



Processing and automation

Blind rivet nuts and rivets easily and efficiently installed

The center of excellence for high-performance fastening technology

KVT-Fastening is an expert for high-quality fastening applications and offers engineering solutions based on the wide product portfolio of the leading manufacturers in the market.



Mechanical engineering | Automotive | Electrical engineering | Energy | Precision engineering | Fluid power | Transportation | Off-shore and Marine | Medical equipment
Aviation and aerospace | Construction industry | Watch manufacturing industry

www.kvt-fastening.com



High-performance solutions from KVT-Fastening are found wherever absolutely safe and secure connections are essential. These small but extremely resilient components play key roles where it matters most – whether in the electronics and energy sector, the automotive and transportation industries, aviation and aerospace, engineering and construction, precision engineering, or medical equipment.

KVT-Fastening does not just supply standard products and individual components, but also provides close and active customer support in the search for ideal solutions, particularly when specific requirements must be fulfilled. This portfolio is complemented by a range of innovative tools and

machines as well as, if needed, the integration into automated serial production workflows.

Ever since 1927, KVT-Fastening has stood for experience, solution-driven know-how, unique expertise in development and consultancy as well as the ultimate in reliability. Since December 2012, KVT-Fastening is a member of the Bossard Group. Bossard is a leading provider of intelligent solutions for industrial fastening technology. The range includes global sales, technical consulting (engineering) and logistics of fastening technology components and bolts. Customers benefit from the extension of competencies in industrial fastening technology and from an optimally enhanced product or service portfolio.



Ergonomic, reliable and time-saving – simple and efficient installation

With a wide range of hand tools and fully-automatic systems, KVT-Fastening offers the appropriate processing system for installing blind rivets, speed rivets and blind rivet nuts.

The hand tools in the form of rivet guns and suspended tools permit both vertical and horizontal assembly positions. The aim is an ergonomic and thus less-tiring and time-optimised working. The riveting units are designed for use in the riveting stations and for integration into fully-automatic applications. The systems fulfil the requirements

for gentle, shock-free riveting. System components for hand tools, process control systems and multiple riveting systems offer upgrades for existing systems.

Advantages

- Time-saving
- Improved quality
- Cost reductions
- Fasteners and installation technology
- Fasteners and system from one source
- Overall service (also on-site service)

