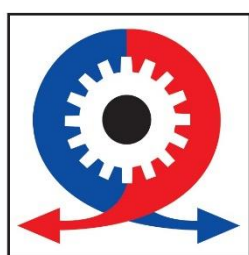
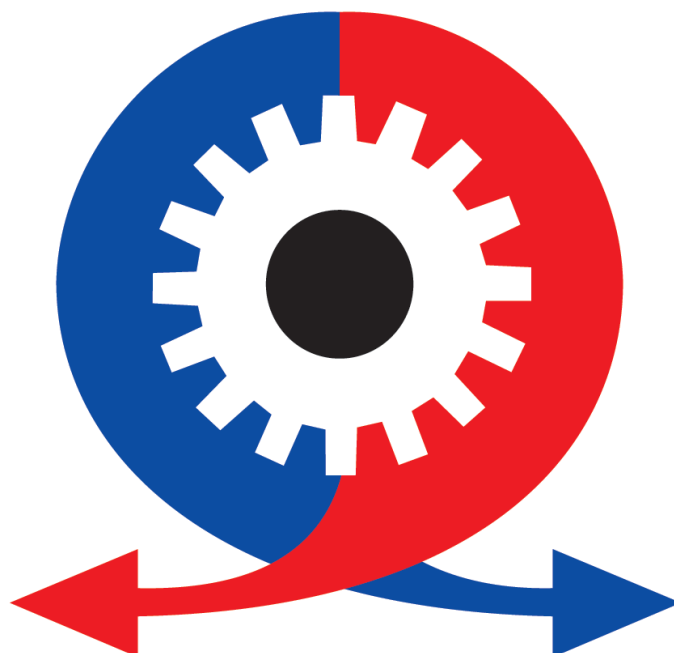


LIST OF NOVELTIES

registered up to 20th September 2019



MSV 2019



October 7–11, 2019
www.bvv.cz/msv

100% Rework s.r.o.

CZ – Brno

PAV F 030

■ Technical cleanliness

Technical cleanliness is one of the basic standards required by the representatives of advanced industrial branches, where contamination strongly affects specific characteristics of products that may have an impact on safety, functionality, reliability, life and quality.

Area of application

Automotive industry • pharmaceutical industry • electrical engineering • production of medical devices, etc.

Customer benefits

Reduction of failures during assembly or operation to minimum • reduction of costs on production dropouts, maximum reduction of the waste rate

ADASH spol. s r.o.

CZ – Ostrava

PAV C 057

■ VA5 Pro Vibration Analyzer

A four-channel vibration analyzer with a thermal imaging camera

Area of application

Machine maintenance • servicing • planning of repairs • detection of failures

Customer benefits

Comprehensive information about the operation condition of the machines • reduction of the number of unplanned machine drop-outs to minimum

Advantage-fl.cz s.r.o.

CZ – Praha

PAV F 086

■ OTEC SF2

A stream finishing machine – deburring, rounding, smoothing with automatic workpiece exchange

Area of application

Industrial production • surface finishing

Customer benefits

- The machine ensures a perfect surface finish and high gloss.
- It complies with the high standard of process reliability, fastness and quality required by large-scale production.
- SF offers short process times, simple automation and safety of the process.

■ OTEC CF 18

A rotating disc-based machine for fine surface finishing

Area of application

An efficient procedure for final treatment in a mass scale

Customer benefits

The effect of centrifugal forces acting on the workpiece and the abrasive material generates a very intensive machining process that can be up to 20 times more efficient than traditional vibrators. In a wet machining process, a mix of water and compound taking off the residual removed material is added and extracted continuously. This guarantees a clean and non-corrosive surface of the work pieces.

■ [ALICONA Infinite Focus G5 s Pick&Place](#)

A high-precision, fast and flexible instrument for the measurement of shape and surface roughness. Along with the Pick&Place, an automation solution by Bruker Alicona, you can set up the entire automation process in ten minutes. The optical measuring systems is extended by a robot arm for automatic picking, placing, measuring and sorting of parts.

Area of application

- The range of measurable surfaces is nearly unlimited.
- Measuring can be done with high resolution, high repeatability and precision.
- Optional connection to the existing production systems including ERP facilitates adaptable production planning.

Customer benefits

- Repeatable optical 3D measuring at a high resolution used in production provides for final quality control and sorting of the measured samples to OK and NOT OK.
- A very simple setting of automated measuring tasks in three steps with no need for the operators to know programming.

ALTEG Bohemia s.r.o.

CZ – Poděbrady

PAV A2 033, 054

■ [AA2200 Automatic strapping machine by Reisopack for vertical strapping](#)

Automatic and semi-automatic strapping machine for pallets of both standard and non-standard dimensions

Area of application

Material handling • transport

Customer benefits

Fixing of products on pallets • packaging of final products

■ [ACF - sensitive flange for robotic grinding](#)

A sensitive flange controlling the pressing force of the grinding tool and copying the part surface for robotic grinding

Area of application

Robotic grinding of welds • grinding of products made of metal sheet, weldments, laminate, carbon • grinding of primary paints under final layers

Customer benefits

It facilitates the programming of robot trajectories and the possibility to define the pressing force offers a range of applications from rough weld grinding, surface grinding, paint grinding up to the polishing of final surfaces in a high quality.

■ [AIRSKIN](#)

A modular system for the detection of contact with a robot arm or movable part of a machine. At the contact with an operator the robot or the moving part of the machine will stop.

Area of application

Increasing the safety of moving parts of machines and robots

Customer benefits

Increasing the safety of persons and machines in the area of collaborative automation • additional equipment for the original machines

■ [ErgoPack 726E X-pert Line](#)

ErgoPack 726E – an ergonomic pallet strapping system with a reinforced electrical drive controlled by a joystick, Siemens touch screen and intuitive user interface • battery power supply • you can choose the fastening force, sealing time, pallet width, etc. on the touch display.

Area of application

For a safe, comfortable and ergonomic strapping of pallets of different sizes, in the ideal straight-up working position, without any running around the pallet. Using a patented system of a guiding chain taking the strapping under the pallet and then upwards to the operator's hand on the other side.

Customer benefits

- ErgoPack is ergonomic: no bending, no running around the pallet, reducing the risk of injury and preventing long-term back problems
- simple operation, fast personnel training
- high safety level for the users
- no accidents reported for the 10,000 system delivers so far all over the world
- safer strapping, higher profitability, efficiency and time saving!
- awarded the gold medal at the International Exhibition of Inventions in Geneva and the AGR Quality Seal for extraordinarily ergonomic products

■ ErgoPack Air 726-580

An ergonomic strapping system for high standing pallets. Battery power supply. Automatic detection of the pallet width by ultrasound sensors.

Area of application

For safe, comfortable and ergonomic strapping of high standing pallets, in the ideal straight-up working position, without any running around the pallet. This is facilitated by a patented floating system of a guiding chain, adjustable up to 580 mm in height. For the strapping of pallets on conveyors, lifting tables and high-lift trucks.

Customer benefits

- ErgoPack is ergonomic: no bending, no running around the pallet, reducing the risk of injury and preventing long-term back problems
- simple operation, fast personnel training
- high safety level for the users
- no accidents reported for the 10,000 system delivers so far all over the world
- safer strapping, higher profitability, efficiency and time saving!
- at the International Engineering Fair Brno 2017 the ErgoPack Air 740-580 was awarded a Gold medal in the category of Innovations in Transport and Logistics
- awarded the AGR Quality Seal for extraordinarily ergonomic products

ARC-H a.s.

CZ – Plzeň

PAV G2 056

■ KEMPPI MasterTig of a new generation

A welding source for TIG – AC/DC welding with innovative functions

Area of application

Professional TIG welding of all structural steels, corrosion resistant steels and non-ferrous materials.

Customer benefits

The MasterTig of a new generation for AC/DC and TIG welding sets up new standards for weld quality, usability and energetic efficiency • a full colour 7" TFT control system • WeldAsist function for the setting of welding parameters, etc.

■ KEMPPI GAMMA GTH3

A new innovative welding helmet with the maximum protection level and comfort for the welder.

