# Innovations of VDW members at the EMO Milan 2015

| Company name | Exibition Hall / Booth | Product | Short discription |
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| Behringer GmbH<br>Kerstin Besemer<br>Industriestr. 23<br>74912 Kirchardt<br>Germany<br>Phone: +49 7266-207-0<br>Fax +49 7266-207-500<br>*kerstin.besemer@behringer.net*<br>*www.behringer.net* | 18 / C17 | Product improvement | **Product name:** HBE Dynamic Serie<br>**Area of operations:** Steel trade, machine and tool building and in metalworking businesses<br>**Consumer value:** Performance, ease of use, energy efficiency,economical cutting<br><br>The new HBE-Dynamic series from the saw specialist, Behringer, delivers good performance, ease of use and economical cutting. The band saw series consists of 6 models in the cutting range from 260 to 700 mm covering an extensive field of applications in the steel trade, machine and tool building and in metalworking businesses. With the new, standard features, the HBE Dynamic defines a new standard for flexible applications. The saw feed by Servo Drive with Auto-Feed-Control for instance provides precise downfeed movements and thus high cutting performance with low tool costs. The standard cutting pressure control consistently prevents overloading of the saw blade. The double clamping vice provides good, safe clamping in automatic mode and flexibility in single cuts. And the optional mechanical stop enables rest pieces to be almost completely sawn, saving costly material. |
| | | Product improvement | **Product name:** HBM SC<br>**Area of operations:** Sophisticated Steel traders, Industry<br>**Consumer value:** Cutting performance, blade life and material savings<br><br>The Speed-Cutting technology by Behringer has revolutionized the band saw market in terms of cutting perfor-mance, blade life and material savings. Using 1.1 millimeter thin, 67 millimeter high standard saw blades, a mini-mum material consumption by the cutting kerf is ensured. Especially when compared to conventional large circular saws this material saving is considerably significant. The precise saw feed by Servo Drive with Auto-Feed-Control provides a constant chip load as well as a sensitive regulation based on varying material qualities and wear conditions of the saw blade. Overloading of the blade is thereby consistently avoided. For economical use, the service life of the tool plays a vital role. Special band guides and a suitable coolant system increase the efficiency significantly. Speed and cost efficiency are no longer in contrast. This is demonstrated very impressively by cutting performance and blade life which were until recently considered unthinkable. |
| | | Product improvement | **Product name:** VA-L 560 NC2<br>**Area of operations:** Aluminium-cutting of solid material, tubes and proflies<br>**Consumer value:** Enlarged cutting range and layer cutting<br><br>Specifically for cutting aluminium, Behringer GmbH with the VA-L 560 NC2 has designed a sawing system that sets new standards. Both in solid material as well as in pipes and profiles with sophisticated cross-sectional geometry, the powerful machine scores with unparalleled high output. The VA-L is designed to use carbide tipped circular saw blades with a diameter of 500 to 560 mm. With the XL package it is possible to achieve a cutting range of 240 mm round or 340 x 175 mm square material, using a 620 mm diameter blade. In addition to the XL package, an optional layer clamping device is available, enabling the machine to cut several profiles, with each cut utilizing the enlarged cutting range perfectly. The robust overall design with the latest drive technology in the feed axis and a very stiff saw blade guide ensure an optimum, low vibration sawing process with excellent cutting performance, excellent surface quality at maximum availability. |
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| Chiron Werke GmbH & Co. KG<br>Rainer Gondek<br>Kreuzstr. 75<br>78532 Tuttlingen<br>Germany<br>Phone: +49 7461 940 3822<br>Fax +49 7461 9408822<br>*rainer.gondek@chiron.de*<br>*www.chiron.de* | 11 / E04 - F05 | Product improvement | **Product name:** Complete production of complex components: Performance-enhanced Series 12 generation<br>**Area of operations:** Productive series production of large components<br>**Consumer value:** Compact, fast, precise, 128 tools in magazine<br><br>Complete production of complex components: Performance-enhanced Series 12 generation. The FZ12 FX is a single-spindle representative of Chiron's new 12 series generation. On display on the stand is a five-axis centre with new Heidenhain TNC 640 control. A distributor will be manufactured from aluminium. The key advantages of the multifunctional 12 series machining centres include improved milling and drilling capacity for reduced unit-cost series production, the highly rigid and robust construction, thicker ball screws and the low space requirement of just five square meters. |
| | | New development | **Product name:** Chiron DZ18W Magnum<br>**Area of operations:** Productive series production of large components<br>**Consumer value:** Powerful, efficient, high performance<br><br>Extended travel, higher axis speeds and more dynamic acceleration are the main features of the new twin-spindle DZ18 W Magnum. Larger bridge dimensions and travel distances - in X up to 630 mm, in Y 530 mm, and in Z 450 mm - enable the efficient processing of large components. |

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| Chiron Werke GmbH & Co. KG<br>Rainer Gondek<br>Kreuzstr. 75<br>78532 Tuttlingen<br>Germany<br>Phone: +49 7461 940 3822<br>Fax +49 7461 9408822<br>*rainer.gondek@chiron.de*<br>*www.chiron.de* | 11 / E04 - F05 | Product improvement | **Product name:** Chiron FZ08 MT precision+<br>**Area of operations:** Small parts processing, medical technology, watch and jewellery industry, precision mechanics<br>**Consumer value:** Turning and milling, very compact, high-precision, 96 tools in magazine<br><br>The new Chiron turning-milling centre has a footprint of only three square meters. It is a compact solution for high-precision, flexible and economical parts machining of bar or chuck parts. Despite its small footprint, it has travel distances (X-Y-Z) of 210 mm, 200 mm and 360 mm, an integrated swivel head, a rotary spindle and a counter spindle. On request, direct linear drives are available in addition to the ball-type linear drives used as standard. The turning-milling centre is ideal for situations in which high demands are placed on the workpiece surface - for example, in medical technology or in the watch and jewellery sector. |
| | | Product improvement | **Product name:** Chiron MILL 2000 high dynamics<br>**Area of operations:** Lightweight body construction, structural components, automotive, aerospace<br>**Consumer value:** Fast, highly dynamic<br><br>In Milan Chiron will be presenting for the first time a new dynamic package for the MILL series to improve performance. The rigidity and weight of the machine structure have been optimsed and highly dynamic drives are used. Delivering axis acceleration up to 1.7 g and a rapid traverse rate of 75 m/min, the MILL 2000 high dynamics yields maximum productivity in the primary and secondary time. The MILL is the ideal processing centre for companies that wish to finish lightweight body parts and structural components even faster and more productively. It can be used both as a proven single-spindle machining centre with a vertical moving column design, or with an NC swivel head for infinitely programmable positions ±110° for 5-axis machining, as well as with reciprocating motion in long-bed production. Automatic tool change using the pick-up method is available from 1.5 s up to a maximum of 60 tool stations or a background magazine which provides up to 163 tools during primary processing time. |
| | | New development | **Product name:** Scherer and Chiron present complete machining cell<br>**Area of operations:** Series production e.g. of automobile parts requiring turning and milling<br>**Consumer value:** Optimally co-ordinated operations / Saving of resources<br><br>Chiron and Scherer Feinbau jointly showcase a highly productive and compact complete system for highly efficient, automated and double-spindle turning and milling of cylinder head components for injection pumps. On show will be a VDZ 100 DS vertical lathe from Scherer in combination with a Chiron DZ12 W machining centre with workpiece changer and integrated FlexcellUno robot automation. The Chiron machine robot serves the two machines via a delivery belt. The lathe is first supplied with the raw parts from a pallet store. After being turned they are transported on a conveyor belt to the milling centre. The parts are then milled and returned to the pallet store as finished pieces. |
| | | Product improvement | **Product name:** Chiron FZ15W Baseline<br>**Area of operations:** Small series, pilot series, job shopper, automotive, aerospace, engineering<br>**Consumer value:** 2 table sides thanks to workpiece changer and reliable<br><br>The "baseline" of Chiron represents a low-cost entry point into single-spindle machining technology. All production requirements of small and medium-sized series can be met with the baseline series. All the machines are preconfigured, can be used flexibly and are available in five-axle versions, with control systems either from Heidenhain or Siemens. |
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| Datron AG<br>Charlotte Breitwieser<br>In den Gänsäckern 5<br>64367 Mühltal<br>Germany<br>Phone: +49 6151 1419-189<br>Fax +49 6151 1419-690<br>*charlotte.breitwieser@datron.de*<br>*www.datron.de* | 4 / C01 | Product improvement | **Product name:** Datron CNC milling tools<br>**Area of operations:** CNC machining<br>**Consumer value:** Designed for HSC, long lifespan, high precision<br><br>Datron CNC milling tools are specifically designed for high-speed milling (HSC). By using high-quality metals and newly-developed coatings, they achieve significantly longer lifespans than most of their competitors. Especially the mini tools convince customers worldwide by being highly profitable and staying precise for a long time. Datron CNC milling tools are compatible with many open CNC milling systems and tools can be customized for specific needs, ensuring maximal flexibility for customers. |