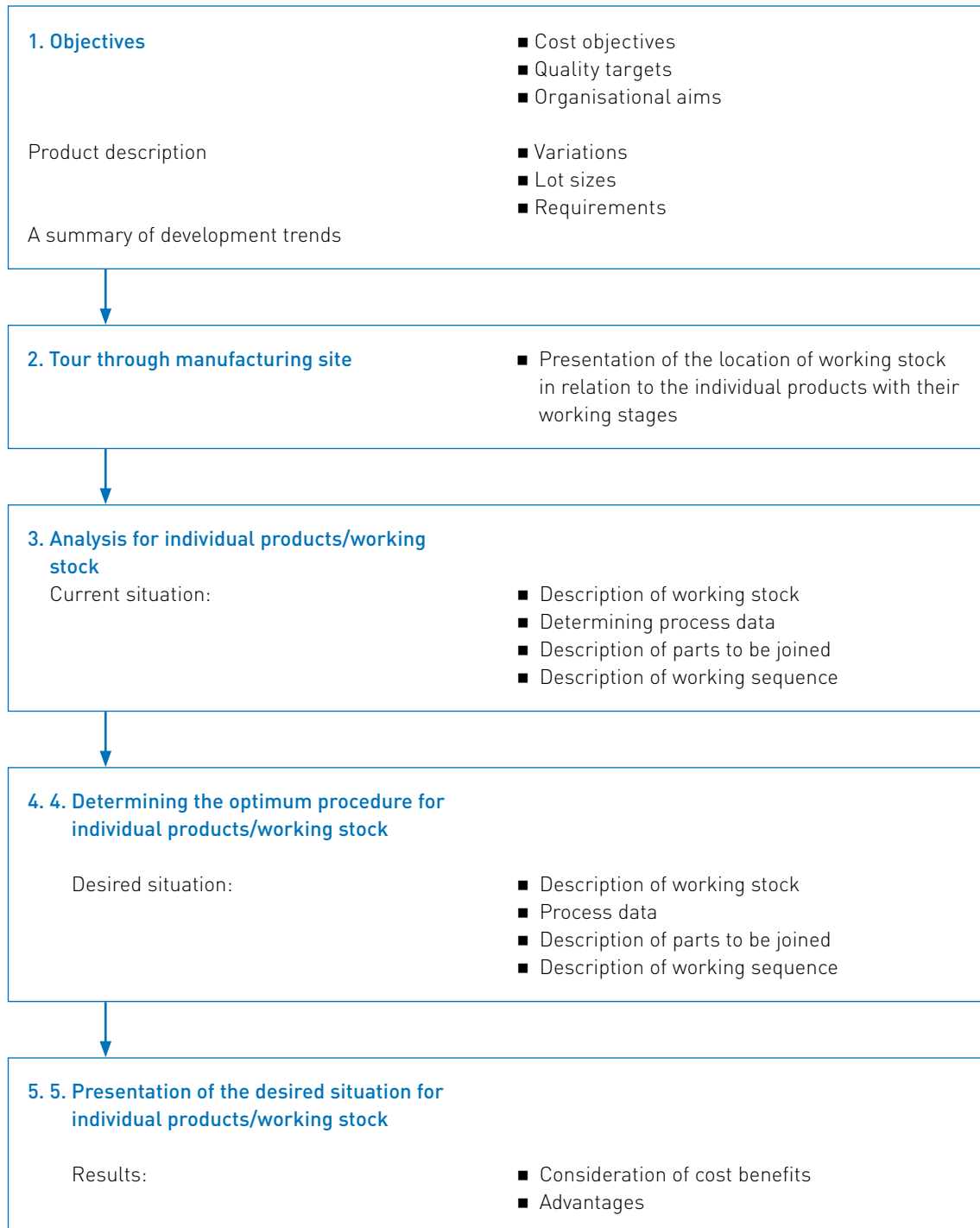


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Process optimising

Procedure for optimising production processes in fastenings



Range of services

For the fastening systems ...

- speed rivets
- blind rivets
- blind rivet nuts

... we offer the ideal assembly solution

- Process monitoring systems
- Special hand tools
- Handling technology
- Hand workstations
- Multiple rivet stations
- Automatic rivet systems
- Equipment manufacture
- Assembly systems



Hand tools

Rivet tool type HTB 700 for blind rivets

The HTB 700 rivet tool has a separate pneumatic-hydraulic pressure intensifier. The riveting tools are thus considerably lighter and consequently more efficient in handling.

Technical data	
Setting stroke	30 mm
Operating pressure	6.0 bar
Air consumed	5.7 l free air / cycle at 5.5 bar
Hose length	3.000 mm
Suitable for	all normal types of blind rivets



Hand tools



Suspended tool type HTB 500 for blind rivets

The blind riveter HTB 500 is the first suspended riveter for vertical applications. It is a hydraulically-operated tool for soft and reliable riveting. The pneumatic control and pneumatic-hydraulic pressure intensifier and the mandrel collector are mounted in a separate supply unit. The trigger is integrated in the ergonomic handle at the barrel.

Advantages

- Simple positioning of the riveting tool
- Time saving operation of the riveting tool
- Ergonomic handling for vertical installation positions
- Automatic switch-off of the mandrel collector.

Technical data	
Setting stroke	24 mm
Operating pressure	6.0 bar
Air consumed	5.7 l free air / cycle at 5.5 bar
Hose length	3.000 mm
Suitable for	all normal types of blind rivets



Hand tools



Suspended tool type HTS 500 for speed rivets

The HTS 500 speed riveter is a hydraulic riveter for gentle, shock-free riveting. The pneumatic control and the pneumatic-hydraulic pressure intensifier are mounted in a separate switch box. The trigger is integrated in the ergonomic handle at the barrel.

