



Individual test adapters from 3D printing

ELOPRINT

COMPANY PRESENTATION



ABOUT US

1800+
COMPLETED PROJECTS

Since 2018

Welcome to ELOPRINT, your pioneer in the production of test equipment through the use of advanced 3D printing technology.

Our wide range of services includes the complete development, 3D printing and assembly of test adapters that create a reliable and quick connection to assembled circuit boards and other electronic components.

Founded in 2018 and based in Esslingen am Neckar, we are characterized by a completely in-house production chain that includes our own 3D printers. This enables us to implement your requirements quickly and tailored to your requirements and ensures lightning-fast delivery times.

Our mission at ELOPRINT?

We do everything we can to establish the limitless possibilities of additive manufacturing in the niche market of test equipment construction. Our committed collaboration with customers from a wide range of industries drives us every day to achieve this mission. Our highly motivated team of developers and designers are constantly looking for innovative solutions.

INDIVIDUAL 3D PRINTING TEST ADAPTERS

What makes our test adapters from ELOPRINT so special? This is where additive manufacturing technology comes into play. We use 3D printing to produce customized test adapters. This innovative technology offers several advantages:



Fast delivery:

Using 3D printing, we produce and deliver test adapters cost-efficiently and quickly. You can safely achieve standard applications in **1-3 weeks**.



In-house manufacturing:

Our expertise in additive manufacturing enables tailor-made solutions for complex electrical testing procedures. We support you at any time.

Cost-effective solutions:

3D printing enables cost-effective, high-quality test fixtures, resulting in significant savings for our customers.



Customized solutions:

Our 3D printing test fixtures adapt to unique requirements so you get exactly the solution you need.



TEST ADAPTER DESIGNS

For common requirements, we offer needle adapters in the 4 designs BAL, PRL, POL and IDL. In addition, completely individual needle adapters or mounting devices are also possible.



BAL



PRL

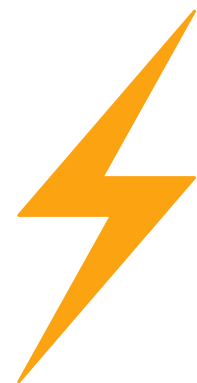


POL



IDL

Your advantages with our test adapters:

