



Company Structure



BC-TECH HOLDING AG

Comercialstrasse 19
7000 Chur
Switzerland

**Electrovac
Hacht & Huber GmbH**
Anglstraße 4
94121 Salzweg
Germany

**Electrovac
Metall-
Glaseinschmelzungs
GmbH**
Aufeldgasse 37-39
3400 Klosterneuburg
Austria

**Electrovac
France Sarl**
501 rue de la Tour
Centra 269
94576 RUNGIS Cedex
France

**Electrovac
Japan K. K.**
TCS Bldg 3F 1 1-14-33,
Esaka-cho, Suita-shi
564-0063 Osaka
Japan

Electrovac USA, Inc.
500 Fifth Avenue, #4810
New York, NY 10110
USA

Production Plants



Electrovac

Hacht & Huber GmbH
(H&H)

- High volume GTMS production
- Highly automated production lines
- 280 employees

Electrovac

Metall- Glaseinschmelzungs GmbH
(EMG)

- Special packages and small volume production
- Stamping
- Glass pre-form production
- Tooling shop
- 105 employees

History



1947

founded in Vienna (AT) by Werner v. Hacht and Gerhard Huber

1951

Production of the 1st glass to metal seal
Electrovac is the first producer in Europe

1962

plant Salzweg (DE)

2010

Aquisition of the EHP division by BC-TECH HOLDING AG

2011

Foundation of Japan Sales Office
Electrovac Japan K. K.

2012

Foundation of USA Sales Office
Electrovac USA, Inc.