Advantages

- Gentle and shock-free riveting
- Simple positioning of the riveting tool
- Time saving operation of the riveting tool

On request with linear stand

Technical data	
Pulling force	3.9 kN (5.5 bar)
Operating pressure	5.0 – 7.0 bar
Air consumed	5.7 l free air / cycle at 5.5 bar
Hose length	3.000 mm
Suitable	speed rivets Ø 2.4 up to 4.8 mm



Hand tools

Rivet station type HTS 530 for speed rivets

The HTS 530 speed riveter is a hydraulic tool used for gentle, shock-free riveting. The pneumatic control and the pneumatic-hydraulic pressure intensifier are mounted in a separate switch box. The riveting process is started by using the foot pedal. Its modular design permits its integration with existing installation tables according to production requirements.

Advantages

- Gentle and shock-free riveting
- Simple positioning of the components
- Automatic function of mandrel clamping by using the protection flap
- Time saved by pure component handling
Integration with existing installation tables

Optionally the ETS 200 frame can be used and the HTS 530 speed riveter can be extended to a complete mini-rivet station.

Technical data	
Pulling force	3.9 kN (5.5 bar)
Operating pressure	5.0 – 7.0 bar
Air consumed	5.7 l free air / cycle at 5.5 bar
Suitable	Speed rivets Ø 2.4 up to 4.8 mm



Hand tools

Rivet tool type HTS 601/HTS 602 for speed rivets

The hydro-pneumatic speed riveters HTS 601 and HTS 602 were developed with particular regard to ergonomic and functional aspects for operation in speed rivet systems. The guns are characterised by their lightness and very high speed of operation. Due to their modular design, they are very easy to service.

The newly-designed system is even more efficient at absorbing shocks and protects the mechanical parts. This results in a longer service life and longer service intervals. A further advantage is a reduction in sound levels when riveting.

Advantages

- Ergonomic design
- Light in weight
- Robust design
- Longer service life
- Longer service intervals
- Quiet in operation



HTS 601



HTS 602

Technical data	HTS 601	HTS 602
Weight	approx. 1.95 kg	approx. 2.35 kg
Stroke	30 mm	30 mm
Cycle time (approx.)	1.0 second	1.0 second
Operating pressure	6 bar	6 bar
Free air per rivet cycle	1.5 l	2.0 l
Suitable for	AL-speed rivets up to Ø 4.8 mm ST-speed rivets up to Ø 4.8 mm VA-speed rivets up to Ø 4.0 mm	AL-speed rivets from Ø 5.0 mm ST-speed rivets from Ø 5.0 mm VA-speed rivets from Ø 4.8 mm

AL: aluminum, ST: steel, VA: stainless steel

Rivet modules



Rivet module type MTB 105 for blind rivets

The hydraulic MTB 105 blind rivet module is characterised by its compact and robust design. It was conceived for use in rivet stations with single or multiple riveting and for fully-automatic applications. Normal blind rivets of diameters from 2.4 mm up to 6.5 mm can be installed.

Advantages

- Compact and robust design
- Easily integrated in rivet stations and automatic riveters
- Rivet spacing of 50 mm possible

On request also for speed rivets



Technical data	
Hydraulic system pressure	max. 320 bar
Operating pressure pneumatic	6 bar
Stroke	max. 21 mm
Weight	approx. 1.2 kg
Hydraulic oil	DIN EN ISO 6743-4 HLP68
Oil volume	16 cm ³
Sound level	75 dB(A) at 1 m distance

Rivet modules



Double rivet module type MTB 110 for blind rivets

The hydraulic MTB 110 blind rivet double rivet module is characterised by its compact and robust design. It was conceived for use in rivet stations with multiple riveting and for fully-automatic applications. Normal blind rivets of diameters from 2.4 mm up to 6.5 mm can be installed.

Advantages

- Compact and robust design
- Easily integrated in rivet stations and automatic riveters
- Rivet spacing down to a minimum of 15 mm possible

Rivet spacing according to customer specification
Also available as 4-head blind rivet module



Technical data	
Hydraulic system pressure	max. 245 bar
Operating pressure pneumatisch	6 bar
Piston stroke	max. 25 mm
Weight	approx. 20 kg
Hydraulic oil	DIN EN ISO 6743-4 HLP68
Oil volume riveting stroke	32 cm ³
Oil volume return stroke	49 cm ³
Fixed rivet spacing	min. 15 mm
Fixed rivet spacing	max. 31 mm

Handling technology

Linear tool stand type ETS 101

The ETS 101 linear tool stand can be used at all assembly workstations where an easy and precise handling of riveting tools is required. Due to the linear guide, tilting of the riveting tool is not possible and the rivet cannot be installed on the skew in the component.