Area of application

The highest comprehensive protection in welding works and grinding – TH3

Customer benefits

Life+Color display for better visibility with self-darkening filters DIN 5-15 • the best respiratory protection TH3 for maximum safety • LED lights for a better orientation in enclosed areas

■ **JVL servo motor**

An intelligent motor drive with an integrated servo unit straight in the servo motor body, supporting the following communication protocols: PROFINET, EtherNet/IP, POWERLINK, EtherCAT, sercos and CANopen • encoder resolution 409600 pulses/rev • safety function STO SIL3, protection IP66

Area of application

For single-purpose machines, in the automotive industry, mechanical engineering, packaging machines and other areas

Customer benefits

Higher production productivity, precision and high repeatability

■ **Beijer Electronics frequency inverter, BFI-E3 series**

A standard product line with a high protection IP66 ensuring dust-proofness and resistance against intensively spouting water • intuitive control by means of a built-in parametrization unit • integrated noise filter that can be disconnected • Modbus RTU and CANopen communication as standard

Area of application

Food processing • wood working • conveyors • bottle filling • heating • removal of contaminated water • packaging machines • ventilation and air-conditioning.

Customer benefits

Thanks to the IP66 protection class, the control panel may be placed on the wall

BBI Int., a.s. – SmartKeeper

■ **Professional Port Lock Key**

A product out of the family of hardware safety locks for Smartkeeper computer ports. This special lock with an individual pattern is designed to unlock nearly all SmartKeeper locks. We can design various lock patterns for systematic lock control.

Area of application

Physical security of computers, servers, switches, routers and other network devices. Hardware protection of production technologies against saboteurs and hackers. Each customer has a lock pattern of its own for unlocking.

Customer benefits

- efficient network safety control without the need for any additional safety control system
- efficient management and control for external users
- simple installation and low costs
- no need for any expert staff
- a single investment, no maintenance costs, no licenses
- the lock is a mechanical protection without electrical power supply and software

■ **LAN Cable Lock**

A lock that physically prevents the removal of a connected LAN network cable from the computer.

Area of application

Physical security of computers, servers, switches, routers and other network devices. Hardware protection of production technologies against saboteurs and hackers. Each customer has a lock pattern of its own for unlocking.

Customer benefits

- efficient network safety control without the need for any additional safety control system
- efficient management and control for external users

- simple installation and low costs
- no need for any expert staff
- a single investment, no maintenance costs, no licenses
- the lock is a mechanical protection without electrical power supply and software

■ USB Port Lock

The lock will close the USB port to prevent any leakage of internal data or any unauthorised access through a USB port.

Area of application

Physical security of computers, servers, switches, routers and other network devices. Hardware protection of production technologies against saboteurs and hackers. Each customer has a lock pattern of its own for unlocking.

Customer benefits

- efficient network safety control without the need for any additional safety control system
- efficient management and control for external users
- simple installation and low costs
- no need for any expert staff
- a single investment, no maintenance costs, no licenses
- the lock is a mechanical protection without electrical power supply and software

Beckhoff Automation s.r.o.

CZ – Brno

PAV V 164

■ Transport system with machine vision and IoT

A high precision transport system with machine vision and IoT data analytics.

Area of application

Precise production machines and lines • testing stations • automatic visual control of products, and many other.

Customer benefits

The XTS transport system can position each rider independently and with a high position precision of 0.25 mm and maximum speed of up to 4 m/s. Thanks to an integrated camera system and the possibility to process the measured data and communication, it is possible to create a completely new concept of testing, measurement or production cells or entire production lines with this system.

■ TwinCAT Vision

Image processing in TwinCAT runtime

Area of application

Searching and comparing of objects on captured images • reading of 1D and 2D codes of different formats • setting of dimensions of the parts of the captured objects

Customer benefits

The image processing takes place in the real-time system TwinCAT and facilitates a very precious synchronization with the other processes in the TwinCAT, such as drive control.

Belet a.s.

CZ – Vejprty

PAV A2 026

■ Functional prototype of a manually guided high-lift truck with hydrogen drive F 12APP3VZ/-FFL/H2O

A functional prototype of a manually guided high-lift truck with a hydrogen drive and lithium accu battery HE3DA, loading capacity 1200 kg, lift 3000 mm

Area of application

Suitable for non-stop workplaces. Easy and fast hydrogen refill, combined with maintenance free batteries HE3DA you can charge continuously, almost non-stop operation in enclosed areas.

Customer benefits

The biggest benefit is the fast refill of hydrogen tanks. The refill only takes 3 minutes, while to recharge the batteries can take up to 8 hours. Thanks to the revolutionary battery recharging in full operation the truck is easy to maintain and works nearly non-stop.

BIBUS s.r.o.

CZ – Brno

PAV F 081

■ CKD manipulator PAW

CKD compact manipulator for PAW compressed air. The manipulator is fixed to the floor.

Area of application

With PAW you can manipulate objects of up to 80 kg in weight to the distance from the base of up to 2.3 m horizontally and 2.6 m vertically.

The manipulator can be equipped with a hook, fork, vacuum shoe or gripper to take the load.

Customer benefits

Easy handling (start up and stopping) thanks to the centre of gravity closer to the operator. Prevents accidents caused by the handling of heavy objects.

■ Eckart rotary actuators

Rotary actuators with the operating pressure of up to 250 bar, working on the principle of spiral gear. Output torque is in the range from 50 to 250 000 Nm with the turning angle 90 to 360°.

Area of application

- tool exchange
- linear control
- bending machines
- control of the valve slide, including emergency closing function
- boom rotation
- workpiece positioning
- tilting machines
- opening/closing of covers
- rotating arm joint of machines

Customer benefits

High-resistance hydraulic components, resistant against wear, ensuring easy turning and combined turning and feeding movements in an extremely small working area • turning precision of up to 5 arcmin • we offer actuators made to the customer's requirements

■ i5 Collaborative robot

Universal robotic arm, including steering unit and control panel

Area of application

Designed for the automation of tasks of up to 5 kg and reach of up to 924 mm. You can attach a wide range of accessories to the standardized wrist, depending on the application – grippers, tools, cameras, industrial lenses, protective elements, sensors.

Customer benefits

The light-weight, available and user-friendly collaborative robot provides precision, considerable variability, swiftness and universality to each production facility.

Thanks to these characteristics, you can increase your productivity and production quality, cut your production costs and free your operators from monotonous and stereotyped tasks.

Bierther Submikron GmbH

DE – Bretzenheim an der Nahe

PAV E 052

■ I4 LAP 700

A single-disc machine for fine honing, lapping and polishing

Area of application

manufacture of clocks/watches and jewellery • metal working • sealing equipment • hydraulic equipment • medical devices • aerospace and astronaut industry • chemical industry • optical industry • building of moulds and cutting/moulding equipment • automotive industry

Customer benefits

working of high-precision and plane workpieces of the planeness by 1 µm compliant with the „Industry 4.0“ principles

■ Composite polishing/lapping disc: CP-8 – Allrounder

Working of metals, ceramics, carbon materials, glass

Area of application

improved polishing results • higher planeness at shorter working times

Customer benefits

an alternative to cast iron lapping discs • better polishing results • higher precision of surface planeness at shorter working times

■ LPS 700

A profiling system for lapping discs

Area of application

single-disc lapping machines

Customer benefits

- dressing and profiling of lapping discs without the need to remove them from the lapping machine
- you eliminate the time needed to mount the machine and to send the disc for metal cutting

BRIKLIS, spol. s r.o.

CZ – Malšice

PAV P 111

■ iSwarf EK

A small, compact briquetting press, designed to be placed under the conveyor of machine tools

Area of application

The briquetting press may be used for the processing of chips from the machining of different materials – aluminium, steel, cast iron, etc. The press is small, compact, suitable for installation under the machine tool conveyor. The press may also be installed away from the conveyor and filled manually.

Customer benefits

Eliminating chips handling • its layout can be changed quickly without any civil engineering or other modifications • universal use

CERATIZIT Česká republika s.r.o.

CZ – Velké Meziříčí

PAV F 044

■ Multifunctional turning tool „FreeTurn“

FreeTurn universal multifunctional tool for highly dynamic turning

Area of application

- for innovative turning from simple to complicated rotating workpieces
- for turning-milling machines and Multitask machines with a milling spindle
- a tool for machines equipped with HDT (High Dynamic Turning) software

Customer benefits

- complete machining by one tool only (productivity higher by up to 200 %, less tool exchanges by 100 %, less travels by 90 %)
- optimized cutting process (feeding speed by 40 % higher, perfect chip control, high quality of surface finish, high stability, long life)
- a wide range of holders and geometries of exchangeable bits of the CERATIZIT product line
- FreeTurn, a modern tool for innovative machining offering a true economic benefit and cost saving

České vysoké učení technické v Praze (Czech Technical University in Prague)

CZ – Praha

PAV Z 036

■ Examples of metal printing - hybrid manufacturing

Samples of metal printing - hybrid manufacturing (HM) based on the WAAM wire depositing and metal cutting. The technology was developed by the Czech Technical University in Prague and implemented in cooperation with Kovosvit MAS.

