Rittal – The System.

Faster – better – everywhere.

FRIEDHELM **LOH** GROUP

Automate. Industrialize. Grow.

Future-proof panel building
and switchgear manufacturing

FRIEDHELM **LOH** GROUP

RITTAL

Because investments
have to make a solid return

"Automation of our processes is
a key element in securing our future."

Maximise value creation sustainably

The demands on many manufacturing companies are
changing: they have to produce more and often also
different product options and always with ever better
quality as well as faster and cheaper. So what does this
major challenge mean for panel builders and switchgear
manufacturers?

For short-term success, it may be enough to mechanise
individual machines and processes. However, medium
and long-term success is only possible by upgrading the
entire process chain.

Seamless **automation reduces processing times** by up to

85%

Automation is the key to future-proofing

The panel building and switchgear manufacturing sector needs comprehensive digitalisation and automation if it is to keep pace with the demands of smart factories and Industry 4.0.

As leading partners to panel builders and switchgear manufacturers, Rittal in association with Eplan offers complete end-to-end system solutions for all processes from a single source.

Powerful allies: Rittal and Eplan

End-to-end digitalisation with knowledgeable and experienced partners
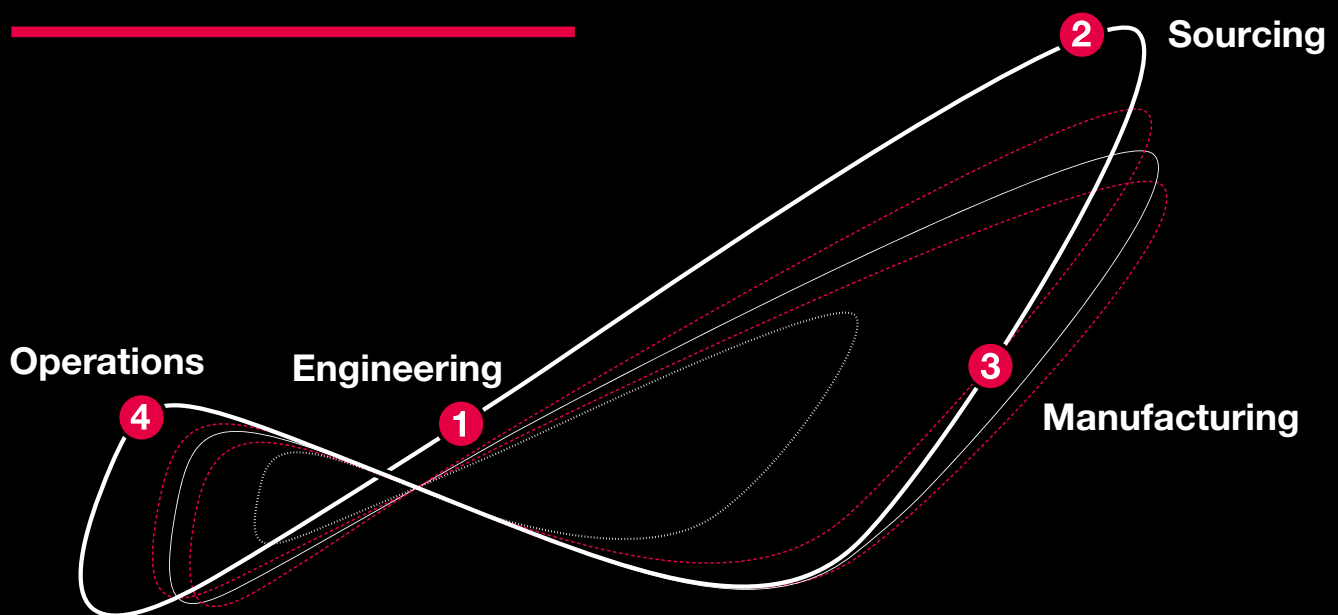
By mechanising and automating manual tasks in panel building and switchgear manufacturing, quality can be improved and productivity increased. The basis for this is digital integration and end-to-end data consistency across the entire value chain.

