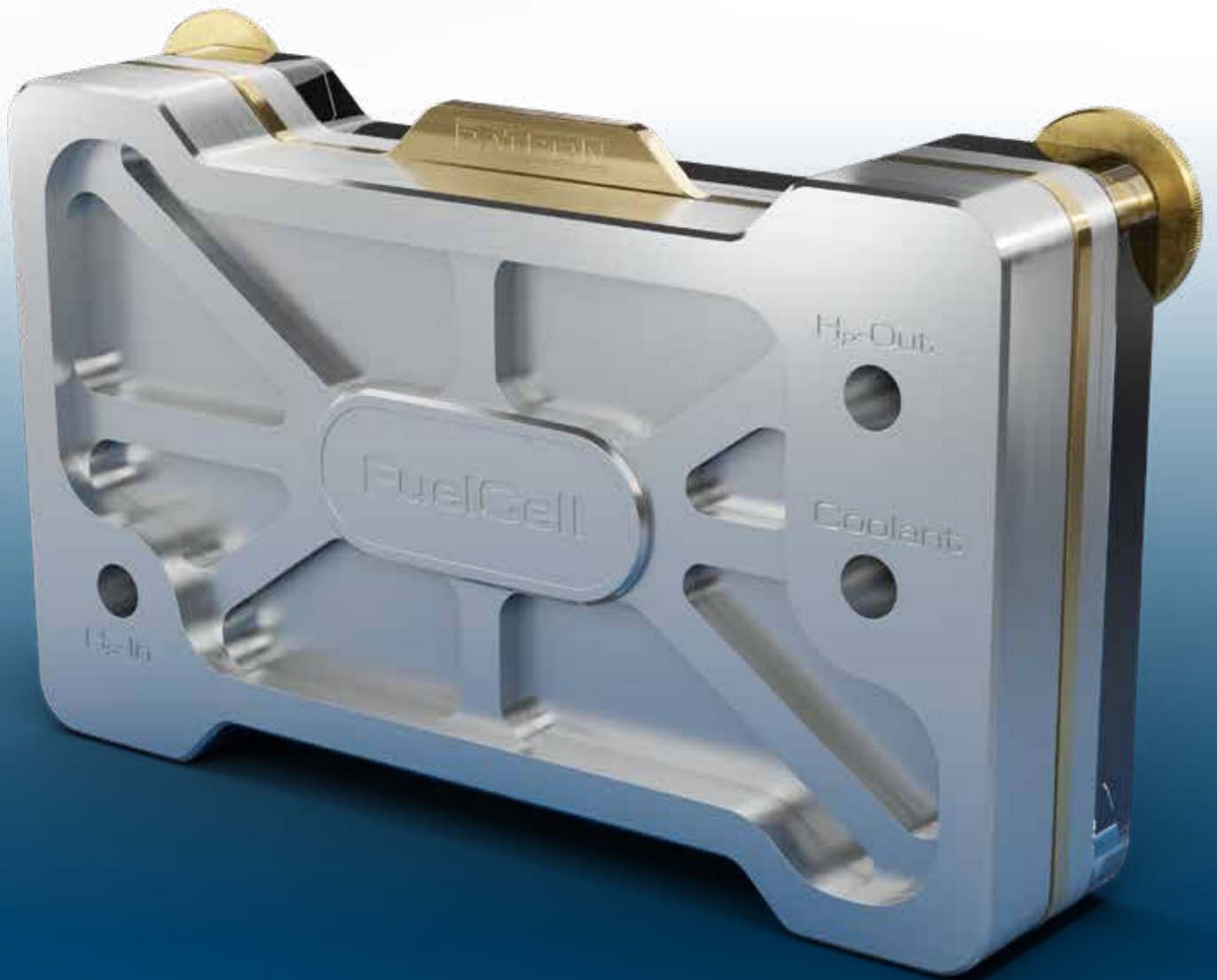


DATRON SOLUTIONS FOR THE PRODUCTION OF FUEL CELL COMPONENTS



More information on DATRON
fuel cell components



MORE THAN JUST MACHINE CONSTRUCTION – YOU ARE IN EXPERT HANDS FROM A TO Z

We at DATRON see ourselves as your partner for a successful production. Our service: Everything from one source. DATRON not only offers cutting-edge machine constructions with “Made in Germany” solidity and reliability. We accompany you through the entire workflow from technology consulting over the sales process, optimal maintenance and repair services up to training and give you tips for a energy- and cost-efficient production. Our many years of experience is supported by our cooperation with leading manufacturers of fuel-cell equipment in Germany.