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| Datron AG<br>Charlotte Breitwieser<br>In den Gänsäckern 5<br>64367 Mühltal<br>Germany<br>Phone: +49 6151 1419-189<br>Fax +49 6151 1419-690<br>*charlotte.breitwieser@datron.de*<br>*www.datron.de* | 4 / C01 | New development | **Product name:** DatronATRON M8Cube<br>**Area of operations:** CNC machining<br>**Consumer value:** Designed for HSC, highly precise, user-friendly, for aluminium and non-ferrous metals<br><br>In the metal-processing industry high precision, speed and profitability are important machine features. The M8Cube is Datron's answer to this: a universal, compact, high-speed CNC machine for milling high-tech materials with micro tools. Having a large working area (1,020 mm x 720 mm x 200 mm), it only has a relatively small footprint of 1,740 mm x 1,740 mm x 1,950 mm. With its short set-up times, a vibration-free design allowing for high precision, extremely fast machining performances with small tools and using high-frequency spindles with up to 60,000 rpm, it provides new opportunities in milling, drilling and engraving, making it the top choice for the efficient machining of housings, profiles and panels made of aluminium and other nonferrous metals or composites. |
| | | New development | **Product name:** Datron MLCube<br>**Area of operations:** CNC machining<br>**Consumer value:** Designed for HSC, large working area, multiple clamping techniques simultaneously are possible<br><br>Machining large-format metal parts is a challenge not only for vehicle and machine engineering. Datron's MLCube is a CNC milling machine specifically built to cope with such tasks. The spacious working area (1,520 mm x 1,020 mm x 200 mm) makes it the best choice for cost-effective sheet machining, for example the nesting-assisted production of front panels, housings, profiles and other large-format aluminium workpieces. Other nonferrous metals or composite materials can also be processed efficiently with the MLCube. With its short setup times, low power consumption, the use of high-frequency spindles with up to 60,000 rpm and the possibility to use different clamping techniques simultaneously, it provides long-term and extremely high profitability even for low production volumes. |
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| DMG Mori<br>Nastassja Neumaier<br>Sulzer-Allee 70<br>8400 Winterthur<br>Switzerland<br>*technicalpress@dmgmori.com*<br>*www.dmgmori.com* | 4 | New development | **Product name:** CTX gamma TC 2nd Generation<br>**Area of operations:** Complete machining<br>**Consumer value:** Better performance<br><br>Better performance and a bigger working area are the main features of the new CTX gamma 1250 TC and CTX gamma 2000 TC. The indisputable highlight of the two 2nd generation machines from DMG MORI is the ultra-compact turning/milling spindle. Their compact dimensions translate into a space saving of 70 mm, meaning that 550 mm long workpieces can be horizontally drilled out or hollow turned. In its development of the compactMaster turn & mill spindle, DMG Mori has increased the turning torque by 130 percent, meaning that up to 230 Nm is available to users. The spindle operates at speeds of up to 12,000 rpm. The new CTX gamma TC models also have improved dynamics: The feed speeds of 50 m/min in the X, Y and Z directions have been increased by up to 65 percent. |
| | | New development | **Product name:** duoBlock 4. Generation<br>**Area of operations:** Milling<br>**Consumer value:** Unique rigidity, extremely high precision, long-term precision<br><br>The latest generation of duoBlock machining centres excels with its unique rigidity and extremely high precision. Above all, the sophisticated cooling system with comprehensive cooling features on the spindle head, NC round table and in the basic machine guarantees long-term precision even in the standard version. The large modules of the duoBlock series also contain numerous options for machine customization such as the precision package, which includes cooling of the entire feed drive or bed temperature control. Furthermore, the customer can select from the widest range of spindles currently on the market – with torques up to 1600 Nm. In combination with the optional heavy duty machining packages, users get up to 50 percent better milling performance in titanium and Inconel. |
| | | Product improvement | **Product name:** Ecoline New Design<br>**Area of operations:** Entry-level segment<br>**Consumer value:** Optimised ergonomics and greater stability<br><br>The latest design evolution of the Ecoline model series from DMG MORI underlines the high quality claim of the machine tool manufacturer's entry-level segment. Significantly, more robust and scratch-resistant finishes made from anodised aluminium and powder-coated metal cladding provide a high degree of value stability. DMG Mori has also designed the Ecoline models to be even more ergonomic with regard to accessibility. The safety windows of the machines can be quickly and easily replaced from the outside. The universal turning machine ecoTurn 450 has furthermore internal chip protection that prevents damage to the window. |

