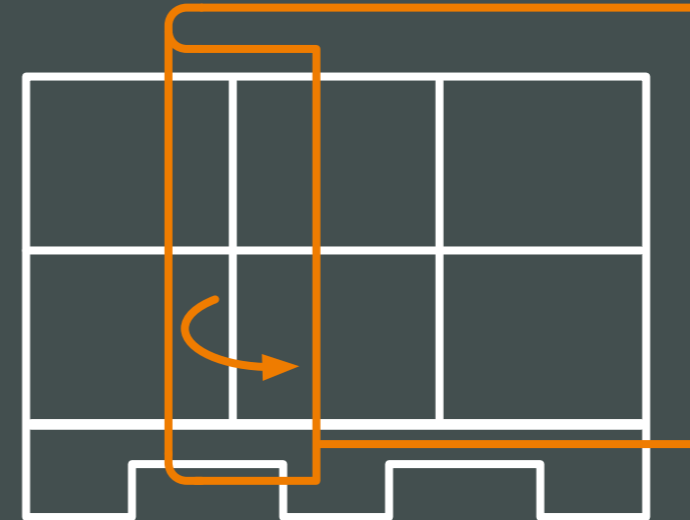
◄ Lowerable machine head for easy maintenance and replacement of the welding bar
The machine head can be lowered to operator level. Floor-level access on MSK packaging systems offer a high level of operator and maintenance friendliness. This makes equipment maintenance simpler and faster.

MSK solutions
Unwrapping machines

MSK Defotech
Fully automatic pallet unwrapping machine

MSK Destraptech
Fully automatic pallet destrapping machine

MSK Defotech
Fully automated unwrapping machine for pallets

60
pallets / hr.

Fully automatic pallet unwrapping
of up to 60 pallets per hour

Unwrapping speeds – fully auto-
mated at up to 60 pallets per hour

Cost savings on personnel

Suitable for shrink and stretch-
wrapped pallet loads

Direct connection to film recycling
container possible

Space-saving footprint

Increased work safety

◀ **Automation of
received goods**
The MSK Defotech pallet unwrap-
ping system offers fully automated
pallet film-packaging unwrapping,
and integrates seamlessly into the
existing flow of incoming materials.
The system is the ideal solution for
higher production speeds and
for reducing personnel costs in
multiple-shift operation.

◀ **High work safety in limited space**

The MSK Defotech is especially suited to limited space conditions, as it safely unwraps pallets without the need for a very large working footprint. With regards to work safety, especially when dealing with tall pallet loads, the unwrapping system reduces manual intervention by personnel to a minimum.

Complete recycling of film ▶

After unwrapping, the MSK Defotech automatically prepares films for recycling through a special film removal system. When using homogeneous film types, these can be completely recycled – an advantage that contributes to the profitability of the production line. The compressed film bales also allow space savings in storage.

MSK Destraptech
Fully automated pallet destrapper

Destrapping speeds of up to 45 pallets per hour

Labor cost savings

Space-saving footprint

Suitable for vertical strapping

Low energy consumption

Automatic shredding of straps

◀ **Space-saving disposal**
With the help of a powerful shredder, the removed straps can be collected in a space-saving way, and sorted in homogenous types for disposal.

MSK solutions
Palletizers

▲ **Flexible and powerful**
The MSK Destraptech can remove up to four transverse and four longitudinal straps per unpacking cycle. The standard model of the machine is designed for one pallet size. If required, it can be designed to handle up to three different pallet formats. Even under or over palletized pallets can be processed. Pallet transport can be both longitudinal or transversal in orientation.

▲ **Strapped incoming pallets are destrapped automatically**
Incoming pallet goods that are secured with straps are automatically unstrapped by the MSK Destraptech, at speeds of up to 45 pallets per hour. Together with the MSK Defotech pallet unwrapping system, the whole spectrum of automated pallet load unpacking is offered from one source. The system allows high production speeds, enhanced work safety, and the reduction of personnel costs.

MSK Robotech
Fully automated robotic palletizer

MSK Looptech
Fully automated film-sleeving machine

MSK Robotech
Fully automated robotic palletizer

Fully automated, high-precision palletizing

High flexibility within a small footprint

Suitable for varying products and layer patterns

Modular design and accessories

Easy maintenance and low wear

◀ **Extensive accessories**

MSK palletizers can be expanded with a large selection of accessories such as centering frames, tray makers, tray magazines, empty pallet magazines, labelers and much more, which allow adaptation to a wide range of production and packaging needs and configurations.

