



Grauel

Assembly Technology

Production Automation



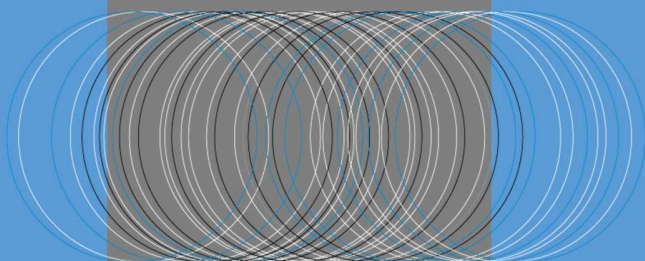
Medical Devices
Assembly & Printing Machines
Medical Devices

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Grauel | the company



Grauel is part of the AAE (Advanced Automation Equipment) group and located in Helmond Netherlands and active since 1976.

AAE employs over 370 staff members and has a turnover in excess of EUR 100 million. Our systems are sold in more than 30 countries worldwide.

Grauel has a dedicated focus on • design • manufacture • assembly and installation of high precision automated assembly and printing solutions.

We co-operate with our customers to realize technically complex automation solutions, tailor made for specific industries including • toy • medical devices • pharmaceutical • automotive • food & beverage • cosmetic industry.

We meet and exceed the highest industry standards and sustain long-term relationships with our customer.

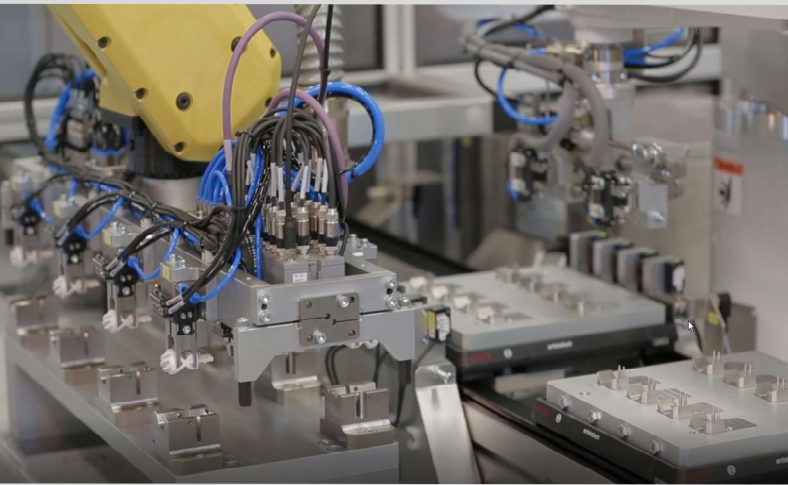


Grauel offers a full range of automations solutions, focusing on the needs and requirements of the customer. Our understanding of the customer needs, allows for high quality and technically optimized solutions.

Our engineers support POP (Proof Of Principles) machines as well as large, fully automated production lines running at high speed to print & assemble complex product.



Grauel | assembly technology

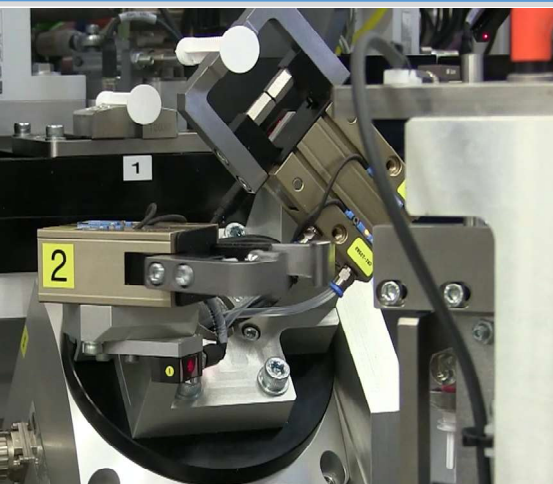
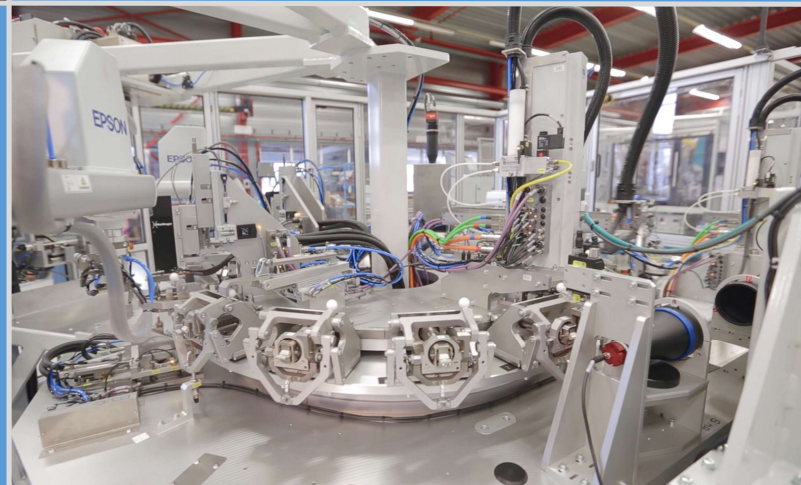