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| DMG Mori<br>Nastassja Neumaier<br>Sulzer-Allee 70<br>8400 Winterthur<br>Switzerland<br>*technicalpress@dmgmori.com*<br>*www.dmgmori.com* | 4 | New development | **Product name:** NLX 6000\|2000<br>**Area of operations:** Turn & Mill machining<br>**Consumer value:** Powerful turn & mill machining with torque of up to 12,000 Nm, long parts and large diametres<br><br>The basis for productive and high-precision machining on the NLX 6000\|2000 are the tremendous rigidity of the drive trains, the structure of the machine bed and the flat guides with their high damping characteristics. The outstanding milling performance is guaranteed by the turret magazine with BMT technology. The integrated direct drive motor achieves up to 4,000 rpm and a high torque of up to 117 Nm. The highlight of the NLX 6000\|2000 is the application-oriented selection of powerful spindles. The range starts at type B with a spindle diameter of 185 mm. In this case, the maximum speed is 1600 rpm, and the torque is up to 7,000 Nm. The range of spindles is rounded off by two spindles, each with impressive torques of up to 12,000 Nm. Type C has a diameter of 285 mm, and for the type D it is an impressive 375 mm. |
| | | New development | **Product name:** SprintPrint 32\|5<br>**Area of operations:** Long turning of parts with diametres of up to 32 mm<br>**Consumer value:** Keeps part costs to a minimum<br><br>The Sprit 32\|5 is designed for both short and long turning of workpieces of up to ø 32 x 600 mm. With a base area of less than 2.8 m², the new development is an extremely compact production facility. The Sprint 32\|5 machines materials in rod form up to 32 mm in diameter using two spindles and a 2-channel controller. DMG MORI keeps part costs to a minimum in this way. 22 tools on two independent workpiece carriers also make it possible to carry out complex machining processes. The automatic lathe also machines demanding workpieces radially at the main spindle with four driven tools. In total, the machine is equipped with five linear axes and on C-axis for the main spindle. |
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| Emag Holding GmbH<br>Markus Isgro<br>Austraße 24<br>73084 Salach<br>Germany<br>Phone: +49 7162 174658<br>*misgro@emag.com*<br>*www.emag.com* | 4 / B23 | Product improvement | **Product name:** Mind M Induktionshärtemaschine<br>**Area of operations:** Induction hardening<br>**Consumer value:** Induction hardening for large-scale production<br><br>With the Mind M, eldec, a subsidiary of the Emag Group based in Dornstetten, Germany, has succeeded in combining all the essential components for induction hardening within a single housing, that is, the generator, cooling and control systems, significantly reducing the space requirement for the machine. The modular design allows a wide range of applications for workpieces of any kind. The Mind M is available in two versions: the Mind M 250 and the MIND M 1000, which provide different degrees of Z-axis inductor travel. This enables shafts up to 1,000 mm in length (MIND M 1000) and chucked components up to 350 mm in diameter to be processed. Generator output of up to 30 kW HF and 100 kW MF is possible; the corresponding cooling capacities have been set to 20 kW and 30 kW. Other options are available in the processing cell to ensure optimal adaptation to the production environment. |
| | | New development | **Product name:** VL 4 H<br>**Area of operations:** Vertical gear hobbing<br>**Consumer value:** Customer benefit: large-scale manufacturing of gears on production lines<br><br>The design of the VL 4 H vertical gear hobbing machine draws from Emag's modular concept. At its core are high-performance drives for high-speed operation of the work spindle and the hobbing unit allowing gears with a diameter of up to 200 mm and module 4 to be dry-hobbed in just a short time. The machine's vertical design prevents the formation of chip clusters since the chips fall directly into the chip conveyor, and, characteristic for Emag, its pick-up principle ensures short idle times. Like all modular machines, the VL 4 has a pick-up spindle that removes the component from the conveyor belt and transports it to the tailstock, where the tailstock flange provides very rigid support. After hobbing, the pick-up spindle removes the component from the machining area. This integrated automation concept assures high availability. |
| Emag Holding GmbH<br>Markus Isgro<br>Austraße 24<br>73084 Salach<br>Germany<br>Phone: +49 7162 174658<br>*misgro@emag.com*<br>*www.emag.com* | 4 / B23 | New development | **Product name:** TrackMotion<br>**Area of operations:** Automation<br>**Consumer value:** Customer benefit: fast, extremely flexible automation solution<br><br>Multi-spindle machining on numerous stand-alone systems calls for the quick transport of parts between machines as well as fast part supply and discharge. With its TrackMotion, EMAG has developed a lightening-fast automation solution. The modular rail system – the track – lends the solution its name and lies at the heart of the TrackMotion. It is installed behind a parts storage facility and the machines to save space. The TransLift workpiece gripper provides the "motion" for the track system, transporting the parts from one machine to the next. Not only does TransLift transport the workpieces at a speed of 150 m/min, replacing conventional conveyor belts, it also has 450 mm of Z-axis stroke and can turn the workpieces over as well. TransLift combines the functionality of a conveyor belt, turnover station and lifting unit into a single automated system, the ultimate reason for its space-saving and simple design. TransLift's great flexibility is also reflected in the parts storage facility, whether for loading on carrier prisms, pallets or stacker pallets – thanks to the gripper's extraordinary speed and mobility, the possibilities are unlimited. |