▲ **Multifunctional robot technology**

Where needed, MSK robotic palletizers can be configured to handle layer tier sheets. For higher performance requirements, a separate layer sheet inserter is used. Automated pallet magazines contribute to performance enhancements of the palletizing system.

▲ **High flexibility within a small footprint**

MSK robotic palletizers have the ability to provide highly efficient and flexible palletizing and depalletizing of products even in more limited space conditions. Thanks to their modular design, they can be equipped with a wide range of palletizing heads and add-on modules, offering the largest possible flexibility.

MSK Looptech
Fully automated film-sleeving machine

Recyclable packaging ▶
Together with the film packaging, the film sleeves applied by the MSK Looptech can be 100 % recycled. An important benefit in terms of disposal logistics and sustainability.

Securing of unpackaged loads for **internal transport**

Targeted stabilization of loads in critical areas

Integrated into palletizing systems or as stand-alone solution

Compared to strapping, film can be 100 % recycled

▲ **Securing loads for internal transport**
In order to secure unstable loads on their way from the palletizing station to the packaging system, the MSK Looptech wraps a film sleeve around critical load areas or individual layers. In contrast to strapping, the film sleeve is applied softly and gently around the load.

▲ **Banding of individual layers in the palletizing process**
Available as a stand-alone solution or integrated in the palletizing system, the MSK Looptech sleeves can be applied before, during, or after the palletizing process on certain product layers. The system works in the tightest of footprints and is suitable for the highest production speeds.

MSK solutions
Conveyor systems

MSK Transtech
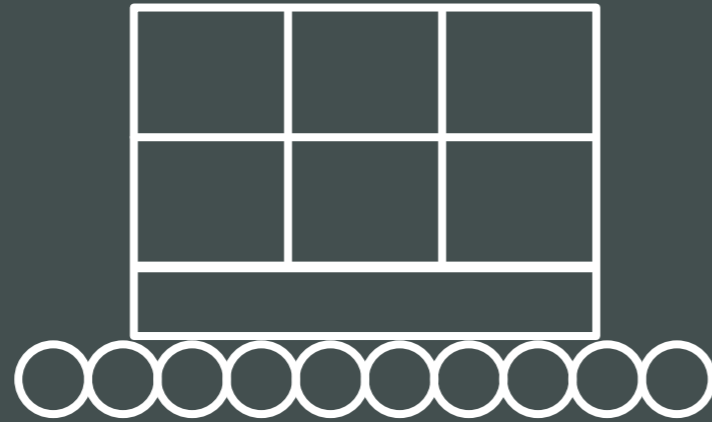Stationary pallet conveyors

MSK Linktech / AGV
Mobile pallet conveyors

MSK Vertical conveyors
Pallet conveying systems over different floors

Automated truck loading / unloading
Intelligent pallet pre-sorting

MSK Transtech / MSK Linktech
Logistics systems for pallets and large containers

Integrated pallet logistics system from received goods all the way to truck loading

Transparent and seamless load tracking

Customizable and fully automated complete systems

Communication interfaces to internal ERP systems and peripheral devices

Long-lasting premium components

Smooth and reliable production flow without forklift traffic

Customer-specific solutions

The development of customer-specific layout solutions with special variants of roller and chain conveyors, plastic belt conveyors, slat conveyors, vertical conveyors, accumulation conveyors, turntables, corner transfer units, etc. is part of our engineering know-how. The entire MSK conveyor technology is manufactured in-house.

AGV (automated guided vehicles)

The individually controlled automated guided vehicles are known for their high flexibility and ability to adapt to varying transport tasks.

Integrated pallet conveyor systems

In combination with fully automatic palletizing and packaging systems, MSK conveyor systems work safely and reliably as an integrated transport and material flow system.

Mobile MSK Linktech shuttle cars

Wherever the use of stationary conveyors is not possible, MSK shuttle cars transport small and large pallets, and packaged and unpackaged loads, achieving speeds of up to 100 m per minute. They contribute to much lower hazard potential for humans and machines, transparent flow of materials, and minimize the generation of noise and exhaust.

◄ **MSK elevators /
vertical conveyors**
Using MSK elevators, pallets can be
transported across different floors
and reach their destination safely. The
MSK EMSY software provides high
quality service in tracking information
data in the logistics process.

