MECHATRONICS SOLUTIONS

Routeco
A Sonepar Company

Contents

Delivering **excellence**

Routeco recognises that your business will be challenged to differentiate itself amongst ever-changing technologies and against global competition. With today's evolving marketplace, your customers expect innovative and flexible solutions that maximise productivity and meet sustainability directives, all while increasing return on investment.

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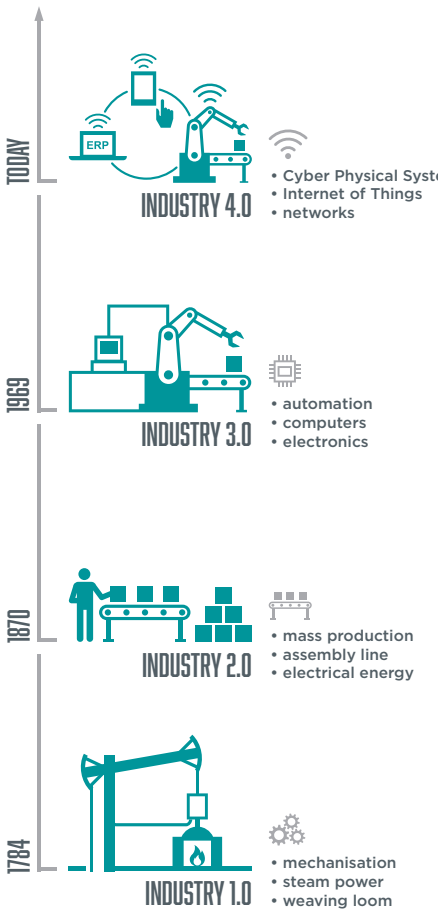
We understand that to compete, you need to define value beyond the cost of your individual factory floor components.

For the last 40 years, we have been at the forefront of product innovation and we want to support and help you to stay ahead, keep modernising, and bring you the benefits of Industry 4.0

We're proud to showcase our mechatronics solution which focuses on the engineering of both electrical and mechanical systems, and includes a combination of robotics, vision, pneumatics, control systems, networking, and software.

Some of the benefits of integrating electrical control systems with mechanical processes with Routeco include:

- Ability to standardise on one software solution
- Programming Ladder Diagram is industry recognised and remains the most adopted language
- Rockwell Automation's Studio 5000® is at the centre of our offer – combining this with their Stratix® networking solution and process control hardware gives you an excellent foundation to build on
- A digital environment through Emulate3D™, which allows for the design and testing of machines before any physical construction begins, saving time, resources while reducing risks associated with mechanical builds



We have robotic solutions from autonox, Comau, Denso and Doosan; Cognex offer vision identification; SMC for pneumatics and grippers; end of arm tooling from Schmalz and Zimmer and these carefully selected partners underscores our commitment to providing comprehensive solutions for automation needs. Rockwell Automation offer a wide range of software and hardware products and together we can help you build a solution that will improve productivity and increase efficiency.

Accelerate your system design process with **one design environment**

Rockwell Automation

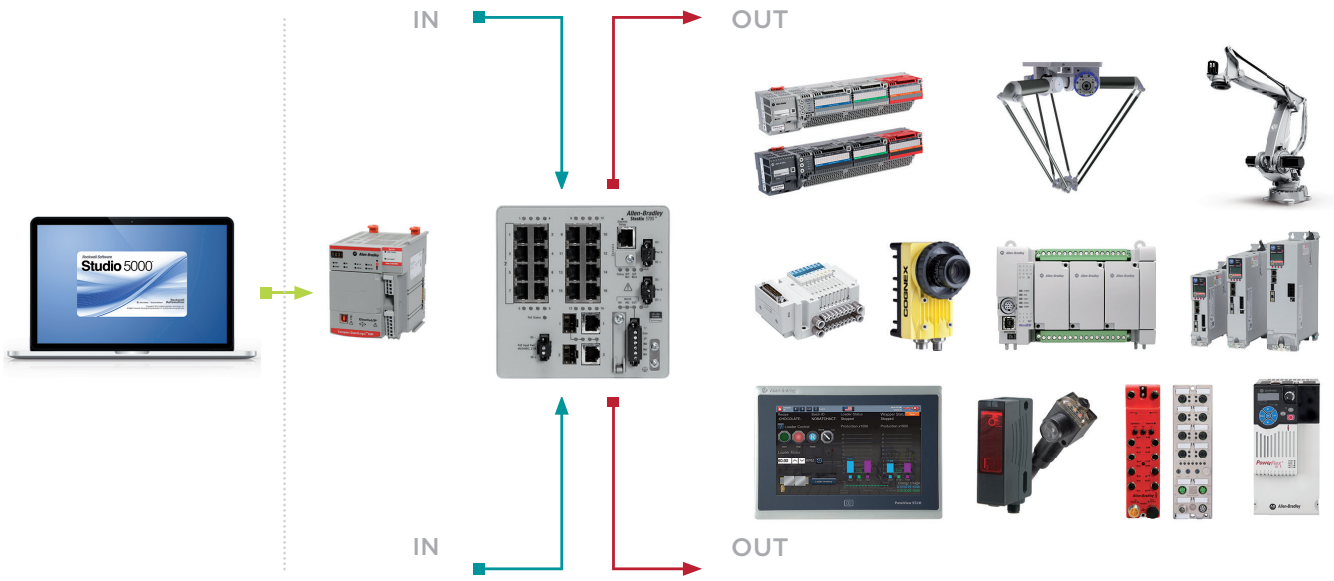
Rockwell Automation's singular focus on automation means they have unparalleled expertise. Their automation expertise is built upon decades of experience. As a result, they know how to work with businesses to translate the deluge of information into useful, actionable insight.

Integration with other solutions is changing how products are made, shipped, and sold. Rockwell Automation's efforts in smart manufacturing connects process and delivers many benefits.

EtherNet/IP™

Rockwell Software
Studio 5000®

EMULATE3D
by ROCKWELL AUTOMATION



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Controllers

Single architecture to control robotic systems.