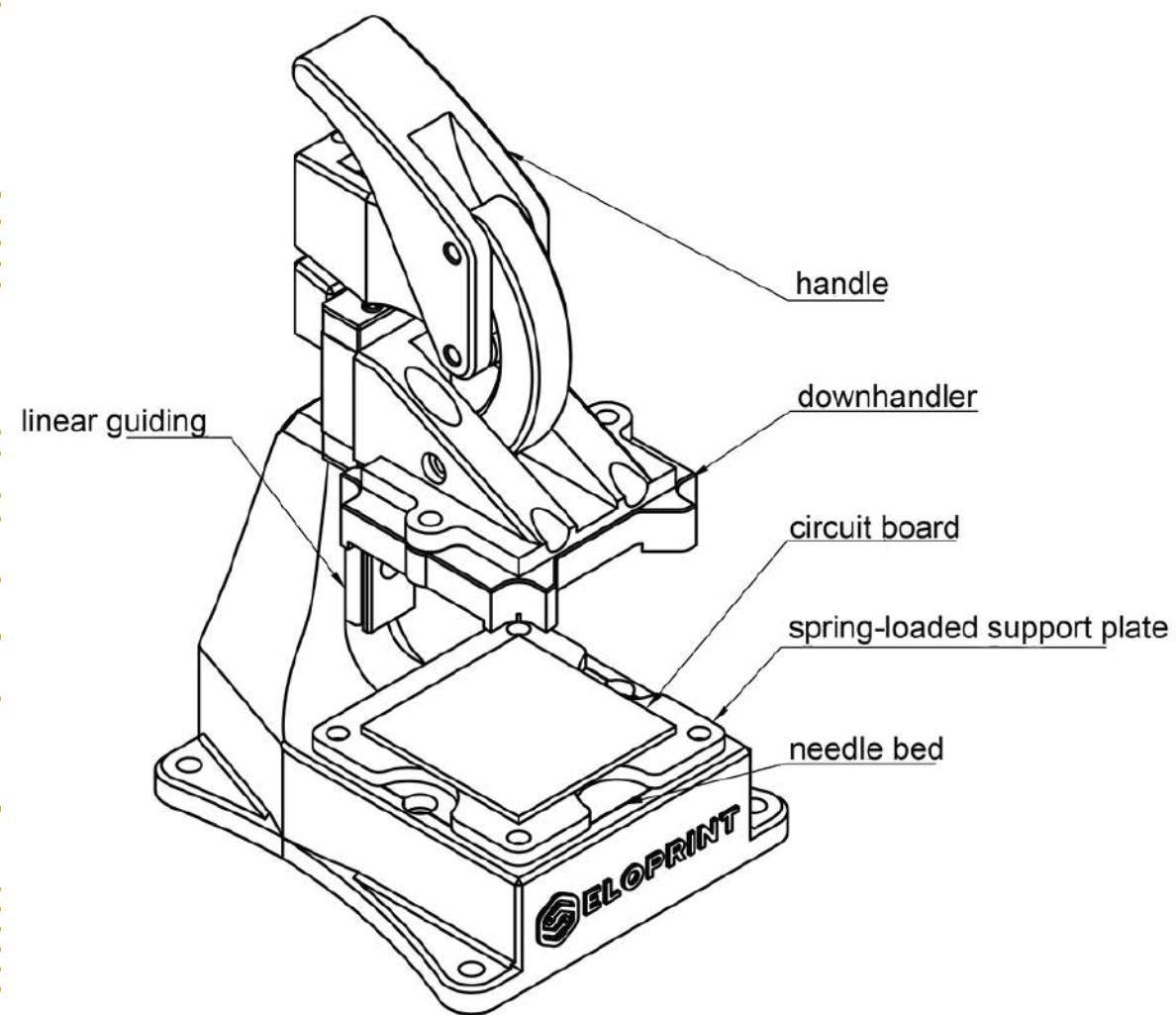


ESD protection For use in ESD-protected areas, our test adapters are provided with a special coating or optionally made entirely of special ESD material.



Maintenance free Our needle adapters are designed to last millions of cycles without maintenance. Only the test contact pins need to be replaced after 10,000 to 100,000 cycles, depending on the application. The exchange is usually carried out without special tools.

BAL-ADAPTER



The BAL type is a basic needle adapter and is suitable for simple small circuit boards. The adapter also enables double-sided contacting of the circuit boards.