▲ **Networked and integrated**
With the help of the integrated MSK
EMSY software, pallet information
can be tracked throughout the entire
logistics process. The software offers
interfaces to communicate with ERP
systems as well as with peripheral
devices such as scanners, scales or
labelers. Through network connec-
tivity, the MSK EMSY receives com-
mands for the destinations of pallet
loads, and can report pallet positions
and pallet related data back to the
ERP system.

▲ **Automated truck loading /
unloading**
For increased loading efficiency, an
intelligent MSK pallet pre-sorting
process can control truck loading fully
automatically. Using the transmitted
pallet data, optimum truck capacity
utilization is ensured.

MSK solutions
Software
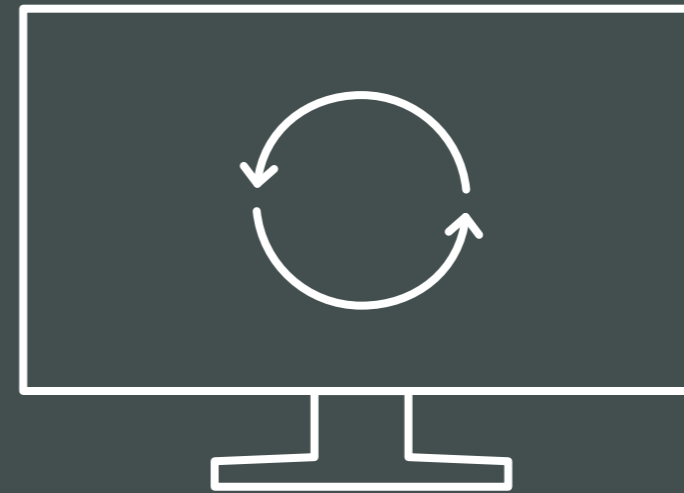
MSK EMSY
Easy machine control

MSK EMSY smart
Mobile status monitoring

MSK EMSY move
Mobile operation

MSK EMSY analytics
Analysis of overall system efficiency

MSK EMSY Software
The latest generation of machine operation

Statistical analysis ▶

MSK EMSY provides statistics on faults, maintenance, production, as well as running, waiting and downtimes, and displays these graphically for the operator. Consumption data such as film, electricity, gas, and compressed air for each pallet can also be processed statistically. Assessments per shift, week, or month, etc. are also possible. The data can be exported into standard programs.

Packagine Line 8 ⌄

↗97% OEE	↗99% Availability	↗98% Performance
↗98% Quality	↗100% Technical availability	504400 Good product	4575 Rejected product

- Downtime
- Waiting time
- Job change
- Unused production time
- Rejects

Time losses | 1385 Layers built | 277 Pallets built

Statistical analysis

Interfaces to all known PLC systems

Settings options through the customer editor and individual upgrade options

Monitoring of energy, film, and air consumption
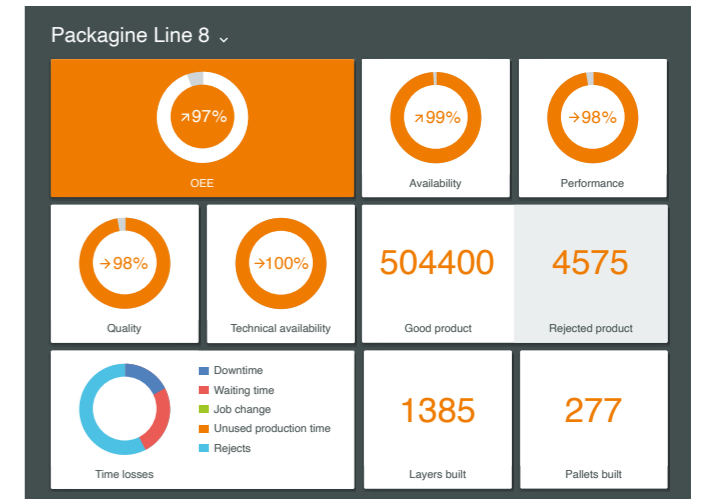
Automated machine settings reduce consumption

