

METAV/2018

DÜSSELDORF, 20. – 24. FEBRUAR / POWER YOUR BUSINESS

METALWORKING

QUALITY AREA

MEDICAL AREA

MOULDING AREA

ADDITIVE MANUFACTURING AREA

ACHTUNG: NEUES SUCHWORTVERZEICHNIS
ATTENTION: NEW INDEX OF KEYWORDS

Eine Messe des
A Fair by **VDW**

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METAV/2018

DÜSSELDORF, 20. – 24. FEBRUAR / POWER YOUR BUSINESS

20. Internationale Messe für
Technologien der Metallbearbeitung
20th International Exhibition for
Metalworking Technologies

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28.01	Machine tools for educational purposes
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53 Automation for storage and transportation

53.01	Components to interlink separate production stages	53.07	Storage of workpieces and tools
53.02	Automated guided vehicles	53.08	Palletising systems
53.03	Cask handling equipment	53.09	Storage and retrieval machines
53.04	Conveying equipment and systems	53.10	Other automation equipment for storage and transportation
53.05	Small hoists	53.11	Other handling, loading and sorting equipment
53.06	Storage equipment and systems		

54 Assembly and handling

54.01	Automatic riveting machines	54.08	Assembly manipulators
54.02	Units for assembly systems	54.09	Assembly machines with welding units
54.03	Inserting machines for electronic components	54.10	Automatic assembly machines
54.04	Flexible assembling systems	54.11	Assembly robots
54.05	Assembly gripping tools and gripping tool changers	54.12	Other assembling machines and equipment
54.06	Individual assembly workplaces	54.13	Ultrasonic assembly machines
54.07	Assembly lines	54.14	Screwing units

55 Industrial robots

55.01	Working tools for industrial robots	55.05	Robots for other applications
55.02	Grippers and tools for robots	55.06	Welding robots
55.03	Changing devices for robot grippers		
55.04	Manipulating robots		

56 Software for product development

56.01	CAD software	56.07	Software for FMEA applications
56.02	CAE software	56.08	Software for product / variant configuration
56.03	CAQ software	56.09	Software for product simulation
56.04	PDM / EDM software	56.10	Software for computational fluid dynamics
56.05	Software for development and design	56.11	Other software for product development
56.06	Software for finite element calculation	56.12	Materials database

57 Software for machines

57.01	Diagnostic systems and software	57.06	Software for NC simulation
57.02	Predictive maintenance	57.07	Software for programmable logic controllers (PLC)
57.03	Software for CNC controls	57.08	Other software for machines
57.04	Software for industrial robots	57.09	Teleservice systems and software (remote service)
57.05	Human-machine interface (HMI) software		

58 Software for production and production planning

58.01	CAM software	58.12	Software for DNC
58.02	Apps for production	58.13	Software for production planning and control (PPC)
58.03	Cloud applications for production	58.14	Software for managing manufacturing systems
58.04	Process diagnostics	58.15	Maintenance software
58.05	Software for order processing (ERP)	58.16	Software for capacity and production date scheduling
58.06	Software for operating systems and networks	58.17	Software for warehousing and conveying management
58.07	Software for data security and data protection	58.18	Software for stock and materials management
58.08	Software for production data acquisition	58.19	Manufacturing execution software (MES)
58.09	Software for manufacturing process simulation	58.20	Tool management software
58.10	Software for production process simulation	58.21	Software-based solutions for Industry 4.0 and internet of things
58.11	Software for industrial purchasing management	58.22	Other software for manufacturing

59 Computers and peripherals

59.01	Data processing systems	59.03	Networks, also for FMS
59.02	Input devices	59.04	Peripherals

Services for production

60 Services for production and product development

60.01	Build-to-order production for machine parts	60.09	Degaussing
60.02	Consultation for Industry 4.0 solutions, internet of things	60.10	Heat treatment services
60.03	Coating services	60.11	Maintenance services
60.04	Vibratory and fluidic grinding services	60.12	Machine calibration
60.05	Services for machine erection	60.13	Maintenance of machines
60.06	Service centres for technical documentation	60.14	Other services for production
60.07	Services for design, construction, calculation and simulation	60.15	Maintenance of tools / tool sharpening
60.08	Services for virtual reality applications		