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| | | Product improvement | **Product name:** VL Baureihe<br>**Area of operations:** Vertical lathe<br>**Consumer value:** High-productivity turning of chucked components<br><br>The vertical pick-up turning machines in the VL series were specially designed for machining precision chucked components. The VL machines are available in four sizes to cover the widest possible range of parts. The smallest machine, the VL 2, is designed for chucked components up to 100 mm in diameter. For each of the other machines in the series – the VL 4, VL 6 and VL 8 – the diameter of the workpieces increases by another 100 mm, making it possible for the the VL series to cover a workpiece size ranging up to 400 mm. For chucked components, each VL machine is equipped with pick-up automation, an integrated parts storage facility and a tool turret with up to 12 (driven) tools. The machines can also be equipped with a Y-axis in the turret for machining complex geometries. |
| | | New development | **Product name:** VMC 450 MT<br>**Area of operations:** Machining of big parts<br>**Consumer value:** Customer benefit: complex machining with short set-up times<br><br>VMC 450 MT vertical turn/mill machine features a body made of Mineralit polymer concrete, which has particularly good damping properties. The turning/milling spindle is mounted on a compound slide with X and Z axes to provide excellent, quick machining results and is available in two versions, 26.4 kW and 43 kW. Workpieces up to 450 mm in diameter can be machined with the VMC 450 MT using various chucks and three main spindle versions with 49 kW, 83 kW or 138 kW. Thanks to the accessible machining area, this machine can be easily loaded by hand or with a crane and connecting with robots or loading gantries is also possible through an NC-operated loading hatch on the side. Using a tool magazine with up to 120 tool positions, even the most complex geometries can be achieved for a wide variety of parts. |
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| Euchner GmbH +Co. KG<br>Frank Kretzschmar<br>Kohlhammerstraße 16<br>70771 Leinfelden-Echterdingen<br>Germany<br>Phone: +49 711 7597-382<br>*press@euchner.de*<br>*www.euchner.de* | 3 / H02L01 | New development | **Product name:** Safety switch CTP<br>**Area of operations:** Safeguarding of safety doors at machines and installations<br>**Consumer value:** Safeguarding of a safety guard in PL e with only one safety switch<br><br>The new safety switch CTP combines the proven principle of operation of electromechanical safety switches with guard locking and guard lock monitoring with modern transponder-coded safety engineering. Thanks to the transponder technology, even a single CTP achieves category 4 / PL e according to EN ISO 13849-1, without additional fault exclusion. The CTP also significantly surpasses the requirements in EN ISO 14119 for a type 4 switch with high coding level. Its usage is ideal in applications in which a high performance level and a locking force of up to 2,600 N are required. Depending on the version, the CTP is also suitable for direct connection to safe control systems or for the series connection of up to 20 devices. The very narrow design of the CTP makes possible straightforward and space-saving mounting on the safety guard. The robust plastic housing with metal head as well as the high degree of protection IP 69K makes the CTP the all-rounder for almost every industrial usage. |
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| Grob-Werke GmbH & Co.KG<br>Marion Häring<br>Industriestraße 4<br>87719 Mindelheim<br>Germany<br>*marion.haering@grob.de www.grobgroup.com* | 11 / E02/F01 | Product improvement | **Product name:** Innovations of mechanical engineering<br>**Area of operations:** Automotive, Automotive Supplier, Aerospace, Mechanical Engineering, Medical, Die & Mold<br>**Consumer value:** Increase of efficiency in production processes<br><br>At the EMO 2015 in Milan, Grob-Werke will present a number of new developments and technological innovations. These primarily include the next stage of development of the G-module range, the newly developed GROB circular storage system for maximum workpiece capacity and flexibility, a new gantry concept for system machines, a new generation of hardware and software, as well as the continued advancement of the Grob G-Net software. With the next innovation stage of the G-module range, GROB-WERKE is introducing a complete redevelopment of the machine to the market. This primarily concerns some component groups and their arrangement as well as modification of the machine design. The machine has become more compact, faster and more efficient, with additional functions and features that were not previously possible in G-modules. The fifth G-Net application, “G-Coach”, will also be introduced. It comprises programming, simulation and training software for SINUMERIK Operate and allows not only convenient programming of machining programs using software with identical controls, but also creates conditions for simulating the milling process. |
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| Hamuel Maschinenbau GmbH & Co. KG<br>Martin Heller<br>Indstriestraße 6<br>96484 Meeder<br>Germany<br>*martin.heller@hamuel.de*<br>*www.hamuel.de* | 1 / A21 | Product improvement | **Product name:** 5-axes turning-milling centre HSTM B HD<br>**Area of operations:** Aerospace<br>**Consumer value:** Machining of complete blisks<br><br>The Hamuel 5-axes turn-milling centre of the HSTM B HD series is particularly suited for the machining of blisks at diameters of up to 850 mm in a horizontal work-piece arrangement. Where the attainable accuracies and surface qualities are concerned, the milling centre meets the utmost demands of modern blisk machining. Blisks, so-called blade integrated disks, are increasingly used in the compression section of jet engines to reduce weight, to increase efficiency and to minimize maintenance. Using a special blisk machining software, Hamuel has optimised the milling strategies in such a way that the best surface qualities and blisk geometries possible are obtained in the processing of titanium, nickel-based alloys and titanium aluminides. |
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| Handtmann A-Punkt Automation GmbH<br>Frau Sabrina Heck<br>Eisenbahnstraße 17<br>88255 Baienfurt<br>Germany<br>*sabrina.heck@handtmann.de*<br>*www.handtmann.de* | 11 / F14 | Product improvement | **Product name:** HBZ Trunnion 80 with Sinumerik-controlled robot automation<br>**Area of operations:** 5-axis HPC machining applications in aluminium, steel, titanium etc. / Industry sectors: machine construction, energy, mold- and die, aerospace<br>**Consumer value:** Powerful machining, material and application diversity, high spindle power, high precision, high productivity<br><br>Handtmann presents at this year's EMO a new facet of the HBZ Trunnion machine series' application range: the automation of the HBZ Trunnion 80 with Kuka KR 600 Fortec six-axis industrial robot controlled through the Siemens CNC – Sinumerik with Run MyRobot/Machining. This innovation is a new development of the strategic partners Kuka and Siemens with Handtmann as a launch customer. Material handling and post machining processes through Sinumerik-based robot automation ensures high machine- and spindle utilization in 5-axis simultaneous machining as well as high accuracy for complex workpieces. Due to the intuitive configuration and programming, robot mechanisms are seamlessly integrated into machine concept and production processes. Handtmann guarantees its customers with this intelligent robot- and Sinumerik-based automation solution shorter machining times and reduced cost per part which results in an increase of machine productivity. |
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| Gebr. Heller Maschinenfabrik GmbH<br>Marcus Kurringer<br>Gebrüder-Heller-Straße 15<br>72622 Nürtingen<br>Germany<br>*marcus.kurringer@heller.biz*<br>*www.heller.biz* | 7 / E03 | Product improvement | **Product name:** 5-axis mill/turning centre CP 4000<br>**Area of operations:** Rotation-symmetrical components with a length-to-diameter ratio below 1<br>**Consumer value:** For maximum flexibility of use in complete machining<br><br>A reduced number of setups and increased workpiece precision are what is normally associated with 5-axis machining. However, if additionally high dynamics and chip removal rates and a powerful machining unit are required, in addition to all that, the Heller C series provides a function for horizontal, vertical and tilted turning with A and B axis. At EMO 2015, Heller will be demonstrating machining of work-pieces to full capacity on the 5-axis mill/turning centre CP 4000, equipped with PCU 63 swivel head unit and HSK-T 63 spindle taper, offering a work area of 800/800/1,045mm (X, Y, Z). With 44kW power, 242Nm torque and up to 10,000rpm spindle speed, Heller proves that demanding mill/turning operations, highly precise control of speed and acceleration and variable adjustment in terms of precision and surface finish are feasible. The CP 4000's machine concept is ideal for turning operations, using a fifth axis provided by the tool. That means, vertical and horizontal turning operations of outer and inner contours can be accomplished without any problem with the C axis and optional A and B axis. As expected, the CP 4000 carries the typical Heller DNA of enabling highly productive cutting, using economically efficient cutting parameters. High cutting performance is achieved due to the extremely stiff swivel-head geometry, torsional stiffness and form fit provided by a spindle locking feature. High power is also in demand when the workpiece rotates against the tool: for that, the rotary table with direct torque drive delivers the required power and speeds up to 1,000rpm. Another interesting feature in this context is a function developed by Heller for the identification of imbalances on the workpiece or the rotary table. It does not require any additional sensors but uses internal drive signals to identify even the slightest imbalances on the workpiece, enabling precise centric clamping. A specially defined user interface supports the operator in correcting imbalances. For turning tools, Heller additionally offers a standard tool measurement system using tactile sensors. At EMO 2015, Heller will be presenting model CP 4000 equipped with Siemens Sinumerik 840 Dsl control. |