Easy operation of the packaging system

Support for maintenance, spare parts requirements, and troubleshooting

▲ **Easy machine control with MSK EMSY**

With the MSK EMSY visualization software, the machine processes virtually run themselves! This helps reduce operator training periods. In addition to easy parametrization for a variety of product dimensions and configurations, the software also assists in troubleshooting, supplies consumption statistics, allows remote maintenance, secures data through automatic backups, and much more.
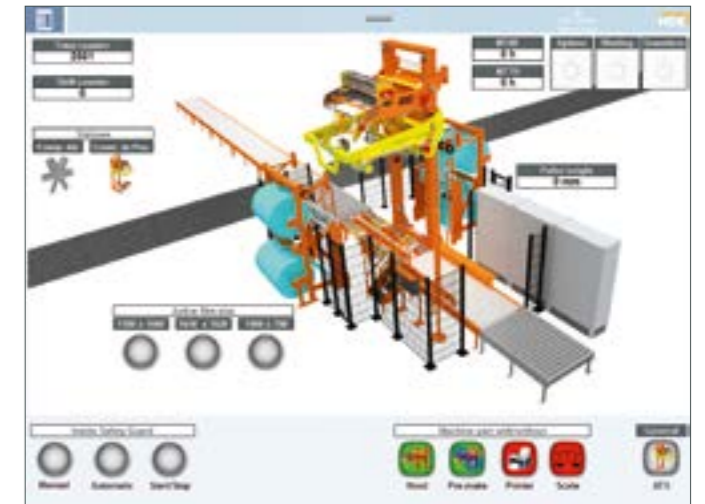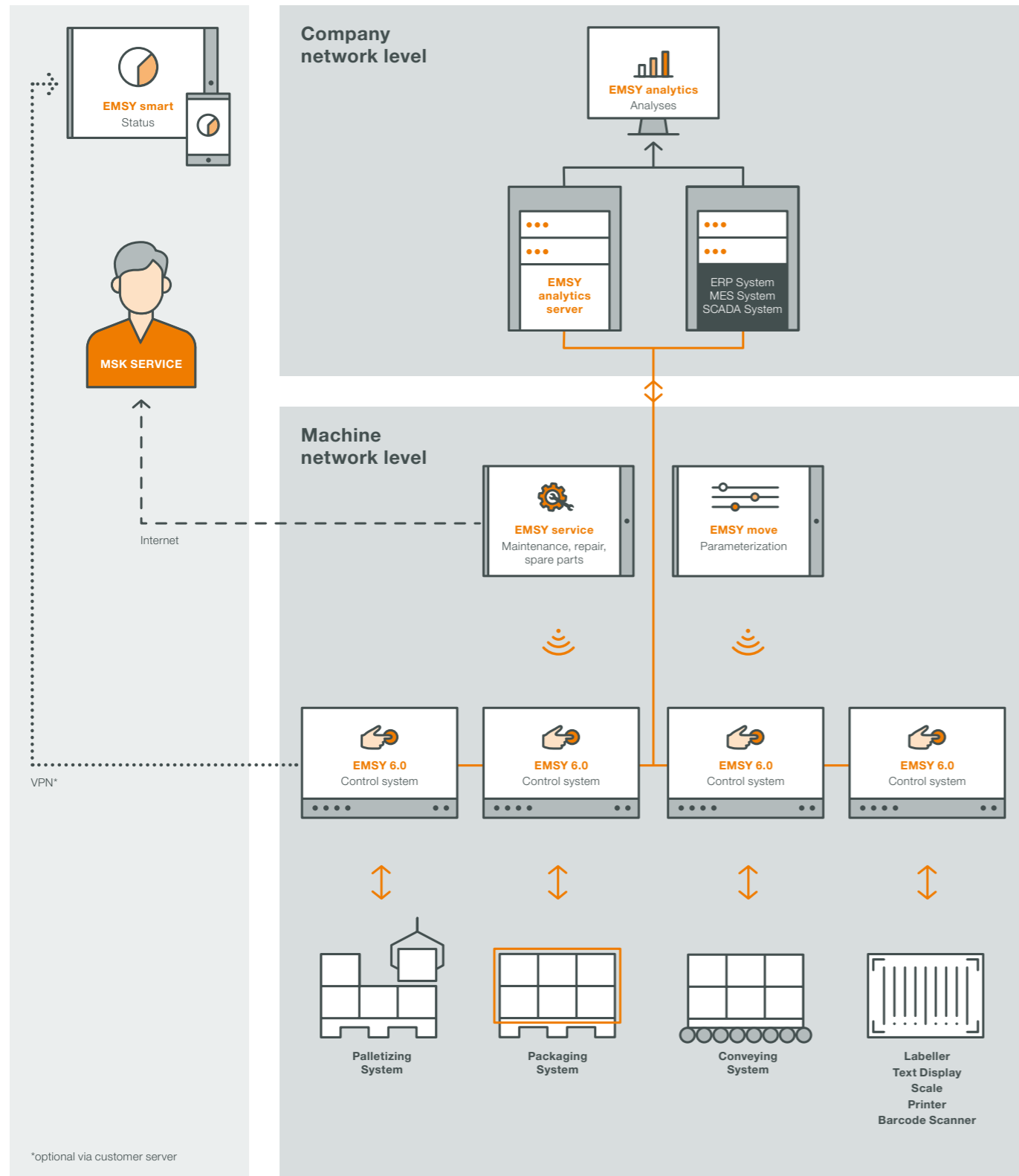
▲ **A picture is worth a 1,000 words**