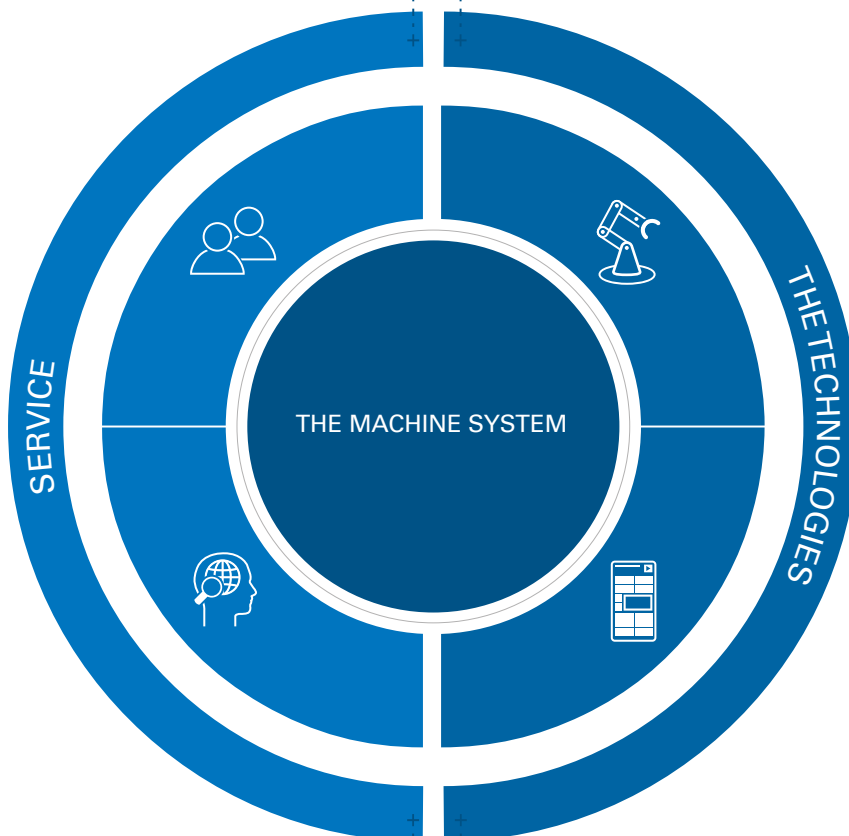


TECHNOLOGY CONSULTING

DATRON offers a complete solution for the entire process. Our experts will assist you with the selection of materials and tools along with optimal dispensing and milling templates.

AUTOMATION SOLUTIONS

Our versatile DATRON automation solutions support your production and enable even greater efficiency and economy.



TECHNICAL EXPERTISE

Our cooperation with well-known research institutes and our many years of experience ensure that you receive optimum customised technology for your application.

SOFTWARE SOLUTIONS

DATRON develops the software in house, enabling us to offer solutions for machine controllers optimally designed for our machines and the requirements of our customers.



MILLING AND SEALING

High reliability, maximum flexibility and scalability have been the major pillars of DATRON technology for many years and form an ideal basis for the manufacture of fuel cells. The exemplary DATRON fuel cell consists of four components, which can be produced precisely and in high quality with DATRON machines.