Certificates



• **ISO 9001:2008**



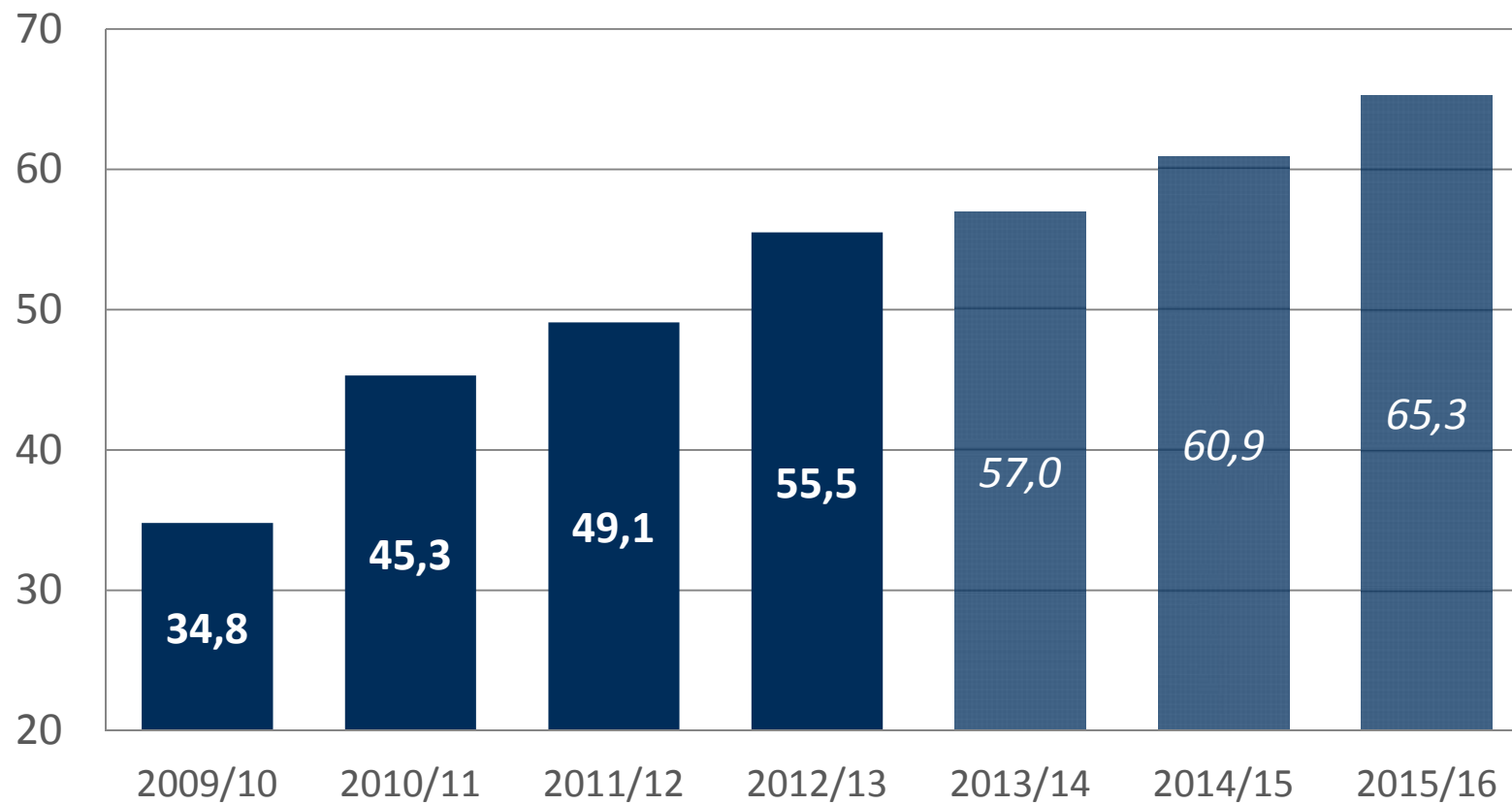
• **ISO TS 16949**



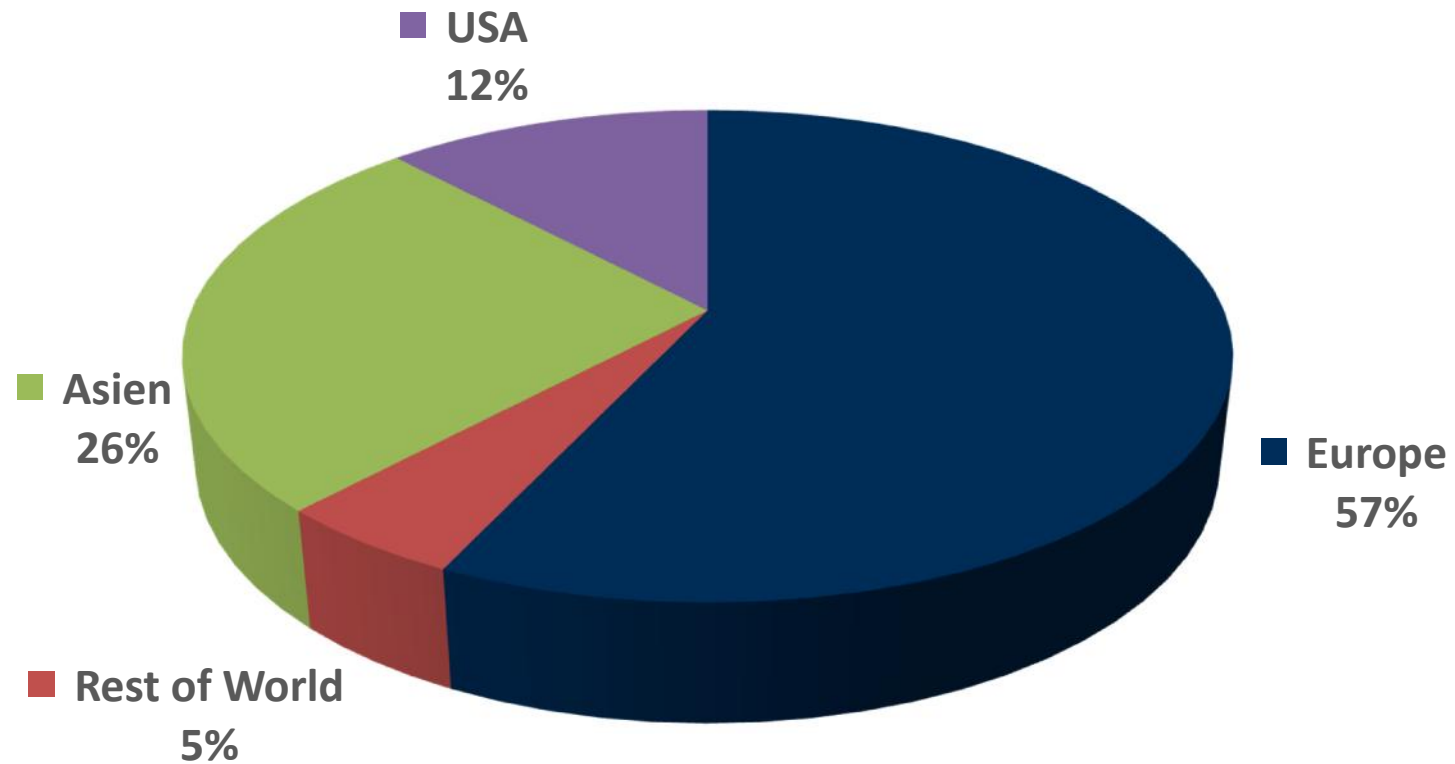
• **ISO 14001**