We optimise and mechanise every stage in your value process, from engineering, purchasing and manufacturing, through to operations and servicing. This leaves you free to actively focus on driving forward your business and positioning yourself for the future.

www.rittal.com/manufacturing

Data continuity and consistency in the value process

Operations

Engineering

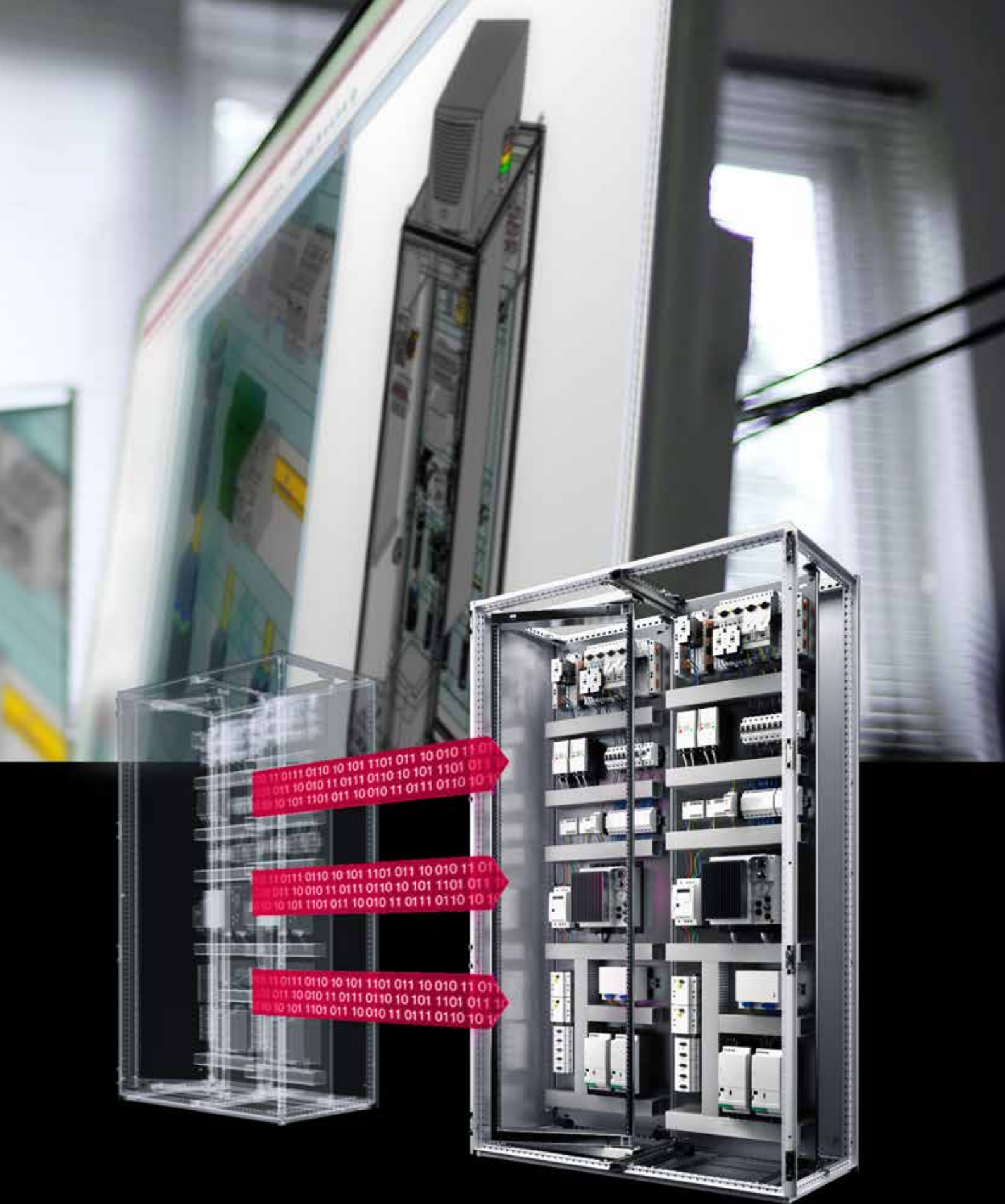Sourcing

Manufacturing

4

1

2

3

Digital prototyping – Digital twin

Plan once –
and profit at every stage

Digital prototyping is the basis for digitalising your engineering processes. Data is transferred to the digital twin of the real product, so that it has all the relevant information available at all times.