Additive manufacturing

61 Machines and systems for additive manufacturing

61.01	Other systems for additive manufacturing	61.06	Systems for laser metal deposition welding
61.02	Systems for 3D printing (3DP)	61.07	Systems for metal powder deposition (MPA)
61.03	Systems for fused layer modelling / freeformer (FLM, FDM)	61.08	Systems for polyjet processes
61.04	Systems for hybrid processes	61.09	Systems for selective laser melting / sintering (SLS)
61.05	Systems for lamination processes (LOM)	61.10	Systems for stereolithography (STL and SLA)

62 Materials for additive processes

62.01	Resins for additive processes	62.03	Metals / metal powders
62.02	Plastic materials (granules, filaments)	62.04	Other materials for additive processes

63 Additional systems and components for additive manufacturing

63.01	3D digitizer systems	63.04	3D simulation
63.02	3D graphics software	63.05	Software for additive manufacturing
63.03	3D scanners		

64 Services for additive processes

64.01	Consultants for additive processes	64.04	Contract manufacturing for additive manufacturing
64.02	Design development and models for additive processes	64.05	Rapid manufacturing
64.03	Engineering for additive processes	64.06	Software development for additive processes

65 Tools and moulds for plastics

65.01	Extruder tools	65.08	Foam moulds
65.02	Moulds for processing fibre composites	65.09	Other tools and moulds for plastics
65.03	Moulds for processing rubber materials	65.10	Injection moulding tools
65.04	Blow moulds	65.11	Thermoforming and deep-drawing tools
65.05	Multi-cavity moulds	65.12	Insert moulds
65.06	Multi-component moulds	65.13	Vacuum moulds
65.07	Pressing tools		

66 Metal forming tools and moulds

66.01	Bending tools	66.15	Special tools
66.02	Bending dies for tubes and sections	66.16	Other metal forming tools
66.03	Die-casting dies	66.17	Blanking and punching dies
66.04	Spinning tools	66.18	Bulging dies and stretching tools
66.05	Fine blanking dies	66.19	Punches and dies
66.06	Multi-stage dies	66.20	Extrusion dies
66.07	Forging dies	66.21	Deep drawing dies
66.08	Thread rolling tools	66.22	Transfer die sets
66.09	Casting tools	66.23	Composite dies
66.10	Roller finishing and deep rolling tools	66.24	Tools for powder metallurgy
66.11	Punching tools	66.25	Tools for screw manufacture
66.12	Knurling tools	66.26	Tools for transfer presses
66.13	Roll forming tools	66.27	Embossing, stamping and marking tools
66.14	Press tools	66.28	Drawing dies

67 Other tools and moulds

67.01	Moulds for glass	67.04	Injection moulding tools for other materials and processes
67.02	Moulds for ceramics	67.05	Tools and moulds for packaging
67.03	Metal injection moulding (MIM)		

68 Pattern making and prototyping

68.01	Sampling	68.06	Prototyping as well as pre-production series and low-volume production
68.02	Design model making	68.07	Rapid prototyping
68.03	Functional model making	68.08	Rapid tooling
68.04	Foundry model making	68.09	Other pattern making and prototyping
68.05	Body and production model making		

69 Components for die and mould making

69.01	Moulds	69.06	Cooling systems
69.02	Hot runner systems	69.07	Standard components and ejectors
69.03	Heating elements for moulds	69.08	Die sets
69.04	Sleeves	69.09	Tempering systems
69.05	Insulation ducts and materials		

70 Services for die and mould making

70.01	Single-part and low-volume production	70.05	Other services for die and mould making
70.02	Engineering and design of tools	70.06	Try out of tools and moulds
70.03	Assembly of tools and moulds	70.07	Vacuum casting
70.04	Product design and component development	70.08	Tool repair

