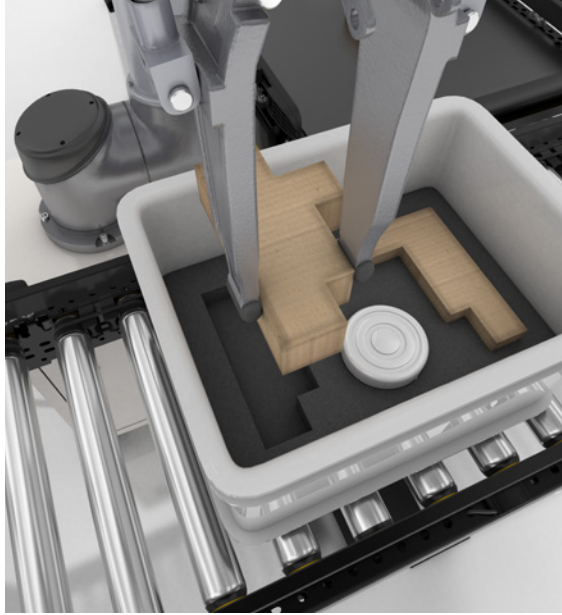


The Interroll Smart Pallet Mover
**Optimizing The Material
Flow In Production**



Industrial Production

IN TRANSFORMATION

The demands placed on manufacturing companies have changed dramatically in recent years. Today's consumers expect a wide range of products ordered and delivered in small quantities, combining quick deliveries with affordable prices.

As globalization advances, price and competitive pressures have increased. Companies react by increasing the degree of automation and making production more and more efficient. Robotics, Smart Factory and Industry 4.0 are the keywords of this trend.

In addition, the production and the material flow are becoming more and more connected in order to leverage untapped productivity potential in a plant. Mobile conveyor systems are increasingly being used for this purpose. They react flexibly to changes and can optimize themselves automatically depending on the circumstances.

Traditional assembly line production takes a back seat compared to new concepts. Today, the production process in many places is no longer linear, but happens in various production cells that can be used flexibly and sometimes even be fully automated. The best known examples can be found in the global automotive industry.



Interroll And The Manufacturing Industry

Modular material flow solutions from Interroll have proven themselves in the manufacturing environment for years – most notably in the tire, automotive and food industry. For example, modular Interroll conveyors and drives are successfully used by leading global companies such as Michelin, Continental, Bridgestone, Pirelli, FCA, PSA, Ford, Jaguar Toyota, as well as global food manufacturers such as Marel and Danish Crown.



In addition to the compact design and the quiet and cost-effective operation, users appreciate the very simple installation and the low maintenance requirements as well as the high reliability and operational safety of these solutions.

What challenges will manufacturing companies have to face

IN THE FUTURE ?

1 Volatile Markets

The order situation can fluctuate greatly. Customers still expect immediate availability and a high degree of individualization. Also, this makes it very hard to make accurate forecasts.

2 Short Product Lifecycle

Products and business models are becoming more short-lived. New trends arise in real time through communication via social networks, reliable control of these processes is not possible.

3 Order Complexity

The trend towards individualization means that product diversity is constantly increasing - with corresponding effects on production.



ROBOTICS

ON THE RISE

From 2009 to 2017 the number of manufacturing robots in the US has more than doubled

2009  **0.813**

2017  **1.974**

PER 1,000 WORKERS

Worldwide shipments of warehousing and logistics robots will grow

FROM **194,000**
UNITS IN 2018

TO **938,000**
UNITS ANNUALLY BY 2022

Source: Tractica, 2019

The proportion of Chinese workers employed in companies that made use of robotics rose

FROM **12%**

TO **37%**

IN 2008

IN 2017

Source: The Century Foundation, 2019/
Survey of Wuhan University, 2019

Worldwide revenue of warehousing and logistics robots

2018  **8.3**
2022  **30.8**

BILLION DOLLARS

Source: Tractica, 2019

OUT OF THE

8 million
ROBOTS

to be shipped
worldwide in 2030,

NEARLY **6 million**

will be mobile



Source: ABI Research, 2019



WORKPLACE SAFETY: AN ONGOING CHALLENGE

MORE THAN

2.78 

MILLION PEOPLE WORLDWIDE

die as a result of occupational accidents or work-related diseases per year.

