

**YASKAWA**

# Packaging

Best in Class Packaging Solution



# The Integration of a Packaging Line

## Your Need: Performance Plus

Staying ahead of competition means constantly pushing the edge of the envelope on machine performance. This extreme effort consumes your time, stresses machine mechanisms and impacts the reliability of finished products. The result is a risk of lost revenue, or of disappointing key customers.

Your world has no room for components that can't be trusted, or for suppliers that create delays in development and delivery.

### What if ...

- Your could reduce ... or even eliminate ... the time spent optimizing your machine's motion performance?
- Your servo system could overcome the mechanical limitations of your design?
- Your could confidently achieve big improvements in throughput an effectiveness?

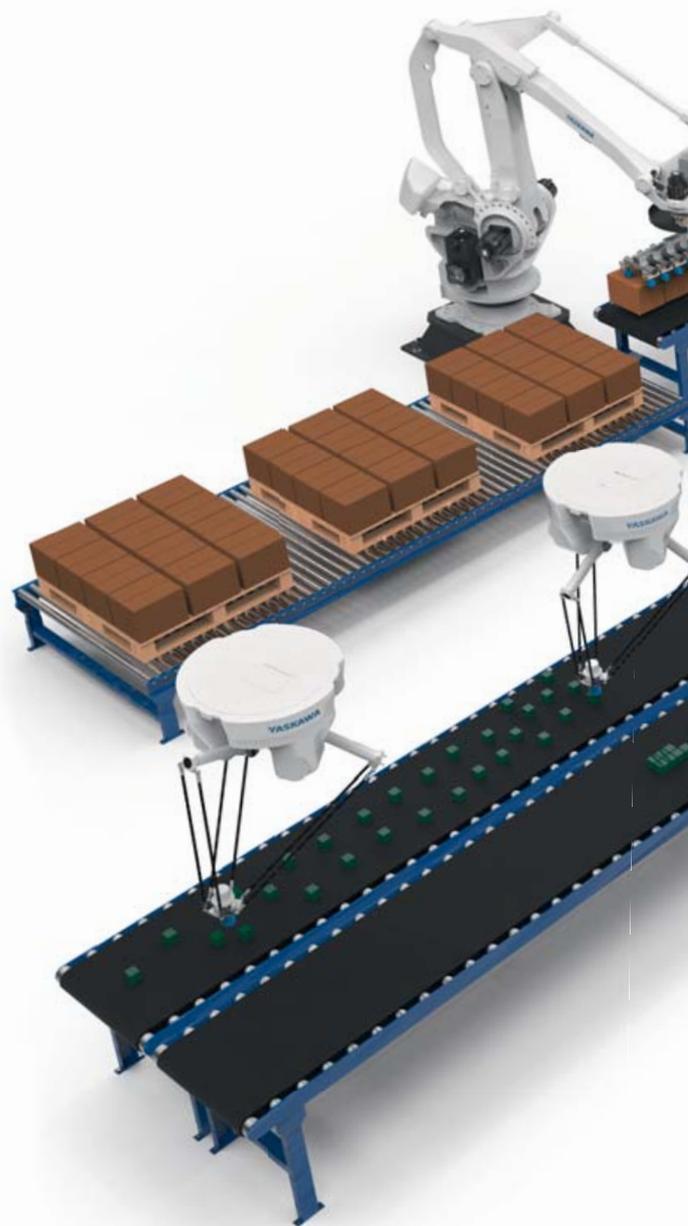
## Your Need: Speed & Success

When customer demand instant perfection, you can't afford to work with ordinary suppliers. Everyone in your supply chain must be completely reliable in supply and rapid in response to any customer question.