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| | | Product improvement | **Product name:** 5-axis machining centre FP 4000<br>**Area of operations:** 5-sided and 5-axis simultaneous machining<br>**Consumer value:** Productivity, process dependability and precision<br><br>5-axis milling is centred around productivity and process dependability. The goal is to set new standards in terms of universality, flexibility and absolute precision. At EMO 2015, Heller will be demonstrating this with 5-axis machining centre model FP 4000 equipped with a twin drive in the Z axis. The machine's work area of 800 x 800 x 1,045mm (X/Y/Z) provides good accessibility with ample dimensioning of axis drives. A fifth axis provided by the tool provides the basis for maximum process dependability and workpiece loads of up to 1,400kg. In combination with Fastems' FPC 1000 flexible pallet container, Heller demonstrates that a system availability way above 90 percent is feasible without restrictions in terms of chip removal rate – no restrictions because the machine concept presented in Milan is equipped with the PCU 63 Power Cutting Universal swivel head unit. This machining unit, providing 44kW power and 242Nm torque, counts among the most powerful 5-axis spindles with HSK63 spindle taper on the market. Additionally, the power provided is available at any spatial angle. As a result, the FP 4000 enables heavy-duty cutting, combined milling and drilling operations or 5-sided machining in a single setup. Even in 5-axis simultaneous milling the machine fulfils highest requirements in terms of dimensional and contouring accuracy as well as economic efficiency. For years, the 5-axis machining centre model FP 4000 has been among the first choice of machines for a wide variety of industries, e.g. tool and die or contract manufacture. And there is good reason for that, since the machine provides impressive repeatability. Temperature curves of a 5-axis machine inevitably vary throughout a day of production. However, due to the precise construction and thermal stability of the machine, they have no influence whatsoever on its precision. This level of precision down to the µ range, is provided by absolute encoded, direct measuring systems, high-resolution rotary encoders and YRT bearings with integrated measuring system. What is more, Heller combines this level of precision with the required dynamics with proven 5-axis kinematics provided by the tool in X, Y, C and/or A axis and two axes provided by the workpiece in Z and B. At EMO 2015, Heller will be exhibiting the machining centres in combination with an 80-place tool magazine and equipped with Heidenhain iTNC 530 control. |
| Gebr. Heller Maschinenfabrik GmbH<br>Marcus Kurringer<br>Gebrüder-Heller-Straße 15<br>72622 Nürtingen<br>Germany<br>*marcus.kurringer@heller.biz*<br>*www.heller.biz* | 7 / E03 | Product improvement | **Product name:** 4-axis machining centre H 4500<br>**Area of operations:** Highly productive machining of a wide range of parts and materials<br>**Consumer value:** High performance and precision, from light-metal machining through to heavy-duty cutting<br><br>Smaller batch sizes, shorter delivery times and growing complexity of components continue to pose new challenges to machine manufacturers. The same is true for reliability and productivity when machines are operated to the limits. With 4-axis machining centre model H 4500, Heller will be presenting a machine concept at EMO 2015, providing a small footprint and designed for robust processes as a cost-effective entry model to the HSK-A 100 class. At the same time, the machine concept offers a comprehensive range of standard equipment due to its high degree of standardisation, resulting in almost limitless options of individual application. This includes a tool magazine with 50 storage places, tactile tool measurement and cleaning of tool cartridges and holders. Model H 4500, for instance, provides a load capacity of 1,400kg per pallet to suit a broad spectrum of machining applications. At EMO 2015, Heller will be exhibiting model H 4500 equipped with Fanuc control 31i-B and the Enforced Eco Cutting spindle version, providing 38kW power, 242Nm torque and 12,500rpm spindle speed. These characteristics not only provide high milling capacity but also the flexibility for a broad range of applications from light-metal machining through to heavy-duty cutting. Although this concept of Heller's comes without extreme rapid traverse and acceleration rates and rather focuses on realistic dynamic rates, adequate system design allows to minimise positioning times and to achieve a chip-to-chip-time of 4.0 seconds. All in all, the stability and productivity provided by the H 4500 mainly result from the known advantages of HELLER's horizontal machining centres, including the inherently rigid design of the machine bed, a twin drive in the Z axis, the water-cooled spindle neck and free chip fall between the rotary table and the pallet changer, steep chip chutes in the work area and at the load/unload station as well as a 600mm wide scraping conveyor covering the complete Z-stroke. |
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| Kapp Werkzeugmaschinen GmbH<br>Carola Rehder<br>Callenberger Str. 52<br>96450 Coburg<br>Germany<br>*carola.rehder@kapp-niles.com*<br>*www.kapp-niles.com* | 4 / C12 / D13 | Product improvement | **Product name:** Gear centre KX 500 Flex<br>**Area of operations:** Machining of gears and special profiles • Suitable for prototyping to large batch production<br>**Consumer value:** Fexible gear grinding machine for various slot sizes equipped with integrated robot cell for minimised set-up effort.<br><br>The basis of the gear centre KX 500 Flex is a shared modular machine platform. Application-specific production solutions can be configured on this versatile machine utilising flexible process technology. The machine is designed to perform diverse processing jobs efficiently and economically. Thus, it is suitable for the production of single pieces as well as for the serial production of high-quality gears. It can be equipped both with dressable ceramic tools for prototype machining and grinding of medium to high-volume series and non-dressable tools for the grinding of challenging gear geometries. The concept features an index table which incorporates the tailstock support. The profile dressing unit is rotated into dressing position by the index table. Besides the common axes the index table and tailstock are designed as NC-axes, too. The workpiece and tool are directly driven. |

# Innovations of VDW members at the EMO Milan 2015

| Company name | Exibition Hall / Booth | Product | Short discription |
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| | | Product improvement | **Product name:** Kapp dressing tools<br>**Area of operations:** For dressing of dressable vitrified tools<br>**Consumer value:** Kapp offers the widest range of dressing tools for continous generating grinding.<br><br>Kapp manufactures dressing tools in positive and negative electroplated version. Highest flexibility can be achieved with form rolls for topological dressing. For the so called "flexible dressing" the tools are designed to dress worms for different workpieces with one tool, while the tip of the worm is dressed separately. For serial production there are profile rolls with integrated tip dresser, in a workpiece specific manner also for grinding of well defined gear root area. Most productive for high volume are multi-ribbed diamond profile rolls manufactured in a negative electroplating process. |
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| Kasto Maschinenbau GmbH & Co. KG<br>Petra März<br>Industriestr. 14<br>77855 Achern-Gamshurst<br>Germany<br>*kasto@kasto.de*<br>*www.kasto.com* | 18 / A18 / B09 | New development | **Product name:** KastoWin<br>**Area of operations:** Universally suitable for numerous sawing applications<br>**Consumer value:** Great price/performance ratio, high cutting performance, simple operation, numerous possible applications<br><br>The KastoWin range consists of five fully-automated bandsaws that cover cutting ranges from 330 to 1,060 mm. In addition, the machines are universally suitable for use with various types of steel. This makes the KastoWin range a flexible solution for numerous applications. The various sizes are all designed in line with the same construction, while the components used are largely identical. This means that Kasto can offer the new saws at considerably lower prices than comparable products. All KastoWin band saws feature a frequency-controlled drive that enables cutting speeds of 12 to 150 metres per minute. For simple, intuitive operation, the KastoWin saws are equipped with the innovative touch-screen SmartControl unit, which monitors and controls all relevant sawing and order parameters. |
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| Klingelnberg GmbH<br>Sandra Winter<br>Peterstr. 45<br>42499 Hückeswagen<br>Germany<br>*sandra.winter@klingelnberg.com*<br>*www.klingelnberg.com* | 4 / D23 | Product improvement | **Product name:** Bevel Gear Cutting Machine C 30<br>**Area of operations:** Automotive, Aerospace, Agriculture<br>**Consumer value:** Machine Tasks Are Made Simple<br><br>Thanks to continuous advancements in the vertical concept, the Oerlikon C 30 Bevel Gear Cutting Machine sets the standard for dry processing. All bevel gear machines in this series are also equipped with a heat-stable, vibration-damping machine bed. An optimized axis arrangement ensures reduced approach paths and thus significantly less load on the drive components – and a stiffer design of the overall system. Moreover, an integrated deburring tool enables maximum productivity and utmost process safety through the use of the PULSAR method. Another highlight of this machine series: its innovative operating concept and ultra-modern control technology. The touchscreen display and the newly developed operating concept make the C 30 more intuitive to operate compared with standards commonly found on the market. |
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| Lasco Umformtechnik GmbH<br>Dr. Stefan Erxleben<br>Hahnweg 139<br>96450 Coburg<br>Germany<br>*lasco@lasco.de*<br>*www.lasco.com* | 18 / D15 | New development | **Product name:** FlexiMat<br>**Area of operations:** Preforming operations<br>**Consumer value:** Material savings<br><br>The new "FlexiMat", a special unit for preforming operations, distinctly increases material efficiency in the forming process. Compared with conventional methods of massive metal forming it allows material savings of up to 20 percent. This was the outcome of a research project that was funded by the Federal Ministry of Education and Research under the Funding Number 17PNT023, carried out jointly by the Labor für Massivumformung (LFM/Iserlohn – Laboratory of Massive Forming) and Lasco and supported by renowned companies of the German forging industry. The "FlexiMat" is the execution of the basic idea of a preforming unit with a vertical closing and forming axis each as well as several upsetting axes, which was followed in the research project and brought to readiness for start of production by LASCO. It is based on a hydraulic press with additional horizontal upsetting cylinders. Seven basic shapes can be produced with the "FlexiMat". Combining them complex preform geometries can be produced. Three forming steps are envisaged. The parts will be moved on via a special conveying system which allows forming both in one and in up to three steps simultaneously. |
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# Innovations of VDW members at the EMO Milan 2015