Area of application

With this new technology you can make metal parts with considerably lower costs, and therefore a completely new market segment is now opening for the AM and HM technologies. With a view to the current costs of purchase of the machines on the market, their operation costs and the cost of source materials, so far the preferred applications are in the top industries (medicine, building of aircraft engines, building of turbines, moulds and tools, aeronautics) and here again, emphasis is given to the most expensive materials, such as titan, nickel alloys, or less frequently stainless steel or aluminium.

Customer benefits

The main benefit of the technology is its relatively low cost; the cost of a part made by this technology is about 25–30 % of the price of the competitive technologies for AM (SLS, DMLS and similar 3D printers sintering metal powder layer by layer by using a laser beam or electron beam) or HM (machines combining the metal deposition technology in one station, usually through Laser Cladding or DMLS and machining).

■ Mechatronic controlled clamp

A mechatronic controlled clamp for automated clamping of large and heavy parts for machining

■ Local ventilation unit with a turning recuperation exchanger

The local ventilation unit with a turning recuperation exchanger is a result of the cooperation between Czech Technical University in Prague and RECUAIR within the project worked in the Operating Programme “Enterprise and Innovation for Competitiveness”. The development focuses on optimised air flow through the unit to prevent any negative sounds.

Area of application

The ventilation unit is designed for installation in dwelling rooms, whereby the noise aspect is a priority. In the development of the new type of ventilation unit, we used computer air flow simulation CFD, measuring of noise in an acoustic laboratory and measuring of performance in laboratory conditions.

Customer benefits

The biggest potential is in cold regions where the outside air temperature gets below zero. The unit can work all-year-round and ensure high all-year efficient heat recuperation.

■ ALTON ventilator chamber

ALTON ventilator chamber was developed by Czech Technical University in Prague and ALTEKO, a company specialising in the production of HVAC units. The two-year research project solved within the Operating Programme “Enterprise and Innovation for Competitiveness” focused on an optimisation of the ventilator chamber for the modular air-conditioning units ALTEKO Tango. In the development of the new line of ALTON units we used CFD flow computer simulation. The aim of the project was to get an innovated design bringing a higher energy efficiency and a lower acoustic performance generated by the device.

Customer benefits

Based on the flow simulation analysis performed in the ALTEKO Tango ventilator chamber a new design was proposed to reduce to minimum the occurrence of local pressure losses and potential sources of acoustic noise. The main innovation was the use of an electric commuted motor (EC), which apart from energy savings offers the possibility to considerably optimise the interior layout of the ventilator chamber.

■ RecoDactylus

Research and development of a mobile device and a method for fast search and taking of latent dactyloscopy prints. The method and the new device use the simplified method of UV-VIS spectroscopy.

Area of application

- Forensic Institute
- the Police and other divisions of the Ministry of the Interior

■ A part of a composite air duct for the jet engine of the L-39NG aircraft.

A result of project cooperation between AERO Vodochody AEROSPACE a.s. and the Faculty of Mechanical Engineering, Czech Technical University in Prague. It is a composite air duct for the L-39NG aircraft - the “S-channel”.

■ Measuring workstation for the flutter resistance tests in light sports aircraft

The flutter analysis is made based on the measured modal parameters. The mathematical model used: LDRII., Theodorsen model of fluttering profile. The computer software used: Flutter 3D – 2.0, developed by the Institute of Aerospace Engineering, Faculty of Mechanical Engineering, Czech Technical University in Prague.

A flutter analysis, i.e. the determination of critical speed of flutter, has to be made for each aircraft prototype.

Customer benefits

The measurement can take place at the customer’s place.

■ Examples of machined parts of the mould type

A machined part of the type of a mould, demonstrating the results of the CNC machine optimisation setting for a higher machining quality. The setting optimisation was achieved with the support of virtual machining simulation (machine tool digital twin).

Area of application

control of CNC machines

Customer benefits

higher machining quality

■ Student formula car FS.11

A new formula car of the CTU CarTech student team of the Faculty of Mechanical Engineering, Czech Technical University in Prague, for the Formula Student international race series

CTU Cartech team comprises about 30 students of the bachelor, master and Ph.D. study programme at the Faculty of Mechanical Engineering, Czech Technical University in Prague. In terms of its structure, the team is divided into two basic groups – engineering and design. Above these groups is the Faculty Consultant as a person responsible for all the team activities. The engineering group has

several sub-groups each of which represents a certain area of the car development. The design group consists of three closely related parts. Each student taking part in the design, building, testing, racing and other events associated with the project, will test in practice his/her technical, human and language skills and abilities. Apart from the victory in the Formula Student/SAE competition, the project offers a superb experience and professional formation for the future engineers.

Ecoclean GmbH

DE – Filderstadt

PAV E 037

■ EcoCube

EcoCube – Efficient cleaning by spraying for multiple applications

Area of application

EcoCube system was designed for efficient quality cleaning by water spraying for individual parts of different geometries, manufactured by chip and non-chip cutting. Thanks to its compact size the system complies with requirements for efficient cleaning while occupying only a small area.

Customer benefits

Efficient cleaning: good cleaning and rinsing with short cycle times and long life of the bath • only a small area needed: compact design, ready to connect, limited space needed for installation • high quality cleaning: optimized cleaning by moving parts, suitable for damage-sensitive parts • modern design with an integrated intuitive operation field HMI

edding International GmbH

DE – Ahrensburg

PAV G2 003

■ Edding markers

Various solutions for the marking on nearly all kinds of surface

Area of application

Our broad special product line includes markers that guarantee permanent marking on smooth, rough and greasy surfaces. They are suitable for any industrial branch – automotive, production, logistics – as well as in the office.

Customer benefits

- highly valued, long life, environmentally friendly as they can be refilled
- extremely easy use in solutions of your special needs
- markers for tradesmen, laboratory markers or the famous markers with which you can mark wherever you need it

■ edding in-line 12

Compact printer with highest connectivity standards

Area of application

End-of-line printer for variable product information on primary and secondary packaging, to print best-before dates, QR codes or customer-individual logos • used for track and trace solutions

Customer benefits

100% reliable to guarantee uptime and OEE • no service or trainings needed, installation and setup within 5 minutes • integration of databases through MQTT, communication revolutionary in industrial communications

■ edding portable 12

Mobile printer for high-resolution marking

Area of application

Printing batch numbers, shipment information or individual logos on a diverse range of substrates

Customer benefits

Individualising products, enabling track & trace solutions and eliminating operator errors • creating high quality prints easily and on the go

EKO-ŠIMKO s.r.o.

CZ – Náchod

PAV G2 009

■ Exhauster for welding, type family: SOS FKR

Exhausters of the maximum suction output from 4000 to 8000 m³/hour, with cartridge filters of the maximum filtering area of 64 m² and automatic filter regeneration using rotating chipping by compressed air

Area of application

Exhausting during welding, soldering, grinding, material cutting ...

Customer benefits

You can have: exhauster maintenance control • monitoring of filter exchange time • automatic remote control of the exhauster • comfortable disposal of removed impurities

■ Exhauster for welding, type family: SOS FKR

An exhauster of the suction output from 2000 to 3000 m³/hour, with three-stage filtration (pre-filter, main cartridge filter and chemical carbo filter), and with a self-supporting nozzle with the reach from 2 to 4 m

Area of application

All welding and soldering/brazing methods

Customer benefits

You can have: monitoring of filter exchange time • counting of operating hours • comfortable disposal of removed impurities

EPO MACHINERY s.r.o.

CZ – Frenštát pod Radhoštěm

PAV Z 088

■ Smart Factory

A robotized production station

Area of application

Production automation using robots. Applications: Pick and Place, CNC operation, assembly, operation of machines, screwing, gluing, etc.

Customer benefits

Fast and precise production • reliability • performance of monotonous and heavy-duty tasks • variability optional extension of the production • increased production volume with a minimum number of operators

■ Automatic surface quality control

Surface quality control using a robot and an integrated load cell

Area of application

Product quality control after machining, welding, casting, polishing, deburring and similar operations.