Using the integrated clamping, if required the individual linear movements can be locked. This is an advantage when the riveting tool is being serviced or repaired.

Advantages

- More simple positioning of the riveting tool
- Precise vertical guidance for the riveting tool
- Avoidance of bad rivet setting due to tilting the riveting tool
- Time saved in handling the riveting tool
- Improved servicing and repair possibilities due to integral clamping

On request to carry a heavier load

Technical data	
Working radius	220 mm to 590 mm
Stroke	650 mm
Height	1.150 mm
Carrying capacity	2.5 kg to 4.0 kg
Mount	Ø = 20 mm



Handling technology

Turntable type ETS 110

The riveting tools used with tool stands are rigidly fixed in a vertical position and only permit reloading in this position. In most cases, the riveting tools have to be pulled over the edge of the table at the workstation to ensure the mandrels are accessible when reloading takes place. This handling restriction is optimised through the use of an ETS 110 turntable developed for the purpose.

Description

The turntable can be adapted to all riveting tools used with linear tool stands. As a result the operative can reload the riveting tool in a horizontal position directly above the working area. Furthermore, clamping the mandrel is carried out automatically by an integrated end-stop switch. By releasing a plunger the riveting tool can be rotated from the vertical by 90° into a horizontal position.

Advantages

- Ergonomic positioning simplifies reloading of the riveting tools
- Improved view for reloading the riveting tools
- Automatic operation of the mandrel clamping
- Tool stands can be placed in any position
- Time saved due to simplified handling



old reloading position and rivet position



new reloading position

Handling technology

Arrangement system type ETS 20

The ETS 20 arrangement system was developed for the storage of riveting equipment for speed rivet systems. It can be fixed to all existing installation tables and makes tidy and direct access possible to mandrels, mandrel springs and nose-pieces.

Advantages

Immediate and direct access to riveting equipment at the workstation

Technical data

Dimensions: 260 x 600 mm (B x H)



System components

Rivet presenter type FSB 100 for blind rivets

The FSB 100 rivet presenter was developed to present blind rivets in the correct position at assembly stations. Its position can be flexibly selected in the immediate vicinity of the working area. In a pick-and-place procedure the handheld unit is placed in the rivet transfer and automatically the blind rivet is transferred. The rivet presenter can also be used in automatic processes in which rivet tools are integrated into production lines.

Technical data

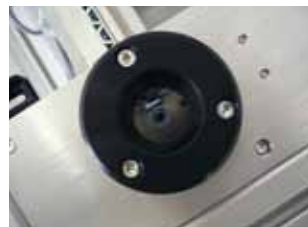
Dimensions: 480 x 400 x 985 mm (B x D x H)
Lockable casters



Rivet presenter FSB 100



Swivelling conveyor for sorting and separating



Rivet transfer unit, integral or separate

Process control system

Mandrel counter type CTB 80 for blind rivets

The CTB 80 mandrel counter is used in monitored assembly processes and is mounted on the riveting tool. It is characterised by its compact and robust design. The mandrel tails are reliably counted before they reach the collecting box. In conjunction with the optional RD 500 process control system assessment and counting of the mandrel residues is also available.

Advantages

- Compact and robust design
- Simple to install



Process control system type RD 500

Monitoring assembly processes in riveting technology

The RD 500 is a modular and compact process control system for the processing of a wide range of rivet elements and can be used for all normal riveting tools. The riveting tools used can optionally be fitted with the necessary counting sensors. The control system monitors the current assembly process and prevents faults occurring. The uses for the RD 500 process control system range from the handheld riveting tool to semi-automated riveting machines.

The RD 500 process control system is connected to the riveting tool sensors with a plug-and-socket connection on the housing and assesses for instance the number of rivets to be set. On correct installation, a component can be unlocked or the compressed air feed to the riveting tool shut down. This enables simple assembly operations at manual workstations to be checked subsequently. The appropriate counting sensors for your riveting tool are also available from us.

The bottom line is that our process control prevents product defects, assures your quality standards and thus saves substantial costs.