| Company name | Exibition Hall / Booth | Product | Short discription |
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| Liebherr-Verzahntechnik GmbH<br>Thomas Weber<br>Kaufbeurer Straße 141<br>87437 Kempten<br>Germany<br>*thomas.weber@liebherr.com*<br>*www.liebherr.com* | 4 / C20 / D21 | New development | **Product name:** Anfas- und Entgratmaschine LCD 300 ChamferCut<br>**Area of operations:** Chamfering of gears<br>**Consumer value:** Chamfer machine for very high chamfer quality.<br><br>Liebherr now provides a stand-alone chamfering solution, using the increasingly popular ChamferCut-method – the LCD 300 ChamferCut. Clamping operations can be performed to maximum rigidity in the gear-cutting machine due to extremely fast set-up times and streamlined workpiece clamping. This technology enables an LCD 300 ChamferCut machine to perform the same machine-finishing work on the gearwheels as roughly two to three milling machines.<br><br>At a glance:<br>• High speed, short cycles<br>• No reduction in hob length<br>• Hob and ChamferCut geometries can be selected independently<br>• Rigid jig for hobbing, adjusted jig for ChamferCut<br>• Very small diameters possible (>30mm)<br>• High quality and precision chamfer shapes<br>• Hassel-free tooth-base chamfering<br>• Very long service lives even where dry machining is involved<br>• No needle-like swarf<br>• Machine settings via CNC axes with simple set-up<br>• Lowest chamfering tool costs in comparison<br>• Tools are easy to regrind<br>• User-friendly data input |
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| Open Mind Technologies AG<br>Carolin Lang<br>Argelsrieder Feld 15<br>82234 Wessling<br>Gernany<br>*carolin.lang@openmind-tech.com*<br>*www.openmind-tech.com* | 4 / C10 | New development | **Product name:** hyperMill<br>**Area of operations:** Mold and Aerospace Industry<br>**Consumer value:** Up to 90 per cent time savings for finishing<br><br>At the EMO Milano 2015 Open Mind is presenting the new 2015.1 version of its hyperMILL CAM solution software. Highlight of the upcoming version is a finishing strategy: 'tangent plane machining'. This 5axis strategy is part of the new performance package hyperMill Maxx Machining and enables 5axis CAM innovation – 'tangent plane machining – which helps to significantly speed up finishing. The full potential of the strategy is realised with a suitable tool - the conical barrel cutter. If the user implements the new 'tangent plane machining' strategy together with the new tool, it is possible to reduce machining times by up to 90 per cent. This time saving is due to the cutter's special shape. All barrel-shaped tools only use a section of the circumference, a so-called circle segment. This makes it possible to implement large radii. The advantage of the barrel shape is therefore the large tool radius, which allows for considerably larger step-overs for the same theoretical scallop height in comparison with ballmills. |
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| Preiseler GmbH & Co. KG<br>Dr. Benedict Korischem<br>Morsbachtalstraße 1 u. 3<br>42855 Remscheid<br>Germany<br>*peiseler.rs@peiseler.de* *www.peiseler.de* | 11 / F19 | Product improvement | **Product name:** Direct driven rotary tilt table ZASD 320<br>**Area of operations:** **T**urbine manufacture<br>**Consumer value:** Automatic loading device<br><br>The ZASD 200, used for turbine blade manufacturing, now has a bigger, newly designed version, named ZASD 320. The faceplate of the C-axis is equipped with a zero clamping system, the implemented direct drive has an appr. three times bigger torque. The overhung, swiveling casing is designed for the assembly of a traveling tail stock. Customers can choose between two options, either fixed centre or a full rotating NC tailstock. The torque of the direct driven A-axis has been increased by more than two times. |
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| Pittler T&S GmbH<br>Oliver Koch<br>Johannes-Gutenberg-Straße 1<br>63128 Dietzenbach<br>Germany<br>*oliver.koch@dvs-gruppe.de* *www.pittler.de* | 4 / C17 | New development | **Product name:** PV315<br>**Area of operations:** Machining of transmission parts for commercial vehicles<br>**Consumer value:** Less investment, higher efficiency, lower TCO costs, less floor space needed, less energy consumption<br><br>Pittler combines the technological know-how of the group in its third generation of the PV machine series. The newly developed PV315 turns, cuts gears, grinds and measures workpieces with diameters up to 315 mm with maximum efficiency in one clamping operation. The performance spectrum of the PV315 also includes thread cutting as well as deburring and pointing work, making it the only machine series on the market to date capable of cutting gears using the skiving process within the scope of complete machining. Developed especially to meet the requirements of the commercial vehicle industry, it is particularly suited for machining transmission components such as hollow gears or planetary carriers. |