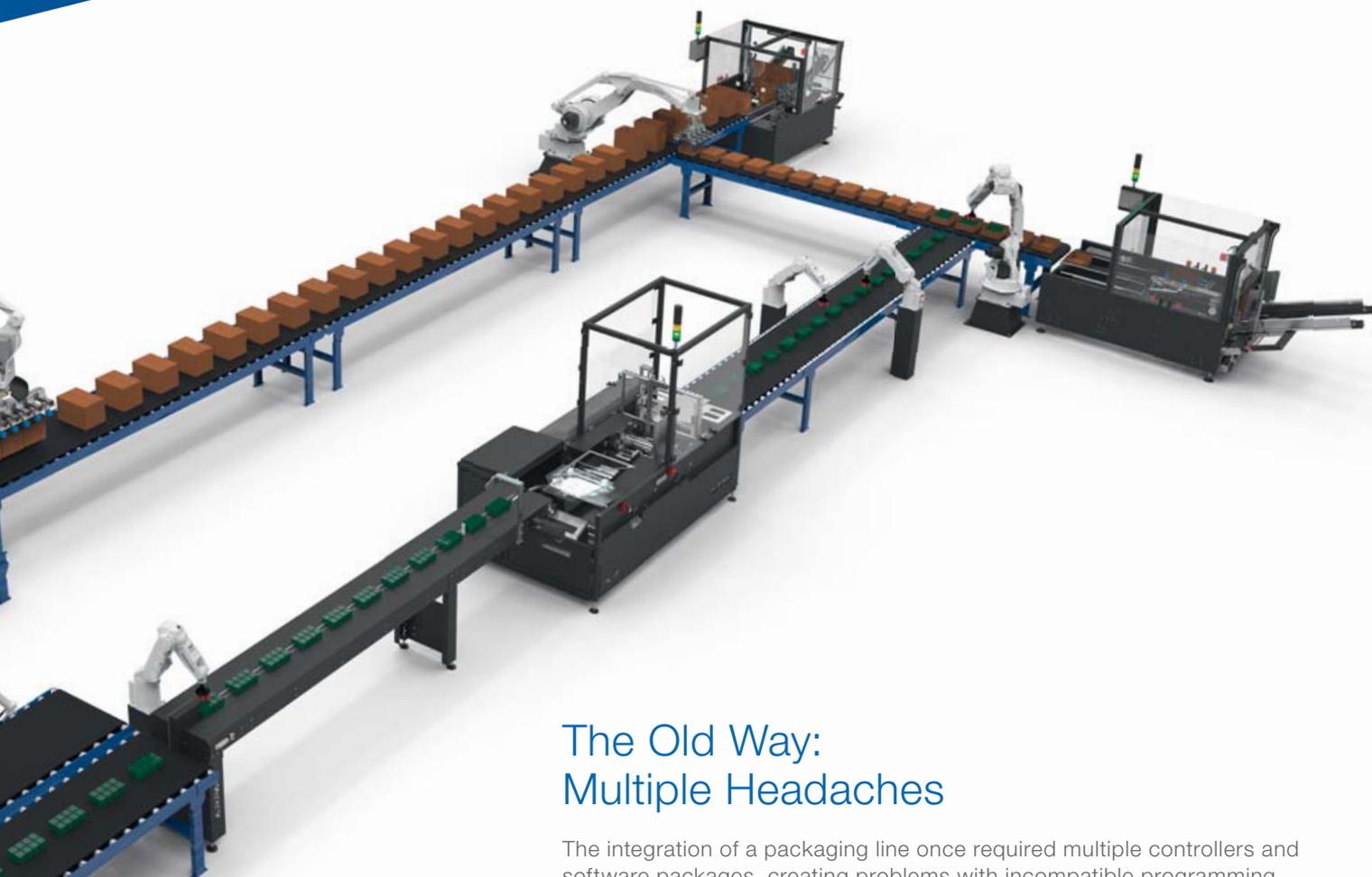
Quality problems simply cannot be part of the equation. Nor can shortage in engineering support in a fasttracked machine design process.

### What if ...

- You hat no worries about the reliability of your automation systems?
- You could reduce your machine lead time and spare parts inventory?
- You hat expert service everywhere your machines are located?



In a rapidly changing global marketplace, today's achievements are tomorrow's expectations. Your customers demand the maximum in both machine throughput and quality, regardless of mechanical and design limitations. Your job is to do it all and at a competitive cost.



## The Old Way: Multiple Headaches

The integration of a packaging line once required multiple controllers and software packages, creating problems with incompatible programming languages, confusing technical support, complex training and conflicts between competing control vendors. The bottom line: added cost, logistics nightmares and uncertain reliability.

## The New Way:



Only YASKAWA offers Singular Control™, the ability to operate robots, servos, variable speed drives and logic from the same software package. It's all achieved without the need for a specialized robot programmer, using the same IEC 61131-3 programming conventions, motion function blocks and PLCopen standards you use now. The YASKAWA name is known for automation components that boost the performance of packaging machinery. Thanks to Singular Control™, we're now also known for the control innovation that makes new packaging ideas possible.

# Be Capable of More

Machine builders and equipment users face high expectations, limited resources and tight deadlines. For you, improvement means suppliers with the products, knowledge and rock solid support to solve production problems day in and day out.

YASKAWA has been putting this brand of customer success in motion for 100 years. It shows in today's commitment to automation innovation, engineering expertise, and operational strength that is the proof behind our promise.



## Confident

### Products that Satisfy

Product performance means more than just a specification. It's also the confidence that your machines will work as expected, in a way that consistently outperforms your competition.

**Breakthrough performance** – Your machine functions at a level that can't be achieved with other automation solutions.

**A competitive price** – You can provide an effective, trustworthy solution at a cost that makes your machine an exceptional value.

**Quality, right out of the box** – Your systems work as expected, the first time and every time.



## Consistent

### Excellence in Operation

Problems with component quality, supply chain hiccups and downtime surprises are simply unacceptable. You need a partner with the operational rigor and expertise to engineer them out of existence.