The real product is accompanied by its digital twin throughout the process. Streamlined, error-free planning is the key to super-efficient manufacturing. What is more, the digital twin continues to deliver vital information during subsequent operation and in the event of servicing. For the value creation process, this translates into seamless digitalisation, end-to-end automation, and superior, more cost-efficient production results.

www.rittal.com/software

Digitalisation and automation for maximum efficiency

- Up to 85% shorter processing times for rack and enclosure panels
- 10x faster wire processing
- Frees up skilled workers from performing routine, mundane and time-consuming tasks

Engineering

Pre-production

Production

Seamless digital production processes

Consistent optimisation of quality and organisation

In collaboration with Eplan, Rittal offers a seamless digital solution for the efficient management of production and machine orders. This helps to shorten throughput times, reduce errors and significantly reduce throughput times.

- **Planning/design:** The data from the digital twin developed at the design stage is transferred to the job management system in the RiPanel Processing Center via direct interfaces.
- **Pre-production:** The job management system transfers all production-relevant documents to the machine processes for each specific project. This helps to boost planning reliability and optimise your processes.
- **Production:** The data transferred from pre-production is used by the workstations to ensure efficient project management of each specific task.

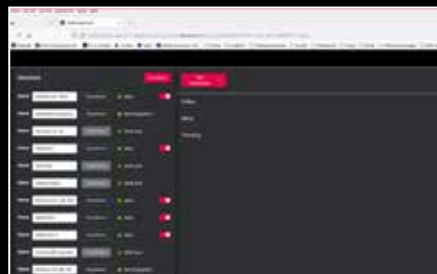Integrating the equipment into the digital processes is a vital step.

