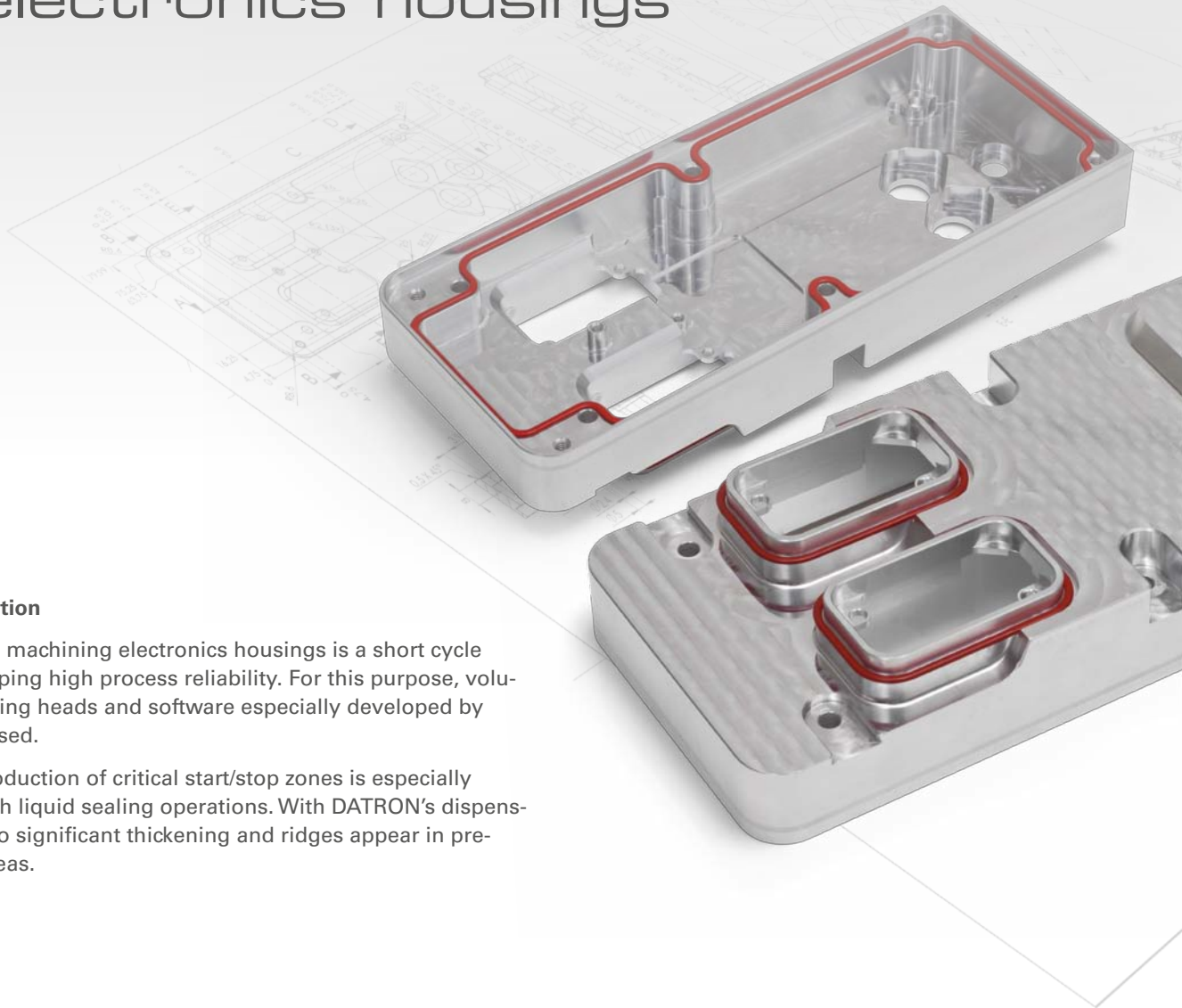


Application description:

## **Reliable dispensing process** for electronics housings



### **Project description**

The goal when machining electronics housings is a short cycle time while keeping high process reliability. For this purpose, volumetric dispensing heads and software especially developed by DATRON are used.

The ideal reproduction of critical start/stop zones is especially focused on with liquid sealing operations. With DATRON's dispensing systems, no significant thickening and ridges appear in precisely these areas.