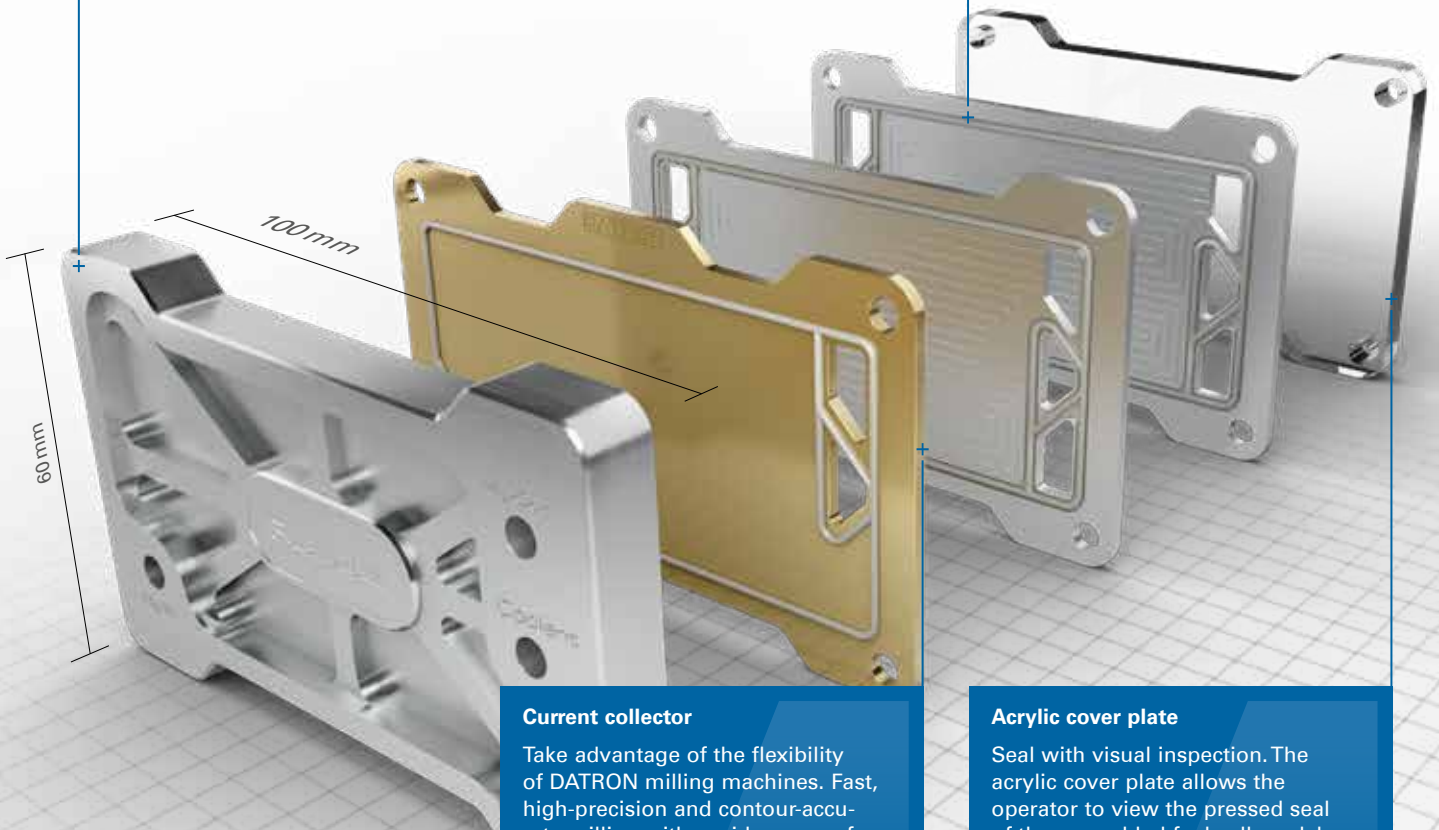
End plate

Light weight construction combined with high stability. Large pockets emphasise the characteristics of this part and demonstrate the advantages of DATRON milling machines in sheet machining. Efficient manufacturing of components with high machining volumes – from a prototype to serial production.

Bipolar plate seal

DATRON dispensing systems are renowned for short cycle times combined with high reliability and provide the optimal conditions for manufacturing bipolar plate seals:

- Top quality and precision
- Dispensing volumes can be programmed as required
- Cost-efficient production



Current collector

Take advantage of the flexibility of DATRON milling machines. Fast, high-precision and contour-accurate milling with a wide range of materials.

Acrylic cover plate

Seal with visual inspection. The acrylic cover plate allows the operator to view the pressed seal of the assembled fuel-cell model.

NOTE

The illustrated DATRON fuel cell does not represent a regular fuel cell. It serves as a model to demonstrate our DATRON technology.

OUR SOLUTIONS FOR YOUR REQUIREMENTS!

Implementing demanding strategies for manufacturing fuel cells poses numerous technical challenges. DATRON offers technological high-quality solutions for your entire process chain.