The state-of-the-art touch panel and 3D animations ensure easy and intuitive operation of complex packaging machines. The clearly structured user interface with its helpful images and user support for virtually all EMSY functions considerably shortens the time necessary to get familiar with the system, and simplifies troubleshooting. All essential status information is available at a glance.

Outside Company

Inside Company

Company network level

EMSY smart
Status

EMSY analytics
Analyses

EMSY analytics server

ERP System
MES System
SCADA System

MSK SERVICE

Internet

Machine network level

EMSY service
Maintenance, repair, spare parts

EMSY move
Parameterization

VPN*

EMSY 6.0
Control system

EMSY 6.0
Control system

EMSY 6.0
Control system

EMSY 6.0
Control system

Palletizing
System

Packaging
System

Conveying
System

Labeller
Text Display
Scale
Printer
Barcode Scanner

*optional via customer server

◄ MSK EMSY smart

The user-friendly app for smartphone or tablet offers quick status of the packaged pallets or products in real time wherever you are, without having to be on site at the MSK system.

◄ MSK EMSY move

By using a modern industrial tablet, MSK EMSY move offers mobility and security to the operation of system extensions. This software is a convenient solution particularly for long conveyor lines and palletizing or packaging systems with multiple modules.

◄ MSK EMSY analytics

MSK EMSY analytics provides transparency for the overall efficiency of an entire system, and reveals ways to raise efficiency even more.

Individual upgrade options

MSK EMSY makes communication between users and the machine easier. Information from all kinds of peripheral devices is managed by the software and can be forwarded to your system (MES, ERP, SCADA, etc.). The software allows interfaces to all known PLC controls and operating systems. Through numerous upgrade options, the system can be optimally adapted to individual requirements.
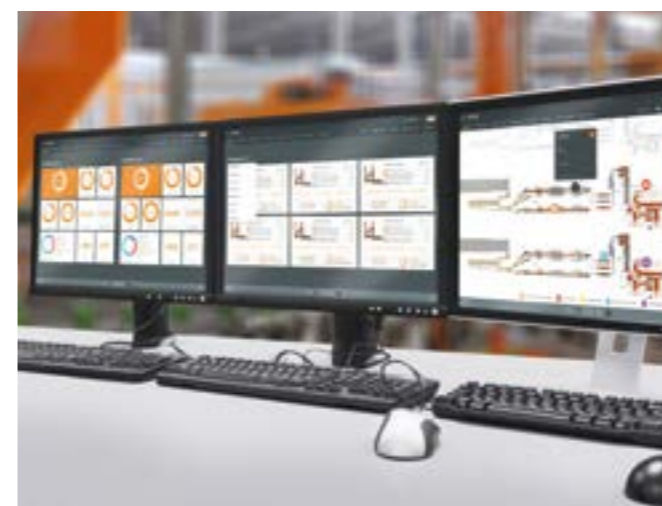
▲ **Complete automation of pallet logistics**

In order to automate the entire material flow and pallet handling from received goods, to truck loading or to the finished goods warehouse, and to reduce the use of forklifts, MSK creates customized and fully automatic complete systems with pallet conveyor technology, palletizing systems, pallet packaging lines, and numerous peripheral devices such as labelers, scanners, and more – all controlled by MSK EMSY.

>6,000

MSK systems sold to date

![MSK Covertech Group logo]

savings through technology

www.mskcovertech.com