Customer benefits

Automation of the final control • faster production cycle in the process automation based on the 4.0 technology

■ Robots for packaging and palletizing

Machine vision in combination with a robotic arm and automatic packaging

Area of application

- detection of parts through machine vision
- part handling
- packaging and palletizing

Customer benefits

- saving on operators in production
- performance of monotonous and heavy-duty tasks
- process automation based on the 4.0 technology

Fehlmann AG Maschinenfabrik

CH - 5703 Seon

PAV P 059**■ VERSA 645 linear machining centre in portal design**

FEHLMANN VERSA 645 linear allows for the machining of workpieces highly dynamically in five axes and with maximum precision. If it is 5-axis machining with positioning, or else 5-axis simultaneous milling you can achieve higher dynamics, and short machining times, thanks to direct drives.

Area of application

The area of application is: complex titanium and aluminium parts for aircraft/aerospace industry, and hardened tool steel in the production of moulds/tools • stainless steel in medical devices and complicated workpieces in the general manufacture of machines/vehicles • also, for coordinate grinding to achieve the highest possible quality of the surface/mould precision

Customer benefits

The movement of only two axes on the tool side improves mechanical rigidity. Thus, you can achieve a longer life, better surface quality and higher precision. It has an outstanding accessibility and optimum view of the working area. You can additionally get standardised automation or customized automation in an easy way and without limiting the operators.

Huron Graffenstaden S.A.S.

FR – Illkirch Graffenstaden

PAV P 059**■ Umill6 High-performance 5-axis machining centre of portal design and broad universality**

A 5-axis milling centre with a round tilting table

Reinforced rigidity for high-performance and above-standard quality machining

Area of application

You can machine workpieces of up to $D = 820$ mm • structure calibration for high rigidity and precision

Customer benefits

A machine suitable for complicated parts in 3 or 5 axes • the spindle profile is perfectly oriented for 5-axis machining • a high-performance spindle for large roughing operations

IGITUR spol. s r.o.

CZ – Chraberce

PAV C 015**■ Electromechanical universal testing machine of 34-SC series**

A universal testing machine for all types of static tests with full touch control

Area of application

A universal testing machine for all types of static tests with a full touch control and enhanced safety elements to comply with ISO 13849 and the smart air-kit

Customer benefits

Extended testing possibilities on the testing machine • improved safety of the operators • easier control by using touch peripherals

■ **Melt-Flow index MF30**

Melt flow tester with a semi-automatic function

Area of application

Melt plastic flow testers to get the MVR and MFR values, with automatic trimming, weight placing and tenzometric control of its weight for tests to ISO 1133

Customer benefits

Faster and easier MF index testing in a semi-automated process • process control by a built-in dynamometric sensor • automatic weight placing

■ **Electropuls E1000**

An electrodynamic test instrument, capacity 1kN

Area of application

Dynamic loading of samples or components with no need to have any hydraulic drive in the forces according to the version of up to 10 kN in combination with the torsional load of up to 100 Nm

Customer benefits

Eliminating the necessity of a hydraulic guide and drive, and an oil system, reducing energy consumption of the test • silent operation • smaller usable area • combined loading in frequencies exceeding 100 Hz

INMACH s.r.o.

CZ – Rokycany

PAV B 057

■ **X-Press Next 30/1250 press brake**

A press brake of ergonomic design, suitable for small parts

Area of application

Edge bending of small parts, suitable for small and large-scale series.

Customer benefits

Fast adjustment • easy operation • high performance • high speed • high precision thanks to the GSP4 measuring system integrated in a matrix that measures angle in real time

Innovalia Metrology

ES – Altube-Zuia

PAV V 017

■ **M3 HYBRID – The complete metrology solution that leads to intelligent manufacturing**

The complete Metrology 4.0 solution to optimize your processes. Innovalia Metrology, with M3 Hybrid, has reduced the point acquisition process combining a contact probe with a 3D high accuracy scanner (Optiscan) and M3 Software.

Area of application

M3 Hybrid has simplified the point acquisition process thanks to the combination of two methods – 3D Scanner thanks to Optiscan and a touch probe sensor – with M3 Software, the multisensor metrology software that has changed the game by offering the option of digitalizing the full parts. M3 Software allows us to manage large amount of data and gives us access to the metrological information from any device and at any time.

With more than 60,000 points captured per second, Innovalia Metrology's proposal surpasses in speed, precision and adaptability to the other market proposals. The M3 Hybrid integration in the

production processes leads to intelligent manufacturing, zero manufacturing defects and allows control at all times the performance and reliability of our production processes.

Customer benefits

- automatic colour mapping comparing CAD and generated point clouds
- automated capture of point clouds
- calculation algorithms certified by PTB
- optimized software for offline programming and CAD interaction
- interoperability through different file formats and standards: .M3, .QIF, .DMO, .DMI and .CSV
- specific modules for SPC analysis

■ M3MH

Complete measurement software for machine tools

Area of application

M3MH is a measurement software that allows to verify, to set up and to measure in a very easy way. Innovalia Metrology, with M3MH establish a direct communication with the machine tool control from the measurement software itself.

M3MH is breaking the current paradigm of charging functions and offers a complete measurement software that allows the user to control the machine tool from a computer. From M3MH, the software with an intuitive graphical interface, the user can perform all the functions of a complete measurement software.

Customer benefits

- full measurement software functionality within your machine
- reference accurately during job set-up
- real-time tool monitoring
- in-cycle gauging, automatic tool offset updates and reduced rework

■ M3 ARM

Ideal arm for measuring any part thanks to its perfect compatibility with touch probe and optical sensor

Area of application

M3 ARM is one of the most popular models on the market due to its versatility. It can be used for measurement, digitizing, scanning or designing all kinds of parts. Regarding measurement applications, this model is highly recommended for the measurement of geometric elements, free forms and reverse engineering. For this, the device supports contact probes and optical.

Customer benefits

- one user interface for all sensors
- increase traceability by keeping all the raw data regardless the capture technology
- optimized software for offline programming and CAD interactions
- automated capture of point cloud and touch points
- titanium, aluminum and composite materials for a very light and strong structure
- temperature sensors for automatic compensation
- smooth counterbalance for easy use in all arm positions
- wireless (Wi-Fi) connection between arm and computer
- 7 axes bracket mount available for different laser scanner

ITES, spol. s r.o.

CZ – Znojmo

PAV B 025

■ R6 straightening machine with one unwinder and 3 m collection bench

The R6 rotor straightener is a machine suitable for the straightening of cold drawn industrial wires, excelling at the straightening quality, length measuring precision and cutting quality.

Area of application

The wire is used in all industrial areas: civil engineering, automotive, food processing, agriculture, health care, etc.

Customer benefits

The straightened wire is perfectly straight, the cut is strictly perpendicular and free of chips. The machine is equipped with a collection bench with a patented automatic system for the setting of the cutting length, which facilitates changes of length and wire diameter without any manual operation. Automatic stop guarantees the length precision of ± 0.1 mm.

iwis antriebssysteme GmbH & Co. KG

DE – München

PAV V 146

■ b.triton

b.triton – the new high-performance roller chains from iwis

Maximum corrosion protection combined with outstanding wear resistance

Area of application

b.triton application fields are in environments with high water or water vapour loads or stringent cleaning requirements in combination with extremely high standards of chain strength.

Customer benefits

- Our new b.triton chains are the optimal solution when stainless steel reaches its strength limit and common coatings cannot resist corrosion when exposed to harsh outdoor environments.
- b.triton chains are using a high performance zinc-flake technology combined with a unique surface treatment. This provides a protective finish that is more corrosion resistant than any other coated chain.
- b.triton is a product range that takes up any challenge!

KOVABEL a.s.

SK – Senica

PAV B 048

■ Cleaning laser

Laser cleaning of metal and non-metal surfaces from paints, corrosion and other impurities

Area of application

Manufacture of cars • ship building • food processing • industrial branches...

Customer benefits

Safe for the part base • no liquid chemicals • simple operation and installation • the power supply is accessible and the automatic cleaning can be done manually or with a manipulator • the cleaning efficiency is very high, and thus time saving • low noise level • suitable for all kinds of processing environments • fast, smooth and precise cleaning • no air pollution

LASCO Umformtechnik GmbH

DE – Coburg

PAV B 058

■ Virtual commissioning

Using a digital twin, you can reduce the commissioning time.

Area of application

Automation systems are virtually optimized for commissioning as early as at the engineering stage. LASCO uses real process parameters for this. Long before installation, the computer simulates all machine processes and operation conditions.

