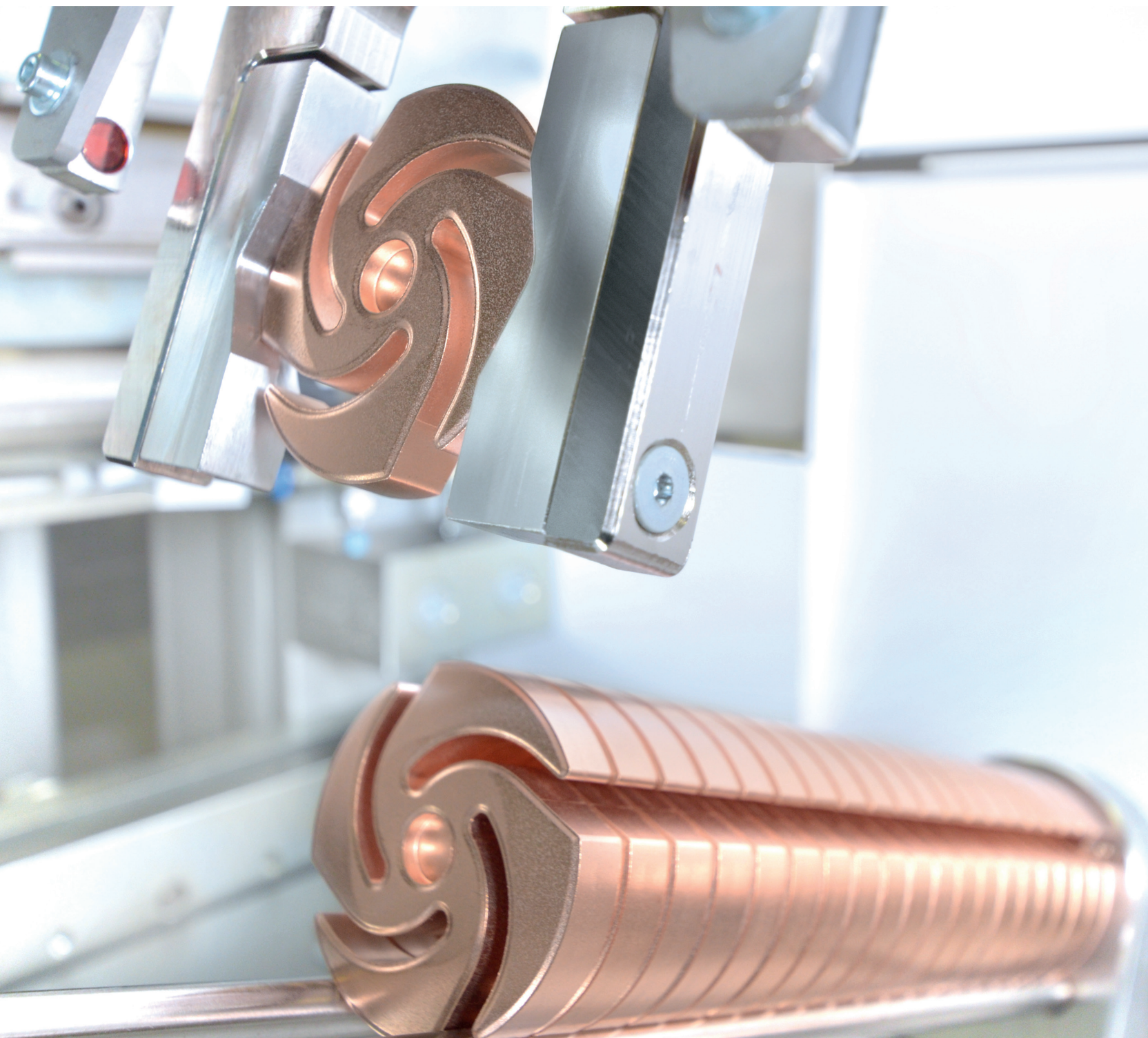


MEDIUM VOLTAGE PRODUCTS

# Vacuum Interrupters and Embedded Poles



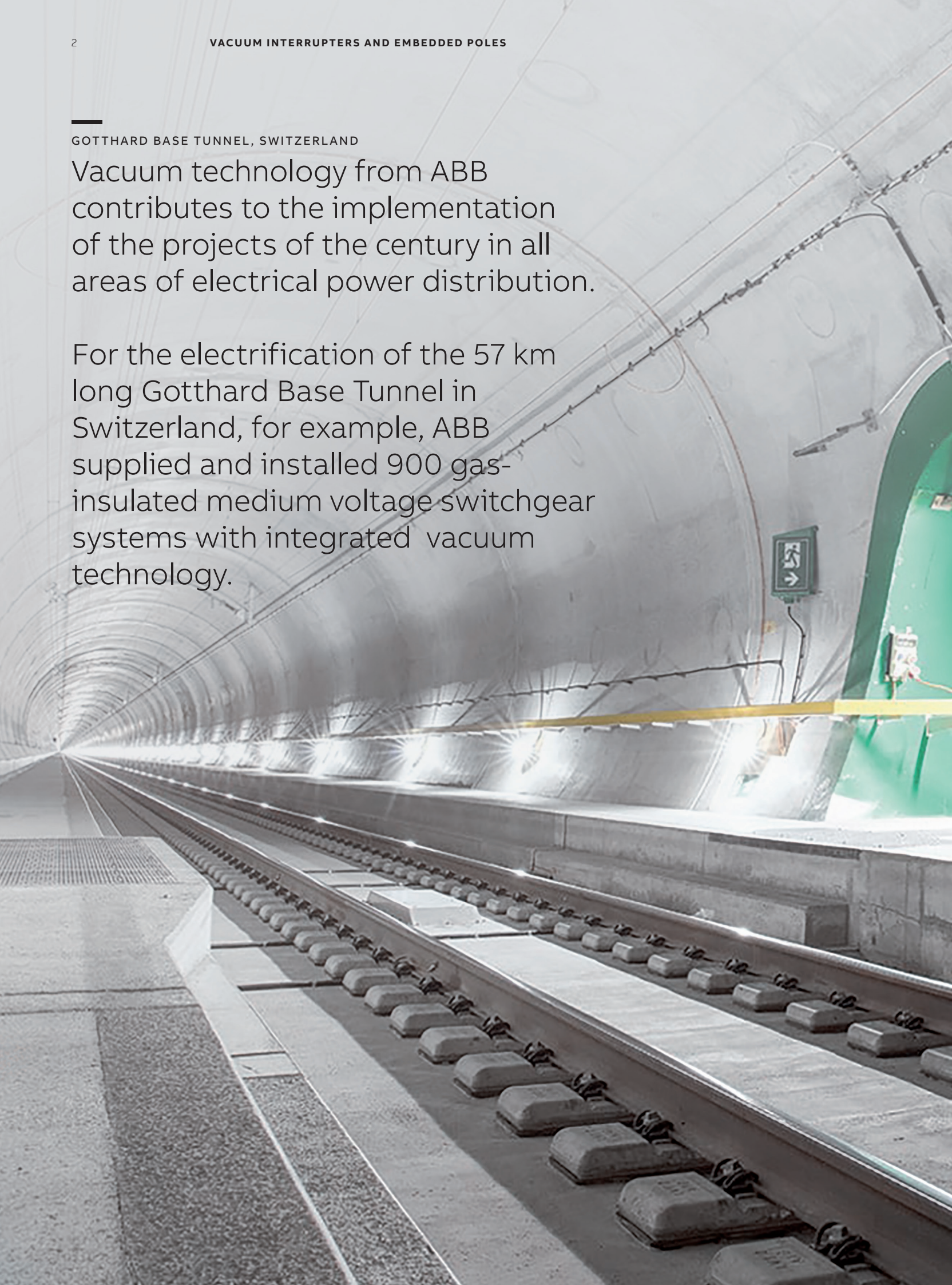


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GOTTHARD BASE TUNNEL, SWITZERLAND

Vacuum technology from ABB contributes to the implementation of the projects of the century in all areas of electrical power distribution.