Ideal for small circuit boards

Guidance of the board via the external geometry or using catch pins



On request with integrated limit switch, plugs, switches, display elements, fan

Optionally with double-sided contacting

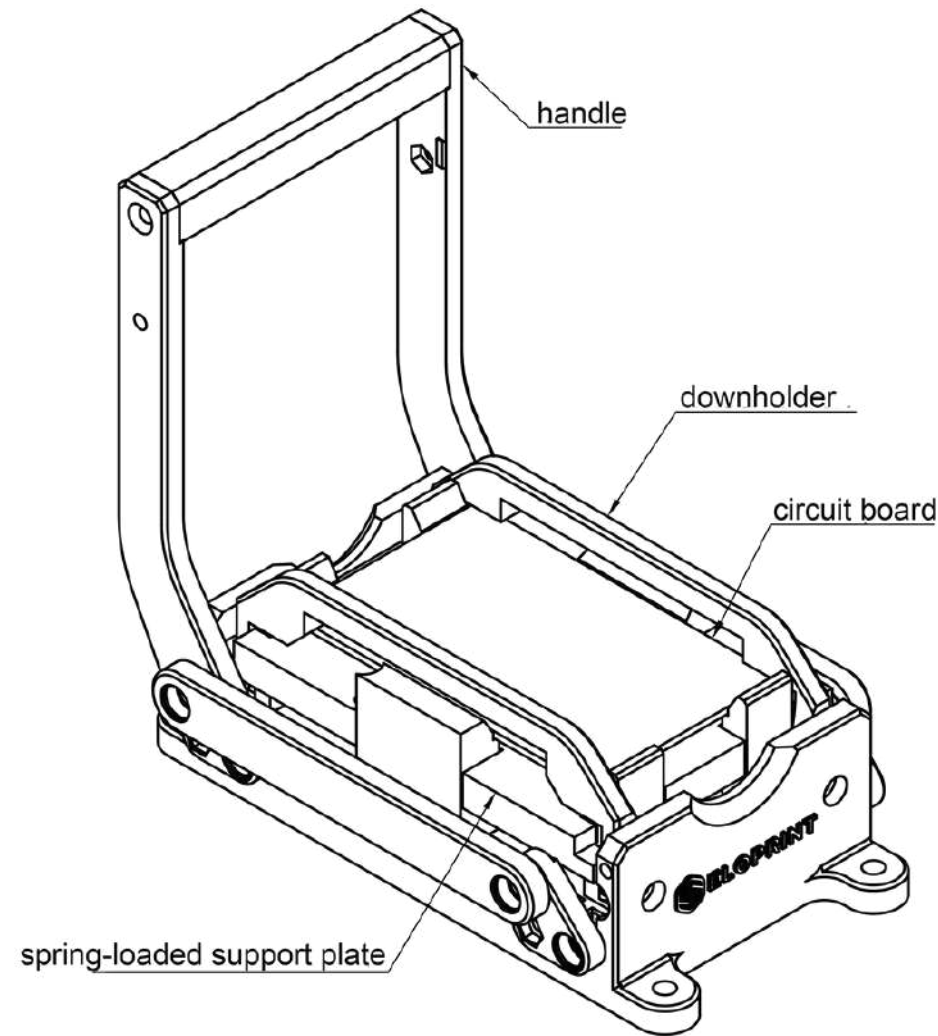


Individually tailored to your circuit board, considering high and protruding components.

Long service life and easily replaceable wear parts

CHARACTERISTIC	STANDARD	SPECIAL CASE
Usable area	Adapted to the size of the test specimen	—
Temperature max.	50°C, 90°C or 120°C	High-performance plastic: >200°C In extreme cases, the test adapters can be made of metal or ceramic
Temperature min.	-20°C	—
ESD protection	Guaranteed by special coating	—
Contact resistance	< 50 mΩ	< 4 mΩ
Current strength	1 Ampere	> 100 Ampere
interface	freely configurable	—
High frequency	No special precautions	Special coaxial test pins, cables and connectors
lifespan	> 100,000 cycles (often much more in practice)	—
Pitch	≥ 1,27 mm	≥ 0.5 mm (requires closer inspection)
Contact force max.	300 N	—
linear stroke	100 mm	—
Material	FR2, PLA, ABS oder PC	Aluminum, steel, PA12, ASA, PEEK, PEI, ceramic or acrylic resin
conformity	RoHS-3	—

PRL-ADAPTER



The PRL type is an advanced needle adapter for small to medium sized boards. Unique mechanical design for excellent power transmission and ease of use.