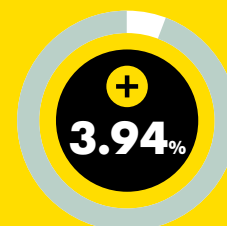
ADDITIONALLY, THERE ARE SOME

374 

MILLION NON-FATAL WORK-RELATED INJURIES EACH YEAR

resulting in more than 4 days of absence from work.

The economic burden of poor occupational safety is estimated at



OF GLOBAL GDP
EACH YEAR

Source: International Labour Organization (ILO), 2019

> The Interroll Smart Pallet Mover (SPM) BENEFITS AT A GLANCE

● DURABLE AND ROBUST

- Proven, reliable product
- Robust, durable construction

● INCREASE IN PRODUCTIVITY

- Automatic material supply of machines
- No downtime due to manual activities
- Up to 30 percent productivity increase

● FLEXIBLE, SCALABLE AND MODULAR

- Easily adaptable to site conditions
- Seamless cooperation with AGVs

● WORK SAFETY

- Keeps workers away from unsafe areas
- Reduces the risks of accidents

● EASE OF INSTALLATION

- Low-cost, plug and play installation
- No interruptions of production processes

● VERSATILE AND INTELLIGENT

- Self-optimizing controls
- Makes preventive maintenance possible

● SEAMLESS INTEGRATION

- Easy integration into existing IT-environments and SOA-installations
- Wi-Fi connection to IOT-Hubs within a Smart Factory

● INTUITIVE CONTROLS

- Simple initial setup and configuration
- Online Configuration Tool

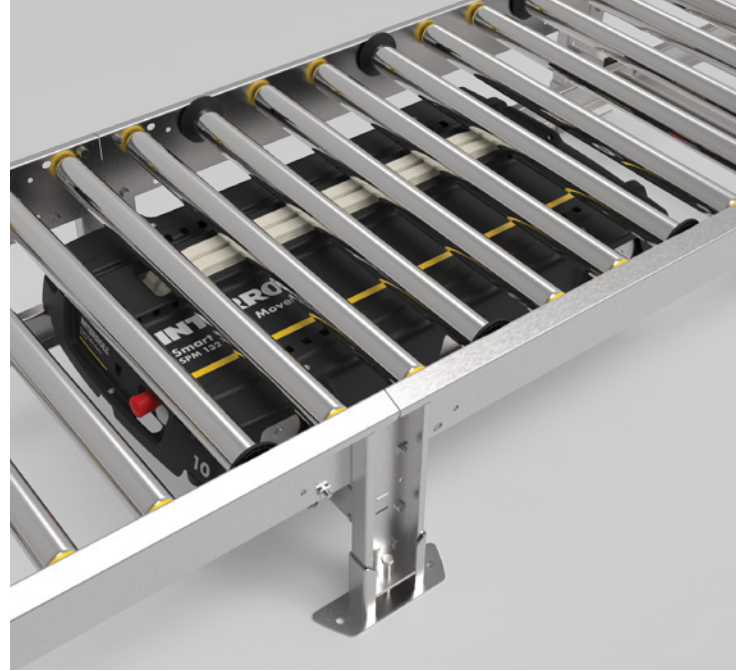


Interroll Smart Pallet Mover

With the **Smart Pallet Mover** (SPM), Interroll offers a new, mobile robotics solution for the automation of pallet transport in the areas of production machines and order picking. The SPM is designed to transport pallets or boxes weighing up to 1000 kilograms. This flexible and scalable solution represents a mobile and autonomously operating transport system that can be used, for example, as a cost-effective enhancement of static conveyors. It replaces manual processes which have so far been carried out by hand or by fork lifts.

The modular **Smart Pallet Mover** consists of components that are designed to work together perfectly. It has a battery-operated drive that runs on rails. The SPM autonomously moves modular conveyor units with pallets or boxes. Depending on the solution, special modules such as pallet magazines are available. The rollers used in the Smart Pallet Mover have successfully proven their robustness and durability for years. This solution can be easily reconfigured. Its height-adjustable feet give additional flexibility and enable the system to be installed even on uneven floors. The Smart Pallet Mover works seamlessly with AGV-systems.