- Logix based scalable multidiscipline control
- Scalable support for 2- 100+ axis
- Uniform software for multiple kinematics
- Integrated Safety & CIP security over Ethernet/IP

Motion

Simplify machine design while improving robotics performance.

- Integrated Motion and Safety
- Servo and Induction Motor Control
- CIP security communication
- Adaptive tuning

Visualisation

Consistent look and feel for electronic operator interface terminals, distributed client/server HMIs, and software.

- Access data at every level of the enterprise
- Standard set of engineering objects
- Common software platform that integrates with the control system

Studio 5000

Simple development of complex robot control solutions through a single control software platform and a collaborative engineering environment.

- Single software to configure, program and maintain applications
- Multi-language IEC 61131-3, multi-discipline, multi-user, intuitive programing environment
- Native kinematics transformation

Integrated Safety

Less unscheduled downtime and more protection for operators.

- Single platform for safety logic, I/O and components
- Diverse technology to improve productivity through zone control
- Safety consultants to assess, educate, design, and validate

The next generation of motion control

Rockwell Automation

Independent cart technology

Historically, motion control has incorporated chains, belts, gears, and walking-beam mechanics. These mechanical solutions had limited flexibility, wasted energy, and led to excessive maintenance costs.

The iTRAK® and MagneMotion® solution are the next steps in motion control, eliminating the rotary driven chains, belts and gears of the past. It replaces mechanics with simple, effective profiles redefining speed and flexibility in automation. Independent cart technology uses magnets to precisely control motion with frictionless propulsion! The result is fewer parts to worry about, reduced energy consumption and the ability to quickly start and stop loads without losing control or putting wear on parts.

MagneMover Lite

- Intelligent conveyor system for light payloads (<10kg)
- Easy to design and setup
- Flexible, modular, and scalable
- Simple programming and control of thousands of carts

QuickStick

- Intelligent propulsion and control system
- Payloads from tens to thousands of kilograms
- Flexible, modular, and scalable
- Simple programming and control of thousands of carts

iTRAK

- Intelligent positioning and flexible conveyor system
- Deterministic closed loop servo performance
- Automatic synchronisation with other motion axes
- High dynamic performance and force

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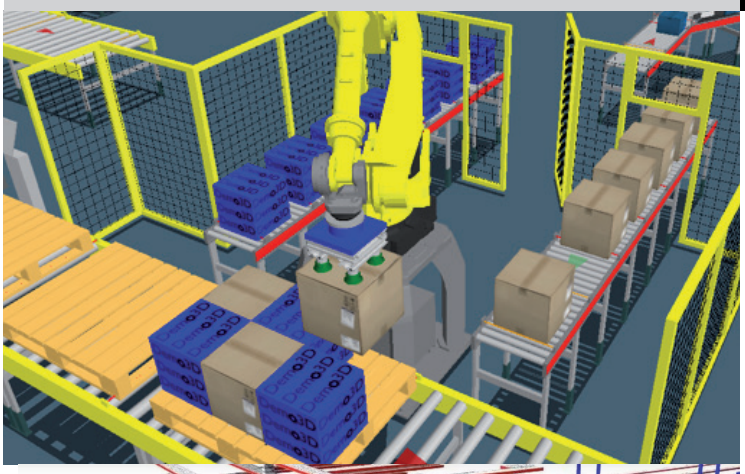
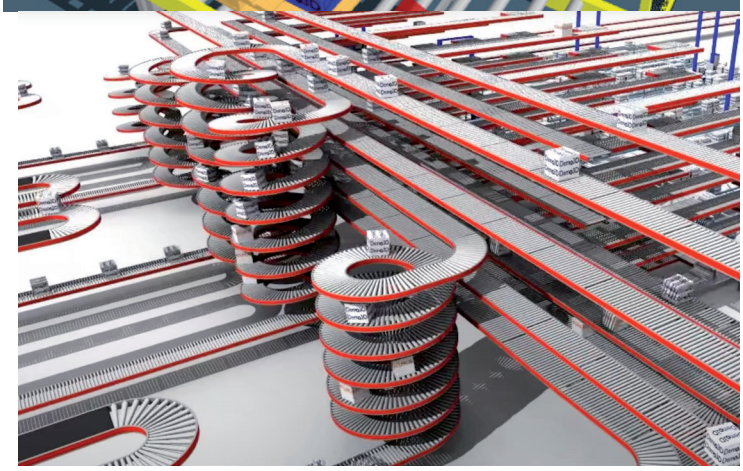
Rockwell Automation

Emulate3D engineering software reduces the risks associated with your automation investments. The digital twin software provides virtual commissioning, throughput simulation, and industrial demonstration of automation.

EMULATE3D
by ROCKWELL AUTOMATION

Test your control system operational logic in the office or from home. Develop, test, and produce robust PLC and mid-level control systems offline before building the real system. Controls emulation saves time and money by testing the control system before going on-site; shorten the project's critical path with virtual commissioning and reduce overall testing time.





Demonstration

Generate videos or even virtual reality demonstrations of an operating system.