Process control systems

Process control system type RD 700

Insertion control with documentation

The RD 700 is a modular and compact process control system for the setting of the widest variety of riveting elements and can be used in all conventional riveting tools. The sensors will determine the level of force applied and the travel of the piston and transmit these via a plug-in cable connection to the assessment electronics. Your existing riveting tools can naturally be retrofitted with our sensors. The possible uses of the RD 700 process control systems range from handheld riveting tool to partial- and fully automatic riveting machines. The RD 700 permits for the first time process control independent of manufacturer, enables a production of constant high quality and if required documentation which can be tracked.

The process control system comprises the sensor, which is fitted to your riveting tool with an adapter designed for the tool, and separate evaluation electronics. Riveting tool and sensor are designed to be separate units. This enables the sensor to be flexibly integrated into the production and guarantees the simplest of handling for the mechanical components of the riveting tools when servicing and maintenance is needed. Maintenance can still be carried out independently.

This version of the evaluation electronics is made up of the evaluation module itself with display and an acknowledgement module. Individual workstations can be fitted up quickly and inexpensively. It is possible to lock components and only to release them by acknowledgement using a key-switch. This means that faulty parts can immediately be removed from the running production line, and they do not move on for further processing.

Characteristics of the sensor system:

- Independent of manufacturer
- Lightweight
- Robust casing
- Available for all types of rivet technology, such as blind rivets/speed rivets/blind plugs/rivet nuts

Characteristics of the evaluation electronic:

- With display or as switch cabinet version without display
- Profibus-connection for control communication
- Ethernet connection to the PC world for convenient parametrising and process data storage
- Envelope- and window evaluation

The bottom line is that

our process control prevents product defects, assures your quality standards and thus saves substantial costs.



Sensor system



Evaluation electronics

Rivet stations

Modular programme of the rivet and assembly technology

The modular building kit assembly station

The assembly station shown was constructed to the customer's special requirements. It was made up of standard assembly components. Expenditure on specially-designed component seating is reduced to a minimum. This building kit principle enables swift completion times and economic individual solutions. The project planning is simplified and transparency for investment considerations is created.

Advantages

- Quick and reliable processing
- Can be optimised to suit the customer
- Compact and ergonomic design

On request



Rivet stations

Rivet station type RMB 309

Reducing assembly time

When using the multiple rivet station RMB 309, assembly times can be reduced by up to 40 % compared with traditional working procedures using handheld riveters (see table below).



Characteristics and advantages

- Quality enhancement with multiple riveting
- Hands free for manipulating components
- Increased productivity = reduction in costs
- Extremely high process reliability
- Good integration in production lines
- Good reusability
- Simple, modular construction
- Compact design

Sample productivity increase calculation*

Working stage	Hand riveter	RMB 309
Pick up component	1 x 3 sec. = 3 sec.	1 x 3 sec. = 3 sec.
Pick up riveter	1 x 1 sec. = 1 sec.	not required
Place rivets	9 x 2 sec. = 18 sec.	9 x 2 sec. = 18 sec.
Clamp component	not required	1 x 2 sec. = 2 sec.
Guide riveter	9 x 1 sec. = 9 sec.	not required
Take out rivet and riveting	9 x 2 sec. = 18 sec.	1 x 2 sec. = 2 sec.
Unclamp component	not required	1 x 2 sec. = 2 sec.
Lay down riveter	1 x 1 sec. = 1 sec.	not required
Stack component	1 x 3 sec. = 3 sec.	1 x 3 sec. = 3 sec.
Total	53 sec.	30 sec.

* Time saved per workpiece 23 sec. Δ approx. 43 %

Automatic riveters

Robot cabinet type RRB 500

Using the robot cabinet RRB 500 with integrated suspended tool HTB 500 and rivet presenter FSB 100 different component versions can be riveted automatically even in small lots. The robot cabinet is of modular design and is available in three basic sizes. The modular equipment can be quickly and easily fitted in the robot cabinet as exchange plates. The exchange plates are also available as an option. Processing of the blind rivets follows the pick-and-place system. The robot has six freely-programmable axes and can perform riveting operations on the component in different directions.

