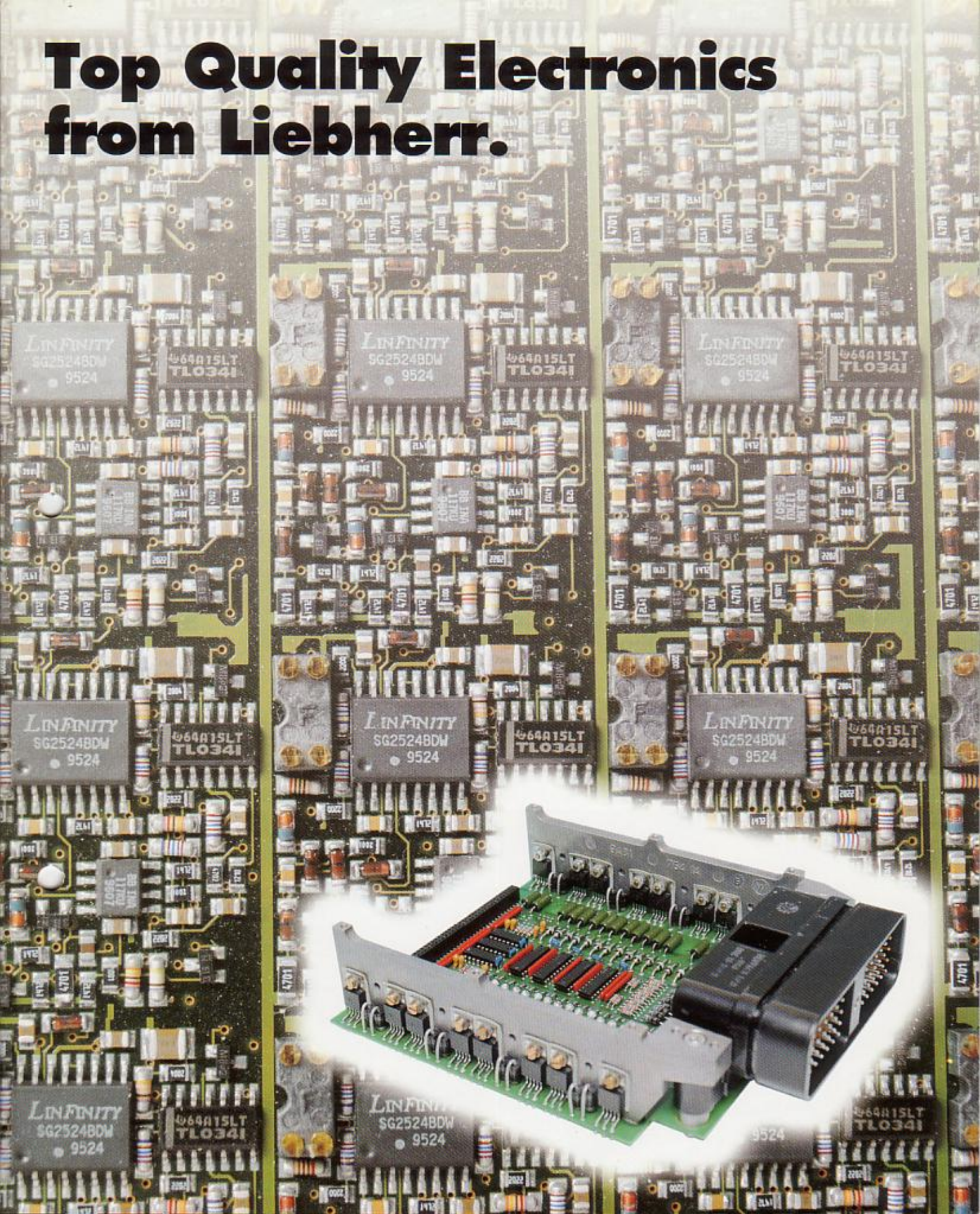


Top Quality Electronics from Liebherr.



LIEBHERR

Electronics.

Top Quality Liebherr Electronics.

Electronics fulfil varied and complex tasks in machine and plant building, for example controlling, regulating and surveillance. The installation of top quality electronic components is absolutely essential when continual and reliable functioning is required under the most difficult conditions such as fluctuating temperatures, vibration and dusty or saltwater environments. For this reason Liebherr-Werk Nenzing GmbH manufactures high quality electronic components for its own use, as well as under customer contract, using the most modern technology.



Top quality in design, development and procurement.

Electronic Components - Manufacturing from one Source.

Technically advanced products such as electronic elements and components require complex handling.