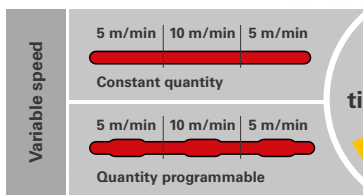


**Would you like more?**  
**Watch the video!**

Scan the QR code with your Smartphone in order to see the video or visit our YouTube Channel and learn more about the diverse applications of DATRON CNC milling machines: [www.youtube.com/DATRONAG](http://www.youtube.com/DATRONAG)

# Reliable Dispensing Process: Electronics Housings

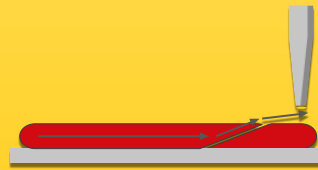
## Highlights



**Short cycle times and high flexibility**

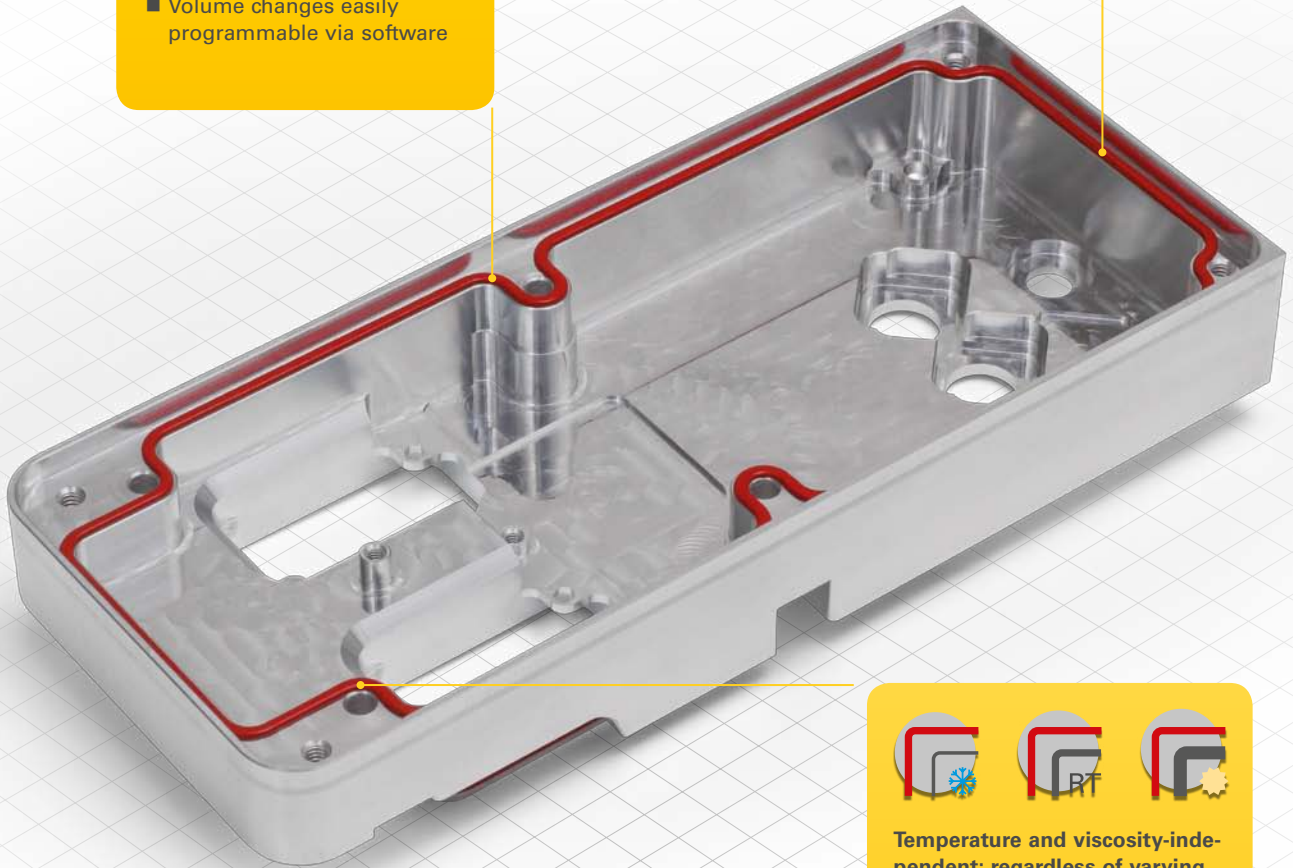
### Speed & volume independent

- Short cycle times due to the possibility of acceleration and deceleration
- Consistent dispensing cross-sections (volumes), even with changing dispensing speeds
- Volume changes easily programmable via software



### Transitions & docking points

- Clean start/stop points due to ramp-shaped transitions
- No material spreading due to special wiping/elimination strategies
- Consistent starting and ending points without (unwanted) thickening



### Temperature and viscosity-independent: regardless of varying production conditions

- Consistent dispensing volumes, even at different temperatures
- Constant material discharge even with viscosity variations
- Unchanged production process even in case of compressed air variations