**Inventory for faster fulfillment** – Your products are available precisely when and where you need them.

**Legendary quality** – Your equipment continues to operate reliably and without intervention.

**Global service and support** – You can rely on timely, helpful technical assistance wherever you or your equipment may be.



## Capable

### Engineering Expertise. Now.

Focus your engineers on their core competencies, thanks to a team of YASKAWA engineers who can instantly add value to automation design, development and support.

**Motion application expertise** – Call on our automation experts to assist with electromechanical design and development.

**Software development** – Turn to a team of automation software specialists to streamline your development process.

**Engineered systems** – Implement complete mechanical and electrical sub-systems that are fully supported for the life of your machine.

# Our best Controller for Packaging Machines

One Software and one controller for automated motion. It's time for something new.

You're ready for the convenience of having one vendor for everything in motion automation: one hardware platform, one software and one programming standard.

We at YASKAWA have worked toward this easy way: Rewriting machine code every time you integrate new mechanisms or needing specialised robot programmers is no longer needed.



## IEC Robot Control: Power for the rest of us

If you are familiar with standard ladder logic and function block programming you can take control of programming every component.

You're ready to take control of programming every component in a complete automation system ... including robots as well as servo systems and variable frequency drives.

- Manage every system component with one software package, running on one motion controller.
- Migrate a motion axis from servos to robots and back again, without changing the application code.
- Do it all with the same IEC 61131-3 programming format that your team is already skilled and comfortable with utilizing

# MPIEC Machine Controllers



## Easy & Consistent for Everyone

To stay a step ahead, you need programming software that is easy to learn, familiar in format and efficient to work with.

Your controller hardware must be accessible to a world of peripheral devices, while keeping functions and user experience perfectly controllable.

## The demand: Flexible PLUS reliable

Today's customers need a finger on the pulse of their machines at all times. Success demands peak productivity, total reliability and greater freedom to interact.

### What if ...

- Key elements of code are already written for you, using a standard, globally recognized programming language?
- Customers can safely access your machine controller from anywhere in the world?
- Programming one of your machines easily leads to programming all your machines?



# The complete mechatronic continuum

## One system under YASKAWA

Single-source solutions are only as good as the source standing behind them. IEC Robot control draws from the expertise, reputation and strength of YASKAWA, a 100 year old global leader with an impressive track record in industrial automation.



MoveLinearToPartPick	
MLxRobotMoveLinearAbs	
MLX	MLX
SendCommand	Sts_EN
RobotNumber	Sts_IP
TargetPosition	PercentComplete
TargetType	Sts_DN
BlendFactor	Sts_AC
Speed	Sts_PC
SpeedUnits	Sts_ER
Acceleration	
Deceleration	
AccelJerk	
DecelJerk	
TrajectoryShape	

Robots, Motion, Variable Speed Drives and Logic in a single software environment.

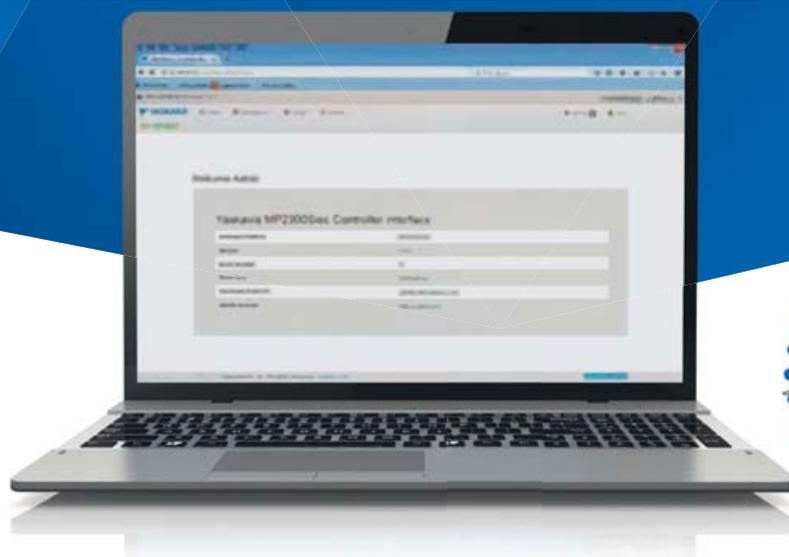
YASKAWA robots, standard or custom mechanisms with the same application code.

- Use the same application code with multiple mechanisms
- Standardize on one robot and provide software interface to meet customer requirements

Familiar Ladder Logic and PLCoper Function Block programming.

No proprietary robot programming language or programming pendant needed.

Common software tool for development configuration and maintenance.



## YASKAWA Control: What You Gain

With easy-to-learn MotionWorks® IEC software and MPiEC hardware, your engineers start programming quicker and stay connected more easily.

The result? Faster machine commissioning and more rapid machine delivery to market.