Ideal for small or medium sized rectangular PCBs

The top of the test specimen is freely accessible when closed



On request with integrated limit switch, plugs, switches, display elements, fan

Optionally with double-sided contacting

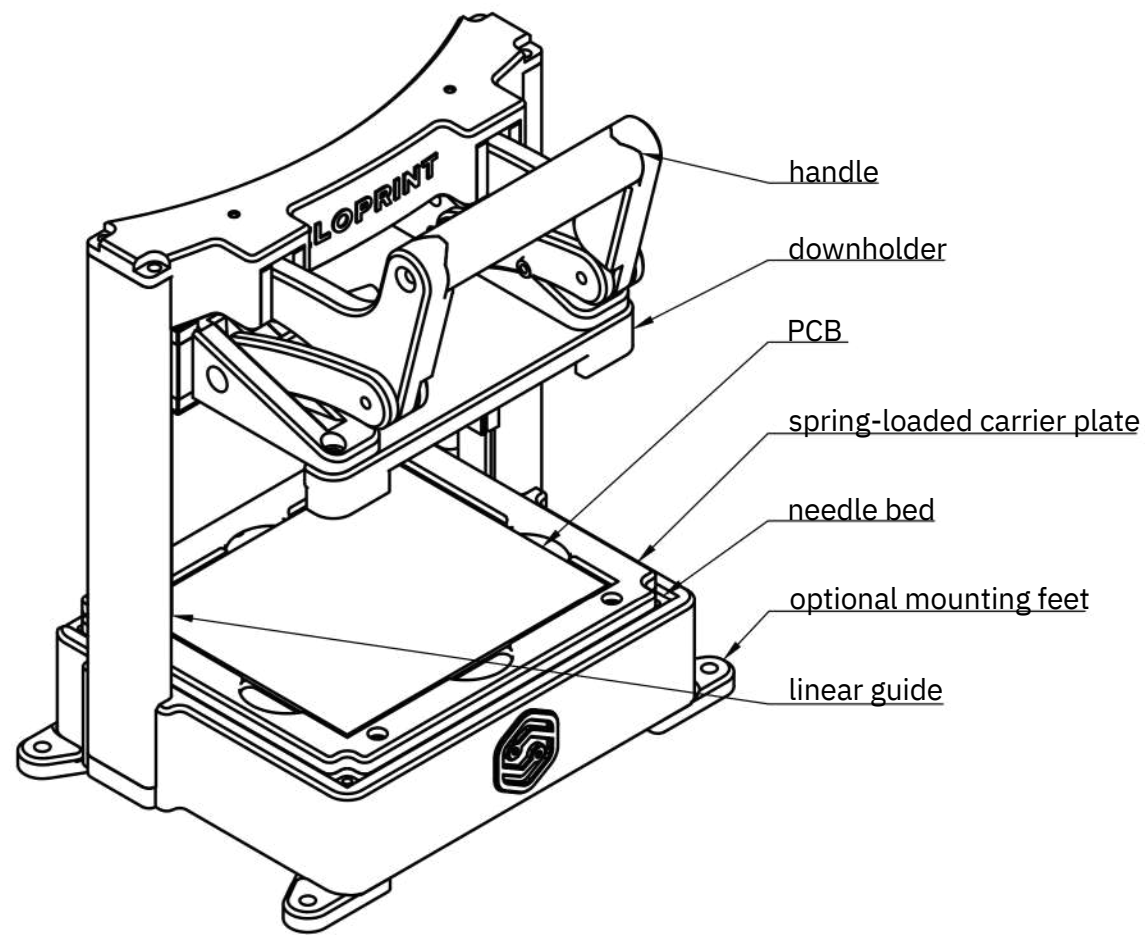


Individually tailored to your circuit board, considering high and protruding components.

Long service life and easily replaceable wear parts

CHARACTERISTIC	STANDARD	SPECIAL CASE
Usable area	Adapted to the size of the test specimen	—
Temperature max.	50°C, 90°C or 120°C	High-performance plastic: >200°C In extreme cases, the test adapters can be made of metal or ceramic
Temperature min.	-20°C	—
ESD protection	Guaranteed by special coating	—
Contact resistance	< 50 mΩ	< 4 mΩ
Current strength	1 Ampere	> 100 Ampere
interface	freely configurable	—
High frequency	No special precautions	Special coaxial test pins, cables and connectors
lifespan	> 100,000 cycles (often much more in practice)	—
Pitch	≥ 1,27 mm	≥ 0.5 mm (requires closer inspection)
Contact force max.	300 N	—
linear stroke	100 mm	—
Material	FR2, PLA, ABS oder PC	Aluminum, steel, PA12, ASA, PEEK, PEI, ceramic or acrylic resin
conformity	RoHS-3	—

POL-ADAPTER



The POL type is a needle adapter suitable for large circuit boards. It has a compact design that allows a high number of test needles in a small space.