71 Measuring instruments and sensors

71.01	Distance measurement, non-contact, manual	71.27	Equipment for residual stress measurement
71.02	Marking, measuring and surface plates	71.28	Equipment for electromotive force measurement
71.03	Non-contact displacement measuring systems	71.29	Noise measurement
71.04	Bore measuring equipment	71.30	Thread measurement
71.05	Colour quality control	71.31	Force and moment measurement
71.06	Colorimeters	71.32	Surface measurement
71.07	Match prediction systems	71.33	Profile and shape measurement
71.08	Precision measuring instruments, electric	71.34	Circularity measurement
71.09	Precision measuring instruments, electronic	71.35	Layer thickness measurement
71.10	Precision measuring instruments, pneumatic	71.36	Clamping force testers
71.11	Precision measuring instruments, mechanical	71.37	Temperature measurement
71.12	Hygrometers	71.38	Displacement and distance measurement
71.13	Gas test units	71.39	Angle and inclination measurement
71.14	Geometric measuring, touchless	71.40	Micrometers
71.15	Interferometers	71.41	Pedestals and tripods for tracers, precision dial gauges
71.16	Calibrators	71.42	Measuring device construction
71.17	Linear and circular graduations	71.43	Transducers
71.18	Laser measuring equipment	71.44	Refractometers
71.19	Gauges and callipers	71.45	Vibration meters
71.20	Light meters	71.46	Other measuring instruments
71.21	Magnetic field measurements	71.47	Gap and flush sensors
71.22	Gauges for testing the accuracy of measuring equipment	71.48	Spectrophotometers
71.23	Measuring magnifying glasses	71.49	Pyrometers
71.24	Torque measurement	71.50	Wavelength measuring instruments
71.25	Speed measurement	71.51	Time and speed measuring apparatus
71.26	Pressure measurement		

72 Gauges and measuring machines

72.01	CNC controllers for coordinate measuring machines	72.16	Measured data amplifiers
72.02	Computerised measuring machines	72.17	Optical, 3D, non-contact measuring machines
72.03	Digital read-out systems	72.18	Measuring machines for use in production
72.04	Three-dimensional measuring machines	72.19	Profile projectors
72.05	Optical measuring and testing instruments	72.20	Testing equipment and instruments for electrical safety and function tests
72.06	Coordinate and multi-coordinate measuring machines	72.21	Scanning electron microscope
72.07	Dynamometers	72.22	Rheological measurement equipment
72.08	Laboratory presses	72.23	Test equipment for grinding burn
72.09	Conductivity meters	72.24	Stereomicroscopes
72.10	Multi-position measuring devices	72.25	Scales in general
72.11	Measuring and marking machines	72.26	Hob testing equipment
72.12	Measuring instruments for machine geometry	72.27	Gear testing equipment
72.13	Measuring microscopes	72.28	Centring microscopes
72.14	Measuring robots	72.29	Accessories for measuring equipment
72.15	Measuring tables		

73 Testing machines for manufacturing and laboratory

73.01	Computer tomography systems	73.16	Metallographic testing equipment
73.02	Vibration fatigue testing machines	73.17	Testing machines for tensile, compression, bending
73.03	Leak detectors	73.18	Test benches with automatic operation
73.04	Dynamic fatigue testing machines	73.19	Surface plates and flatness testing
73.05	Electronic unbalance measuring and control equipment	73.20	Crack checking instruments
73.06	Drop impact testing machines	73.21	X-ray metrology systems
73.07	Spring testing machines	73.22	Other testing machines
73.08	Hardness testing machines	73.23	Testing systems for quality assurance
73.09	Power test benches	73.24	Ultrasonic testing machines
73.10	Machines and apparatus for non-destructive testing	73.25	Torsion testing machines
73.11	Surface testing machines	73.26	Equipment for measuring vibration and noise
73.12	Impact testing machines	73.27	Eddy current testers
73.13	Specimen preparation systems	73.28	Gear testing machines and apparatus
73.14	Test installations for noise evaluation	73.29	Tension testing machines
73.15	Corrosion testing equipment	73.30	Accessories and test materials

74 Analytical devices, general

74.01	Resistance testing	74.07	Laboratory data network
74.02	Energy dispersive spectrometers	74.08	Other devices for specific testing and analytical procedures
74.03	Gas chromatography	74.09	Spectrometers
74.04	Gravimetric analysis	74.10	Dust measuring instruments
74.05	Instruments and apparatus for testing and analysing solid substances	74.11	Temperature test chambers
74.06	Climatic test chambers		