### A familiar programming standard

MotionWorks IEC complies with IEC61131-3, and provides five globally recognized standard programming languages. It includes motion function blocks that adhere to the PLCopen standard. Experienced control engineers will find this software comfortably familiar, and learning to program with MotionWorks IEC has never been easier.

### Built-in YASKAWA toolboxes

YASKAWA toolboxes make programming common functions so easy, it's like having a YASKAWA engineer working by your side. Standard code elements are already written and ready for use, reducing development time.

### A reusable code library

Import and re-use previously developed logic to speed up new projects. Re-use your own work or use logic created by others.

### Easy connectivity, worldwide

An MPiEC controller is your gateway to full remote control of a machine at any location with internet access. Keep a constant finger on the pulse of machine operation, from your own factory floor or from poolside worldwide.

### Web server updates

MPiEC controllers allow loading of programs and updating of firmware from any web browser, with no other software required. Browser-based controller status data helps reduce maintenance time and cost.

### Scalability

All our single-axis to multi-axis MPiEC controllers utilize the same MotionWorks IEC software platform, making programming and maintenance consistent for all machine sizes.

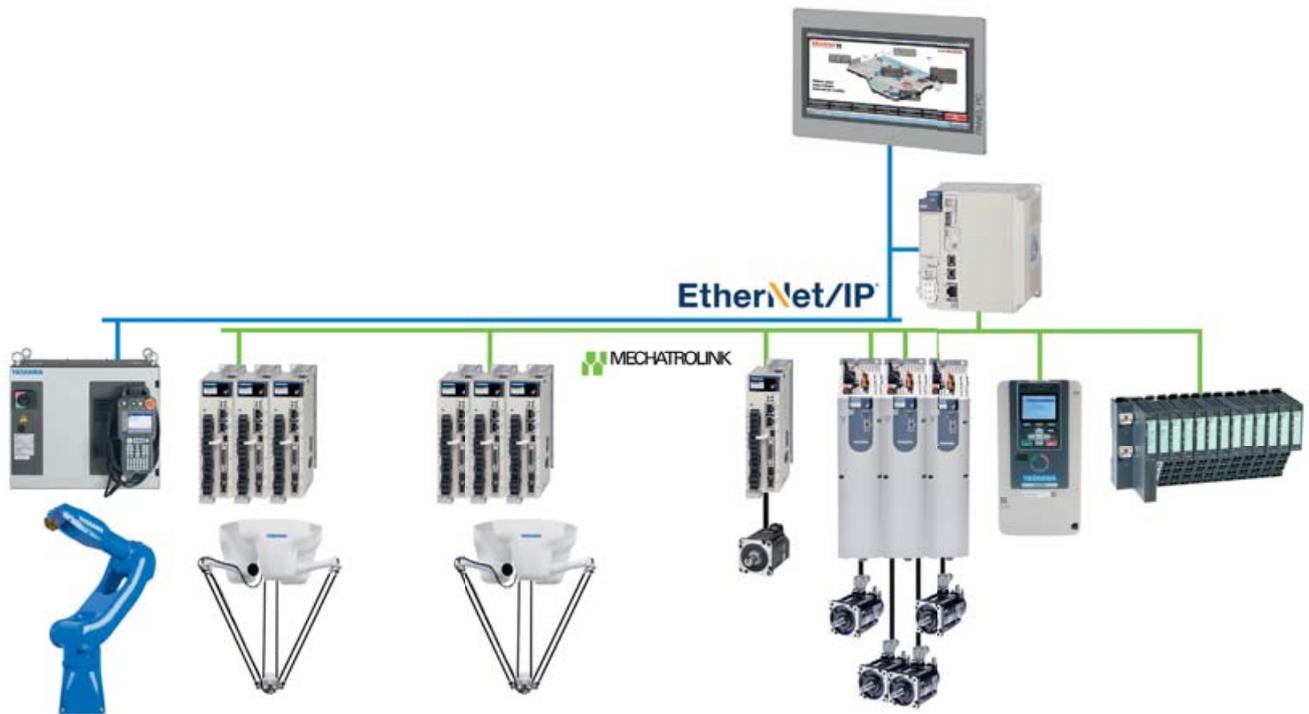
### Three networks to choose from

MPiEC controllers include the MECHATRO-LINK motion network, plus Modbus TCP and EtherNet/IP communication networks at no extra cost. This ensures an economical way of connecting to all the devices in your machine.