Customer benefits

The digital twin was established by LASCO and the virtual commissioning laid the foundation stone for process optimization in design and commissioning.

■ LASCO Virtual Reality

Visualization of machines in LASCO virtual reality

Area of application

The visualization of machines and equipment in virtual reality helps you get your feasibility study and availability study in time.

Customer benefits

A future machine may be made virtually recognisable at the designing stage. Thus, it is possible to avoid any design defects. The final machine may subsequently be used for training purposes and as a marketing tool.

Lenzkes Spanntechnik GmbH

DE – Lüdenscheid

PAV V 026

■ Multi – Quick MQ 60S + MQ 100S

A mechanical quick-clamping system with a flat forged clamping base and a high-grade alloy steel lever with a double adjustable clamping range. Available in a long and short version, for machines with a t-slot and threaded openings.

Area of application

- clamping of workpieces on milling cutters and machining centres, mainly in heavy machining
- clamping of workpieces and moulds in injection moulding technologies, forming and pressure casting

Customer benefits

Long life thanks to top quality material • the clamping range and height are variable and smoothly adjustable • big clamping forces with a low torque • big clamping forces through an improved clamping lever/turning point proportion • shorter clamping time thanks to simple handling

LIFTEC CZ a.s.

CZ – Praha

PAV E 040

■ Robotic cell

A demonstration of the cooperation of an industrial robot and Arex fibre laser

Area of application

Marking of metal and plastic parts directly in production

Customer benefits

Industry 4.0., traceability back to the beginning of the production process thanks to the marking made during production

■ LaserGear

A basic line of lasers by Tykma, laser class I and class IV

Area of application

Marking of metal and plastic products manufactured in small-scale series

Customer benefits

Efficient laser marking of products at a favourable price

■ Code – M

A camera for the control inkjet printer marking

Area of application

All applications made by inkjet printers

Customer benefits

Instantaneous control whether the printing is OK

Lintech, spol. s r.o.

CZ – Domažlice

PAV E 002**■ LIN-BOT**

A combination of a universal laser head, micro-marking instrument and robotic arm

Area of application

An industry 4.0 technology. Both technologies (laser and microdot) are mainly used in the automotive industry for marking/2D engraving/datamatrix code. By the pulse fibre laser, you can engrave a datamatrix code up to 0.3 mm deep.

Customer benefits

The LIN-BOT station corresponds with the latest production trends. Thanks to the automation of partial operations, any human factor errors are eliminated. In some cases, operators are not needed at all.

The 2D/datamatrix code marking is resistant against rougher types of surface finish. Simple installation into existing production lines. The laser head can mark hot material of up to 400 °C.

■ Laser marking, engraving and cutting to order

Lintech offers customized marking and engraving, laser cutting, manufacture of marking matrices, manufacture of front panels with laser marking.

Area of application

- in all industry and production areas, such as marking of parts, semi-products, final products, etc.
- in laser cutting we can cut metal foils, rules and sheets in the thickness of 0.025-2 mm by using a special pneumatic clamping system
- the repeatable and positioning precision of the cutting is up to 0.01 mm

Customer benefits

Permanent undeletable marking of one's own products without the need to buy a laser technology = cost saving.

■ Pikkyo fully portable dot peen marking instrument

Battery-powered microdot instrument for undeletable marking of alphanumerical characters, 2D codes or graphic logos.

Area of application

Mechanical engineering • metal production • automotive industry • surface treatment of materials • traceability

Customer benefits

For simple and precise undeletable marking of large and very heavy products • remote control and simple loading of data from USB flash disc

Misan s.r.o.

CZ – Lysá nad Labem

PAV A1 002, PAV P 142**■ High performance machining centre Okuma Genos M660V-e**

A three-axis vertical CNC machining centre with high stiffness and excellent thermal stability

Area of application

- a versatile machining centre with table fixation area of 1530x660 mm and 660 mm Z axis travel

- maximum spindle speed 15,000 rev./min and 22 kW for universal deployment in machining ferrous and non-ferrous metals

Customer benefits

A machining centre to an affordable price, highly reliable and easy to control

■ High-speed two-pallet machining centre Brother Speedio R650X2

A vertical two-pallet machining centre with a 40-tool magazine and high-pressure 70 bar cooling

Area of application

- repeated manufacture of accurate engineering parts with high productivity
- excellent prerequisites for high-speed thread cutting

Customer benefits

A compact and highly dynamic and reliable machine with an automation option for material feeding and ejection operations

■ Surface grinding machine Okamoto ACC52SA1

High-precision surface grinding machine with magnet clamping area of 500x200 mm and preset grinding cycles

Area of application

Precision grinding of flat surfaces with the option of grinding wheel loss compensation in dressing

Customer benefits

A reliable grinding machine with new LCD control panel for maximum simplification of machine adjustment

Narran s.r.o.

CZ – Brno

PAV G2 052

■ ROD cleaning laser

ROD 500 (500 W) powerful cleaning laser for industrial use and ROD 100 (100 W) small compact cleaning laser

Area of application

Delicate and fast cleaning of various surfaces by the mobile cleaning laser machine ROD made in-house

Customer benefits

Cleaning of all possible surfaces • a cheap and efficient method for the removal of corrosion, impurities and other layers

■ SEI laser Mercury CO2 and Fiber

Mercury 1255 2 kW cutting fiber laser, working area 1250 x 1500 mm

Mercury 609 CO2 300 W laser, working area 1500 x 2050 mm

Area of application

Larger and large facilities, production lines

Customer benefits

Professional compact cutting plotter machines for plastics and metals designed for demanding customers who need to be sure that the machine can run in non-stop operation.

■ Thunderlaser

- Nova 51 (100 W) with Synrad metal tube and exchanged optical system, working area 1300 x 900 mm

- Nova 24 (60 W) with a glass tube

Area of application

Nova 24 – a cutting and marking laser machine of very compact design • offering the same cutting and engraving attributes as much bigger and more expensive lasers

NOVA 51 – a laser machine suitable for the cutting and marking of larger formats

Customer benefits

Nova 24 – as the size is really small the laser machine is placed on the table, therefore, it is ideal for smaller studios, workshops or graphic designer studios

Nova 51 – a flexible laser machine of a favourable price for less demanding facilities which cannot afford laser machines of industrial size

PcVue GmbH

DE – Altdorf

PAV V 139

■ PcVue Energy

- energy monitoring
- reports of a strong information value
- display of various consumptions
- recording of energetic data

Area of application

Energy monitoring by PcVue Energy is suitable for various professions, counters and meters of status. PcVue Energy generates reports about the quantity of electrical energy, gas, water, heat and other meters, for example oil level or energy consumption of various devices.

Customer benefits

- quickly and simply generated reports of a high information value
- recording of energy data – monitoring of counter readings, status, ...
- pre-prepared report package
- web portal with access to one's equipment
- fast overview to identify the potential for savings

■ Contextual Mobility

- safe delivery of information to the right person in the right place at the right time
- mobile operation area according to the context, with approaching and localization services
- automatic notices in respect of context and control
- graphic HMI for mobile devices
- display and control in real time
- administration of alarms and events
- display of trends
- access to all local and non-local sources: audio, video, user manuals, general documents, other web services
- connection of text and call reports
- instant exchange of reports with the central office or other mobile users
- Asset-Tracking
- object oriented and user-friendly configuration area reducing the preparation time

Area of application

Geolocalization in indoor and outdoor areas using IPS (Bluetooth LE Beacons, QR-Codes, NFC, Wi-Fi positioning system) and GPS

Customer benefits

- You will automatically get only relevant data and information about the machine where you just are.
- You can control the machine from a mobile device, do maintenance, inspect the machine documents and many other activities.
- Automatic information in respect of context and control

■ **IoT Starter-Kit**

PcVue IoT Starter-Kit is a ready-made solution, prepared for use, which will make it possible for you to approach IoT Revolution in simple steps. Using this solution, you can get a good view of new technologies (LPWAN, IOT sensors, ...).