Grauel is a unique automation company. We provide high quality assembly and printing solutions, that have a high degree of modularity, offering high precision applications and flexibility for fully automated production processes.

We have various (in-house) developed assembly and printing modules that are used to configure complete solutions, ranging from individual assembly machines to fully automated production lines with robot(s) integration.

Grauel provides complete assembly and printing solutions for extremely complex technical assembly processes. This also includes specific manufacturing and testing modules:

- linear & bowl feeding
- complete handling and positioning
- full robot integration
- leak testing
- gluing
- ultrasonic & spin welding
- material pre-treatment & printing
- UV curing
- mechanical and vision inspection and testing.



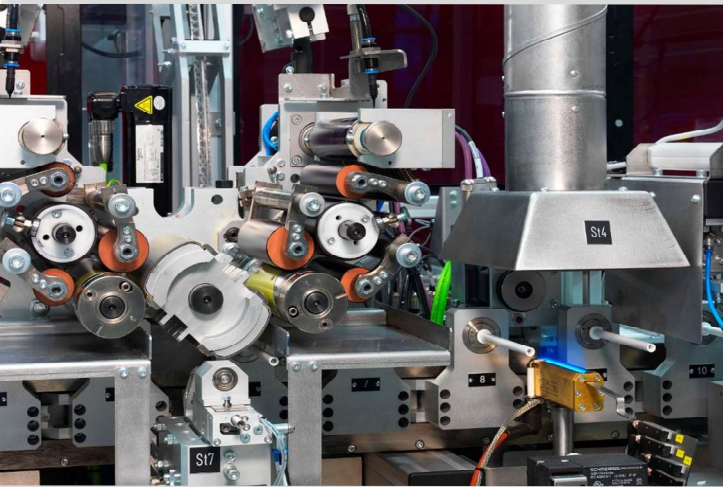
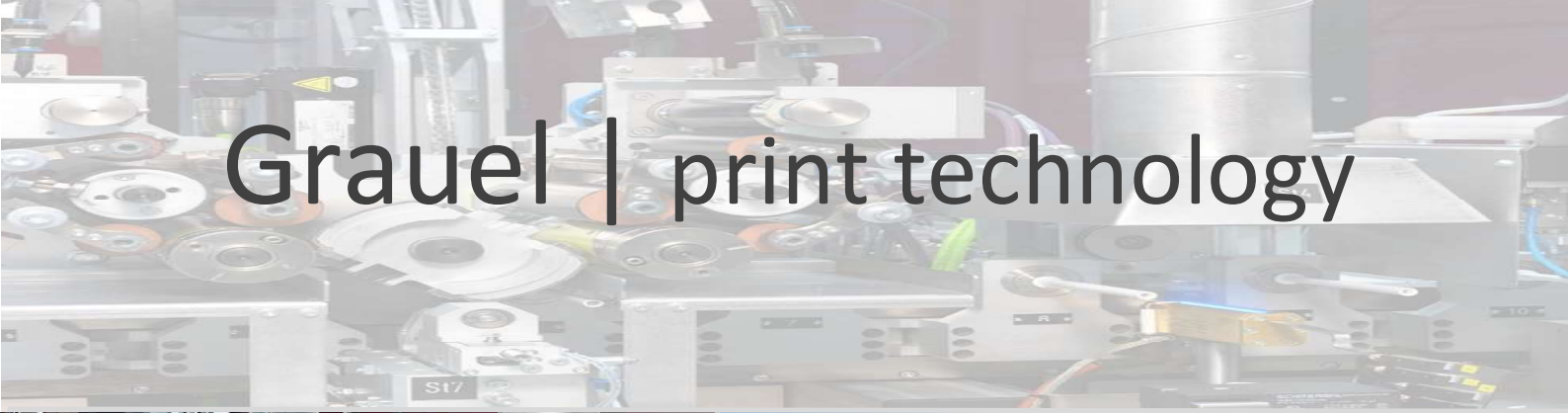
Our assembly solutions can be integrated directly into the production process or can be used as a stand-alone unit. These solutions can be provided as manual, semi-automatic and fully automatic assembly system.