For the electrification of the 57 km long Gotthard Base Tunnel in Switzerland, for example, ABB supplied and installed 900 gas-insulated medium voltage switchgear systems with integrated vacuum technology.









# Experience

## Expertise

Vacuum interrupters from ABB can be found in almost every switching application. With over five million vacuum interrupters in service, more than 30 years of experience, and an annual production volume of more than 450,000 interrupters, we are one of the largest manufacturers worldwide.

## Know-how

Each year, we perform numerous internal and external type tests with a widest range of applications, and continuously develop our portfolio. As the inventor of the embedded pole technology, producing over 250,000 poles each year, we are the largest and most experienced partner to our customers worldwide in the field of medium voltage switchgear. Combining your know-how with ours enables us to minimize development and testing costs.

—  
01 Transfer of vacuum interrupters from the clean room to further manufacturing and quality processes

—  
02 Fully automatic pole production





**Innovation**

As one of the leading companies in the power engineering sector, we consider it incumbent upon us to put technological progress into practice. Innovations such as the one shot brazing method for vacuum interrupters, our embedded poles and our new technology for the manufacture of thermoplastic pole parts are an integral component of our portfolio. Environmentally friendly materials and manufacturing techniques play a major part in that process. With our innovations, our customers can also participate in the new technologies and thus position their products better on the market.

**Flexibility**

The close cooperation between Research and Development, the Test Laboratories and Production puts us in a position to supply products optimized in terms of both quality and costs. We can also maintain a high degree of standardization and at the same time react flexibly to individual customer specifications. This combination results in short delivery periods for our entire portfolio.





# Quality and reliability

—  
01 Deployment of robots in the clean room for vacuum interrupter production

—  
02 Assembly of the vacuum interrupters

—  
03 In-process life testing

—  
04 100% traceability of all production parameters

## High-tech location

We manufacture our vacuum interrupters and embedded poles in Germany to meet the highest quality standards. All our staff are specially trained.

## Automated production

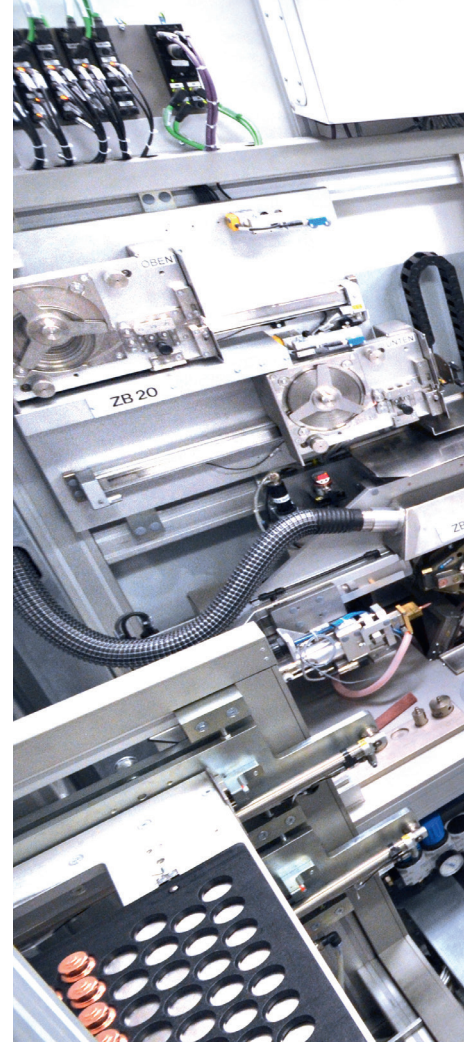
Our production facilities are highly automated. As a result, we manufacture our products with maximum product safety, quality and efficiency. We achieve this, for example, by producing the contacts ourselves with minimum material input. It is a matter of course for us to monitor all process steps and raw materials continuously and ensure full traceability.