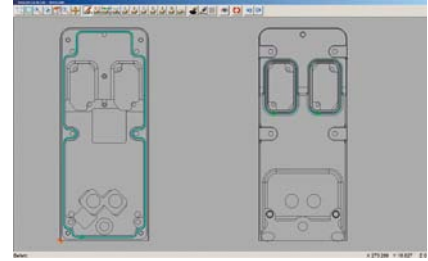
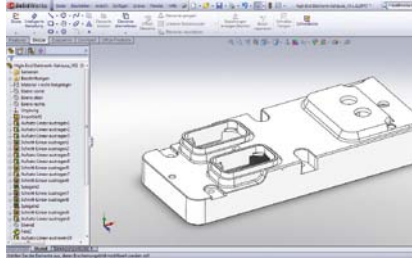
### Our selected application range: the electronics industry, device production

Even sophisticated shapes and surface geometries sealed until now with other methods, for example press-sealing, can now be processed more cost-effectively in small batches with DATRON's dispensing technology.

# The Manufacturing Process

## CAD/CAM

DATRON offers easy to use and practical 2D/3D CAD-CAM software for processing dispensing paths. The converted data can be edited directly on the machine or using work-preparation software.



## Dispensing materials

1-component silicone, bonding at room temperature, stable. The material is used as a permanently elastic sealant.

## Example using a dispensing machine

### DATRON **PRO500**

#### Technical Data:

- iVD – Volumetric dispensing head
- Light curtain
- Installation dimensions (W x D x H) without operating terminal  
1,300 mm x 1,300 mm x 1,950 mm
- Weight approx. 560 kg



## Technologies used

### XYZ needle compensation

Fully automatic measuring and software correction of the dispensing needle position in the X, Y, and Z directions.



### XYZ Sensor

Probing of the material's edge and height to determine the reference point on the workpiece. The material's surface is measured by grid-shaped probing. The height profile thus created is corrected immediately by the dispensing programme.



### Plasma pre-treatment

Optimum surface treatment prior to dispensing to improve the adhesion of the dispensing material.



### Clamping technology

The clamped medium is held using a conical centring cone and vacuum-fixed directly onto the table or using M6 screws.



## Set-up and processing time

Very short set-up and processing time due to perfect matching of dispensing technology, software and clamping system.

**Setup time:** about 15 minutes

**Programming time:** about 15 minutes

**Cycle time for plasma pre-treatment:** 25 seconds

**Cycle time for dispensing operation:** 30 seconds





## Materials

### We dispense everything with the utmost precision

The integration of DATRON's dispensing head into the path control system ensures precise volume application, irrespective of the material's dispensing and flow properties.

All major 1-component sealants, adhesives, potting materials, EMI shields, hot melts or abrasive materials can thus be applied in a process-safe manner, even in case of very thin beads.

We will be happy to discuss dispensing of 2-component materials personally with you.



#### Silikon

**Wacker Elsatosil E14**

**Chemical base:** Silicone

**Bonding method:** RTV,  
2-3 mm/24 h

**Shore hardness:** 36 A

**Remarks:** Acetic  
acid-bonding system



#### 2-component silicone

**Dow Corning D94-30P**

**Chemical base:** Silicone

**Bonding method:** thermal,  
5 min/150° C

**Shore hardness:** 32 A

**Remarks:** 2-component,  
potting time 4 - 6 h



#### Epoxy resin

**Delo Monopox 1197**

**Chemical base:** Epoxy

**Bonding method:** thermal,  
15 min/180° C

**Shore hardness:** 67 D

**Remarks:** adhesive, abrasive



#### Polyacrylate

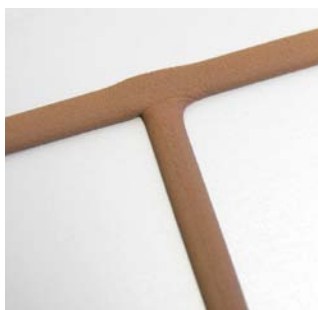
**Henkel Loctite 5883**

**Chemical base:** Acrylate

**Bonding method:** UV

**Shore hardness:** 45 bis 50 A

**Remarks:** Silicone-free



#### Combination bead

**Nolato 8801/Nolato 8510**

**Chemical base:** electrically  
conductive and non-  
conductive silicone  
(combination)

**Bonding method:** thermal,  
30 min/100° C

**Remarks:**

Coat: electrically conductive

Core: non-conductive silicone



#### 1-component foam

**Sunstar Penguin Foam 3151E**

**Chemical base:** Polyurethane

**Bonding method:** thermal,  
5 min/80° C

**Shore hardness:** 42 (00)

**Remarks:** Physically  
foamed, close-celled