- without cables and cost cutting
- strong signal coverage, even in a building's core
- simple installation (coverage of long routes)
- no subscription needed
- safe (no information in the Cloud)

Area of application

- display of energy (water, heat energy, ...) consumption indices
- alarm in the case of drop-out of instrument, current, ...
- transmission of data from analogue sensors: CO2, luminosity, air pressure, ...
- display of ambient temperature
- liquid level rise or drop alarm
- door open / safety violation alarm, counting of door openings and closings
- monitoring of energy consumption of electrical devices
- display of consumption of various meters

Customer benefits

- with the Starter-Kit you will get 3 pre-configured sensors
- LoRaWAN-Gateway
- LoRa – communication controller for PcVue
- special libraries of graphics, data processing and communication with the selected IoT sensors
- a day of technical support provided by our support team (training, configuration and Starter-Kit commissioning)

Pick To Light Systems

ES – Onati

PAV V 017

■ **Pick To Light**

Ensures maximum speed and productivity when selecting items

Area of application

"Pick To Light systems" are easy-to-use, intuitive systems which leave the operator's hands free, have a short learning curve and do not require the use of any additional devices.

This Pick to Light series range includes models suitable for all needs. In the most common models the pick position lights up, indicating the quantity required, whilst the operator confirms by simply pressing a button. More info.: www.picktolightsystems.com/en/picking-products/pick-by-light

Customer benefits

Our solutions are designed to quickly prepare orders and prevent service errors. Implementing a Pick-to-Light/Put-to-Light system leads to improved productivity and outstanding user acceptance. In addition, the integration of our systems with the user's software solution (WMS or ERP) is quick and straightforward.

Robustech s.r.o.

SK – Komárno

PAV C 055, PAV V 127

■ **TubelInspect**

3D optical template TubelInspect P8 by Aicon 3D Systems. The measuring device is used for measurements of bent tubes and wires by means of 8 high-resolution cameras.

Mean measurement time is 5 seconds

Area of application

Pipe manufacture

Customer benefits

Accelerated production run in • reduction of scrap • replacement for mechanical templates

■ **GapGun Pro 2D profile meter**

A manual wireless measuring device for measurement of various profiles such as gaps, elevations, radiuses, angles etc. The measuring options are nearly limitless.

Area of application

Automotive industry • mechanical engineering

Customer benefits

Easy and quick measurement of various profiles • automatic recording of the measurement data

■ **Digital microscope SANXO**

ANXO-Scope HD is a complex kit for quick enlargements and live video inspections. The microscope was developed as a robust and non-expensive manual inspection and worktable for printed circuit checks. Thanks to the ergonomic design there is additional space above the worktable for secured handling of the examined part. Other characteristic features of the instrument include adjustment, adaptation and extension.

Area of application

Electro-technical industry

Customer benefits

An affordable digital microscope model, developed as a robust and non-expensive manual inspection and worktable for printed circuit checks

SAMSYS GmbH

DE – Alzey

PAV P 043

■ **Bar feeder Samsys Type MULTI-3000**

Bar feeder MULTI-3000 for bar diameters 5–65 mm, bar lengths of 1240 mm or 1640 mm

Area of application

A fully electrical feeder of short bars for CNC lathes with material container assuring regular material feed to the lathe workspace

Customer benefits

- increased productivity of machining by CNC lathes
- the feeder assures multi-hour unmanned operation and CNC lathe production automation

SECTRON s.r.o.

CZ – Ostrava

PAV Z 088

■ **GSM KEY SMART 3**

A smart controller opening gates and bars

Area of application

GSM KEY SMART3 is an instrument permitting gate or bar opening by a smart phone. Users are authorised on the basis of incoming calls. The list of authorised users can be edited by the administrator by means of SMS or from a PC. As the incoming call is not answered the gate opening is free of charge.

Customer benefits

GSM KEY is used for gate or bar opening from a mobile phone. The opening operation is FREE OF CHARGE. Control by a mobile phone, no further remote controls, 100% security – authorisation by phone number.

Optional control of other devices – security systems, heating, pumps

No monthly fee or battery changes

■ Application of RFID technology in logistic processes

An example of application of RFID technology in logistic processes

Area of application

Logistics • goods monitoring • hotels and wellness • food processing industry • healthcare • sports • attendance systems • lending libraries • civil engineering • tool rent etc.

Customer benefits

Process acceleration and streamlining • cost reduction • administration reduction • simplified data import to/export from the system • transparency

■ Industrial terminals SECTRON with Cinterion BGS5 module by Gemalto

BGS5 as the foundation stone for IoT beginning

Area of application

Industrial terminals SECTRON, thanks to their low price and compact size, can be implemented in various projects. In addition to cellular connectivity they offer the option of self-programming by means of the integrated JAVA. The device can thus be used as a security element, data collector and remote controller of other devices, all with the option of cloud service connection

Customer benefits

Low price, JAVA programming, various interface types offered

SEMACO tools and software, s.r.o.

CZ – Jeseník

PAV P 067

■ Finishing milling machine ArCut X

A new development by Fraisa for perfect surface in record time

Area of application

ArCut X by FRAISA integrates excellent performance with nearly perfect surface.

A very interesting concept of tools for flat workpiece surfaces

Customer benefits

Cost reduction • excellent finishing performance and quick machining • milling machine cost reduction – low wear due to a longer section of the blade engaged • high quality of the tool – tolerance $\pm 5 \mu\text{m}$ on the cutting tool results in brilliant preciseness of the workpiece outline

■ Software for NC code simulation – NCSIMUL

NCSIMUL is designed for simulation of a CAM generated NC code with the option of subsequent route optimisation, program re-generation for another machine or combination of multiple part working in a single machine

Area of application

The function of NC code simulation offers a solution for any company in the form of control before machining and machine collision prevention resulting in extensive saving of machine repair costs

Customer benefits

Control of CAM generated NC codes • simulation of the whole machining process • route optimisation • tool life extension

■ Manufacture control software WORKPLAN

A manufacturing ERP/MES system, specifically oriented to manufacture to order

Development since 1992 on the basis of tool workshop requirements

Area of application

CRM function • offer calculations • bill of quantities import • transparent technology creation • capacity planning • purchases and warehousing • on-line (BCR) worksheets and workshop previews • quality module, analyses and user surveys • any outputs as needed – open database

Customer benefits

System openness and readiness for integration allows for configuring of only the required modules and their inclusion in the existing software portfolio of use of ERP as a complex solution for SMEs as well as larger companies

SEPSafe s.r.o.

CZ – Brno

PAV V 097

■ **Flanged sealing ring PLIDCO Flange + Repair Ring**

A flanged sealing ring for multiple uses in sealing leaks on flanged joints

Area of application

A device for leak elimination on flanged joints: the ring is equipped with the Girder Rings assembly system holding circumferential seals in place, thus perfectly sealing the flanged joint along its perimeter. After the ring installation on the flanged joint the sealing putty is pressed by a filling piston via the filling valves on the flanged joint into the space between the ring and the flange to seal and prevent medium leak

Customer benefits

A very quick repair without any drilling in the flanges and thus without destruction of the original material: in the course of the nearest pipeline outage the ring is dismantled, the flange seal is replaced, and the pipeline operation can be restored right away. In the cases when the ring is not welded to the pipeline, it can be refurbished after dismantling and stored for future use.

■ **Clock Spring Leak Stopper Sealing Kit**

Leak Stopper is a sealing kit for quick stopping pipeline leaks

Area of application

Leak Stopper™ is ideal for oil and gas pipelines, refineries, petrochemical and chemical plants and municipal water and gas distribution pipelines, replacing voluminous products requiring longer installation time and producing higher risk. The process involves stretching a specialised tape with a low-profile buckle across the leak by a trained assembler using tongs.

Customer benefits

The use of the sealing kit is very quick and simple. The easy installation brings multiple saving benefits – the operators can prepare the kit closer to the defect using less material for quicker repair reducing the time of ditch opening and thus the associated safety risk.

■ **Composite repair system Clock Spring Syntho-Glass® XT**

Composite material for repairs and reinforcement of corrosion-weakened pipelines

Area of application

- quick and effective repair of corroded or otherwise impaired pipelines and structures with application to most pipeline types without the need for costly and time-consuming network outages
- the material is made of bidirectional glass fibre, pre-impregnated and activated by contact with fresh or sea water before installation

Customer benefits

Syntho-Glass XT ensures high tenacity in very short time. If used correctly with the primer, it is able to repair any installation element in a couple of minutes.

SMARTEV CDS s.r.o.

CZ – Karviná – Fryštát

PAV Z 088

■ EV METER charging station

EV METER charging station with a payment terminal

Area of application

Public areas • parking lots • shopping centres • other places where the e-car charging service is needed

The service can be charged easily as it allows payment card use for the payments.

Customer benefits

- easy to operate charging station with direct payment with payment cards
- a display for advertising
- usable as parking fee payment machine

Solidify 3D, s.r.o.