Advantages

- Fully-automatic operation
- Time-saving
- Quick and easy conversion for other applications



Robot cabinet RRB 500 with suspended tool HTB 500 and rivet presenter FSB 100

Hand tools



Suspended tool type HTI 500 for blind rivet nuts

The blind rivet nut unit HTI 500 is the first suspended riveter for vertical applications. It is a hydraulically-operated tool for soft and reliable riveting. The pneumatic control and pneumatic-hydraulic pressure intensifier are mounted in a separate switch cabinet. The trigger is integrated in the ergonomic handle at the barrel. Left-hand rotation to reverse the drive screw can if required be actuated by a separate switch.

Advantages

- Gentle and reliable riveting
- Simple positioning of the riveting tool
- Time saving operation of the riveting tool
- Ergonomic handling for vertical installation positions

With linear stand on request



Technical data	
Setting stroke	up to 10 mm
Operating pressure	6 bar
Air consumed	5.7 l free air / cycle at 5.5 bar
Hose length	3.000 mm
Suitable for	blind rivet nuts M3 to M10

Rivet modules



Rivet module type MTI 100 for blind rivet nuts

The hydraulic blind rivet nut rivet module MTI 100 is characterised by its compact and robust design. It was conceived for use in rivet stations with single- or multiple riveting and for fully-automatic applications. All normal blind rivet nuts from M3 to M10 can be processed.

Advantages

- Compact and robust design
- Easily integrated in rivet stations and automatic riveters
- Rivet spacing of 50 mm possible

Other designs available on request

Technical data	
Hydraulic system pressure	max. 250 bar
Weight	approx. 1.5 kg
Piston stroke	max. 10 mm
Piston working surface	1100 mm ²
Hydraulic oil	DIN EN ISO 6743-4 HLP68
Oil volume	7.70 cm ³
Speed	2.320 U/min

Process control system type RD 700, see page 20, can also be used for this rivet module.



System components

Rivet presenter type FSI 100 for blind rivet nuts

The FSI 100 rivet presenter was developed to present blind rivet nuts in the correct position at assembly stations. Its position can be flexibly selected in the immediate vicinity of the working area. In a pick-and-place procedure the handheld unit is guided to the rivet transfer and the blind rivet nut placed on the spindle. The rivet presenter can also be used in automatic processes in which rivet tools are integrated into production lines.

Technical data

Dimensions: 480 x 400 x 985 mm (B x D x H)

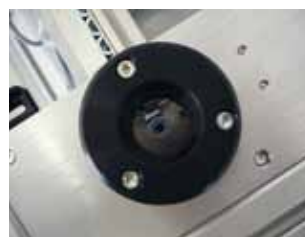
Lockable casters



Rivet presenter FSI 100



Swivelling conveyor for sorting and separating



Rivet transfer unit

KVT-Fastening – Fastening technology



Blind rivet nuts



Blind rivet technology



Thread inserts



Self-clinching fasteners



Stud welding systems¹⁾



Lock nuts



Bonding fasteners



Access solutions



Quick fastening elements and clips



Quick release pins and spring plungers



Adhesives and sealants¹⁾



Construction fasteners²⁾



Special processes²⁾



Plugs



Pressure intensifiers³⁾



Installation technology



Quick connectors⁴⁾

Fastening, sealing and flow control solutions for complex applications

The extensive KVT-Fastening portfolio offers optimal solutions for your most challenging applications. The products included in this catalog represent only a selection from our entire product portfolio. Upon request, we will be pleased to provide additional information or an individual consultation to you.

Intelligent logistic systems

Bossard SmartBin and SmartLabel are intelligent logistics systems which monitor stock with total reliability and ensure stock replenishment automatically. An online system transmits the data to our server, and this – if necessary – triggers an order. These systems ensure quick and easy availability of C-parts while production is running.



Logistic systems

Competent analysis for efficient solutions

KVT-Fastening's highly qualified experts analyze the given task at hand. Based on this sound understanding of the project, they then develop ideal solutions that are economical, efficient, and safe.



Solutioneering

For more information about our range of products and order at our E-shop, please visit www.kvt-fastening.com

¹⁾ Not available in Germany. ²⁾ Only available in Switzerland. ³⁾ Not available in Switzerland. ⁴⁾ Not available in Austria.

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