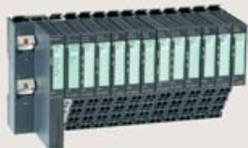
**PackML**  
an **OMAC** standard



# Flexible Solutions for Packaging Machines



# Total System Solutions with the YASKAWA Product Portfolio:

VISUALIZATION	<p><b>HMI</b> Line displays Touch panels</p>	
CONTROL	<p><b>Machine Controllers</b> For up to 62 axes IEC61131-3 standards</p> <p><b>PLC</b> Control systems Standard CPUs, compact CPUs</p>	
INPUT OUTPUT	<p><b>I/O-System</b> Modular Extremely compact</p>	
DRIVES AND MOTORS	<p><b>Servo Drives</b> Wide range of motors Outstanding performance</p> <p><b>AC Drives</b> From 0.1 kW to 630 kW Medium voltage inverters from 200 kVA to 12000 kVA</p>	
ROBOTICS	<p><b>Robots</b> Up to a reach of 3.159 mm From 4 to 15 axes</p>	
SOFTWARE	<p><b>Software</b> VIPA SPEED7 Studio YASKAWA MotionWorks® IEC Software</p>	

# Get the maximum throughput



The development of the new Sigma-7 series focused on three main goals: consistently fast commissioning, high production output and maximum operational reliability. The series offers a powerful response to today's market requirements for both machine constructors and final customers in the production industry. Sigma-7 offers particularly great potential for packaging plants, semiconductor manufacturing, wood processing and digital printing machines.



200 V Series



400 V Series



### Quick setup in just 3 minutes

Presets in the amplifier software simplify commissioning. A 'tuning-less' function allows immediate use of the Sigma-7 without the need for complex parametrisation or special knowledge of control equipment, while an auto-tuning function ensures quick adjustment.



### Space savings

New book-style housing supports gap-free, side-by-side installation of amplifiers even in small spaces. This makes it possible to realize a high performance density inside a cabinet. The needed space is reduced to a minimum, allowing it and the drive electronics to be integrated in the machine.