Therefore, Liebherr-Werk Nenzing GmbH sets great value in ensuring that the development, procurement and manufacturing processes are carried out by highly qualified and specially trained personnel:

- Design and development of electronic components in accordance with customer requirements
- Timely procurement of parts according to Liebherr specification
- Manufacturing of the electronic components using automated production equipment
- Completion and wiring of the units to be carried out manufactured according to manufacturing procedures specific to products
- Automatic in-circuit and unit testing in order to exclude possible production errors
- Painting of the tested electronic components for protection against exterior influences
- Execution of specific test procedures in order to ensure resistance to influences in the surrounding environment.

The Liebherr production programme is complimented through a service network operating world-wide securing long-term functionality and reliability of products purchased by our customers.



Top quality through the strictest environmental tests.

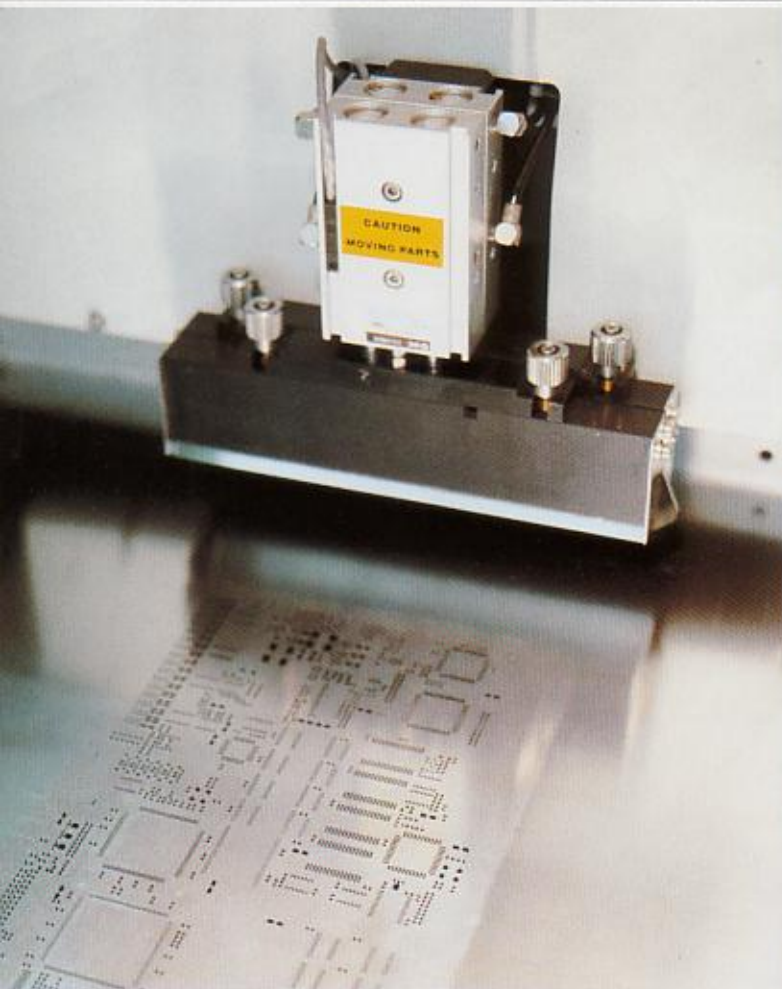
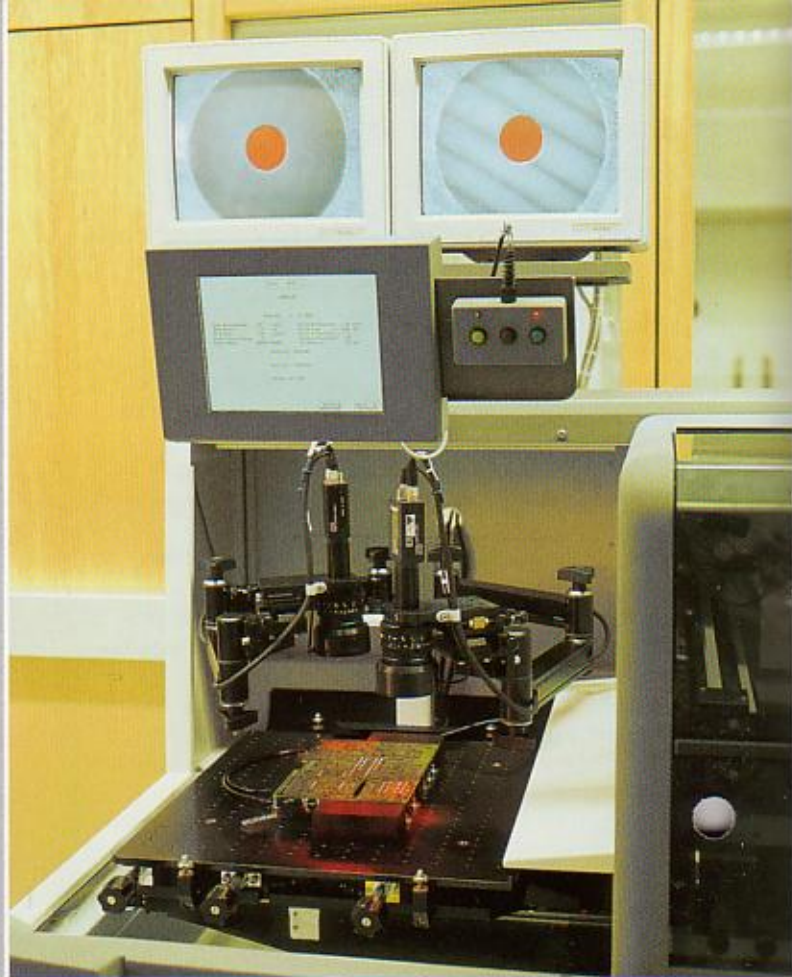
Automatic Production Procedures provide for Supreme Process Quality.