## Security of supply

As a result of our great manufacturing depth, we assure the quality of the majority of our components ourselves. In addition, ABB secures supplies for each component by engaging several suppliers and production sites. This ensures extremely short delivery periods and reliable supplies, even in times of peak demand.

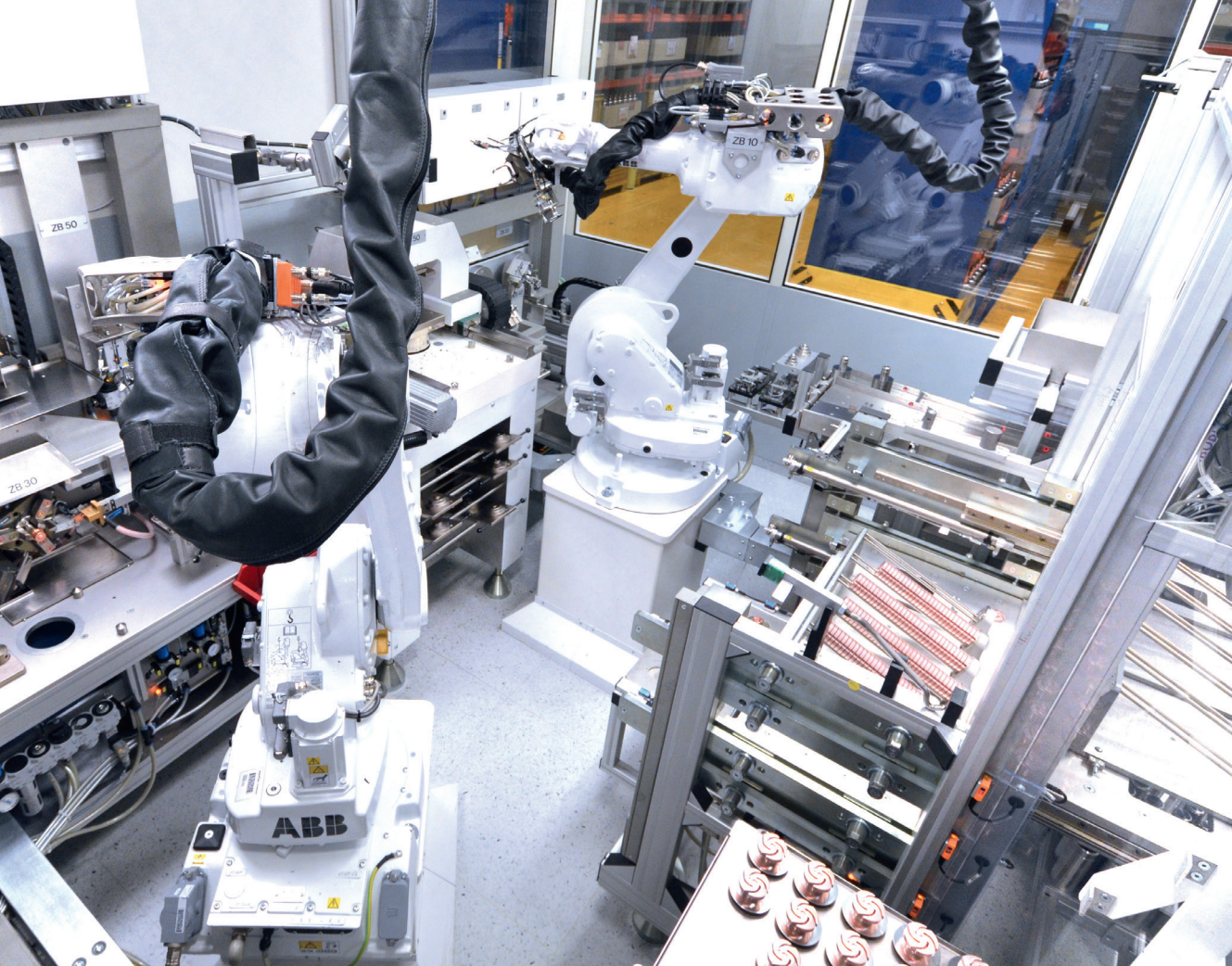
## Quality Assurance

Our regular checks include radiographic examination and two internal pressure measurements with 48 hour quarantine storage. Batch release tests for all critical materials also secure the high quality of our products in the long terms. Each cast of the contact material for our vacuum interrupters is subjected to selected tests on switching capacity and only released for series production when those tests are passed.