**guarantee
continuous
improvement
of all our
processes and
product
quality**

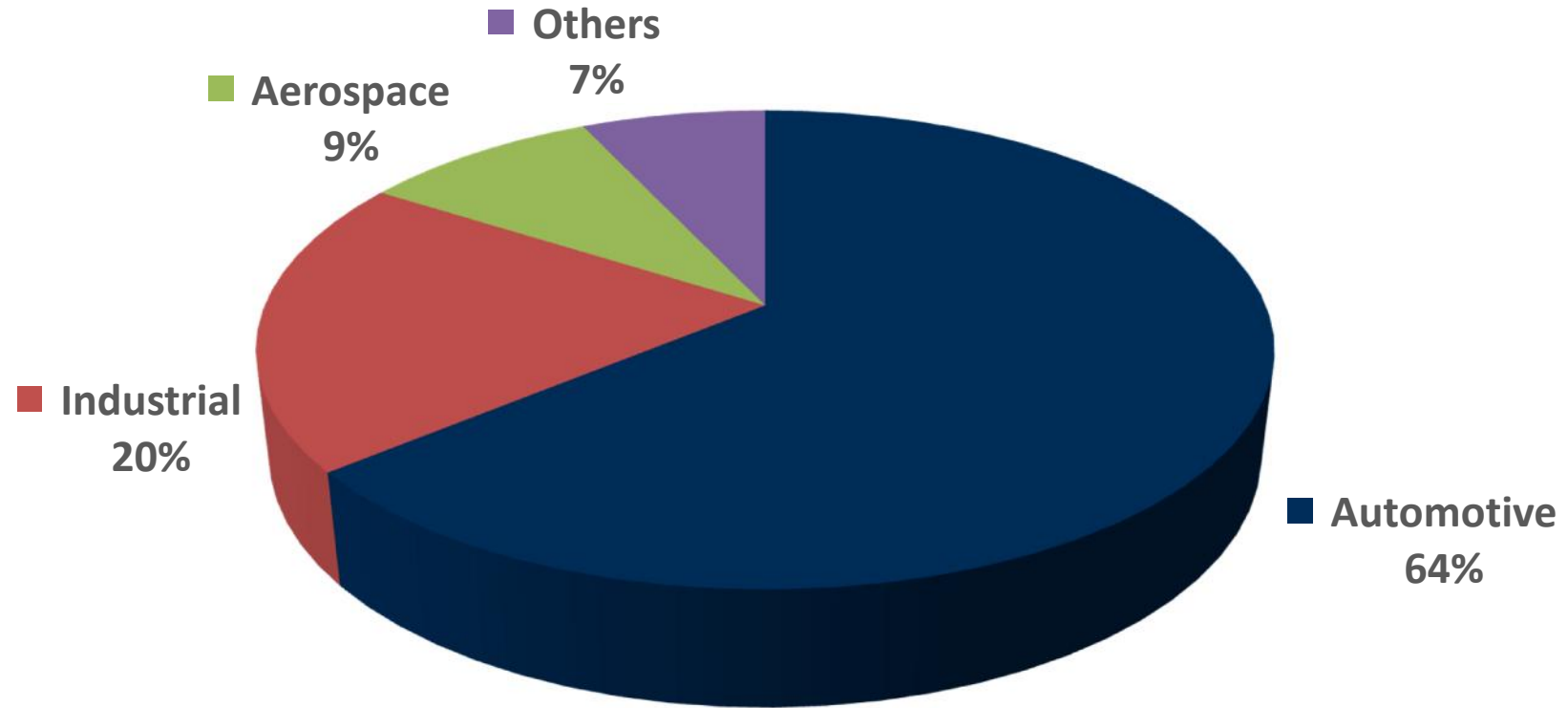
Net Sales (in Mio. €)