From design to manufacturing at the push of a button

Design
The digital twin is developed using Eplan engineering tools and Rittal configurators and includes all production-relevant data.
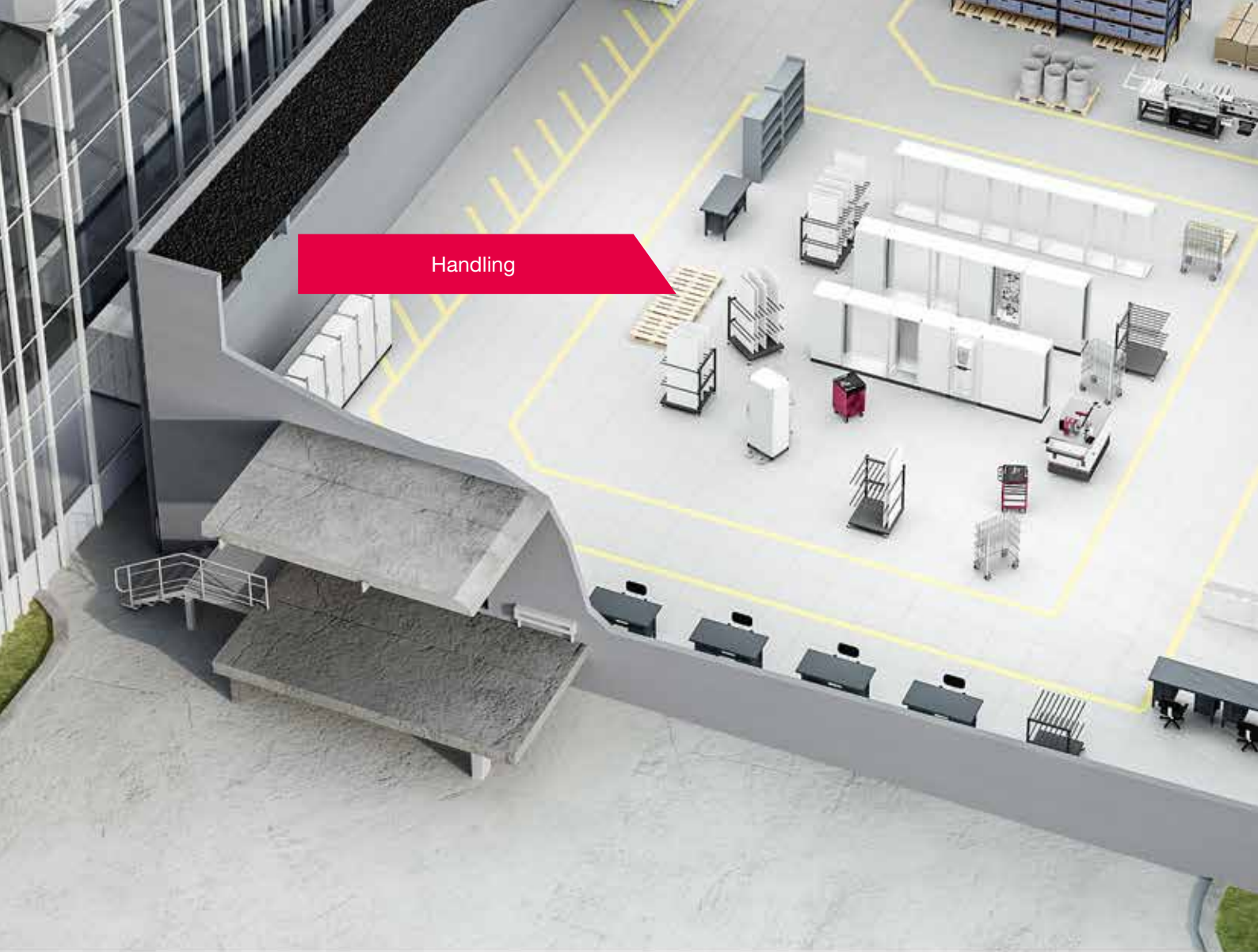

Pre-production
Simple, centralised planning of resources and production orders for manufacturing is carried out using the RiPanel Processing Center with its state-of-the-art order management and layout tool.