Integration may be achieved through the use of robots that are a flexible connection between the primary production process (e.g. molding forming) and the assembly or printing processes.

Flexible transport lines, robot palletizing or automated packing can also be integrated to provide a full assembly and printing solutions.



Grauel | print technology



Grauel has a full range of printing application available, providing very accurate and stable print on a wide range of products. These solutions can seamlessly be integrated with the full assembly application.

Grauel also provides the treatment systems (Corona, Flame, Plasma) to ensure the highest quality standards are reached. The best treatment for your process can be established by Grauel to support your process and product development.

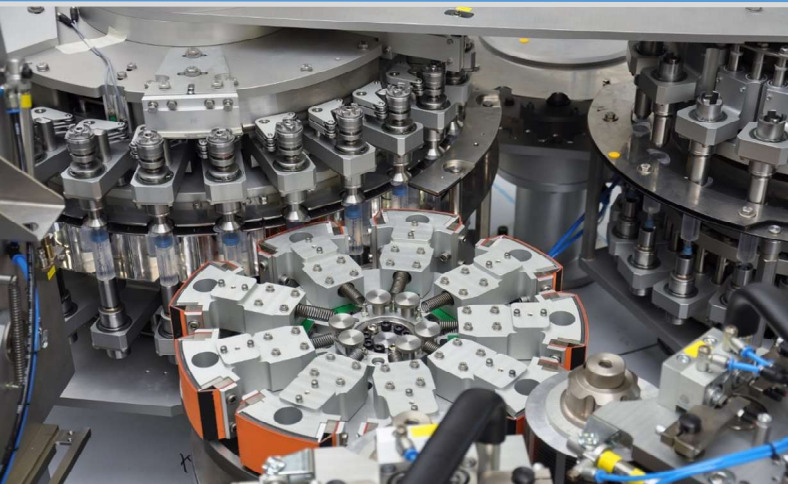
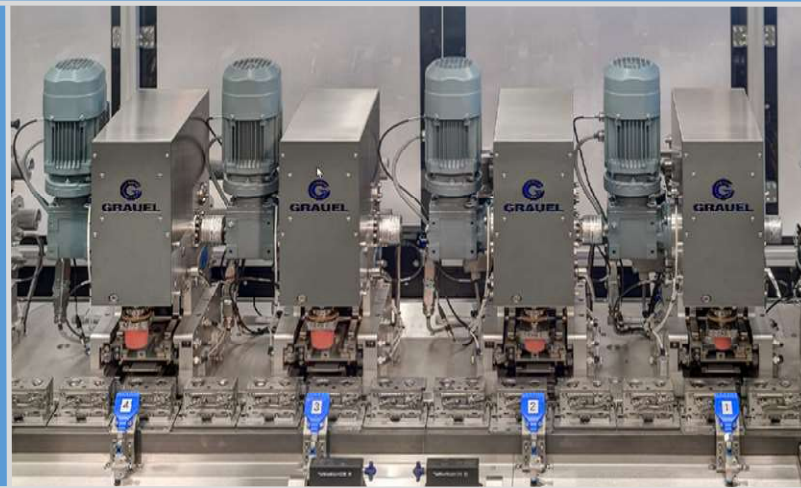
We have long experience with various printing methods and the inks used. Our core printing solutions include:

- dry offset
- pad print
- (indirect) flexo print
- DOD inkjet.

In addition we also completed projects using

- hot foil
- laser marking / engraving / embossing.

Grauel supports its customers with the selection of the correct printing method and inks for both semi and fully automated processes.