Simulation

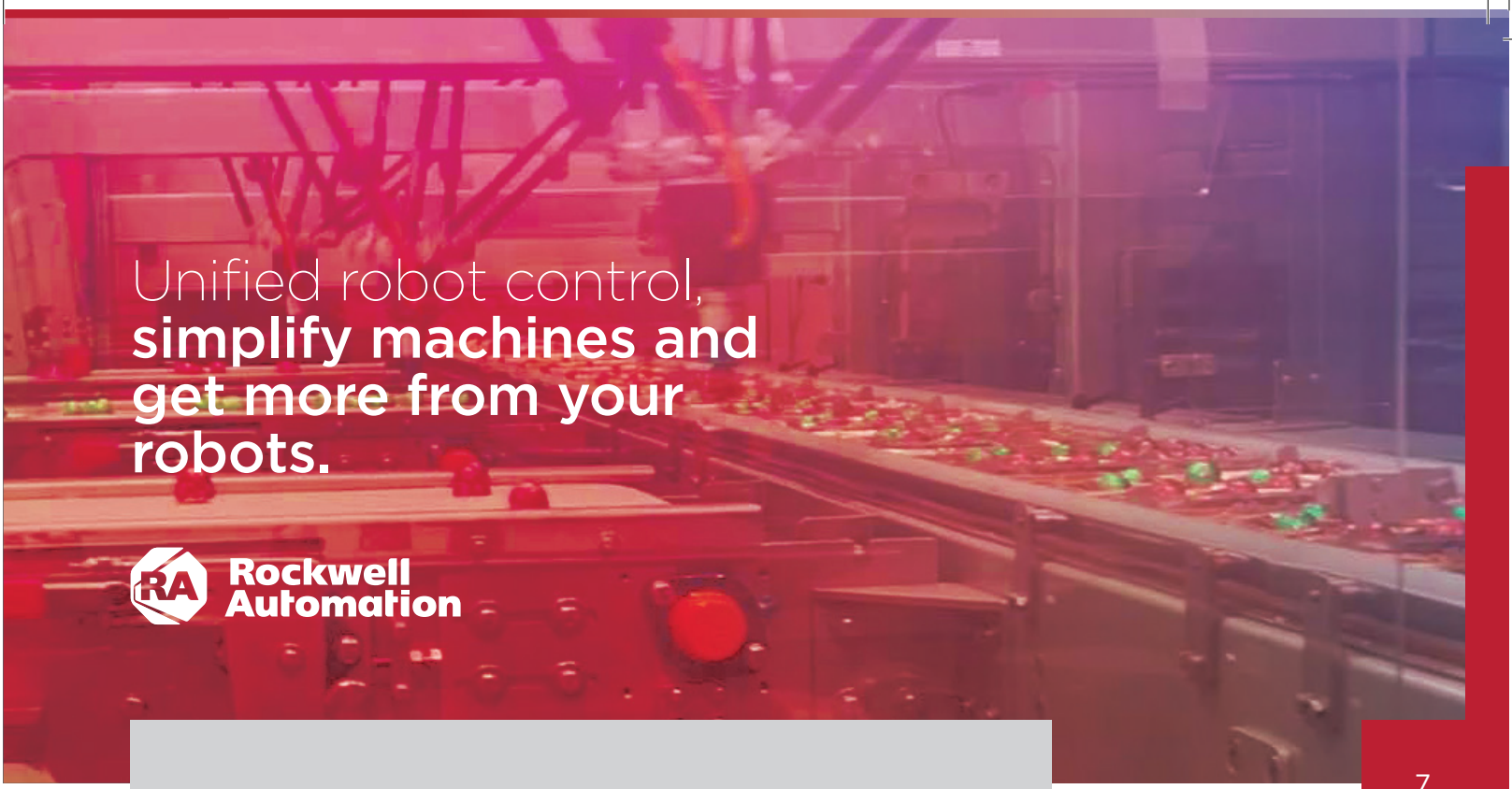
Analyse system throughput, identify bottlenecks, and understand the system response to operational changes.

Virtual Commissioning

Connect an accurate, dynamic model of the system to the real controls, before building the actual system.

Operator Training

Reduce risk by training workforce in a safe, virtual environment.



Unified robot control, **simplify machines and get more from your robots.**

Rockwell Automation

Industrial robots can be powerful assets in helping companies achieve their most important production goals. But the value they deliver can be held back when the system design consists of disparate systems for robot and machine control. With unified robot control you can break down these productivity barriers.

Launch projects faster

- Write, test and refine all control code within the Studio 5000® environment
- Use Rockwell Automation configuration workflow to generate Logix and HMI projects
- Virtually commission systems with Emulate3D™ software integration

Optimise performance

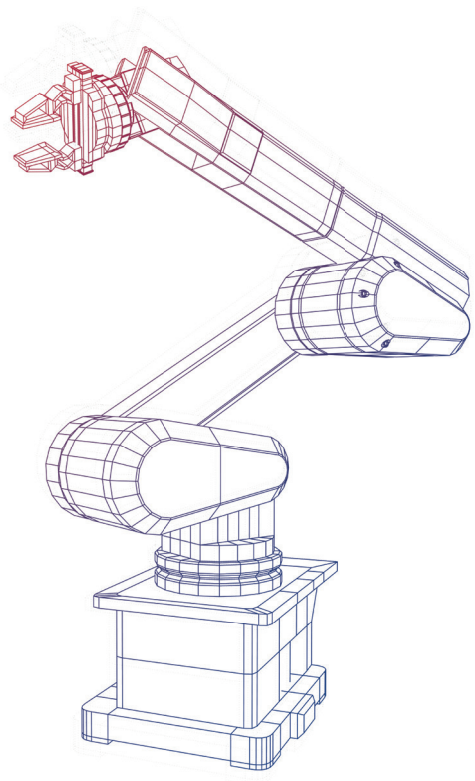
- Improve synchronisation between robots and surrounding devices, including independent cart technology
- Easily exchange important data between machines
- Control one or multiple robots with a single Logix controller

Empower teams

- Create robot experts with those already proficient in the Studio 5000 environment
- Use one operating environment for complete system control
- Eliminate the need to train and learn third-party robot programs

Deliver more value

- Build more compact systems by removing dedicated robot controllers
- Select from multiple robot geometries across Rockwell Automation Technology Partners and control them in one solution
- Design with common components that support your automation systems facility-wide



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Routeco Palletising System **a state of the art end of line solution**