In addition to conventional technology, the manufacturing of electronic units is increasingly carried out using Surface Mounted Technology (SMT).

This activity is divided into four tasks:

- soldering paste printing
- automatic SMT assembly
- SMT soldering and
- subsequent visual control

All relevant steps in the process have a great influence upon the quality of the manufacturing process and are, therefore, carried out using automatic equipment. Thereby, ensuring constant high quality.



Top quality through guaranteed reliability

development and production

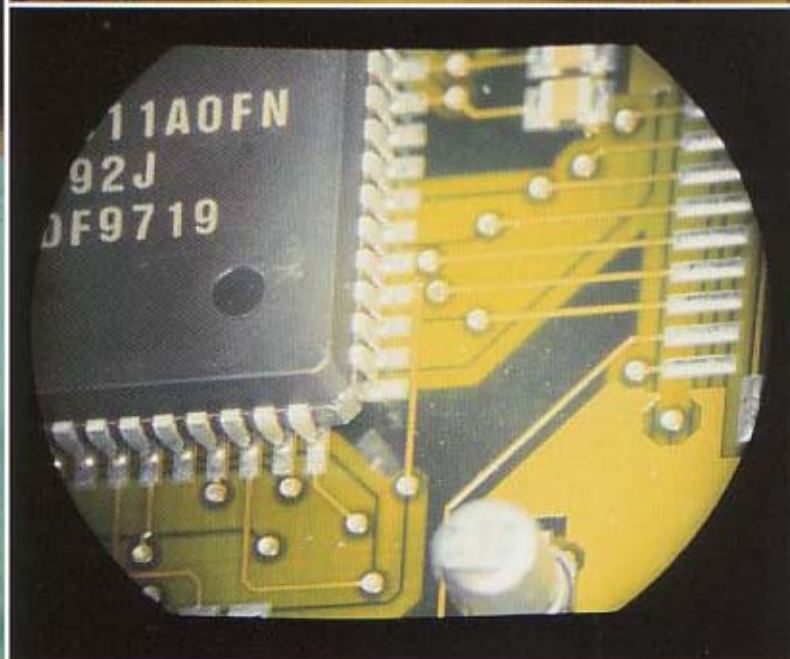
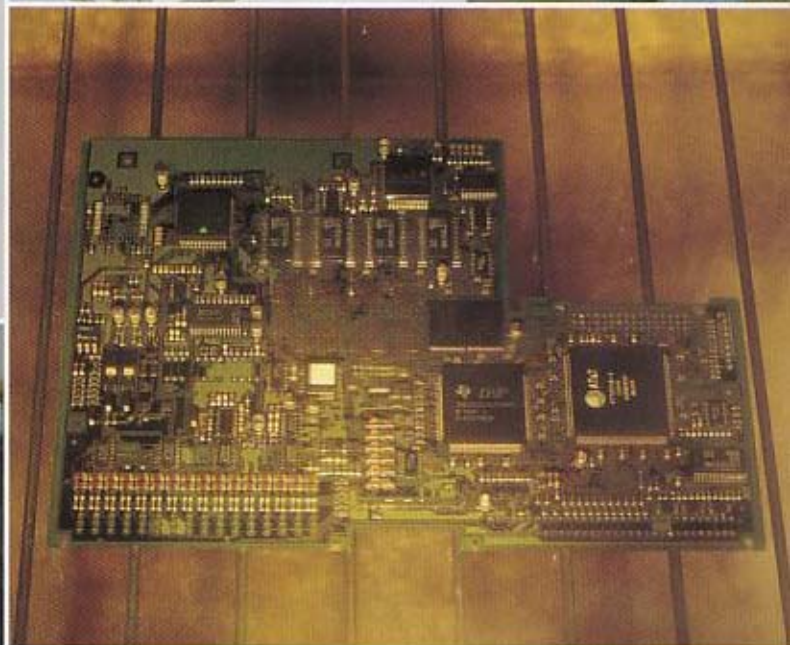
Continuous Controls to Ensure Product Quality.