CZ – Brno

PAV A1 014

■ Photocentric Liquid Crystal HR2

SLA/DLP 3D printer LC HR2

Area of application

Prototyping • construction • dental application • small-series manufacture • ,test model production

Customer benefits

3D printer LC HR2 with working volume of 197x146x250mm providing a broad range of options for effective manufacture

■ Photocentric LC MAGNA

SLA/DLP 3D printer LC MAGNA

Area of application

Prototyping • construction • serial manufacture of parts with perfect surface • test model production

Customer benefits

3D printer LC MAGNA with working volume of 510x280x350mm providing a broad range of options for effective manufacture

SUBTER PLUS s.r.o.

CZ – Jindřichův Hradec

PAV G1 020

■ DOSS Zehn

An innovative automated optical system for quality control

Area of application

Dimensional checks and checks for surface defects of various, above all pressed plastic, rubber and metal products.

High-precision cameras in combination with appropriate lighting are able to detect surface defects on products such as cuts, bubbles, deformations and dimensional defects.

Customer benefits

A quick and effective method of sorting out defective products with human factor faults elimination

Swisstool Export – Gruppe

CZ – Praha

PAV P 058

■ High-precision lathe SCHAUBLIN 225 TM-CNC-D1-3 with extraordinary characteristics

A high-precision lathe with FANUC numerical control usable as conventional lathe with hand wheels as well as CNC lathe

Area of application

Ideal lathe for hard turning • maximum turning diameter 270 mm • length of turning with collets B32 409 mm • continuous regulation of headstock speed in the range of 50 – 5,000 rev/min

Customer benefits

The Turn Mate function serves for easy control of the lathe not requiring special knowledge of ISO programming

TFC Ltd.

DE – Bochum

PAV V 060

■ Corrugated spring

A spring rolled of flat wire, which is up to 50 % smaller than the existing springs

Objective: space saving • cost cutting • design reduction • generation of the product benefits

Area of application

Corrugated spring is used in many different makes in industrial applications.

Thanks to the NO TOOLING CHARGES technology, special solutions are quick and cost effective.

Examples: axial pre-stressing • balancing of tolerances • dynamic applications • special material

Customer benefits

- needed area of up to 50 % smaller (keeping the same lift and force)
- no tooling cost
- special solutions quickly and cost effectively
- large standard stock on the shelf
- a wide choice of materials

■ Laminar sealing rings

Laminar sealing rings rolled of flat wire, used as mechanical labyrinth sealing

Objective: sealing against impurities • high mechanical properties • special solutions

Area of application

The set of laminar sealing rings is used as an efficient protection against contamination, splashing water, etc.

Thanks to the NO TOOLING CHARGES technology, special solutions are quick and cost effective.

Examples: sealing against contamination / splashing water • sealing of shafts or spindles • special material

Customer benefits

- sealing with high mechanical properties against impurities, dust, water
- long life and resistance against temperature
- no tooling costs
- special solutions quickly and cost effectively
- large standard stock on the shelf
- a wide choice of materials

■ Spirolox retaining ring

A retaining ring rolled of flat wire, with full retaining surface 360°

Objective: space saving • cost cutting • design reduction • generation of the product benefits

Area of application

Spirolox retaining ring is used in many different makes in industrial applications.

Thanks to the NO TOOLING CHARGES technology, special solutions are quick and cost effective.

Examples: axial retention • 360° retaining surface • small radial space • special material

Customer benefits

- full retaining surface 360°
- no tooling costs
- special solutions quickly and cost effectively
- large standard stock on the shelf
- a wide choice of materials

TG Drives, s.r.o.

CZ – Brno

PAV A1 014DT

■ TGMmini

TGMmini control system is a hardware optimised version of the computer-based control system TG Motion

Area of application

CNC control • robotics • manipulation • packaging • assembly lines • electronic gearing • cutting benches • feeders...

Customer benefits

TGMmini features simultaneous functioning of two processes – real-time control (virtual PLC) and visualization (HMI) • compact design • high computing performance • fast communication • simple interconnection with other control systems

TM Technik

CZ – Brno

PAV F 030

■ New generation of proximity 3D scanners

Stereo scanner MICRON3D uses green LED light for measurement, wavelength ca 500 nm, considerably increasing measurement precision

Area of application

Proximity 3D scanners, excellent for quick measurements of shaped parts, representing an asset for automotive and aircraft industry, reverse engineering, healthcare etc

Customer benefits

One of the most precise scanners on the market • better scanning of different surfaces thanks to the green light – 30% better results than traditional white light assisted measurements

VKR-abrasive s.r.o.

CZ – Blansko

PAV F 104

■ 6-head deburring system Q-FIN F200XL with water filter WES3000

Modern semi-automatic multifunctional device for grinding, brushing, polishing, deburring, deoxidisation and unification of workpiece surfaces, winner at the EUROBLECH trade fair etc.

Area of application

This top-standard device is designed for all companies dealing in product surface finishing and requiring high quality of the finish, variability of use and unity of the worked parts

Customer benefits

- perfect dry and wet working of materials (metal, plastic, glass, stone etc.)
- permits working of very small parts thanks to the excellent system of vacuum suction
- multifunctional use
- simple machine setting by the operator
- zero emissions to the work environment
- perfect work process security

■ Robotic welding and grinding site VKR TECHNOLOGY

A universal robotic work site for automatic welding by MIG/MAG, TIG methods, grinding, brushing and polishing of all sorts of products

Area of application

A compact and portable robotic device for welding and grinding of small and medium-size product series

Customer benefits

- precise adaptation to customer requirements
- changeable robot working head
- automation of the manufacturing process of MIG/MAG, TIG welding, grinding, palletisation etc
- minimisation of errors and customer complaints
- production cost minimisation
- easy handling and setting, usable for small-series production

■ Suction worktable with water filter VKR TECHNOLOGY

On the European market this device represents a unique certified dust-free workstation with suction and water filtration, inter alia for explosive environment.

Area of application

The suction worktable VKR TECHNOLOGY is designed for any engineering company, paint shop, for metal, plastic and stone works performing material working with material loss requiring dust-free implementation of these processes.

Customer benefits

- minimisation of emissions into the work environment and considerable improvement of the environment of grinding, brushing, polishing and similar processes
- cost saving in relation to OHS and fire protection
- assurance of suitable working conditions for high-standard product finishing
- assured compliance with legislative requirements, especially in operations with increased demand for elimination of dust emissions

Vstřikovací systémy pro plast s.r.o.

CZ – Šternberk

PAV G1 015

■ Injection moulding machine Woojin Plaimm – series TH-A5

Servo-hydraulic articulate press of TH-A5 series

Area of application

- automotive
- technical parts
- consumables

Customer benefits

- precision
- low consumption
- high performance
- reliability

■ Device for changing suspension geometry of a vehicle

The subject of the research is analysis of the effect of geometry change on motorcycle driving properties, construction design and active suspension of the front wheel, including the necessary technical documentation. So far geometry change has exclusively been used for racing motorcycles where the change is set firmly for the circuit profile. Active geometry change permits dynamic change of driving properties according to current requirement.

Area of application

Part of the chassis of one-track vehicles, especially motorcycles, for public road operation, with an advanced wheel suspension system • the device can be installed on most conventional motorcycles with the requirement of electrical installation extension with a beam for the device, its control unit and control elements

Customer benefits

A device increasing utility value of the motorcycle and its operation safety thanks to the optimised control and increased stability as high speeds

■ A topologically optimised scooter with bionic structure produced by 3D print

A topologically optimised scooter frame with bionic structure produced by 3D print using SLM method of anticorrosive steel 316L

Area of application

This technical solution belongs to the field of traffic and concerns customised frames for single-track vehicles using the technology of 3D print.

Customer benefits

Lightened hollow structure • shape adaptable to customer requirements • unique design

■ Smart helmet

A design of cycling helmet based on modern individualised manufacture (by a combination of 3D scanning and 3D print) with integrated smart electronic elements. The two-layer structure includes an outer impact-resistant shell printed by the method of Selective Laser Sintering (SLS) of powder polyamide (PA) and an inner impact absorbing structure printed by the method of Multi Jet Fusion (MJF) of thermoplastic polyurethane (TPU).

Area of application

Cycling

Customer benefits

A “tailor-made” product produced on the basis of 3D scan. Using augmented reality (AR) information such as speed, time, position, gradient of ascent/descent, heartbeat, weather etc. is displayed directly in the visor.