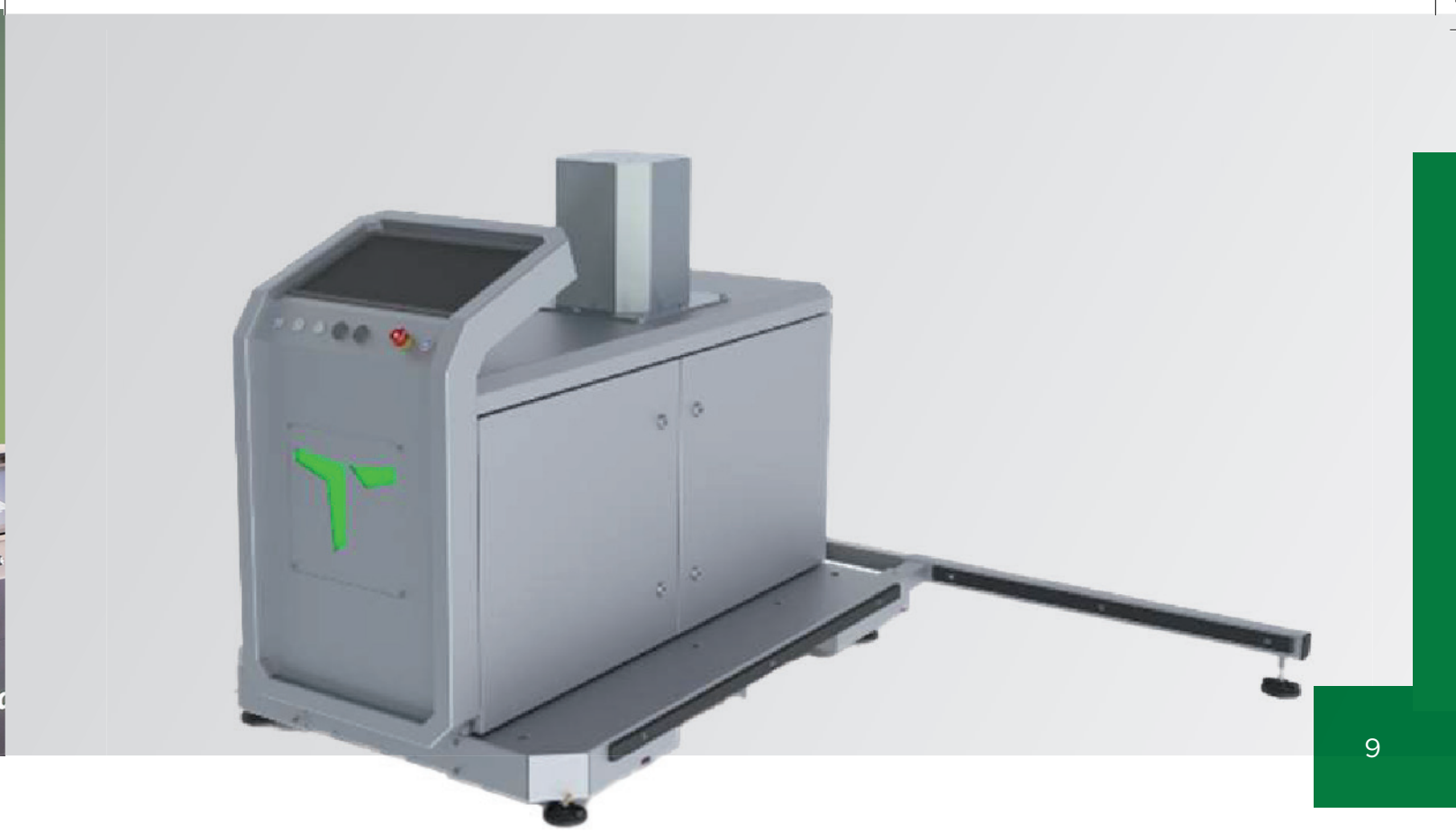
Ruggedly built in stainless steel, the palletising base is designed to fully integrate with a Doosan cobot and its controller. Offering a load capacity of up to 30Kg and an extended reach of 2000mm, this system comes complete with a large 15in touchscreen supporting programming and control. The system comes with simple to use, preinstalled palletising application software, including capability for on or offline 3D simulation.

The base features outriggers for stabilisation and easy location of two pallets and allows fitting of area safety scanners if required. A telescopic vertical lift is available as an option to the fixed-height cobot pedestal. The system is supplied without a cobot gripper to allow integrators the flexibility to fit other preferred or required grippers and to enable the palletisation of a wide range of products. Moving the base is easy thanks to forklift and pallet truck cut outs.

An illuminated front logo panel is present allowing an Integrator to add their own logo for brand visibility.

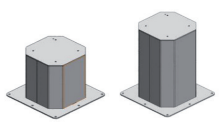
Specifications

Dimensions	2525(W) x 1525(D) x 1270(H) mm
Weight	250kg
Material	Stainless Steel
Compatible Robot Models	M-Series/A-Series/H-Series/P-Series
Available Software	Dart platform/Native OmniPack
IP-Value	IP-54



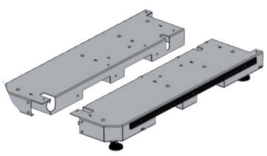
HMI

The HMI frame and 15in touchscreen gives the operator a robust and easily accessible programming and control interface. The cobot teach pendant with mounting bracket is a lower cost but less capable option to the HMI. Customised logos can be applied and are illuminated.



Pedestals

By using different cobot pedestals, different heights and reaches can be attained. The pedestals are easy to switch. There is also an electric lift version available.

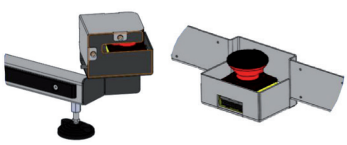


Adjustable Base

To maintain stability while using the H-series and P-series, the base is adjustable. It has two positions to maintain a small footprint with the M/A-Series. This also ensures optimal working space for the H/P-Series.

Stabilisers

The stabilisers make it possible to place the palletiser without the need for anchoring in the floor. They also provide an end stop/location for the pallets.



Integrated Safety

If added, area scanners can reduce cobot speeds in the case of a person being detected in specific zones. Scanners are mounted to specific points on the stabilisers.

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Denso Wave offers **products that contribute to improving productivity**

DENSO robotics

DENSO is a pioneer and industry leader in small robots development since the 1960s, and is the world's largest manufacturer of small assembly robots, with an installed base of over 120,000 robots.