Sales by Region FY 12/13



Sales by Sector FY 12/13



Product Groups



Hybrid Packages



Customized Packages



Sensor Housings



Transistor Headers



Ignitors



Battery Covers



Dieter Thumfart

- graduated engineer
- experience in GTMS-business since 1993

Christian Bargähr

- experience in GTMS-business since 1986
- establishing BC-TECH AG in 1995
- build up a swiss multy million \$ company
- 2010 aquired Electrovac hermetic packages division

Hermetic Packages



Characteristics of our glass-to-metal-seals

- ✓ High resistance against pressure and temperature-cycles
- ✓ Chemical resistance
- ✓ Protection against corrosion
- ✓ High electrical insulation
- ✓ Long product life time of electronics
- ✓ Wide variety of possible materials
- ✓ Optimum heat dissipation
- ✓ Individual, customer-specific package design

Applications



- Safety and restrain systems
 - Airbag igniters
 - Hood Release
 - Switches for current cut off
 - Micro gas generators for seat belt tensioner
- Gear rate-, pressure-, acceleration sensor
- Gear box modules
- Diesel injection
- Emergency roadside assistance systems



Automotive

Glass To Metal Seals used in Hybrid cars

Based on Electrovac know how for hermetic seals in automotive application we developed a new product, which is used in hybrid electric cars for air conditioning (AC) compressors.

Specification:

- Hermeticity: $< 1 \times 10^{-8}$ m bar l/s
- Insulation resistance: > 10 Gohm @ 500 VDC
- High voltage: 3400 KVDC
- Working pressure: min. 45 bars
- Plating: Ni and on request also Ag
- Silicone rubber coating on request

Materials:

- Base plate out of stainless steel, steel or Kovar
- Contacts out of NiFe or 1.4762



Industrial

- Pressure, gas and flow sensors
- Pressure transducer
- Pressure switch
- Feedthroughs for sensors
- Air-condition and refrigeration systems
- Covers for Li-batteries



Aerospace

- Hybrid packages
- Night vision devices
- Radar electronic
- Safety systems
- MIL igniters
- Thermo batteries
- Laser systems for satellites
- Oil and tire pressure sensor for planes



Medical

- hermetic housings for sensors in medical equipment (which must be sterilized)
- joints and prostheses
- blood pressure monitor
- hermetic packages for LED´s (dental instruments)
- pressure sensors for oxygen bottles
- hermetic housings for laser treatments
- glass to metal seals for endoscopy



Telecommunication

- Transistor headers for opto electronic applications
- Hybrid packages for hermetic close electronic circuits
- Housings for data communication systems
- Safety systems
- microwave technology
- High speed data transmission