Ideal for large boards or complex assemblies

Interface: D-Sub or according to your requirements



Interface: D-Sub or according to your requirements

Optionally with double-sided contacting

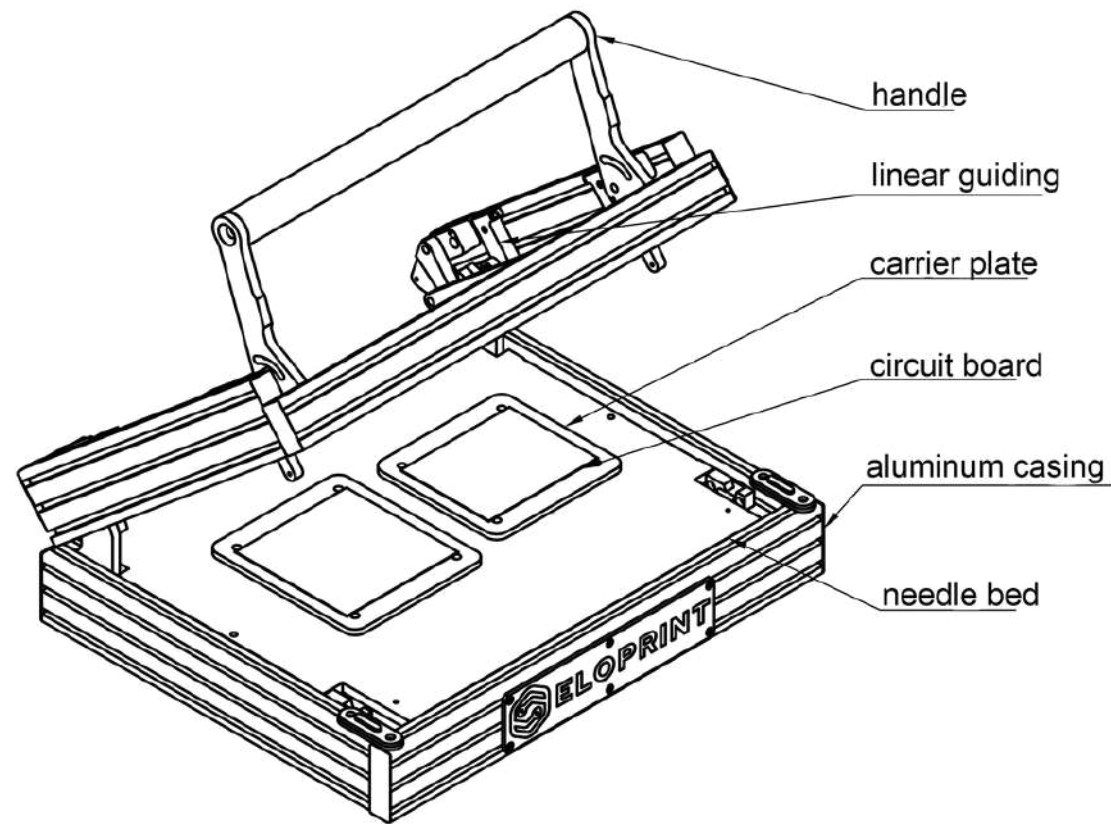


Individually tailored to your circuit board, considering high and protruding components.