DENSO robots are designed to run trouble-free with only minimal scheduled maintenance. This results in significant savings in maintenance costs as well as the cost of production downtime due to overly frequent or lengthy maintenance procedures.

DENSO robotics

VP Series
5 & 6-AXIS

VS Series
6-AXIS

VS-6 Series
6-AXIS

VM Series
6-AXIS

VMB Series
6-AXIS

VLA Series
6-AXIS

HS-A1 Series
4-AXIS

HSR Series
4-AXIS

HM Series
4-AXIS

COBOTTA Series
-

The competitive advantages of using **Delta robotics**

autonox Robotics

Specifically designed to maximise speed and versatility, Delta robotics are used on high-speed small part handling and picking operations. Linked to existing conveyors, Delta robotics offer a unique parallel-link structure. Combined with a very large work envelope it makes them ideal for many industries including food and beverage, pharmaceutical and electronics.

Benefit from a complete process implemented on a single controller platform:

- Patented:
  tool changing and motion delivery, this reduces wear and increases performance
- Stability:
  the autonox24 arm joints cannot detach themselves during operation
- Hygienic options:
  approved materials with reduced gaps and washdown tested

autonox Robotics

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Enabled systems, products and services **Comau develops Industry 4.0**

COMAU

Comau, founded in 1973 is an Italian multinational subsidiary company based in Turin. They provide more than 40 different industrial robotic arms, SCARA, Articulated and Collaborative.

Automated Guided Vehicle (AGV) maximum payloads of 1500Kg.

Handle with speed.

Specifically designed for palletising, handling and high-speed operations, this innovative robot delivers performance levels that may even surprise you. They can support a wide range of payload capacities from 3kg to 650kg.

Doosan provides **excellence beyond imagination**

DOOSAN

You can experience the differentiated performance of Doosan cobots in applications that require the dexterity of workers.

With the built-in torque sensors installed on each of the six joints and an innovative motion control algorithm, Doosan cobots can perform precision assembly tasks quickly and safely. They simulate the hand motions of the operator with the industry's highest force sensing rate allowing complete assembly without any damage or defects.

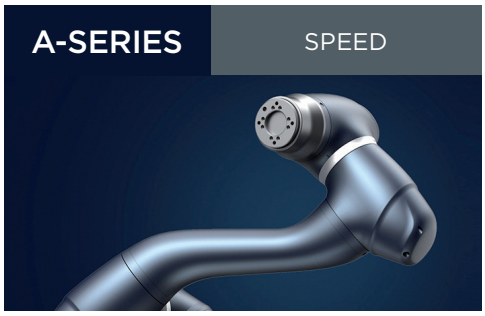
H-SERIES STRENGTH

H-Series payloads of up to 25kg* and a maximum arm reach of 1700mm*

M-SERIES PRECISION

M-Series payloads of up to 15kg* and a maximum arm reach of up to 1700mm*

A-SERIES SPEED



A-Series payloads of up to 9kg* and a maximum arm reach of up to 1200mm*

P-SERIES INDUSTRY-LEADING

P-Series payloads of up to 30kg and a maximum arm reach of up to 2030mm

*model dependent

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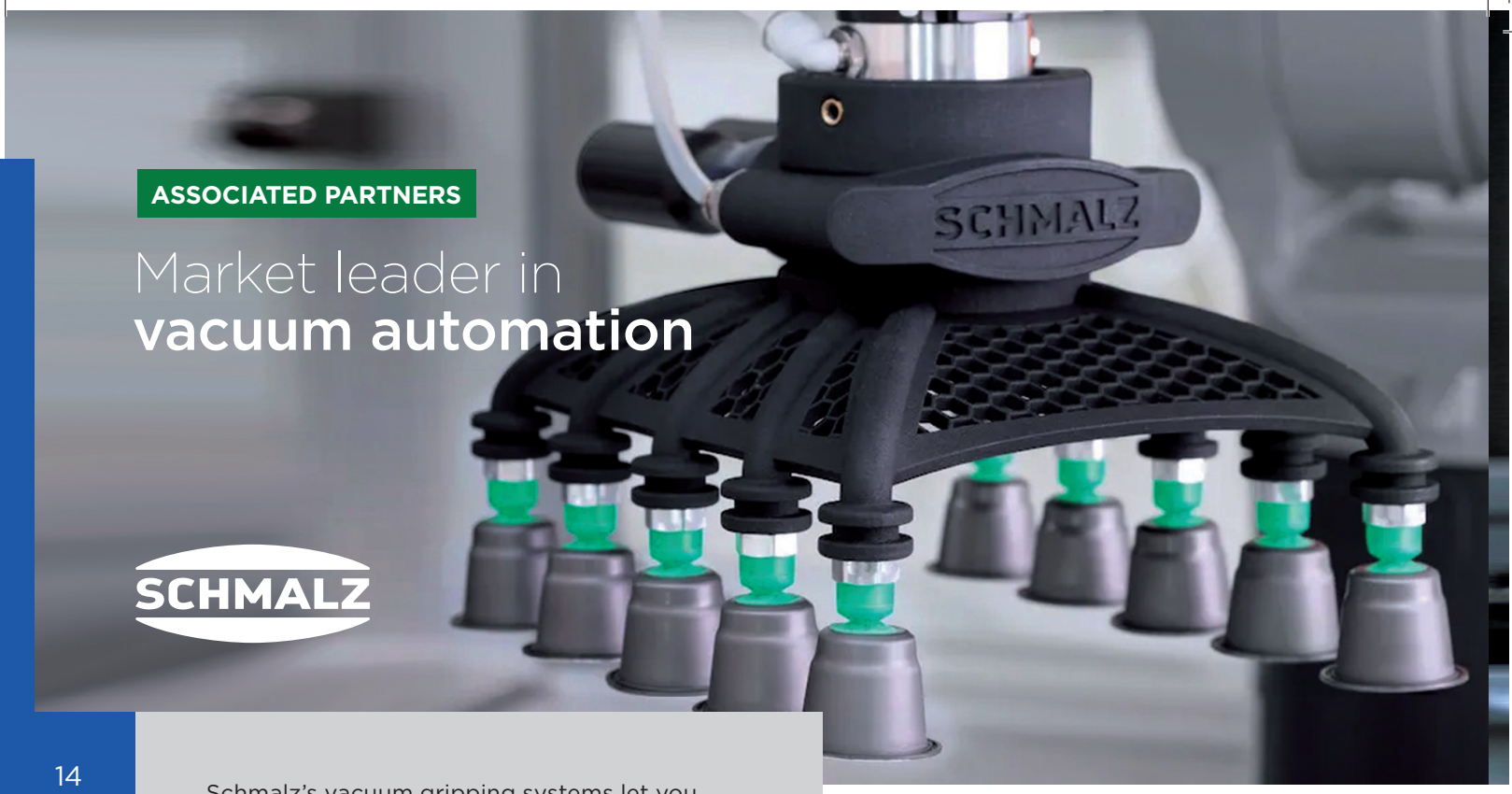