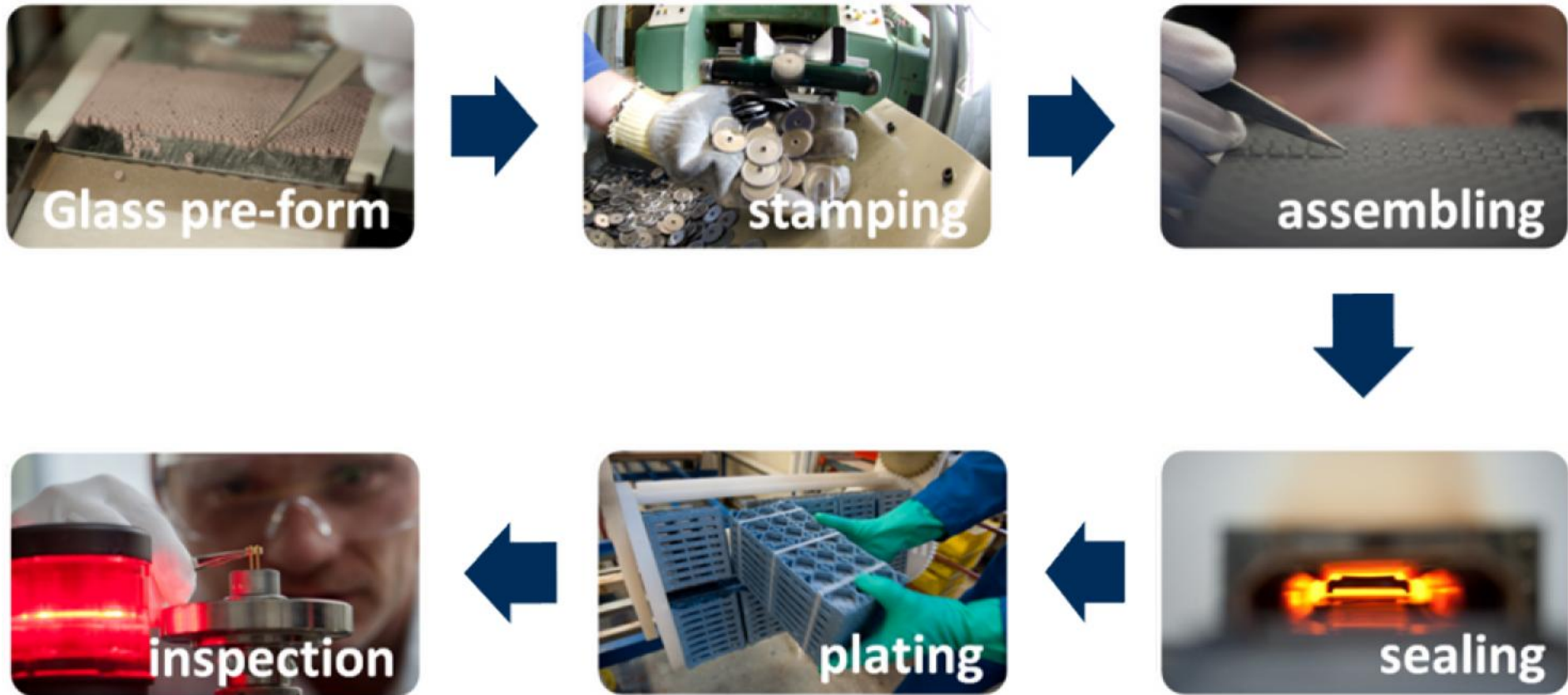


Military

- thermal- and lithium/thionyl chloride batteries
- glass to metal seals for pyrotechnic igniters
- hermetic sensors for military aerospace
- customised housings for different applications
- transistor headers
- hybrid packages