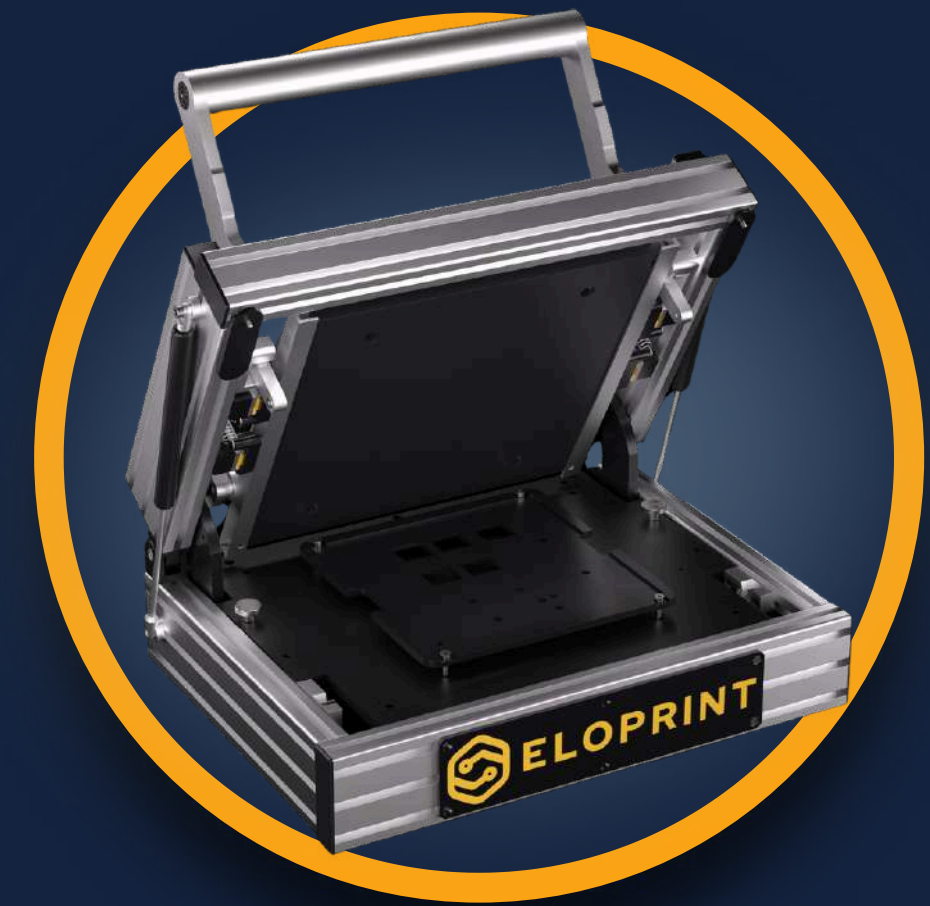
Long service life and easily replaceable wear parts

CHARACTERISTIC	STANDARD	SPECIAL CASE
Usable area	Adapted to the size of the test specimen	—
Temperature max.	50°C, 90°C or 120°C	High-performance plastic: >200°C In extreme cases, the test adapters can be made of metal or ceramic
Temperature min.	-20°C	—
ESD protection	Guaranteed by special coating	—
Contact resistance	< 50 mΩ	< 4 mΩ
Current strength	1 Ampere	> 100 Ampere
interface	freely configurable	—
High frequency	No special precautions	Special coaxial test pins, cables and connectors
lifespan	> 100,000 cycles (often much more in practice)	—
Pitch	≥ 1,27 mm	≥ 0.5 mm (requires closer inspection)
Contact force max.	300 N	—
linear stroke	100 mm	—
Material	FR2, PLA, ABS oder PC	Aluminum, steel, PA12, ASA, PEEK, PEI, ceramic or acrylic resin
conformity	RoHS-3	—

IDL-ADAPTER



This IDL test adapter was specially developed for very large boards. A robust adapter that reliably contacts even large quantities of very large circuit boards.



Individual sizes for very large circuit boards possible

Robust frame made of aluminum strut profiles



Large installation space in the adapter for components such as in-system programmers or measuring electronics

Optionally with double-sided contacting



Available in standard sizes 200×200 mm and 300×300 mm as well as individual sizes.