—  
01

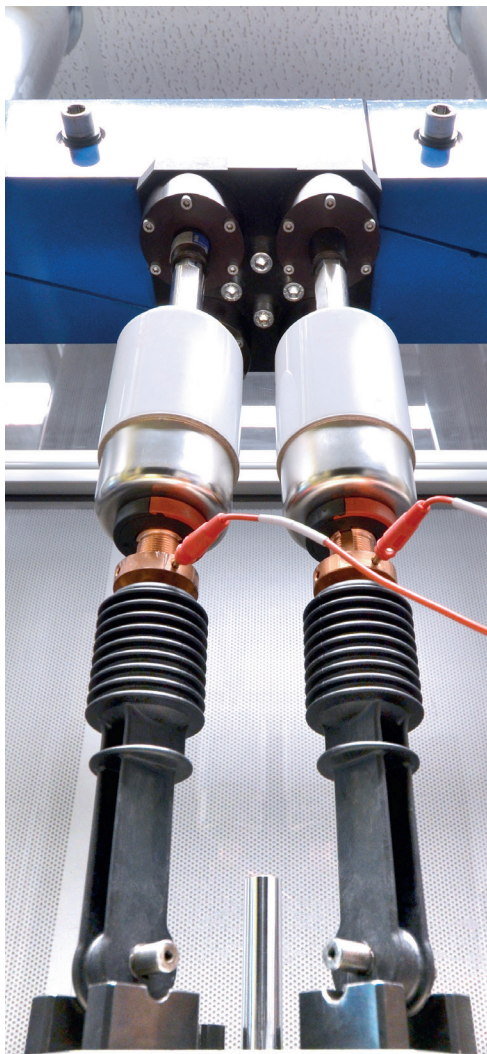




02



03



04

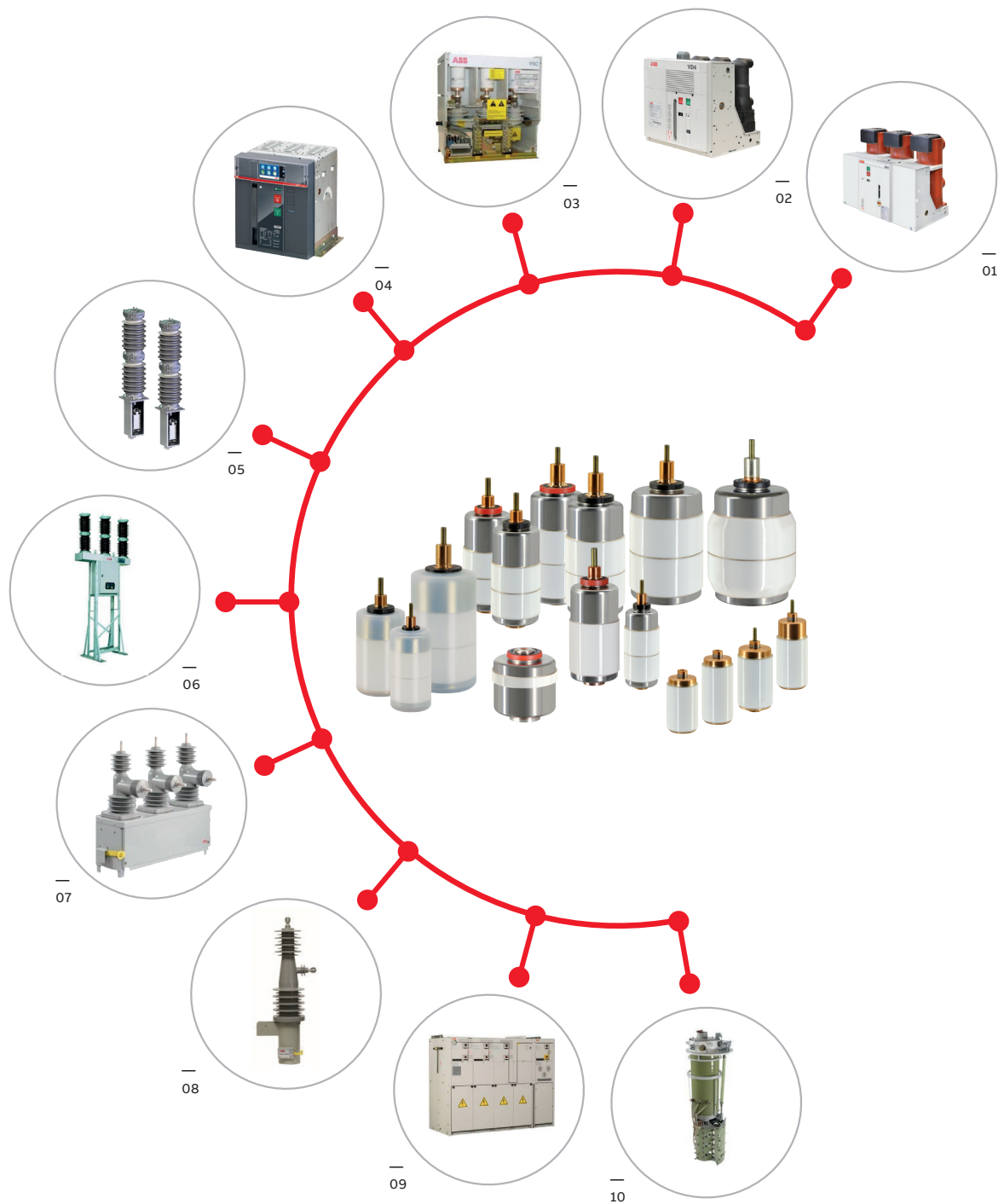




# Portfolio

## Applications for ABB vacuum interrupters

- 01 Generator circuit-breakers
- 02 Circuit-breakers
- 03 Disconnectors and contactors
- 04 Low voltage circuit-breakers
- 05 Switches for railway applications
- 06 Outdoor circuit-breakers
- 07 Circuit-breakers for autoreclosing in outdoor applications
- 08 Switches for capacitor banks
- 09 Ring main units
- 10 Tap changers for power transformers





# Portfolio

## Applications for ABB Embedded Poles

—  
01 Circuit-breakers,  
12 kV - 27 kV

—  
02 Circuit-breakers,  
36 kV - 40.5 kV

—  
03 Circuit-breakers  
for autoreclosing in  
outdoor applications,  
12 kV - 38 kV



—  
01



—  
02



—  
03





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# Cooperation

**Individual customer support**

We support our customers from the initial phase of development through the design of prototypes and type testing to series manufacture of the final product. In doing so, we can draw on our extensive experience with the use of vacuum switching technology in an extremely broad range of applications.

We assist our customers as a one stop shop with services including selection of the right product, adaptation of the design, individual data sheets, flexible delivery times and type tests in independent laboratories.







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**Additional informationen**

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