Production
The systematic use of digital data in machining and wiring offers a host of benefits and eliminates the need for programming work on the machine.
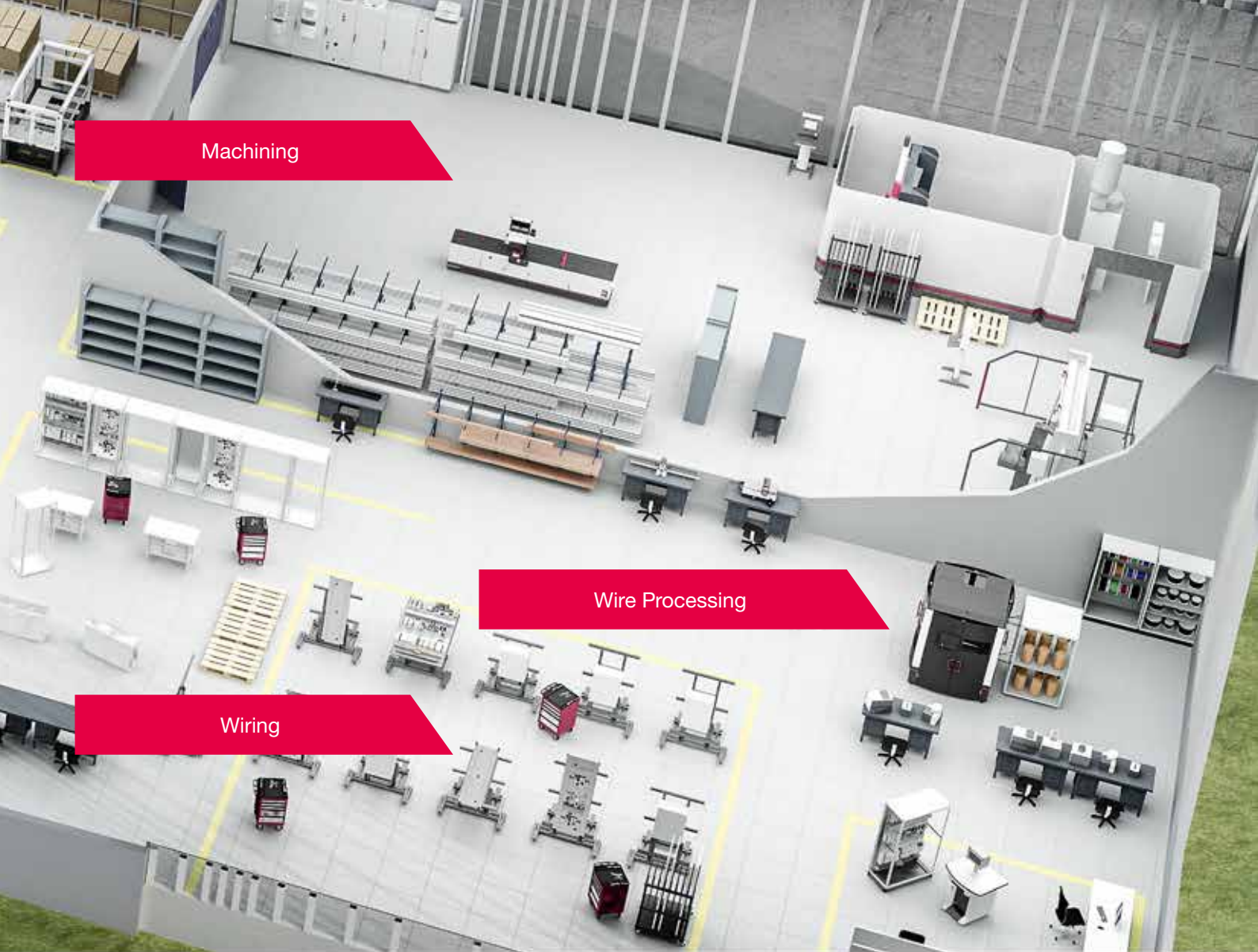
Automating panel building and switchgear manufacturing

Reliable and safe progress, one step at a time

The solutions offered by Rittal Automation Systems cover a wide range of individual processes throughout the entire production operation – from manual tools to fully automated mechanical engineering.

- Our **equipment** for machining metals is fast, precise and highly efficient.
- Our **automated solutions** for wire processing achieve major efficiency gains.
- Our **ergonomic handling tools** streamline a range of processes involved in manual tasks.
- **We offer bespoke advice,** precise-fit solutions and flexible financing options at every stage of your automation upgrade.

www.rittal.com/ras
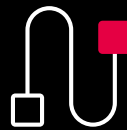
Machining

Wire Processing

Wiring

Automate machining

See pages 12 – 17

Accelerate wire processing

See pages 18/19

Support wiring

See pages 20/21

Aid handling

See pages 22/23

Rittal Automation Systems –

The simple way to automate and mechanise your panel building and switchgear manufacturing.

Machining: Perforex MT drilling and milling centre

Minimise your processing times with maximum precision

Perforex Milling Terminals will significantly accelerate your throughput times when machining anything from the smallest housings and flat panels to large enclosures. These versatile drilling and milling centres are capable of handling all machinable materials, including spray-finished sheet steel and stainless steel as well as aluminium, copper and plastic.

A variety of interfaces support problem-free data transfer from virtually all standard CAD systems and planning tools, such as .dxf, EPLAN Pro Panel, RiPanel Processing Center and Rittal Configuration System. What's more, the RiPanel Processing Center allows you to create layouts directly in the workshop, safeguarding your digital workflow and ensuring high levels of efficiency.

www.rittal.com/automation

Automated machining

With a fully automated tool changer and an integrated magazine for up to 21 tools, all work operations are completed in a single pass.