Interchangeable needle bed/hold-down device

CHARACTERISTIC	STANDARD	SPECIAL CASE
Usable area	200*200mm and 300*300mm	Adapted to the size of the test specimen
Temperature max.	50°C, 90°C or 120°C	High-performance plastic: >200°C In extreme cases, the test adapters can be made of metal or ceramic
Temperature min.	-20°C	—
ESD protection	Guaranteed by special coating	—
Contact resistance	< 50 mΩ	< 4 mΩ
Current strength	1 Ampere	> 100 Ampere
interface	freely configurable	—
High frequency	No special precautions	Special coaxial test pins, cables and connectors
lifespan	> 1,000,000 cycles (often much more in practice)	—
Pitch	≥ 1,27 mm	≥ 0.5 mm (requires closer inspection)
Contact force max.	1000 N	—
linear stroke	30 mm	—
Material	Aluminum, steel, FR2, PLA, ABS or PC	PA12, ASA, PEEK, PEI, ceramic or acrylic resin
conformity	RoHS-3	—

EXAMPLES

Test adapter designs

All of our test adapters are always individually adapted in shape and size to the assembly to be tested. Thanks to the additive manufacturing process, special features in the needle adapter can be easily taken into account.



BAL-ADAPTER

Interchangeable needle bed

A typical version of our budget solution for small boards. The board is positioned using catch pins and placed on a spring-loaded support plate. By operating the lever, an individual hold-down stamp presses it onto the test needles.



PRL-ADAPTER

Contacting of plugs

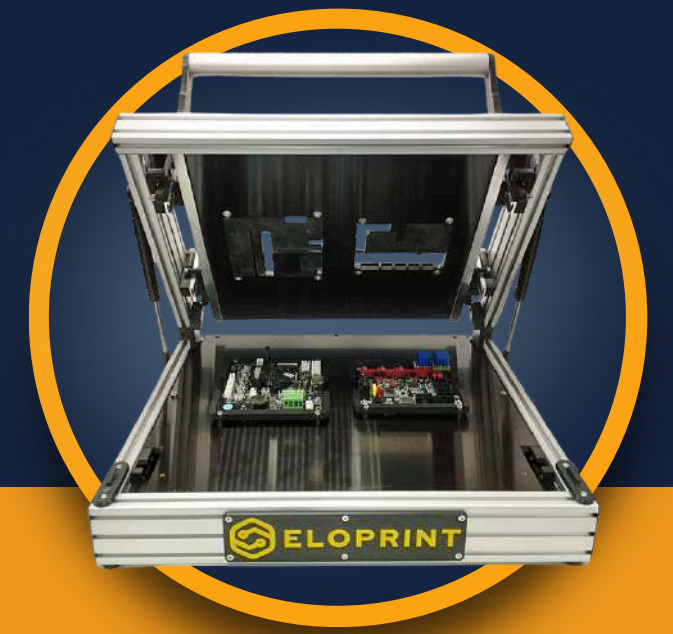
In this case, the test adapter had to contact a plug on the test object with a very fine pitch. This was not possible with test needles. That's why a circuit board with the appropriate mating connector was designed. Of course, in such cases we attach great importance to the easy exchange of wearing parts.



POL-ADAPTER

Freedom of geometry

Another typical POL test adapter for a board with free-form geometry. POL design test adapters can be used for any geometry. It doesn't matter whether you want to test a rectangular board or whether the board has an individual shape. Several different boards can also be used next to each other.



IDL-ADAPTER

Stability and precision

The IDL from ELOPRINT is a robust adapter that reliably contacts even large quantities of very large circuit boards: The frame made of aluminum strut profiles offers maximum stability. The CNC-milled needle bed ensures reliable electrical contacting of even the smallest test points.

Are your requirements too individual for our standardized needle adapters?

We would then be happy to create individual designs. This is worthwhile, for example, for modules that are installed in housings or if individual plugs have to be contacted from different sides.

Contact us!

See for yourself by calculating a project using our [price calculator](#).



CONTACT DETAILS

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