75 Components for measuring and testing equipment

75.01	Components for measuring and testing equipment, general	75.07	Air spring insulators with level control
75.02	Lighting systems	75.08	Measuring machine accessories for workpiece fixation
75.03	Built-in and attachable optics	75.09	Proximity switches
75.04	Automation elements for measuring and control procedures	75.10	Optical components (lenses, prisms, etc.)
75.05	Coded linear and angular measuring systems	75.11	Other optical systems
75.06	Fibre optic systems	75.12	Graduated plates

76 Other apparatus, instruments, etc.

76.01	Equipment for micro-inspection rooms, general	76.09	Tooling protection fluids
76.02	Illumination systems for visual quality control	76.10	Optical benches
76.03	Products for electronic documentation	76.11	PC measuring technology
76.04	Demagnetising devices	76.12	Other apparatus, instruments, general
76.05	Products for photographic documentation	76.13	Clamping and loading technology for measurement structures
76.06	Apparatus for calibration, tolerance checks, etc.	76.14	Grips and fixtures for tension testing machines
76.07	Holography systems	76.15	Workpiece control and measuring equipment
76.08	Magnetising equipment	76.16	Counters and counting devices

77 Image processing

77.01	Image processing systems	77.04	Video systems and endoscopes
77.02	Measuring microscopes with digital image processing	77.05	Visual geometry measurement
77.03	Sensor systems for image and signal pattern recognition		

78 Quality assurance, software

78.01	APQP / PPAP management software	78.14	QFD systems, quality function deployment
78.02	Auditing software	78.15	Quality information and control systems
78.03	Automation of test sequences	78.16	Complaints and error management systems
78.04	Diagnostic systems	78.17	Traceability
78.05	Initial sample report	78.18	Simulation and offline programming of coordinate measurement machines
78.06	Acquisition of measured electrical data	78.19	Quality assurance software
78.07	Acquisition of measured non-electrical data	78.20	Software for quality management (QM)
78.08	Processing and evaluation of measured data	78.21	Quality control software
78.09	Mobile data recording	78.22	SPC systems
78.10	Process visualisation and machine monitoring	78.23	Statistical analyses
78.11	Measurement system capability	78.24	Statistical experiment planning
78.12	Testing control and management		
78.13	Test scheduling and test data evaluation		

79 Services for quality, measuring and testing technology

79.01	Chemical-physical analyses	79.09	Quality management consulting
79.02	Computer tomography	79.10	Training for coordinate measuring technology, quality assurance, non-destructive testing
79.03	Calibration (German Calibration Service – DAkkS)	79.11	Six Sigma
79.04	Testing service for precision and measuring equipment	79.12	TQM consulting
79.05	ISO 9000 consulting	79.13	Non-destructive testing
79.06	Calibration services	79.14	Certification
79.07	Measurements on payment basis		
79.08	QA workstations		

Production systems and components for medical engineering

80 Production machines for medical engineering

80.01	Production machines for dental implants	80.06	Production equipment for cannulae and needles
80.02	Production machines for human implants	80.07	Clean room technology and installations
80.03	Marking, engraving and laser lettering machines	80.08	Scanners / 3D scanners for medical and dental applications
80.04	Production machines for surgical instruments	80.09	Additive manufacturing systems for medical products
80.05	Production machines for stents	80.10	Packaging machines and installations for medical products

81 Surface technology for medical products

81.01	Coating systems for medical engineering	81.03	Sterilisation, disinfection and cleaning systems
81.02	Surface treatment for medical and dental applications		

82 Medical materials

82.01	Semi-finished medical products	82.03	Non-metal materials for medical and dental applications
82.02	Medical steels and titanium		

83 Components for medical engineering and production

83.01	Drive systems for medical and laboratory equipment	83.07	Motors for medical and dental applications
83.02	Seals and sealing systems for medical engineering	83.08	Sensors for medical engineering
83.03	EMC shielding	83.09	Simulation software for medical engineering applications
83.04	Filters and diaphragms for medical engineering	83.10	Software for medical production engineering
83.05	Lasers and laser systems for medical and dental applications	83.11	Software for medical equipment and installations
83.06	Mixing and dosing systems for medical and dental applications		