Profitable even with a batch size of 1

With its simple, intuitive programming and option of remote maintenance, the machining centre guarantees a rapid return on your investment.

Top quality

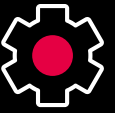A choice of operating modes and automatic tool calibration ensure perfect results every time.

Machining: Perforex LC laser centre

Rapid modifications,
even in stainless steel

Perforex LC laser centres are ideal for automated mechanical modification of standard enclosures in stainless steel, sheet steel and powder-coated metals. Machining stainless steel enclosures is many times faster and there is no damaging of the cut edges. Even small and medium-sized panels can be machined, shortening the amortisation period still further.

What is more, the machining of spray-finished metal panels with intricate contours and mounting plates with tapped holes can be achieved without any visible damage to the paintwork. Contactless, low-vibration 3D laser machining boasts significantly shorter throughput times and enhanced productivity.

www.rittal.com/automation

Highly efficient
Perforex laser centres can machine multiple components in a single operation and from five sides simultaneously, with minimal set-up and operating input.

Thread tapping option
The LC 3030 offers even greater flexibility with six thread sizes in the tool magazine and automatic change-over of the machine head.

Clean process
Fast, wear-free cutting, even in stainless steel, requires no coolants or lubricants and is exceptionally precise, eliminating the need for time-consuming rework.
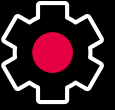
Machining: Secarex cutting centre

Precise length cutting
with reduced wastage

Wiring ducts, support rails and cable duct covers can be precision-cut to size with the Secarex cutting centre. The cutting dimensions can be transferred directly from a CAE system in CSV format (EPLAN Pro Panel) or manually entered. The parts are then quickly and precisely cut to length and labelled on a project-specific basis using the integrated label printer.

The cutting centre includes five DIN rail sizes in one template. This ensures superior cut quality, reduced waste, speeds up the process and significantly lowers overall costs, resulting in financial pay-back after just 130 enclosures per year.

www.rittal.com/automation

The **Secarex is cost-effective** from just

130 enclosures per annum.

Speeded-up processes
Simple data transfer and automated length-cutting of the parts is significantly faster and more reliable than the manual alternative.

Reduced waste costs
Because of smart waste minimisation over several projects, waste costs can be significantly reduced.

Automatic labelling
The integrated label printer automatically produces clear labels for parts after cutting.

Speed up your wire processing: Wire Terminal WT C

Boost takt rate and cycle times and improve processes

Digital wires and fully automated wire processing on the Rittal Wire Terminal means improved efficiency and speed with reduced error rates, enabling you to process increased volumes without additional staff.

- **The Wire Terminal WT C fully automated wiring machine** has a compact design and can automatically assemble up to 36 different wires without manual intervention – optionally with wire ejection, project-specific wire output in labelled wire rails, or as a chain bundle.
- **Use of an optimised, fully integrated, servo-powered crimper solution tailored to this application** supports the production of wires with different wire end ferrule lengths and cross-sections from 0.5 – 6 mm^2 without retooling. The new WT Tube 12 wire store is ideal for simple wire changeovers. The modular system features modern wire routing including wire infeed block with quick-change system and RFID memory.

www.rittal.com/harnessing

The systematic **reduction of manual pre-production work** increases the **process speed** by a

factor of 10

Wire Terminal WT C:
Fully automated wire assembly including length-cutting, wire stripping (full and partial), fitting with wire end ferrules, labelling and project-specific order picking from the dedicated storage system, or as a chain bundle.

Rittal's semi-automatic machines:
Boost your efficiency in the workshop with wire cutting, stripping and crimping.

New: Efficient job management with the RiPanel Processing Center
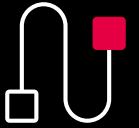
Wiring support

Perfectly streamlined processes down to the last detail

Whether you opt for partially or fully automated wire processing:
Component wiring in the rack or on the mounting plate can be time-consuming. Rittal has developed a series of perfectly coordinated solutions to streamline this process and make wiring more reliable and efficient.