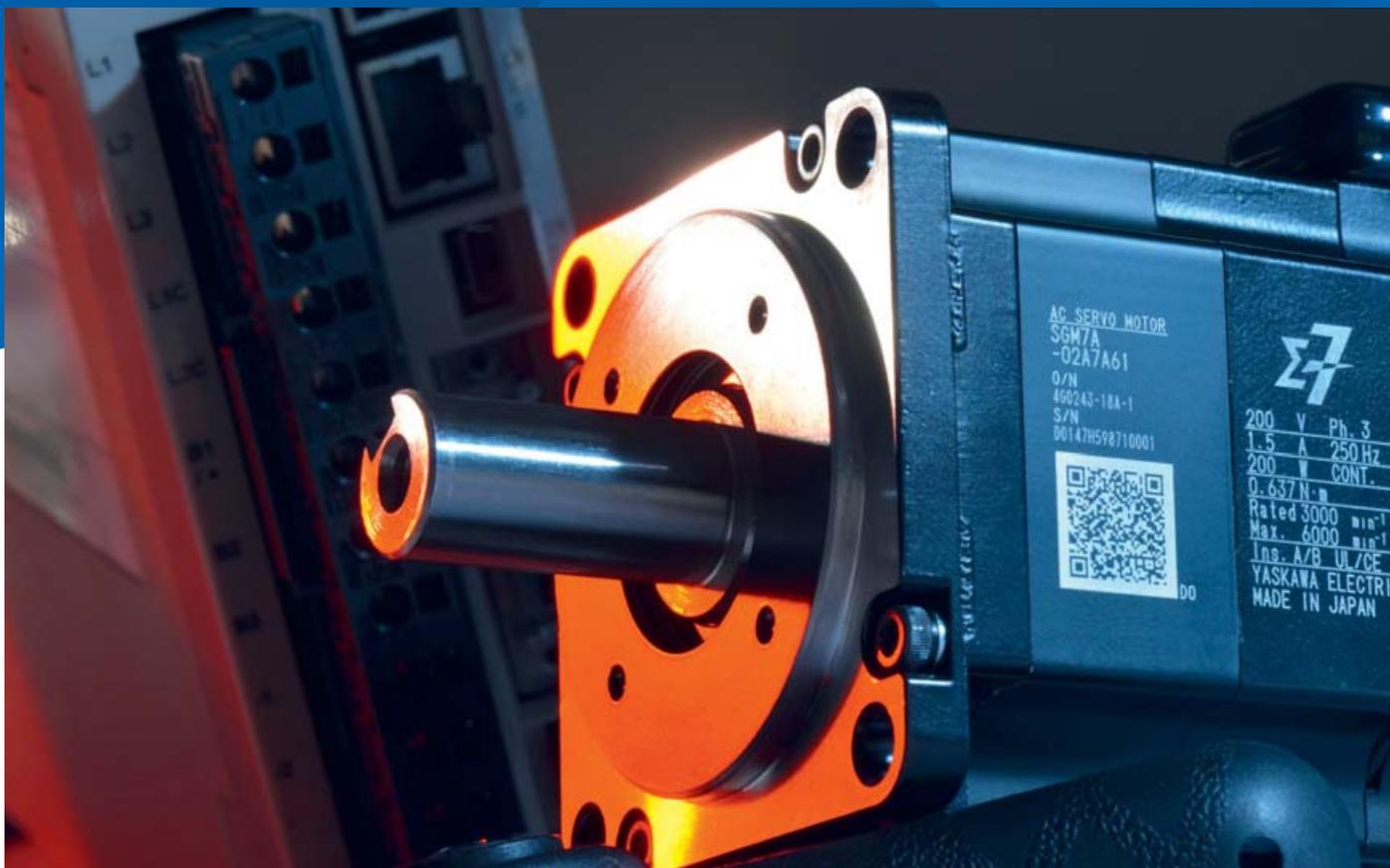
### Eco friendly

Sigma-7 motor efficiency reduces heat generation by up to 20%. The possible DC Power coupling of axes allows energy sharing and energy savings of up to 30%.



### Cost savings

Sigma-7 reduces the overall costs by providing faster machine setup, higher throughput with more products in less time and reduced machine downtimes due to the high reliability of our products.



## Your Gain: Global Excellence

YASKAWA has a long track record for reliable quality and responsive support.

### A legacy of quality

YASKAWA's award-winning quality has been the motion industry's benchmark for decades. YASKAWA products practically never fail and we can stand behind this statement with 100 years of evidence.

## Your Gain: Productivity Boosts

Motion control systems from YASKAWA give you real impact on equipment effectiveness. This creates confidence that a machine will work as expected every time, which gives you an advantage over your competitors.

## Tuning Time Savings

YASKAWA's well earned reputation for industry-leading performance is enhanced by our Tuningless Mode, which eliminates the need to optimize tuning gains. Vibration Suppression automatically compensates for limitations in a machine's mechanical design, creating more consistent performance.

## Initial Quality

Defining initial quality is simple: you get what you want. YASKAWA products ship on time, work right out of the box, perform as expected, and continue to do so for the life of your machine.

## Competitive Price

YASKAWA maintains a #1 market share in some of the world's most price-sensitive industries, which is proof of YASKAWA's superior balance.



# Robots bring Flexibility to any Machine

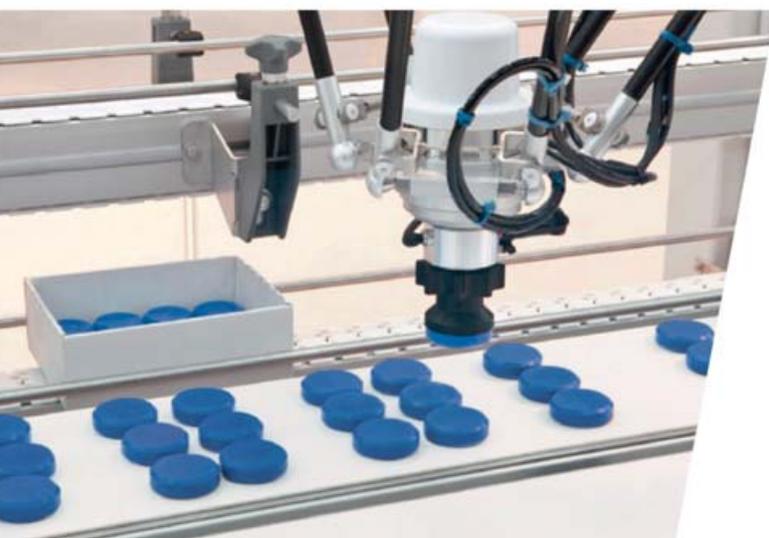
Vision-based, high-speed Robotic Solutions

## Range of Capability



YASKAWA offers a wide range of Robots for any task in the packaging industry.

- Picking, packing, packaging and palletising
- Special food grade grease
- IP67 robots
- 4, 6, 7 and 15 axes robots



More than 40 years experience in robotics and build in functions in our controller for Handling and Packaging applications, enables you to build high performance machines.

# Industrial Robot Controller YRC1000micro

for small MOTOMAN Robots

The MOTOMAN YRC1000micro controller is a controller for small MOTOMAN robots. It provides high performance robot control in a small footprint cabinet. Its performance and functions are optimized for Pick & Place and assembly applications.

Besides the typical YASKAWA functionality, the MOTOMAN YRC1000micro controller includes easy connections to peripheral devices and new high speed and high precision motion control.

It is compatible with the optional “Functional Safety”, which monitors motion range and speed limitations.



## KEY BENEFITS

- Compact and lightweight
- High performance
- New motion control
- Minimum installation space
- Easy connections to peripheral devices
- Compatible with “Functional Safety”

## Optimal Industrial Design

- Volume: 21,5 l (GP7/8/12, MotoMini), 30 l (HC10DT)



## Smart Pendant Fast and easy Programming

YASKAWA's programming pendant “Smart Pendant” makes no compromise between ease of use and capability.