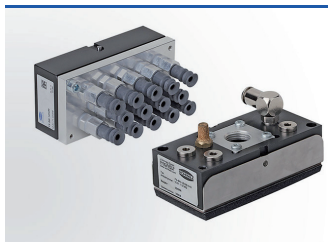
ASSOCIATED PARTNERS

Market leader in **vacuum automation**

SCHMALZ

Schmalz's vacuum gripping systems let you implement decisive productivity increases through automating processes. The systems range from layer and vacuum area gripping to ready-to-install vacuum suction spiders for use in all areas of automation.

Designed based on the human hand, these **finger grippers** can be used in quality control or accurately placing small products close together.



Schmalz's **area gripping systems FX-SW** are ideal for use in packaging processes where a range of products are handled e.g. filling boxes.

The **ECBPi vacuum generator** is an intelligent vacuum generator and is used in mobile robotics, fully automated small parts handling and stationary handling tasks.

These **floating suction cups** come in a range of sizes and designs with different holding force for low contact handling of thin and sensitive workpieces.

Schmalz offer solutions that stand for energy efficiency and technology advancement ready for factories of the future as the world continues to change and embrace digital transformation.

The products shown are all compatible with Rockwell Automation's Studio 5000. All models can be controlled by Rockwell Automation Kinetix® Motion Control - and if you need any help with motion control we can arrange for one of our experts to assist.

SCHMALZ

ASSOCIATED PARTNERS

Any robot
any gripper

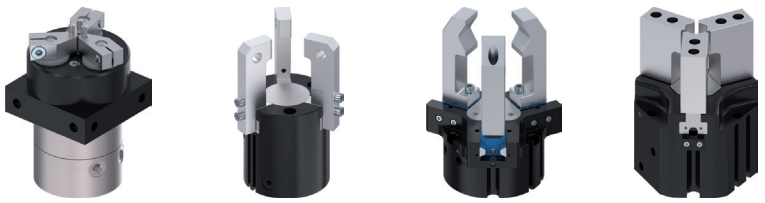
ZIMMER group

Zimmer are a leading manufacturer and their standardised solutions for mechanical and plant engineering are globally recognised. Zimmer's specialities include automation and handling technology, clamping and braking elements and machine tooling.

ZIMMER group

Zimmer's grippers are award-winning.

The pneumatic grippers are rugged, hard-coated, steel-in steel profile guided and offer flexibility to take on any task. The hardwearing grippers support maintenance intervals of up to 30 million gripping cycles. With an IP67 rating, the grippers are suitable for almost all environments.



3-Jaw Concentric Grippers

- Stroke per jaw from 2mm - 6mm
- Gripping forces up to 350N

2-Jaw Parallel Grippers

- Stroke per jaw from 2mm - 6mm
- Gripping forces up to 280N

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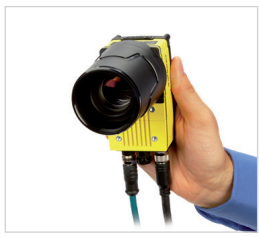
Inspect, identify, detect and guide. **Machine Vision**

COGNEX

Cognex manufacture industrial machine vision systems, software, and sensors. These solutions are used in automated manufacturing to inspect and identify parts, detect defects, verify product assembly, and guide assembly robots.