As with all Interroll platform products, the Smart Pallet Mover is extremely easy to install, to operate and to

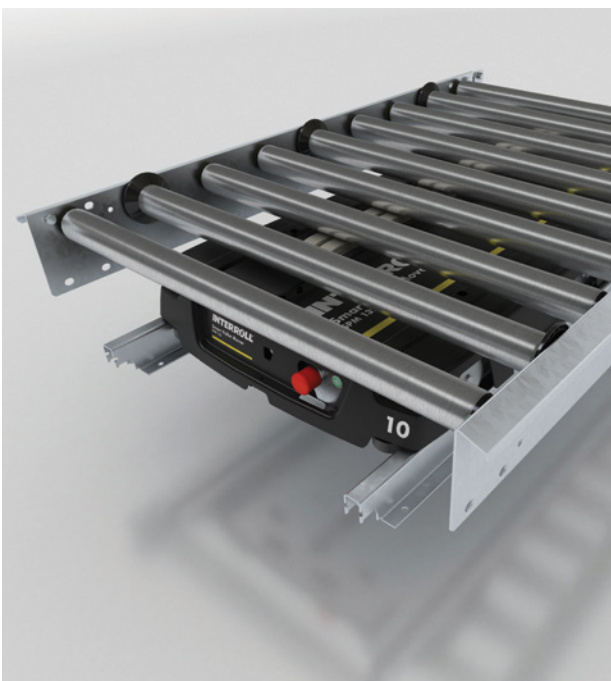


maintain. This plug and play solution can be put into operation without lengthy production downtime. A comprehensive, user-friendly online tool makes it possible to configure the system quickly and easily.

Networking capabilities are based on global standards such as REST API and JSON and ensure maximum compatibility and user-friendliness. The Smart Pallet Mover can be easily integrated into existing IT-environments such as ERP, MES and WMS, but also in SOA-installations. It can also be wirelessly connected to IoT-Hubs making it an integral part of a Smart Factory.



A software application provides plenty of information that can be utilized for condition monitoring, which makes preventive maintenance possible and allows for savings due to the reduction of downtime.

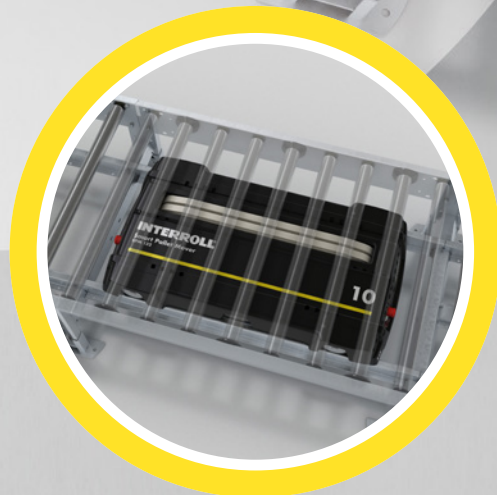


Safe material supply for manufacturing machines

With the Interroll Smart Pallet Mover manual work in safety-critical areas can be avoided. This not only eliminates expensive production downtime for the material supply of machines, but also the risks of accidents. The Smart Pallet Mover is equipped with 60 sensors, which ensure that there will be no collisions with objects or people.



SMART MOVING



About Interroll

Established in 1959, Interroll has grown to become the world's leading supplier of key equipment for material handling. Whether you're handling boxes, pallets, parcels or soft goods, no other supplier has such a comprehensive range of solutions on offer.

This is why system integrators, OEMs and end users choose Interroll as a trusted partner for material handling installations, worldwide.

Interroll's global reach ensures quick delivery and superior after-sale service for customers, no matter where they are. By helping increase our customers' efficiency, we boost their competitiveness in today's high-stress marketplace.



[interroll.com](https://www.interroll.com)

Interroll reserves the right to modify the technical features of its products at any time. Technical information, volumes, data and features are only rough guidelines.

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