Production Process



Production Process Glass Preform



Milling



Drying



Pressing



Sintering



Products

Production Process

Stamping



Progressive die stamping
for high volumes

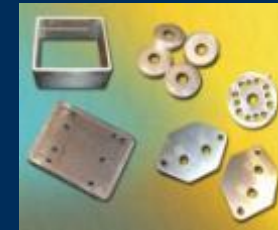
Single die stamping,
for special packages



cleaning

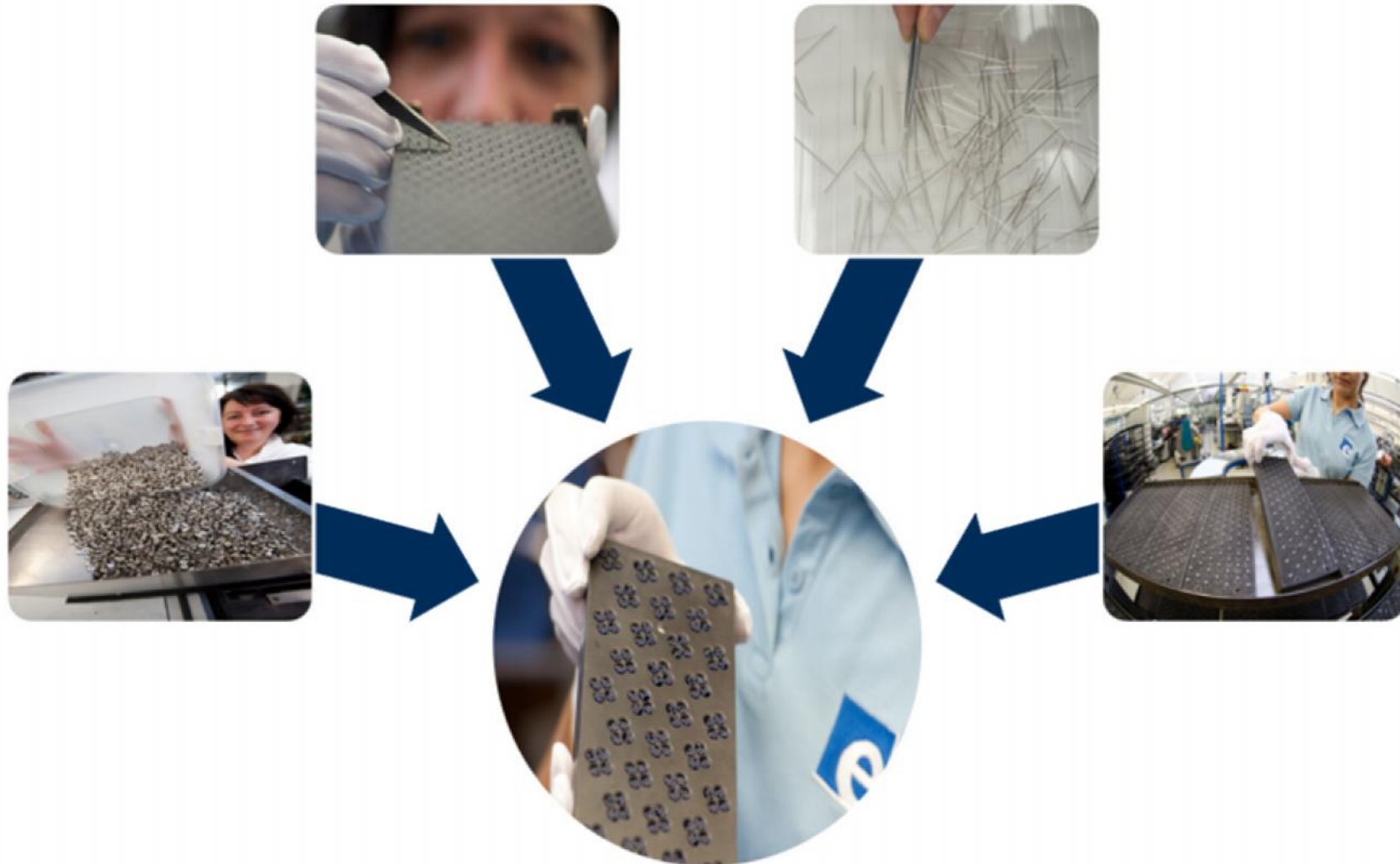


tumbling



Products

Production Process Assembling





Thank you for your attention

www.electrovac.com