■ Rover for ERC competition

A mobile inspection robot with handling extension

Area of application

The robot is designed for unknown terrain investigation and autonomous orientation. It is at the same time a testing platform for development of new technologies. The handling extension permits the robot to work with objects in its surroundings. Rover is equipped with a system for earth sample taking and analysis. A system of cameras provides information about the Rover surroundings and helps the operator to orient himself or compile a map for autonomous operation of the robot.

Customer benefits

Technology testing options • demonstration and promotion of the successful student project

■ SAM – Safety Ambient Monitor

SAM is a pocket monitoring device warning about dangers of increased thermal exposure

Area of application

The SAM system has been primarily developed for employees working in environments with the danger of increased thermal exposition and the related risks, such as fire-fighters or miner rescuers.

Customer benefits

The SAM system continually assesses working conditions for employees exposed to high temperatures and warns in the case of exceeded pre-set temperature limits, either directly the exposed person or, wirelessly, his manager, thus preventing threatening health complications such as organism overheating, burns etc. Further functions include physical activity monitoring, free fall detector or optional heartbeat sensing. Data for a selected group of individuals can be shared wirelessly with the unit permitting well-arranged imaging of all data and graphics.

■ Augmented reality as construction support

The exhibit shows use options of the augmented reality systems in construction and designing, this in particular involves use of HoloLens spectacles or support of designing robotic technological sites.

Area of application

Virtual reality in robotics: Augmented reality systems offer a supplemental option of real environment presentation and verification of technological site design outputs. They permit visualisation of the site in the stage of its development to assure better presentation of the proposed idea to the customers or users before implementation. This permits identification of potential drawbacks not detectable by standard methods.

Customer benefits

The augmented reality system is used for presentation of a real and practicable design of a robotic technology site with a YUMI robot by ABB. The design has been implemented, inter alia, in the RobotStudio, permitting preparation of the program for the robot before the site manufacture was commissioned. This software will permit generation of data for the augmented reality spectacles and visualisation of not only the site itself, but also the robot program functionality, for example directly in the place of the future site installation. This permits better verification of compatibility with adjacent technological units.

■ Rotorkit – device for active suppression of self-excited rotor vibrations in slide bearings

The device demonstrated development of rotor instability of the whirl type and its suppression by a suitable control system and piezoelectric actuators positioning the bearing case.

Area of application

Active control of slide bearings is the first in the world tested and operable functional sample. The device works with a cylindrical case and in place of accurate case manufacture and assembly permits not only vibration dampening but also management of the defined bearing pivot position with micrometre accuracy. The device permits multiple increase of the slide bearing operation speed.

Customer benefits

Active control of slide bearing is not yet a common product on the market. Application is limited by the piezoelectric actuator strength up to 20 kN. The active bearing control can be used directly in the machines whose control system will perform functions not permitted by standard bearings, such as positioning with up to 8 micrometre accuracy. The new bearing will keep stable rotor run at high speed.

VŠB-TUO, Faculty of Mechanical Engineering, Conservation Workshop

CZ – Ostrava

PAV Z 037**■ ČZ 125 2XOHC**

A unique racing motorcycle of 1950s, used by the racing pilot František Bartoš

Area of application

The motorcycle is part of an extensive collection of the Moravia Silesia Region. The conservation workshop of VŠ-TU (Technical University of) Ostrava adds value to the collection, planning its utilisation for teaching as well as science and research.

Customer benefits

In future the development will permit conservation of historic motorcycles for private customers or performance of reverse engineering – dismantling to individual parts or groups of parts.

■ Model engine of Jawa 250 of 1939 1:1 from 3D print (FDM)

An accurate model of the engine of a Jawa 250 of 1939

Area of application

The model will be used for teaching and exhibition/popularisation purposes. It is also planned to be introduced to the blind.

Customer benefits

We perform reverse engineering and are able to prepare manufacturing documentation or assure manufacture of any part.

■ Ash tray of Tatra 87

An accurate replica of non-survived ash trays of Tatra 87

Area of application

The product will be used in Tatra 87 vehicles to complete the vehicle interior and its restoration to its original appearance and functionality

Customer benefits

We possess technologies and experience to design and manufacture any part into historic or other machinery units

Vysoké učení technické v Brně (Brno University of Technology)

CZ – Brno

PAV Z 077**■ System for proximity application of friction modifier to rail heads**

A stationary system for application of lubricants and friction modifiers to rail heads for the purpose of adhesion optimisation and rail traffic noise reduction

Area of application

For broad-gauge rails with cross section pursuant to ČSN 736320 • for lubricants with NLGI 000–1 • application pressure 3–9 bar • quantity applied by one nozzle 0.4–3 g

Customer benefits

In comparison to conventional application methods this system can boast of increased accuracy and repeatability of dosing, which is a necessary prerequisite for effective control of adhesion between the wheel and the rail in rail traffic.

■ Magnet-rheological damper of twisting movements

A prototype of magnet-rheological damper of twisting movements for rail vehicle chassis

Area of application

Chassis of high-speed rail vehicles

Customer benefits

A prototype of magnet-rheological damper of twisting movements for rail vehicle chassis and a controller permitting semi-active regulation of the dampening force with the result of reduced wear of the chassis and the railway superstructure and increase of maximum achievable speed

■ Robot Morpheus

A mobile investigation robot for chemical, biological, radiological and nuclear industry

Area of application

A robot for investigation of unknown environment that may be dangerous or inaccessible for humans, Morpheus is especially suitable for measurements of ionising radiation but may also be used for other CBRN threats or measurements of other environmental parameters, or also multispectral 3D mapping of the environment. The robot is able to work in difficult terrains.

Customer benefits

The robot was developed especially for carrying voluminous sensors. It is already in use at the State Institute for Radiation Protection for detection and search for sources of ionising radiation.

WHP TECHNIK s.r.o.

CZ – Brno

PAV P 070

■ Linear altimeter TESA MICRO-HITE plus M with motorised control

A new generation of altimeters for 21st century – functionality, easy control and design • supplied in three ranges: 0–350 mm, 0–600 mm, 0–900 mm

Area of application

The altimeter can be used wherever accurate measurements are needed across its working range. It is ideal for measurement laboratories where the users are able to make use of its full potential. Thanks to the broad range of touches the altimeter will become your universal assistant.

Customer benefits

In addition to the standard known high precision, repeatability and compactness the altimeters are equipped with hybrid imaging units for touch control and for button selections. The SW control environment intuitively guides the user to all functions, maximising the desire of the user to use it fully. The battery operation reaches the standards of professional accumulator tools where thanks to the eternal charger and a replacement battery you will never again need a power cable.

■ Digital magnetic probes Magnescale with USB output

Robust touch probes with USB output for laboratory use and for quality control stands

Area of application

A control and measurement workstation with requirement for very fine resolution and high precision and repeatability of measurements with the necessary data outputs of the measured values into a PC (with Windows OS).

Customer benefits

Simplification of measurement recording by means of automatic sending of the measured values into statistical and recording systems, without the need of any other HW or converters – just a USB probe and a software for data collection in your PC.

■ Digital calliper TESA Valueline with IP67 coverage

Digital TESA callipers with upper jaws for exterior measurements and digital calliper TESA Valueline. All with IP67 coverage and wireless data transfer option

Area of application

Mechanical engineering industry

Customer benefits

Digital TESA callipers with IP67 coverage, ideal for demanding operations

Ziehl-Abegg s.r.o.

CZ – Brno

PAV V 178

■ Ventilator with free runner ZAbluefin

A ventilator with the highest efficiency on the market, for installation in HAC devices; specific blade shapes have been developed on the basis of bionic knowledge

Area of application

Broad range of applications in HVAC technologies, broad use in ventilation and air conditioning units

Customer benefits

Very high efficiency of the free runner ZAbluefin and EC motor will assure fulfilment of the strict EU requirements for efficiency (eco-design) of ventilation units. Another bonus is very low noise
Thanks to the extraordinary technical parameters this new products quickly draws attention of all HVAC unit manufacturers.

ZLÍN ROBOTICS s.r.o.

CZ – Slušovice

PAV F 110

■ Mobile stand for collaborative robot

A universal mobile stand UMS for collaborative robot permits simple connection of the robot to the workstation or production line and quick relocations between sites

Area of application

Increased usability of the robot by ease of relocations between sites or production lines

Customer benefits

Simple connection of the robot to the workstation or production line and quick relocations between sites; the stand includes full connectivity of the robot to the work site