Wires processed on a project-specific basis at the Wire Terminal are easily order-picked for the Wire Cart and transported to the Wire Station wiring bench. The wires are sequentially arranged in the wire rails for simple, intuitive wiring. At the Wire Station, the wires are securely wired using robust, ergonomic hand tools. The EPLAN Smart Wiring digital assistant visually presents every step in the wiring process for superior results and to support staff.

www.rittal.com/smart_wiring

Wiring typically accounts
for **49%**
of the **processing time**
on an enclosure.

EPLAN Smart Wiring:
Digital assistant for clear presentation of
the wiring process, also suitable for use
on mobile output devices

Wire Station:
The mobile and ergonomic wiring table enables
fatigue-free working

Rittal hand tools:
A wide assortment of screwdrivers, pliers, hole
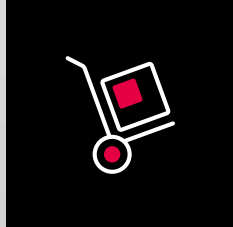punches, cutters and other mechanical tools for
professional results

Simple handling

Clever tools
for ergonomic working

With the right equipment, manual tasks can be considerably simplified, streamlined and speeded up.
That's why we offer a wide range of high-quality and ergonomic bench solutions for machining, assembling, wiring and testing enclosures.

Our ergonomic handling systems for transport and lifting operations make the work for fitters and service personnel easier. They are ideal for transporting materials and tools to the jobsite and can even accommodate very large components.

www.rittal.com/handling

**Ergonomic tools and equipment
can reduce injuries
by up to 57%**

Rittal assembly frames:
With a height- and tilt-adjustable mounting level for efficient, ergonomic machining of mounting plates and enclosures.

Rittal Smart Lifter:
Powerful and sturdy lifting and transport device for easy handling of enclosures and bayed enclosure suites.

Rittal functional trolleys:
Converts from transporter to practical desk by simply unfolding. Extremely stable and rugged.

Rittal storage and transport trolley:
Ideal for storage and order picking, and for easy handling of enclosure panels.

Moving forward together

We offer a range
of financing options

Digitalising and automating your value processes calls for bold decisions and investments, yet it also offers huge potential for cutting costs and boosting efficiency. Seize this potential and chart your course for your digital future.

We can assist you in your investment planning with flexible and customised payment and financing models. You benefit from attractive conditions and options ranging from trade credit to leasing.

www.rittal.com/ras_financing

Benefits of trade credit

- Low liquidity commitment
- Planning security through fixed monthly instalments
- Repayments possible at any time

Payment models between the customer and Rittal		Financing models in association with external financial partners	
Trade credit (instalment plan)*	Direct purchase	Hire purchase*	Leasing*

* Please ask your national company for further details.

Professional servicing for your machines

Service and support
direct from the manufacturers

No-one knows your equipment better than the manufacturers. Regular maintenance of your machines by the Rittal Manufacturer's Service team is the best way to ensure their availability for use, performance and a long service life. Draw on the experience and knowledge of our highly trained qualified service technicians and benefit from dependable production quality and exceptional reliability.

Service agreements – Individual and fully customisable
Everyone's service needs are different. Rittal service agreements allow you to arrange multiple services individually and also combine various service packages, all with fixed, transparent conditions.

www.rittal.com/our-services

	Scope of services included in standard contract	Optional contract package
Maintenance	1 x per year	2 x per year
Availability	Working days (Mon – Fri) 7 am – 5 pm	Every day of the week (Mon – Sun) 24 hours
On-site service	Within 72 hours Including reduced hourly rates	Within 48 hours Including reduced hourly rates
Machine warranty	No warranty extension	+ 12 months
Individual stocking of spare parts	On request	
DXF remote training	One training session	
Software update	As necessary (but excluding hardware/PC or operating system replacement)	

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■ Power Distribution
■ Climate Control
■ IT Infrastructure
■ Software & Services

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Rittal companies throughout the world here.

www.rittal.com/contact

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