# PatchWork® stencils

**Adept knowledge**
Through our customized data preparation solutions and the optimization of your CAD data in collaboration with our specialists, we guarantee maximum efficiency and quality for your project.

**Direct contact**
Your immediate access to us: Personal contact – fast, easy, and reliable.

**All from one provider**
We combine a wide variety of technologies and processes to achieve the best results: cutting, welding, marking, ablating, coating, etc.

**Express delivery**
6-hour express service ex works: Orders received by 1 pm shipped on the same working day.

## PatchWork® stencil

The **PatchWork® stencil** from LaserJob enables the simultaneous printing of solder paste deposits of varying heights in just one squeegee stroke – precisely, flexibly, and efficiently. Laser-welded steps made of precision sheet metal precisely regulate the amount of solder paste for each component. Ideal for mixed assemblies, fine-pitch and power electronics, and complex assemblies with different requirements.

## Manufacturing process

1. Laser cutting in the base sheet metal
2. Welding in the precisely fitting stainless steel sheet metal in the desired thickness (steps)
3. Laser cutting of all apertures in a single step

## Advantages

- Different solder paste volumes, precisely adjustable for each component
- Reproducibility >6 Sigma, material thicknesses from 50–500 µm, steps of 10 µm
- Sheet thickness tolerance ±2% for maximum precision
- Rounded step edges, smooth surface, optimal solder paste release behaviour
- Subsequent insertion of steps possible (step-up/step-down)
- Express production possible from 6 hours/working day
- Steps possible on squeegee and circuit board side (e.g., for recesses in barcode labels)

LaserJob

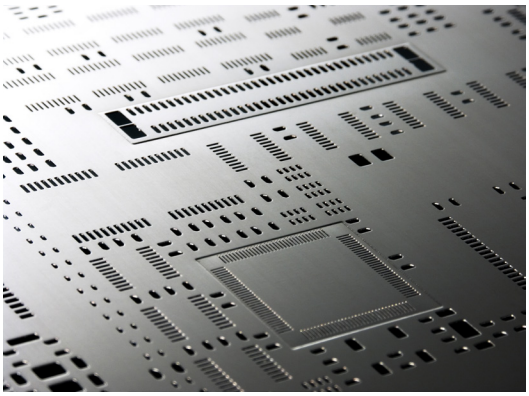
# PatchWork® stencils

## Technical details

| | |
|---|---|
| Stencil material | Stainless steel 1.4301 |
| Hardness (Hv) | Minimum 370 |
| Tensile strength ($N/mm^2$) | > 1.100 |
| Sheet thickness tolerance | ±2 % |
| Patch thicknesses (µm) | 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 180, 200, 250, 300, 400; max. 2 mm |
| Maximum processing area | 800 × 600 mm |
| Frames & tensioning systems | LJ 745, VectorGuard, QuattroFlex, Stencilman, Alpha-Tetra/Micromount, ZelFlex, custom |
| possible as | Standard stencil, 3D PatchWork®stencil, integrated NanoWork® coating, patch-in-patch, recesses |

## Fields of application

- Mixed-assembly printed circuit boards
- Fine pitch/grid array, QFP with heat sink
- Power electronics and special designs
- Identification labels/barcodes on printed circuit boards



## Our other products

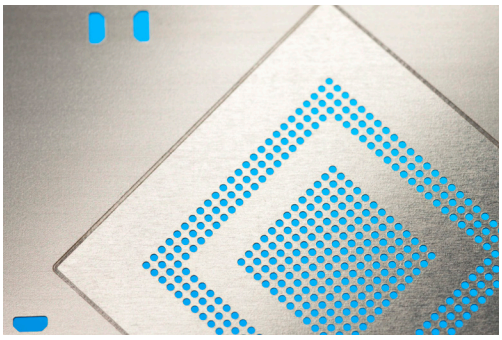
- SMD, adhesive, reballing, sintered stencils, special shapes
- Nano coating: NanoWork® stencil
- Repair stencils
- Multiple use creation / aperture design
- see also: www.laserjob.de

## Additional services

- Layout consulting, pad manipulation, design optimization
- Test reports according to customer specifications
- Data for solder paste inspection systems and DataMatrix code
- Customer frame storage, express service, customized solutions

## Quality & manufacturing conditions

- Air-conditioned manufacturing environment for process stability
- In-house developed special machines
- Machine park with 20 systems & redundant capacities
- In-house design & CAD data preparation
- Fast turnaround times
- Minimal reworking thanks to maximum cutting quality



## Our services overview

**Stencil delivery times**

- **Standard delivery times for SMD stencils/ PatchWork® stencils:**
  3 working days ex works (from receipt of order by 5 pm)
- **Standard delivery times for NanoWork® stencils:**
  4 working days ex works (from receipt of order by 5 pm)
- **48-hour express service ex works:**
  Delivery on the next business day (by arrangement, orders received by 5 pm)
- **24-hour express service ex works:**
  Next business day delivery (by arrangement, orders received by 5 pm)
- **6-hour express service ex works::**
  Same-day delivery (by arrangement, orders received by 1 pm)

**Comprehensive consulting**

At LaserJob, we place great importance on personal support and individual consulting—from the initial idea to series production. Our many years of experience and comprehensive expertise make us your strong partner in all matters relating to your electronics manufacturing.

**Transparent quality assurance and documentation**

- Quality management ISO 9001:2015 certified
- Individual measurements and tests may be performed
- Complete documentation (material certificates, initial sample test reports, CoC, serial number management, etc.)

**Our customer service:**

- Customer frame storage, test reports according to customer specifications
- Long-term data archiving
- Data for solder paste inspection systems
- DataMatrix code
- Customer-specific labeling
- Serial number management
- Multi-shift operation
- Redundant machinery
- Data security
- Maximum flexibility

## Extensive material warehouse

LaserJob maintains an extensive warehouse stock of stainless steel and other metal sheets and foils for you, combining the highest quality standards with fast delivery times. We are happy to provide material test certificates upon request. In addition, we can procure stainless steel with special properties – such as increased tensile strength or a fine grain structure – for you at short notice.

## Shipping and packaging

**Shipping – Fast and tailored to your needs**

**Daily shipping:** We ship your orders daily with DHL Express.

**Custom shipping options:** Upon request, we may also use UPS, FedEx, DPD, or other shipping providers of your choice.

**Diverse transportation options:** We also offer direct deliveries and courier services with experienced partner companies. This allows us to respond flexibly to your requirements and delivery dates.

**Packaging – Safe and sustainable**

**Securely packaged:** To prevent damage, all products are carefully packaged in a manner appropriate to the material – we are also happy to follow your individual specifications.

**Special solutions for stencils:** We offer special storage bags for our stencils in the tensioning system, which ensure optimum protection and convenient handling.

**Customer-specific return packaging:** Would you like to use your own packaging solutions? No problem! We are happy to support you in the development and integration of customer-specific return packaging into our shipping process.

## Order

To ensure that your order is processed quickly, please send it to us with your data by email to **mail@laserjob.de**.

We process your data in the following formats: Gerber, ODB++, DWG, DXF, Eagle and IGES/step.

## Contact

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**www.laserjob.de**