84 Medical engineering services

84.01	Contract production of medical equipment	84.03	Medical product engineering
84.02	Lining and surface finishing of medical products	84.04	Certification and approval of medical products

General services

85 General services

85.01	Training centres	85.06	Research centres
85.02	Consultants	85.07	Internet, e-commerce
85.03	Databases for technical and economic research	85.08	Other general services
85.04	Technical journals	85.09	Technical literature
85.05	Financial services, leasing	85.10	Associations, organisations

3D digitizer systems	63.01
3D graphics software	63.02
3D scanners	63.03
3D simulation	63.04

A

Abrasive and polishing pastes	36.10
Abrasive band grinding machines	08.03
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Abrasive tools and products	see page 38
Accessories	see page 39
Accessories and test materials	73.30
Accessories for electroerosive machining	26.08
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Air bearing based linear guiding systems	43.12
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Air spring insulators with level control	75.07
Aluminium and light alloys	48.01
Analytical devices, general	see page 45
Angle and inclination measurement	71.39
Angular heads	39.13
Anti-vibration mounts	43.03
Apparatus for calibration, tolerance checks, etc.	76.06
Apps for production	58.02
APQP / PPAP management software	78.01
Arc welding machines	32.06
Assembly and handling	see page 41
Assembly gripping tools and gripping tool changers	54.05
Assembly lines	54.07
Assembly machines with welding units	54.09
Assembly manipulators	54.08
Assembly of tools and moulds	70.03
Assembly robots	54.11
Associations, organisations	85.10
Auditing software	78.02
Automated guided vehicles	53.02
Automatic assembly machines	54.10
Automatic forging machines	25.03
Automatic polishing machines	14.01
Automatic riveting machines	54.01
Automatic tool dispensers	39.04
Automation elements for measuring and control procedures	75.04
Automation for storage and transportation	see page 41
Automation of test sequences	78.03
Axle journal grinding machines	08.01
Axle journal turning and roller burnishing lathes	01.03
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Balancing machines	40.01
Band sawing machines	12.01
Bar and section bending machines	22.16
Bar and section finishing machines	22.15
Bar feeders	42.07
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Bar, section and tube working machines	see page 35
Beading and curling machines	18.16
Bed type boring and milling machines – fixed column	03.02

Bed type boring and milling machines – moving column	03.01
Beds and parts of machines in polymer concrete	43.14
Bench lathes	01.26
Bench presses	20.22
Bench type drilling machines	02.13
Bending and straightening presses	18.02
Bending centres	19.03
Bending dies for tubes and sections	66.02
Bending machines for reinforcing bars	22.01
Bending tools	66.01
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Bevel gear generating and planing machines	10.03
Blanking and punching dies	66.17
Blanking, nibbling and punching machines	see page 34
Blanks for tools – carbide	48.17
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Blow moulds	65.04
Body and production model making	68.05
Bolt chamfering machines	24.01
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Bonded abrasive products	36.07
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Boring and facing heads	38.11
Boring and milling machines, gantry type	03.05
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Broaching tools	35.31
Build-to-order production for machine parts	60.01
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C

Cable duct systems	45.08
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CAD software	56.01
CAE software	56.02
Calibrating presses	21.05
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Cam grinding machines	08.12
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Can making machines	21.01
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CAQ software	56.03
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Casting tools	66.09
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Centring and end facing machines	01.10
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Circle (disc) cutting shears	16.05
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Colorimeters	71.06
Colour quality control	71.05
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Column type drilling machines	02.11
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Countersinks and core drills	35.42
Couplings	43.10
Crack checking instruments	73.20
Crank presses	20.09
Crankshaft and camshaft milling machines	04.09
Crankshaft and camshaft turning lathes	01.14
Creep feed grinders	08.15
Crimping machines	18.13
Cross slide tables, also NC-controlled	42.11
Cutter and reamer sharpening machines	09.02
Cutting centres	19.06
Cutting machines for hollow shapes	16.03
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Cutting tools	see page 37
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Cylinder head levelling machines	08.34
Cylinder honing machines	14.13
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E