# Innovations of VDW members at the EMO Milan 2015

| Company name | Exibition Hall / Booth | Product | Short discription |
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| Profiroll Technologies GmbH<br>Jens Wunderlich<br>Pee-Wee-Straße 1<br>04849 Bad Düben<br>Germany<br>*profile.rolling@profiroll.de*<br>*www.profiroll.de* | 2 / E03 | New development | **Product name:** Rollex FBR<br>**Area of operations:** Automotive<br>**Consumer value:** Shortening of process chain<br><br>The Rollex FBR is a CNC controlled cold rolling system for finishing and burnishing rolling of machined gears. Gears made by rough machining are favorable in price but show a process related rough gear surface with several micro teeth errors. This gear surface is finished by rolling with Rollex FBR and teeth errors are corrected. Additionally the heat treatment related distortion is pre-corrected. The introduction of this process requires close cooperation between user and machine supplier but ensures the benefit of having a low price alternative process chain without final hard fine machining. Besides, the Rollex FBR meets most modern requirements on Energy Efficiency due to electromechanical drives and the absence of any hydraulics. |
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| Samag Group<br>Saalfelder Werkzeugmaschinen GmbH<br>Hüttenstraße 21<br>07318 Saalfeld<br>Germany<br>Phone: +49 3671 585 0<br>*vertrieb@samag.de*<br>*www.samag.de*<br>(Pressekontakt Köhler + Partner GmbH)<br>Johanna Nöske<br>*jn@koehler-partner.de*<br>*www.koehler-partner.de* | 11 / G18 | Product improvement | **Product name:** MFZ 4-2W, TFZ 2L-1000<br>**Area of operations:** Automotive suppliers and others<br>**Consumer value:** With its travel and feed range, it is currently the fastest machine of its type<br><br>The MFZ 4-2W ls part of the MFZ famlly of modular machines with two, three and four spindles for horizontal complete machlnlng of cube-shaped parts made of steel, cast iron or aluminum. With its travel and feed range, it ls currently the fastest machine of this type. The result is an extremely powerful and highly productive machining solution for medium to large series productlon. Optimal piece costs are guaranteed, Supplemented by optional rotary axes with direct drive technology (depending on the type) the MFZ 4-2W is equipped wlth two independent Zaxis spindle units with a clearance of 450 mm for live-sided or five-axis simultaneous machining. With the deep drilling mllling center TFZ 2L-1000 Samag offers lts customers a machlne that combines two technologies for the efflcient machining of complex cube-shaped parts. The machine is designed for the four-sided complete machlning of parts with a weight of up to 10 tons in one clamping. The combinatlon of deep drilling and milling, together with a fasttool changing system, eliminates stack-up errors and costly set-up times. At the same time, the chip-to-chip times are also optimized. |
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| Schuler AG<br>Simon Scherrenbacher<br>Bahnhofstr. 41<br>73033 Göppingen<br>Germany<br>*simon.scherrenbacher@schulergroup.com*<br>*www.schulergroup.com* | E 06/ 18 | New development | **Product name:** Efficient Hydraulic Forming<br>**Area of operations:** Forging industry<br>**Consumer value:** Energy efficiency<br><br>“Efficient Hydraulic Forming” (EHF) can reduce energy consumption of hydraulic presses by up to 60 percent. The new technology offers energy savings in all operating phases – fully automatically, without the need for any action by the machine operator. The EHF stand-by module ensures that the main drives are switched off when not required. A patented start-up system can bypass the usual start-up characteristics of drives and thus utilize even the shortest breaks without any time loss. An intelligent, speed-controlled drive only supplies the auxiliary functions with energy when actually needed. This effectively minimizes idling losses. Thanks to the efficiency-optimized, modular hydraulic system with energy recovery, the energy stored in the system does not remain unused, but is fed back into the production process efficiently. The function of the control valves in the main circuit has been taken over by servo pumps. |
| | | New development | **Product name:** MSL 2-2000<br>**Area of operations:** Forging industry<br>**Consumer value:** Quality, productivity, energy efficiency<br><br>Automotive supplier Hirschvogel Automotive Group has commissioned a new Schuler press with 2,000 metric tons of force to manufacture a variety of shafts for transmissions, drivetrains and engines. It is the first press line of this size to feature Schuler’s ServoDirect Technology (SDT). The inclusion of ServoDirect Technology results in an improvement in output performance. The ability to accurately control the slide speed means that the forming and transfer processes can be closely coordinated, while die service lives are prolonged. The freely programmable slide movement also greatly facilitates machine set-up. And in addition, energy requirements are reduced. These same benefits have already seen servo drives firmly establish themselves for the forming of sheet metal parts. Schuler is now equipping an increasing number of forging presses with ServoDirect Technology. In addition to the MSL 2-2000 press, these also include a 1,600-metric-tonne closed die forging press and several systems for cold and warm forging with a press force between 500 and 800 metric tons. |

# Innovations of VDW members at the EMO Milan 2015

| Company name | Exibition Hall / Booth | Product | Short discription |
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| | | New development | **Product name:** Linearhammer mit Servo-Technologie<br>**Area of operations:** Forging industry<br>**Consumer value:** Precision, quality, productivity, energy efficiency<br><br>The new linear hammer drive enables an exceptionally high degree of precision in forging: the repeat accuracy of the forging blows has an outstanding significant constancy. Previously standard hard-on-hard blows for balancing temperature and material fluctuations are eliminated completely. The elimination of die-to-die hard-on-hard blows means a reduction in the total number of forging blows – thus reducing cycle times and the energy needed for forming. Together with the non-contact and maintenance-free linear drive the potential energy savings are up to 20 percent. In the case of low impact energies, the linear motor can be started from any position and thus also reduces cycle times by eliminating unnecessarily long slide strokes. By avoiding hard-on-hard blows on the impact surfaces, the load on die and hammer is also drastically reduced. In combination with forging, the system is also excellent for pressing and bending. |
| Schuler AG<br>Simon Scherrenbacher<br>Bahnhofstr. 41<br>73033 Göppingen<br>Germany<br>*simon.scherrenbacher@schulergroup.com*<br>*www.schulergroup.com* | E 06/ 18 | New development | **Product name:** Radwalze<br>**Area of operations:** Forging and railway industry<br>**Consumer value:** Forging and railway industry<br><br>Schuler supplies turnkey systems for the forging and rolling of monoblock wheels. Schuler's newly developed wheel rolling machine forms the heart. Highly dynamic servo motors transfer the torque of the main drives via web rolls onto the pre-forged blank. Together with the main roll and conical rolls, the web rolls form an almost fully finished railway wheel from the blank. The dynamic power of the drive systems means that a railcar wheel can be rolled in less than 20 seconds. Taking into account the automation, the line can reach output levels of up to 75 wheels per hour. The new wheel rolling machine enables users to produce a wide range of different geometries. In addition to railcar and locomotive wheels with diameters of up to 1,450 mm and rim widths of 175 mm, the system can also manufacture crane wheels with a rim width of up to 300 mm. Based on the finished wheel, Job Engineering Software enables the user to simulate the entire forging process. An integrated FEM program adapted to the product checks the calculated forming operations. The resulting data are then transferred directly to the forming machines. |
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| Schwäbische Werkzeugmaschinen GmbH<br>Stefanie Moosmann<br>Seedorfer Straße 91<br>78713 Schramberg-Waldmössingen<br>Germany<br>*s.moosmann@sw-machines.de*<br>*www.sw-machines.de* | 11 / F06 | New development | **Product name:** BA W02-22<br>**Area of operations:** Automotive, Aerospace, Precision Technology, Pneumatic/Hydraulic, Medical<br>**Consumer value:** Individual manufacturing solutions, small costs per part due to high precision, fast multi-spindle machining<br><br>For high-speed machining of small light-metal parts, such as impellers, SW presents the compact, twin-spindle BA W02-22. With a spindle distance of 250 mm, working space of 200x350x300 mm, double swivel carrier and linear motor technique, the space requirement is just about 4 square meters. Besides definitely higher dynamics, the BA W02-22 reaches a jerk double and a kv factor as high as ball-screw machines of identical construction. Additionally, SW provides automation solutions for machines and complete production lines. Non-cutting times caused by technical and organizational reasons are reduced by innovative supply of productive lifecycle services. |
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| United Grinding Group AG<br>Fritz Studer AG<br>Michèle Fahrni<br>Postfach 177<br>3602 Thun<br>Switzerland<br>*info@studer.com*<br>*www.studer.com* | 14 / L05 | New development | **Product name:** Internal cylindrical grinding machine S121<br>**Area of operations:** Internal cylindrical grinding<br>**Consumer value:** Exceptional cost-effectiveness<br><br>The new Studer S121 is a CNC universal internal cylindrical grinding machine for medium-sized workpieces in single piece and small-series production. It has a swing over bed diameter of 400 mm, a maximum workpiece length of 300 mm and an internal grinding length of 175 mm. The inside, flat side and outside of chucking parts can be ground with the S121. The machine is equipped with the new StuderGuide rail system, high precision multi-axis drives with linear motors, and a pivoting dressing device. The S121 opens up a wide range of internal grinding applications to users. This applies in particular to machine tool, drive component, aerospace and tooling workpieces. |
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# Innovations of VDW members at the EMO Milan 2015