1



2



3



4



	1	2	3	4	
Machining:	Roughing/finishing		Thread milling	Engraving	Cutting
Milling tool	4-in-1 single flute end mill, Ø10mm	4-in-1 single flute end mill, Ø3mm	Thread milling cutter M6	Ball nose end mill, Ø0.5 mm	4-in-1 single flute end mill, Ø6mm
Cutter number	1	1	4	2	1
Speed	32,000 rpm	38,000 rpm	37,000 rpm	40,000 rpm	35,000 rpm
Feed	8 m/min	3 m/min	0.4 m/min	0.8 m/min	6 m/min
Infeed XY	6 mm	2 mm	0.5 mm	0.05 mm	6 mm
Infeed Z	2.4 mm	2.4 mm	1 mm	0.1 mm	1.3 mm
Dynamics	5	3	3	3	3
Chord error CAM	0.03 mm	0.03 mm	0.03 mm	0.03 mm	0.03 mm
Item no.:	0068810A	0068803A	00680060E	00684005	0068806K

EFFICIENT. HIGH-PRECISION. POWERFUL. – DATRON MILLING MACHINES

Modular clamping technology

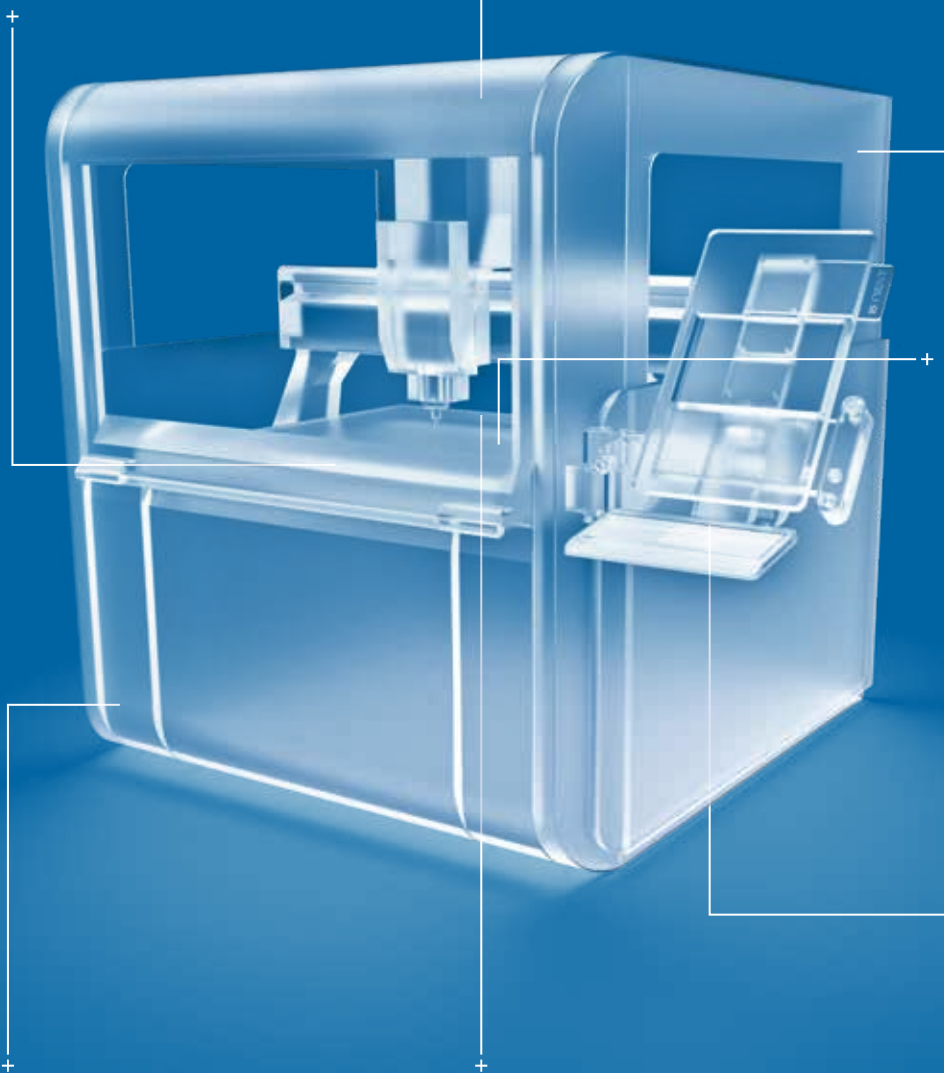
- Our flexible DATRON solutions for clamping – from the bench vice to the innovative vacuum clamping technology – are noted for their ease of use and short set-up times
- The DATRON vacuum clamping technology allows the use of DATRON VacuCards as sacrificial layers, reverse deburring, thread milling and the machining of highly filigreed work pieces