# Shift to Packaging 4.0

i<sup>3</sup>-Mechatronics sets our fundament for developing future packaging automation, just as we have done many years ago by creating the concept of Mechatronics. The connectivity and communication between all our products but also with 3rd party components and systems will enhance productivity and flexibility.



## ***i<sup>3</sup>-Mechatronics***

### **integrated**

Our production environment enables customers to collect and analyze real-time data. It is open for further data analysis with specialized Big Data tools and AI. Production data can be visualized by the YASKAWA Cockpit on application, machine and complete production line level.

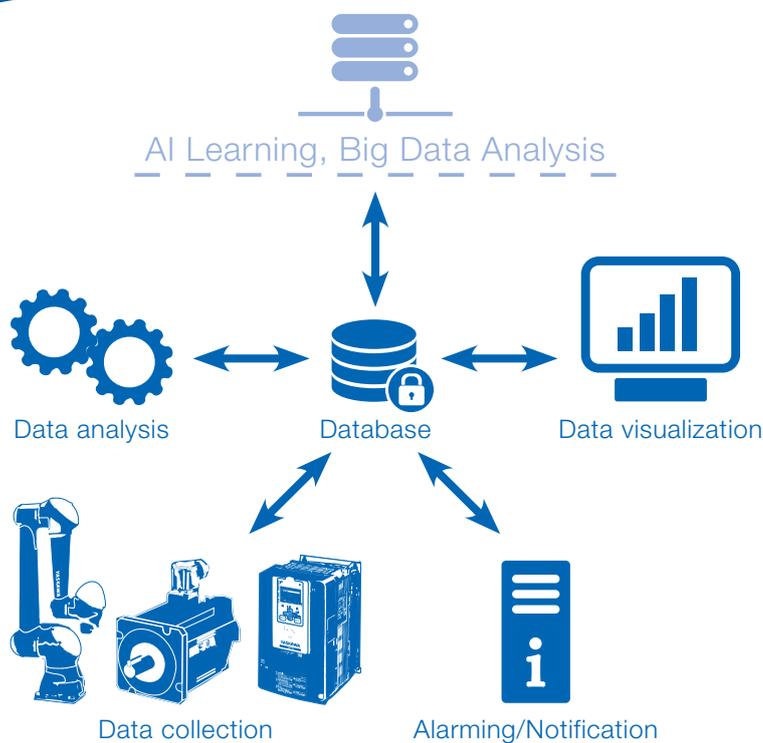
### **intelligent**

Big Data analysis and AI learning of collected production site data offer new ways to optimize the production process on machine level and factory level.

### **innovative**

Insights gained from the in-depth analysis of the production process are triggering improvements and create a better level of production and quality.

# The Packaging 4.0 Solution



### Solution with i<sup>3</sup>-Mechatronics

- Understand relationships in the machine together with the customer to reach conclusions on the state of wear and tear of machine accessories. Integrate this information into existing Production Monitoring system of OEM. Take predictive maintenance information from drives, servoamplifiers, robot controllers, etc as well.
- Enable mass data acquisition that is tied together with production information, which can be fed to higher level cloud-based systems to help the OEM reach conclusions and optimize machine performance.

### Value for OEM

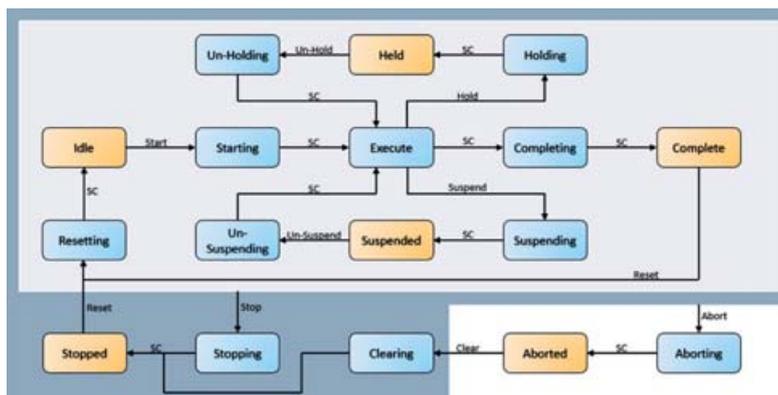
With such capabilities OEMs can provide value to their end-users, without having to disclose that this is done by YASKAWA. OEMs can also optimize and improve their machines **with more data to analyze.**