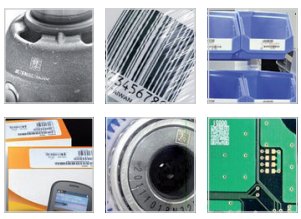
AUTOMATION SOLUTION PROVIDER ASP COGNEX

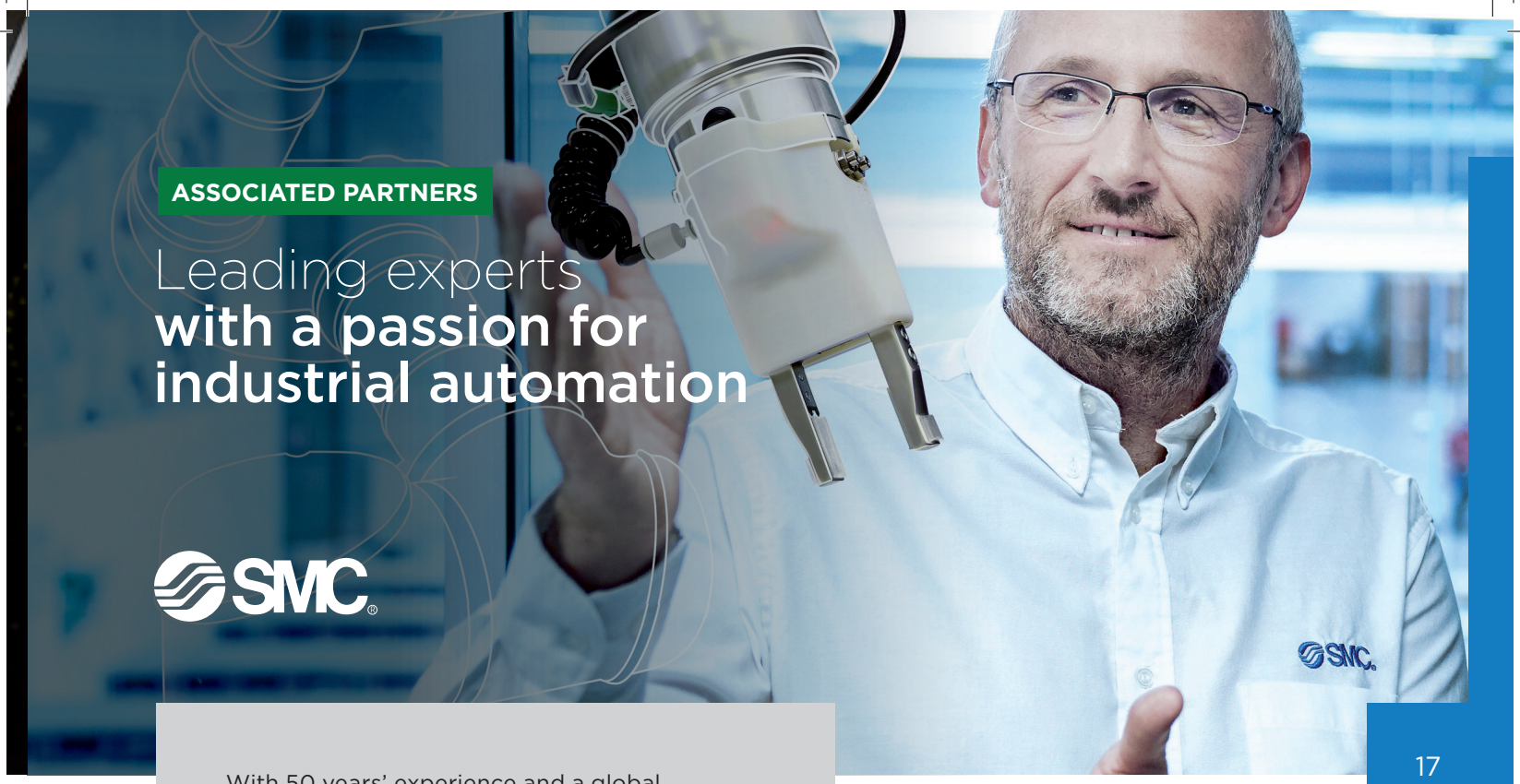
Machine vision is essential in every step of the manufacturing end-to-end process.



Smart Vision Systems combine a camera's ability to take pictures with the processing power of a computer to make decisions about the position, quality, and completeness of a manufactured part or product.

Critically, and unlike other classes of sensors, they can handle multiple inspection points per target. Vision cameras use a combination of tools including pattern, colour and AI to carry out their tasks and output the results directly on ethernet IP using standard Studio 5000 control tags. They can detect specific parts within a very wide region of interest, and can do so dynamically as the part moves along the line ensuring that you have no adverse effects on the manufacturing time of the line.





ASSOCIATED PARTNERS

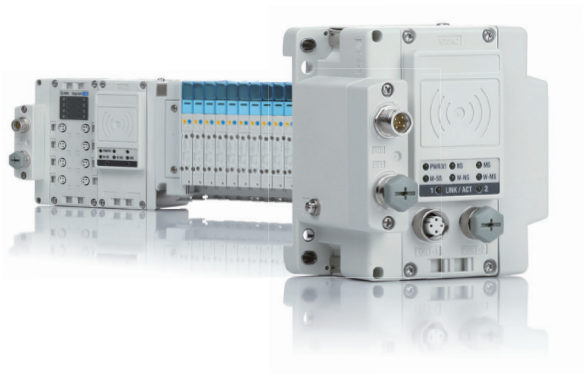
Leading experts **with a passion for industrial automation**

SMC

With 50 years' experience and a global reputation for excellence, SMC continue to invest in new product development initiatives. They aim to continue meeting users' needs with innovative, high-quality products, including cost-effective production and logistics, supported by local engineering expertise.

Building on their market leading pneumatics offer, SMC can support robotic applications through five key ways:

- Innovation - with the world's first integrated wireless valve system
- Speed - achieve precise movement in your robot and increase productivity
- Endurance - designed to endure your robot's movements
- Easy exchange - exchanging tools on your robot arm made easier Miniature - grippers and vacuum products



A modern solution

SMC work closely with businesses in a wide range of sectors to understand their concerns and challenges. This prompted the development of a first-of-its-kind product: the EX600-W.

The EX600-W is a decentralised wireless fieldbus system that bypasses the need for network cables. The system uses the 2.4 GHz ISM frequency band and uses a FHSS across 79 channels in that frequency range, changing channel every 5 ms to avoid interference with other objects and industrial noise.

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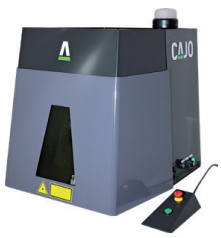
ASSOCIATED PARTNERS

Precise and permanent markings. **Intelligent laser marking solutions**

CAJO

Cajo's cutting-edge laser marking technology and intelligent machine vision solutions are used in more than 70 countries by pioneering industry leaders worldwide.

Integrable solutions



Stand-alone solutions

Device platforms

Dedicated solutions

CAJO

Cajo Technologies Ltd. provides manufacturers with the best and most sustainable product marking solutions on the planet. Cajo's patented technology and intelligent laser marking systems are designed to improve all possible production processes, replacing outdated and wasteful marking methods globally.

Cajo's remarkably cost-efficient lasers and flexible software solutions are available for all industrial marking purposes, covering the needs for traceability, identification, and product markings, with an extremely short payback time.

COST-EFFECTIVE & ADDITIVE-FREE PRODUCT MARKING TECHNOLOGY

PATENTED METHOD FOR MARKING COLOUR

PRECISE AND PERMANENT MARKING ON THE FLY

LEADING **MANUFACTURERS**

Routeco partners with global manufactures offering industry-leading control and automation solutions. Our comprehensive product portfolio ensures customers receive complete solutions from a single provider, making us the trusted choice for all your needs.