Flexible machine design

- Scalable production, from a prototype to batch production
- Large machining area combined with small footprint

Sustainable production

- Clean chips and machined components without residues thanks to ethanol as a cooling lubricant
- Low power consumption of the machine
- Low operating costs



Optimum batch production

- Specialist in sheet machining
- Options for automation connections
- Sister tool management enabled by DATRON next

Precision

- The unique combination of effective, high-speed DATRON technologies delivers the precision you require

Special-purpose tools for your application

- Our many years of experience and the expertise of our DATRON tool specialists are at your disposal to design and manufacture customised specialpurpose tools

Highly dynamic system

- Our revolutionary DATRON next machine control and the highly dynamic axis system in combination with high spindle speeds ensure that DATRON machines deliver a high machining volume over time, excellent surface finish and fast traversing speeds

MAXIMUM FLEXIBILITY AND SCALABILITY WITH SHORT SETUP AND CYCLE TIMES

The objectives for machining bipolar plate seals are short cycle times and high reliability. The solution are DATRON volumetric dispensing heads and software, all developed in-house. Specific focus is placed on liquid densities and the ideal mapping of the critical start/stop areas. DATRON dispensing systems eliminate significant thickening and increases specifically in these ranges.

Homogenous density level even with complex structures

- Dispensing volumes can be programmed as required over the complete bead contour to ensure a homogenous density level, even in structured surface finishes

High reliability

- The material preparation guarantees seal application free from bubbles while the option to measure components makes a significant contribution to reliability

Inexpensive in any case

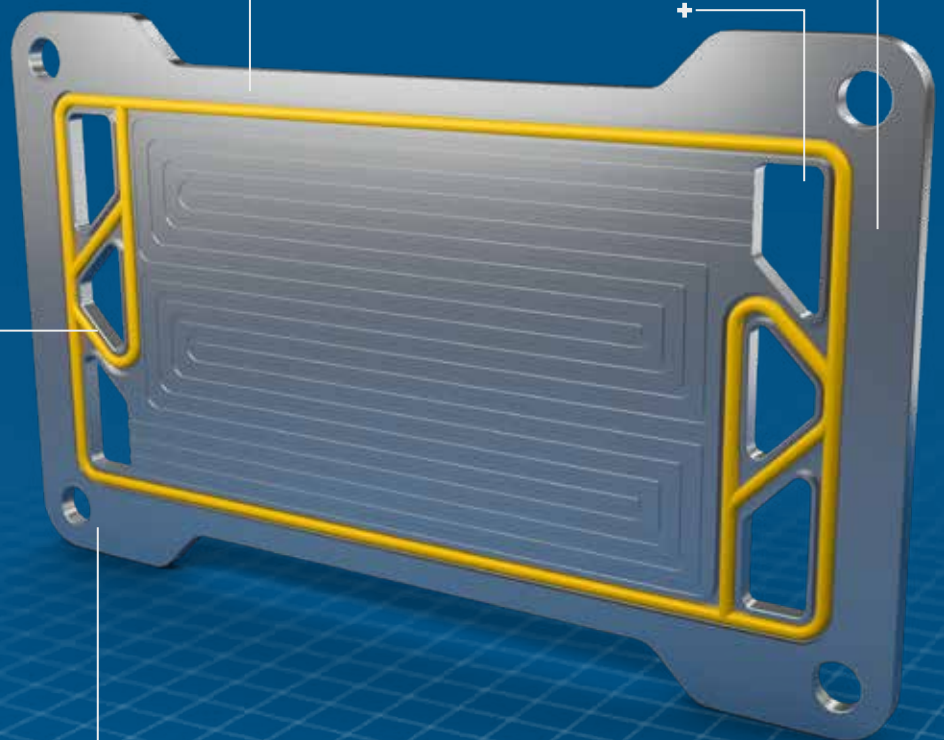
- Low-maintenance machine systems
- No cost for tools, therefore economical even when manufacturing small numbers