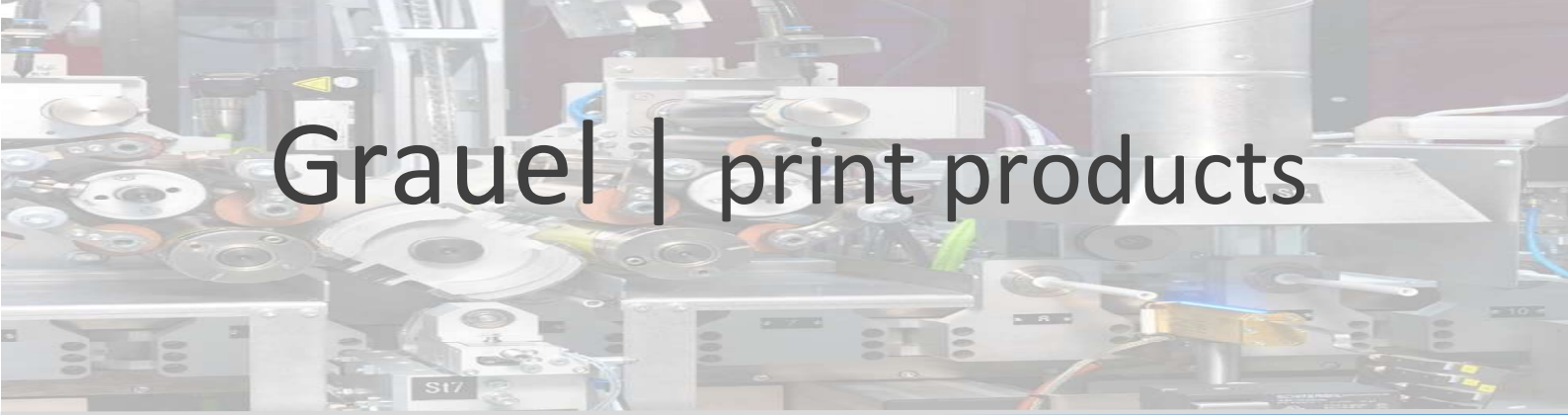


Being a full solution provider we can integrate pre-treatment and curing solutions for the complete printing & assembly process. Grauel also offers products treatment verification (Dyne) parameters as well as curing verification (Tape, Scratch and Chemical test).

We offer

- corona treatment
- plasma treatment
- flame treatment
- UV curing,

all designed to provide full printing and assembly solution which can be integrated into one application.



Grauel | print products



Grauel has a full range of printing application available, providing very accurate and stable print on a wide range of products. These solutions can seamlessly be integrated with the full assembly application.



Grauel also provides the treatment systems (Corona, Flame, Plasma) to ensure the highest quality standards are reached.

We have long experience with printing methods and the inks used. Our printing solutions include: • dry offset • pad print • flexo print • ink jet • hot foil.

Grauel supports its customers with the selection of the correct printing method and inks.



Being a full solution provider we also include treatment and curing solutions.

We offer • corona treatment • plasma treatment • flame treatment • UV curing, all designed to provide a full printing and assembly solution in one application.



Grauel | medical devices

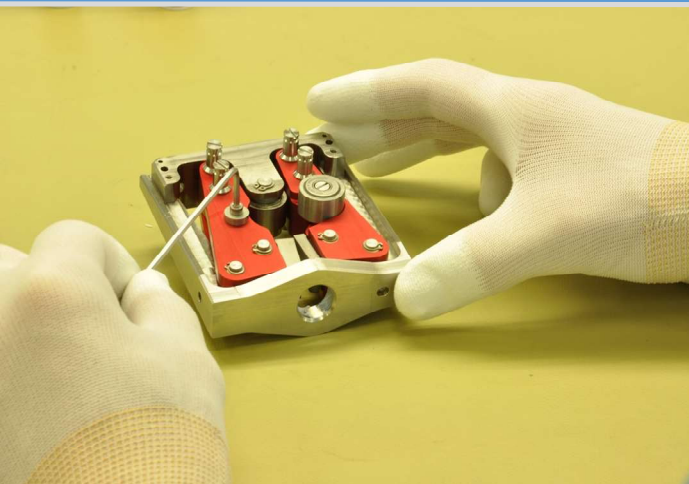


Leading companies in the high tech industry rely on Grauel to support the production of 'high precision ultra pure' parts as well as full (module) assemblies and proof of principles.

This is done using fully automated high tech applications or prototypes for feasibility studies and automation studies.

Dedicated (measurements) are available in the cleanroom to ensure the modules and parts meet the highest quality standards and all steps in the production and assembly process are monitored and quality standards are met.

To further support the highest quality standards, a Finsonic cleaning facility is available to ensure all parts are 'ultra pure' before and/or after assembly.



Our 2.000 m² class 7 cleanroom is provided with logistics rings including • Wet cleaning and drying processes

- Local ISO class 5 mini environments available for very clean assembly and qualification
- Ultra High Purity zones with dedicated instruments
- Ultra pure water
- Extreme clean dry air
- Wet-vacuum (up to 0.08 bar absolute)
- RGA equipment

- Leak test equipment (vacuum and overpressure)
- Facility Monitoring: 24/7 Data Acquisition and Data Logging.