Adaptaflex · Allen-Bradley by Rockwell Automation · AMCI Advanced Micro Controls Inc. · APC · Belden

Betaduct A Cablecraft Company · Boardman Transformers · Bussmann by Eaton · CAJO · Cisco

Cognex · Control Station · CoreTigo · Crouse-Hinds by Eaton · Eland Cables

EPLAN · finder Relaying Innovation · Grace Technologies · Guardmaster · Hardy Process Solutions

Hirschmann A Belden Brand · HMS · IBOCO · IXON · Kopex

legrand · LEM · MEDC · Mennekes My Power Connection · molex

MTL Instruments by Eaton · Panduit · Phoenix Contact Inspiring Innovations · PILZ · ProSoft Technology

PULS · RL Red Lion a spectris company · rf IDEAS · Rittal · Rockwell Automation

schaffner More Power to You · SMC · SmartSights · optimize! softing · Spectrum Controls An Allied Motion Company

Stratus · Thomas&Betts · Weidmüller · Westermo · Wittenstein

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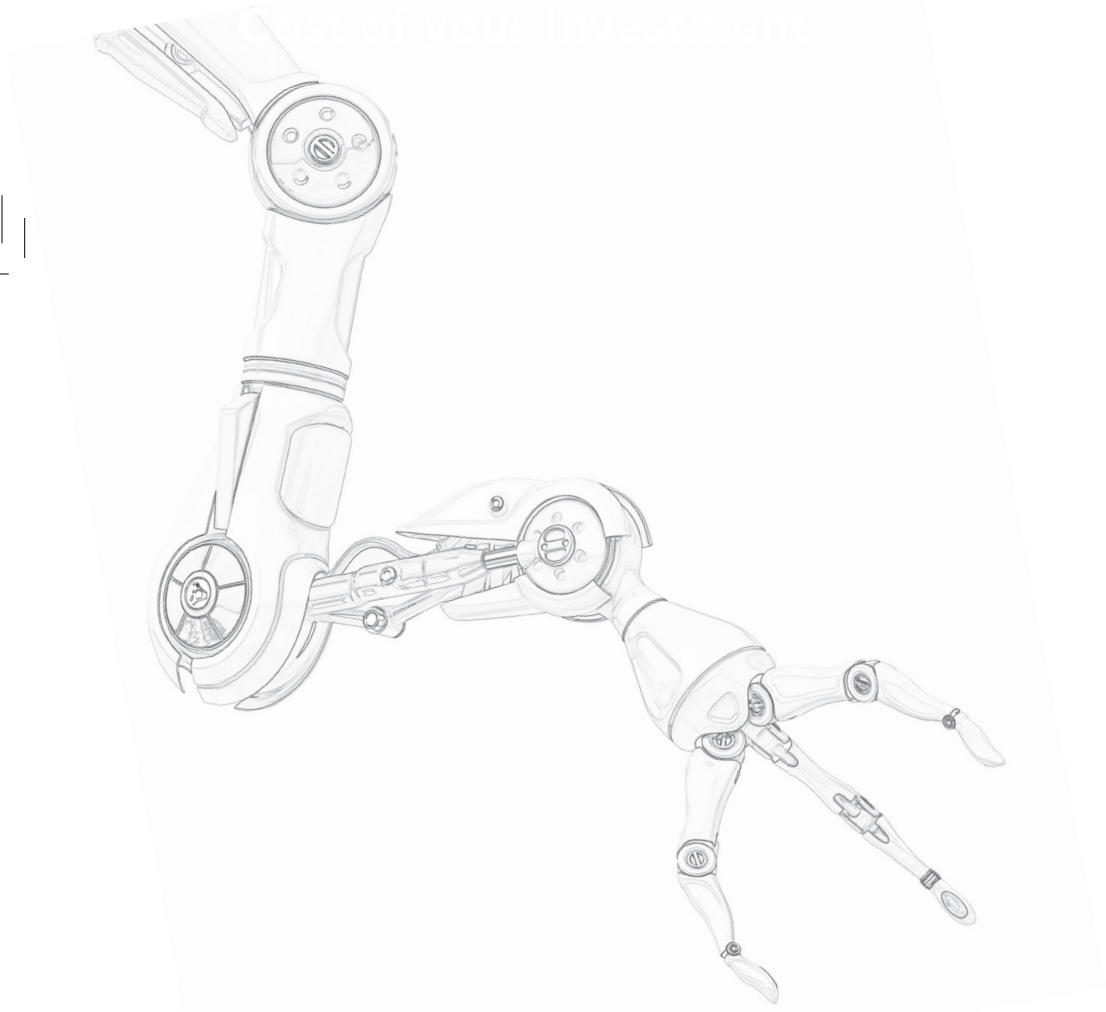

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Cost of **investment**

Factors to consider when evaluating investment in robotics.

It can be daunting to consider all the different factors involved in robotics investment, but we're here to help.

We'll guide you through lifecycle planning and all expenses that need to be considered: from the initial hardware, software, and installation to ongoing operational and maintenance costs.

We'll assess opportunities for you to unlock hidden benefits linked to current Rockwell Automation or existing controls software. Using existing software licences and programming competency is a tangible benefit, rather than requiring different solutions for robotics and controls which could mean several different renewals and ongoing training needs.

Use Routeco's expertise and experience to explore current and future mechatronic projects. We can provide a complete solution which will save time.

Mechatronics offer from Routeco includes:

- Control, motion and safety solutions from Rockwell Automation
- Vision sensing capability through Cognex
- Pneumatic and end of arm technology from SMC, Schmaltz, Zimmer
- Scara, 6 axis and palletising robots - Comau
- Delta robotics - autonox
- Scara, 6 axis and gantry robots - Denso
- Independent cart technology solutions from Rockwell Automation

Notes

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Routeco
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A ROCKWELL AUTOMATION PARTNER

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