Low shape and position tolerances for seals

- High machine repeat accuracy and precision
- High-quality axis systems also used within the DATRON CNC machine fleet

Seal design

- Narrow seal width ensures a compact design
- Simple seal application in grooves

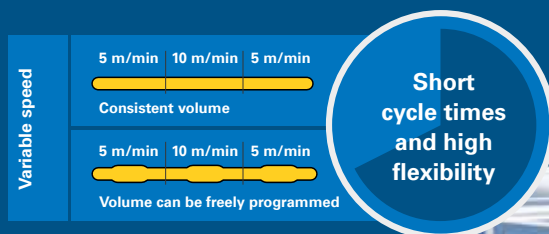


FLEXIBLE. PROCESS-SURE. PATENTED. – DATRON DISPENSING SYSTEMS

DATRON dispensing systems are noted for their high performance and volumetric consistency. In combination with the accessories specially designed for dispensing tasks and in consultation with our expert technicians, we offer system solutions from a single source to ensure optimum quality for your manufacturing.

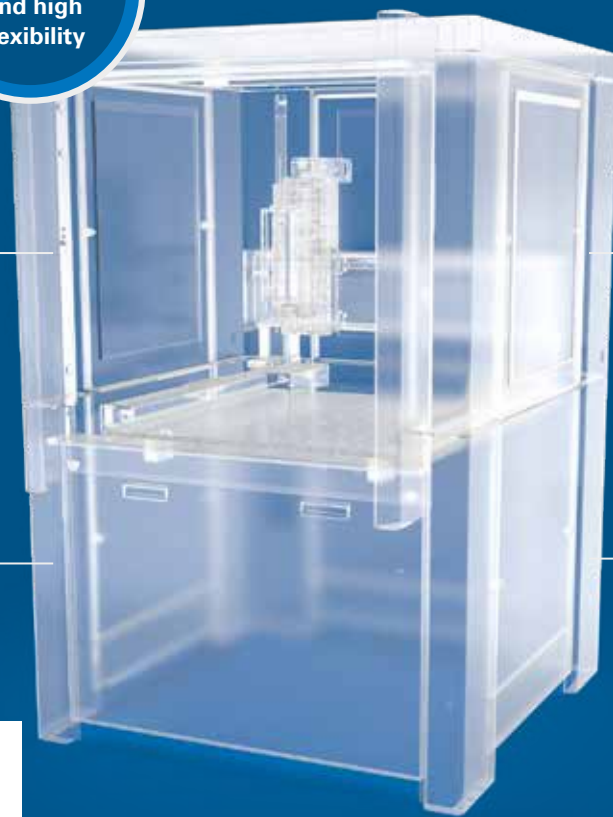
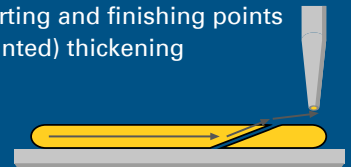
Independent of speed & quantity

- Short cycle times due to the option of acceleration and deceleration
- Consistent bead cross-sections (volumes) even with varying dispensing speeds



Transitions & fusion spots

- Clean starting and stopping points due to ramped transitions
- Special wiping and removal strategies prevent material carryover
- Consistent starting and finishing points without (unwanted) thickening



Independent of temperature and viscosity

- Consistent dispensing volumes even at different temperatures
- Consistent material application even with variations in viscosity
- Unchanged manufacturing process even under variations in the compressed air

Experience and expertise

- DATRON volumetric dispensing systems are setting new standards in industrial dispensing technology and are therefore capable of meeting the ever-increasing demand for repetitive accuracy of position, shape and dispensing volumes of the applied glues, sealants or casting materials. Our highprecision dispensing systems provide optimal manufacturing quality combined with a consistent high degree of reliability

We look forward to providing you with detailed information
+49 (0)6151-1419-0



By email
info@datron.de



or online at
www.datron.de



DATRON @ Social Media

Our DATRON social media channels keep you in the loop with product highlights and event information plus exclusive content on our smart DATRON technologies.

Don't miss out, become a DATRON fan!



@datron.ag
www.datron.de/
linkedin



@datron.ag
datron.de/
instagram



DATRON AG
datron.de/
facebook



DATRON AG
datron.de/
youtube