### Value for End-User

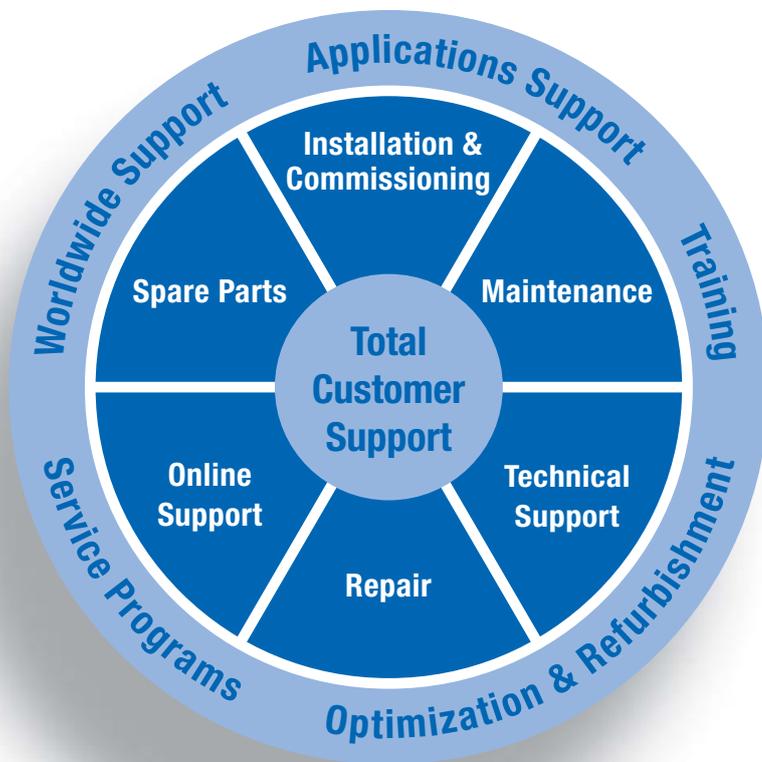
More production due to less downtime and machine optimization. **Associated to PackML, you can expect a consistent growth of OEE.**

**PackML**  
an OMAC standard

**OPC UA**



# Total Customer Support



-  Process Optimization & Product Modernization
-  Support for Product Application
-  Installation & Implementation
-  Service, Warranty & Maintenance Contracts
-  Preventive Maintenance
-  Training
-  Repair
-  Detailed Reporting
-  Spare Parts
-  Inventory & Logistics Programm
-  Error Analysis & Troubleshooting

YASKAWA supports you throughout the entire product lifecycle with service products and services tailored to your needs.

The 360° all around support, the TOTAL CUSTOMER SUPPORT, not only refers to the YASKAWA products and systems but also to your applications and processes.

Through our global service network, YASKAWA is always close to you to ensure your success, because ...

**... customer satisfaction is our top priority!**

# YASKAWA —

a leading Global Company – an European Player

## A Global Company



- Top 100 Global Innovator 2015 2016 and 2017\*
- More than 100 European Channel Partners
- Network of System Integrators

\* Clarivate Analytics (former part of Thomson Reuters)

YASKAWA Europe GmbH, Drives Motion Controls Division, Location Eschborn, Germany



YASKAWA Europe GmbH, Environmental Energy Division, Helsinki, Finland



YASKAWA Europe GmbH Robotics Division, Allershausen, Germany



YASKAWA Europe GmbH, Drives Motion Controls Division, Location Herzogenaurach, Germany

## Business Organizations in EMEA

(Europe, Middle East and Africa)

- Helsinki, Finland
- Lappeenranta, Finland
- Vaasa, Finland
- Stord, Norway
- Torsås, Sweden
- Moscow, Russia
- Turku, Finland
- Wrocław, Poland
- Vienna, Austria
- Istanbul, Turkey
- Prague, Czech Republic
- Banbury, UK
- Eindhoven, Netherlands
- Nantes, France
- Barcelona, Spain
- Turin, Italy
- Ribnica, Slovenia
- Tel Aviv, Israel
- Johannesburg, South Africa



## Engineering Capacity in Europe

### Application Engineering

- Machine Solutions
- Application Adaption
- Training & Support

> 2010 > > > > 2018 >

### Product Development

- Firmware, Communication
- Hardware, Mechanics
- Safety Solutions
- Software Tools
- Chip Development



## The European Production Sites

Glasgow, Scotland  
Production of drives and servo products



Ribnica, Slovenia  
Plant construction and robot systems



Torsås, Sweden  
Assembly of controllers, positioners and portals



Allershausen, Germany  
Plant construction and robot systems



Kočevje, Slovenia  
Robot manufacturing and R&D center (Work in progress)





### YASKAWA Headquarters

YASKAWA Europe GmbH  
Hauptstraße 185  
65760 Eschborn, Germany  
Tel. +49 (0) 6196/777-300

All dimensions in mm.  
Technical data may be subject to change without previous notice.  
Please request detailed drawings at [robotics@yaskawa.eu.com](mailto:robotics@yaskawa.eu.com).

YEU\_DMCR\_Packaging\_EN\_v1  
A-11-2018

[robotics@yaskawa.eu.com](mailto:robotics@yaskawa.eu.com)  
[www.yaskawa.eu.com](http://www.yaskawa.eu.com)

# YASKAWA