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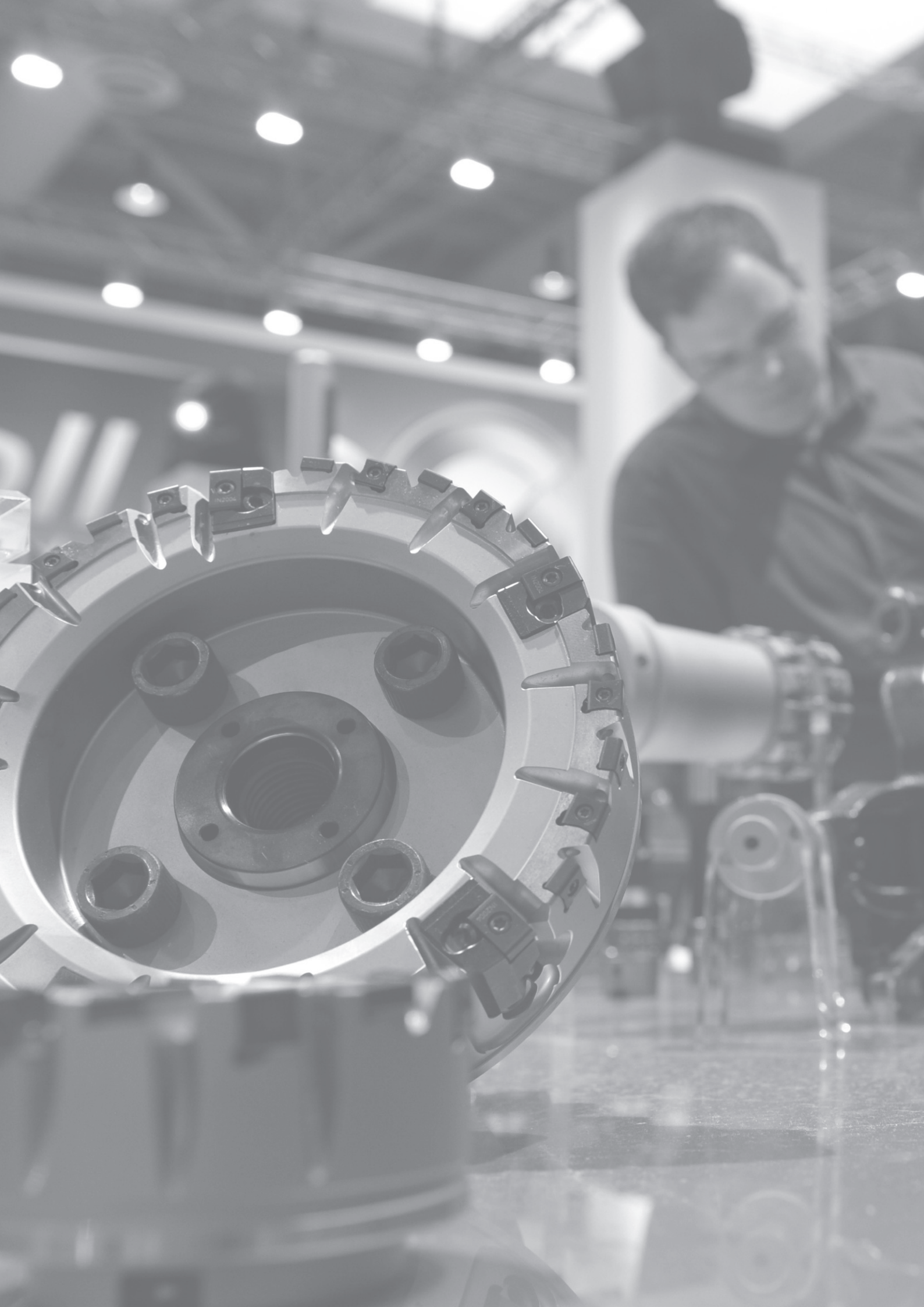
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