The fully-automatic or partly manually tipped electronic components undergo permanent controls running parallel to production and are conscientiously tested for potential sources of error.

The objective is to test all working processes and so ensure the high quality standards.

This activity requires the use of the most modern technical equipment in conjunction with appropriately trained personnel in order to meet with the high-profile demands of Liebherr.

Great value is also set upon the quality of the working environment. Clean environmental conditions within the production area - controlled atmospheric humidity and room temperature as well as filtered air - are the basic requirements for achieving the demanded quality standards.



liability in SMT process.

Completion of the Individual Elements to the Finished Product.

After the fully and partly automated production of the electronic components, follows the assembly and completion to finished units.

Completion is carried out by qualified, specially trained personnel with the assistance of manufacturing procedures specific to products.

Apart from the continuous control parallel to the manufacturing process, each unit is subject to numerous test programmes in the form of element control and overall functional tests.

Additionally, standard Liebherr specified environmental tests are carried out in order to test the product for functionality under changing environmental conditions. These test procedures include:

- temperature tests
- climatic tests
- combined vibration and temperature change tests
- saline environment tests

Through this series of tests it can be ensured that the products withstand extreme environmental conditions.

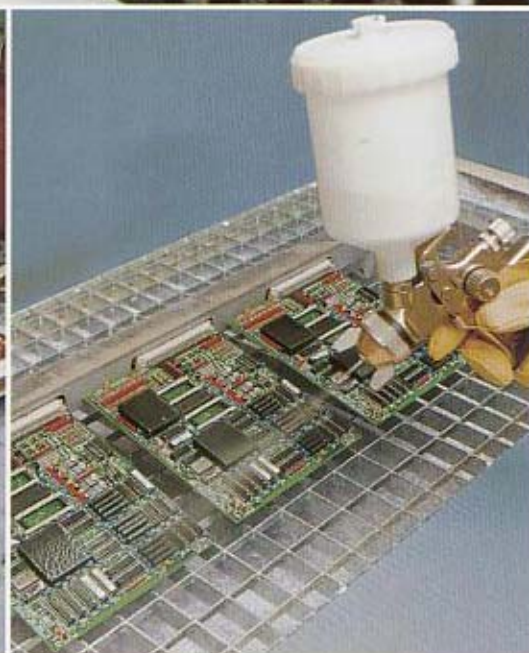
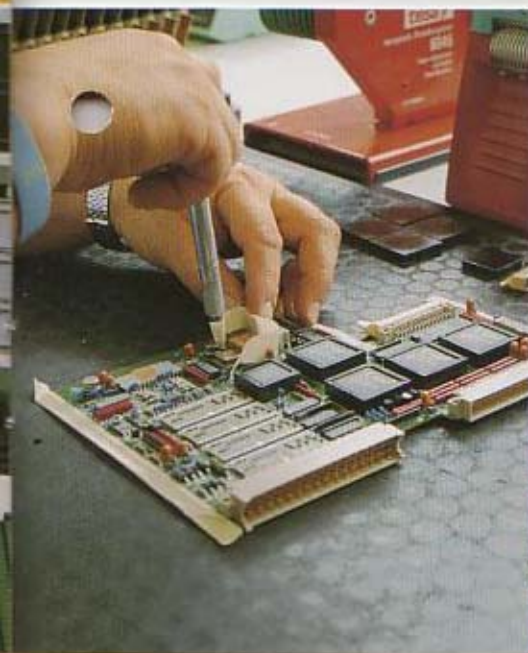


Top quality in completion, assemb



The Strengths of Liebherr-Electronics

- development, design, procurement and production from one source
- tipping using conventional, SMT and Fine Pitch Technology
- reflow and flow soldering on process controlled equipment
- flexible execution of mass or small orders
- many years of experience as well as appropriate equipment in the in-circuit, function and unit test fields
- high quality awareness, short delivery times and good price/performance ratio
- a motivated team of experts in the fields of development, design, procurement and production



ly and finished units.

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