| Company name | Exibition Hall / Booth | Product | Short discription |
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| Vollmer Werke Maschinenfabrik GmbH<br>Patrizia Faßnacht<br>Ehinger Str. 34<br>88400 Biberach/Riß<br>Germany<br>*p.fassnacht@vollmer-group.com www.vollmer-group.com* | 14 / M18 / N13 | Product improvement | **Product name:** QWD 760 H<br>**Area of operations:** Wire EDM<br>**Consumer value:** Precise machining of PCD-tipped tools<br><br>Vollmer's improved QWD 760 H wire EDM machine is designed for processing PCD (polycrystalline diamond) tools. It can be used to precision-sharpen the complex tool geometries of cutters, drills or reamers. The EDM has five simultaneously controlled CNC axes and uses the information and values taken from the original design drawing of the tool. This allows a fully automated sharpening process in which the tool is measured and eroded in a single clamping. Equipped with a diagnostic system, the machine function can be checked continuously during the work cycle. The Vollmer QWD 760 H wire EDM machine is designed for processing PCD (polycrystalline diamond) tools. It can be used to precision-sharpen the complex tool geometries of cutters, drills or reamers. The EDM has five simultaneously controlled CNC axes and uses the information and values taken from the original design drawing of the tool. This allows a fully automated sharpening process in which the tool is measured and eroded in a single clamping. The machine function can be continuously checked with a diagnostic system during the work cycle. |
| Vollmer Werke Maschinenfabrik GmbH<br>Patrizia Faßnacht<br>Ehinger Str. 34<br>88400 Biberach/Riß<br>Germany<br>*p.fassnacht@vollmer-group.com www.vollmer-group.com* | 14 / M18 / N13 | Product improvement | **Product name:** QXD 250<br>**Area of operations:** EDM and grinding<br>**Consumer value:** Based on Vpulse EDM generator technology, the QXD 250 can process PCD-tipped tools up to 30 per cent faster.<br><br>The Vollmer universal machine offers simultaneous path interpolation in six CNC-controlled axes. PCD tools with a diameter of up to 320 mm and a length of up to 250 mm can be precision-processed thanks to the extended travel and swivel range. In a combined process the QXD 250 can measure, grind, erode and polish in a single clamping. At the heart of the device is the Vpulse EDM generator. This allows the Vollmer eroding machine to process PCD-tipped tools up to 30 percent faster. Tool manufacturers can obtain even greater versatility and flexibility from the Vollmer QXD 250 eroding machine together with the modules of the software duo ExLevel PRO and PRO ExLevel 3D View. This package permits hybrid sharpening - eroding and grinding - of cylindrical PCD blanks and makes it possible to process a much wider range of tools than before. |
| | | Product improvement | **Product name:** Vgrind 160<br>**Area of operations:** Tool grinding<br>**Consumer value:** Tool manufacturers can manufacture large numbers of cutters and drills from solid carbide quickly and accurately.<br><br>In the Vollmer vgrind 160 grinding machine, five CNC-controlled axes ensure the precise machining of workpieces. Tool manufacturers can use it to produce drills and milling cutters made of solid carbide with diameters of between 2 and 20 mm. At the heart of the vgrind 160 is a new kinematic system which is controlled via two vertical spindles. Unlike single spindle or horizontal double spindle devices, the improved vgrind 160 can realize multi-level processing thanks to the vertical arrangement. The spindle arrangement also eliminates the known fixed and floating bearing problem. This allows tool manufacturers to manufacture large numbers of cutters and drills from solid carbide quickly and accurately. |
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| ZF Friedrichshafen AG<br>Georg Ehling<br>Graf-von-Soden-Platz 1<br>88046 Friedrichshafen<br>Germany<br>*georg.ehling@zf.com*<br>*www.zf.com* | 11 / F32 | New development | **Product name:** ZF Servoantriebssystem<br>**Area of operations:** Industrial automation<br>**Consumer value:** Optimum rive solutions for highly variable and compatible with all common field bus interfaces.<br><br>ZF Servo Drive System Provides the Optimum Solution for Machines and Systems. The complete system consisting of servogearboxes, servomotors, and servo controllers boasts perfect interaction thanks to systems expertise and connectedness. The Special Driveline Technology business unit of ZF Friedrichshafen AG has offered a wide range of industrial drives, brakes, and clutches for mechanical engineering applications as well as customized drive solutions for decades. As of now, the product portfolio comprises servomotors and servo controllers in addition to servogearboxes. Thus, ZF delivers everything from a single source and ensures that the components work together in perfect interaction. ZF finds the optimum configurations for each drive solution. These are highly variable and compatible with all common field bus interfaces. Proper dimensioning of the driveline plays a decisive role, in particular with regard to energy and cost efficiency. The greater interconnection between products and machines also enhances efficiency of the producing companies of our customers and thus contributes to their success in global competition. |

# Innovations of VDW members at the EMO Milan 2015

| Company name | Exibition Hall / Booth | Product | Short discription |
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| | | Product improvement | **Product name:** ZF-Duoplan HWG<br>**Area of operations:** Machine tools<br>**Consumer value:** Shaft drives increase the spread between the torque and the speed for machine tools, irrespective of whether they are operated with a DC or AC drive.<br><br>As a world market leader for two-speed manual drives for stationary applications, ZF has pooled its comprehensive know-how for the new hollow shaft drives from the Duoplan model range. Consequently, the ZF-Duoplan 2K 150 HS that was already presented in 2012 features a top speed of 18 000 revolutions per minute with up to 24 kilowatt (kW) drives with 600 newton meters (Nm) of nominal output torque. Now, two further versions for higher performance ranges are almost ready for the start of production at ZF: The 2K 280 HS/HWG is designed for up to 44 kW or 1 400 Nm and, thus, scores with a maximum of 16 000 revolutions. In addition, there is the 2K 380 HS/HWG that excels with up to 12 500 revolutions with 60 kW motors or 1 900 Nm engines. Caption: The ZF-Duoplan 2K 380 hollow shaft drive: One of two new two-speed hollow shaft drives that make machine tools more effective, efficient, and flexible. |
| ZF Friedrichshafen AG<br>Gerorf Ehling<br>Graf-von-Soden-Platz 1 88046<br>Friedrichshafen Germany<br>*gerorg.ehling@zf.com*<br>*www.zf.com* | 11 / F32 | New development | **Product name:** ZF-Servoplan<br>**Area of operations:** Industrial automation<br>**Consumer value:** Applicable in almost all areas of automation technology thanks to modular design; low-play gearing for exact positioning<br><br>The ZF-Servoplan planetary gearset was developed to be directly connected to servomotors. Thanks to different sizes and a basic modular design, it can be used in almost all areas of automation technology. The servo-controlled transmissions together with the servomotor provide a coaxial input and output. By means of a force locking clamp coupling, the servomotor's output shaft is connected to the sun gear of the servo-controlled transmission. This sun gear drives three planetary gears in a planet carrier. They move on a ring gear with internal gearing. As a result of the allocation to three planetary gears, the forces are distributed evenly resulting in a very compact design with high power-to-weight ratio. |
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**Further information:**
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