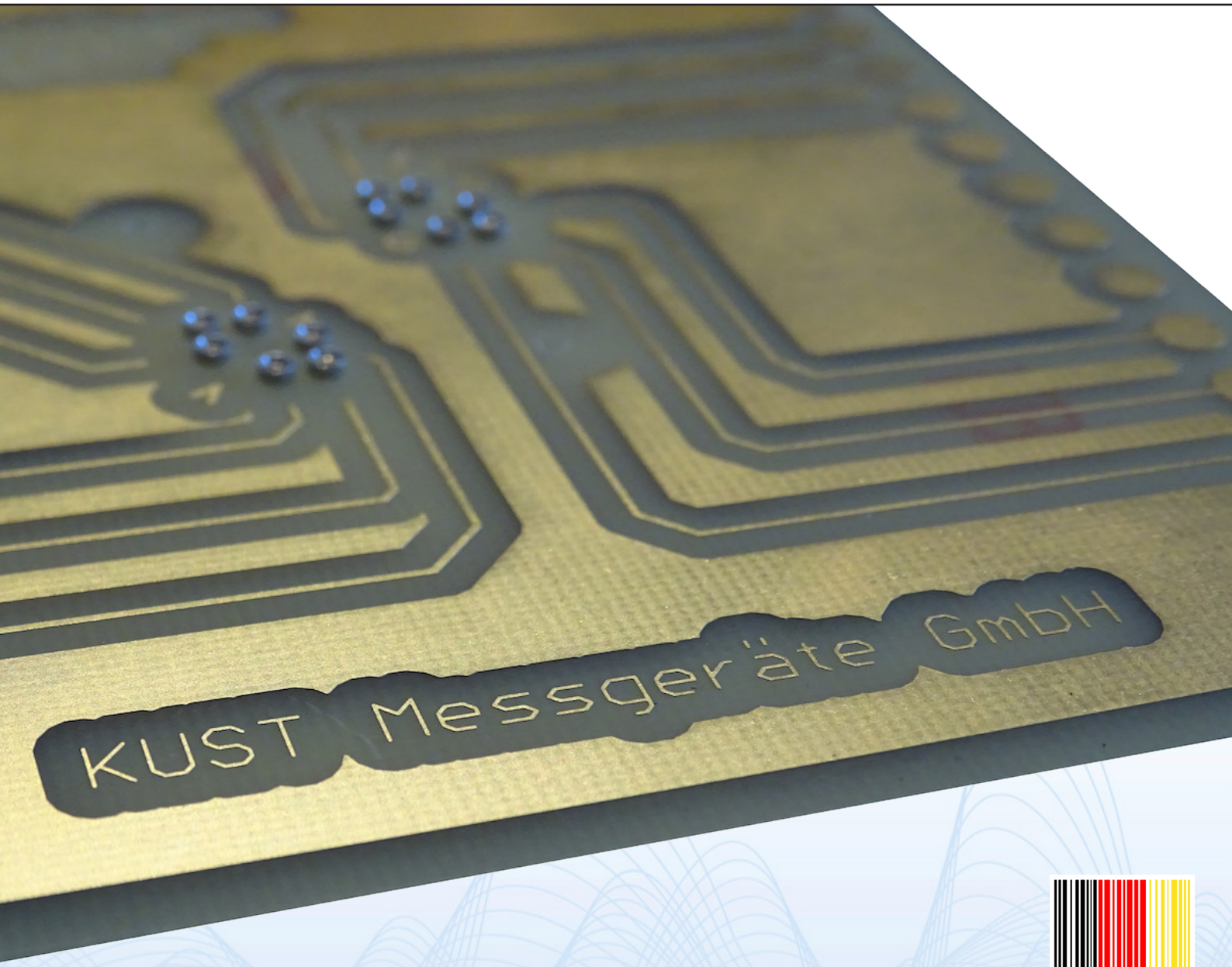
KUST Messgeräte GmbH

FIXTURING SOLUTIONS

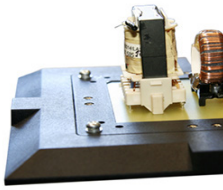
CUSTOM DESIGN | MANUFACTURING | SUPPORT



MADE IN GERMANY

www.kust.de

Effect of BAD fixture on the Voltech Testers:



Voltech AT3600 Transformer tester is designed to offer: Great SPEED & ACCURACY, REPEATIBILLITY, SAFTY and COMBINED FUNCTIONALITY of many different pieces of test equipment. By using badly designed fixture adapter customers destroy and compromise all above. BAD Fixture will elimante what you payed for!

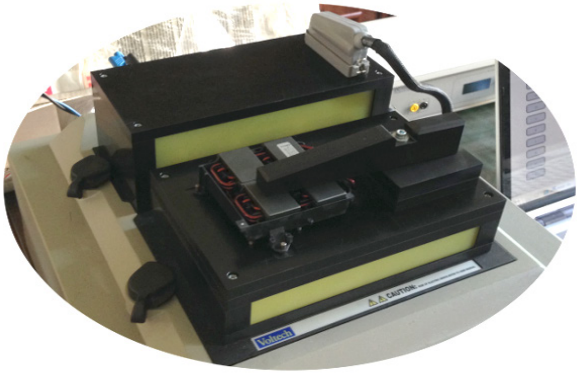
So, why the “Good” Fixture is so important?

!!!Please read this section before proceeding to browse the document!!!

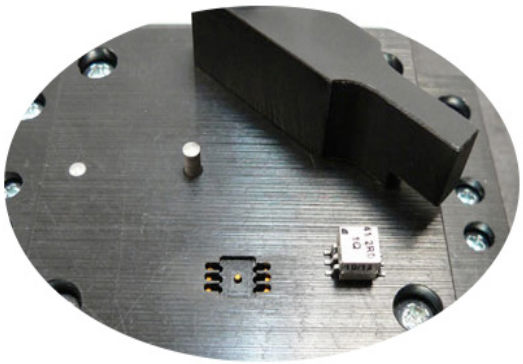
- **Accuracy:**
  Correctly chosen connection point will maintain testers accuracy especially when low measurement values are considered. “TRUE KELVIN” is always recommended for Low Resistance tests.
- **Repeatability:**
  Well designed and properly constructed Fixture provides comfort of testing each part under same conditions in respect to placement and contact between connection point and the components pin/pad. Inserting/connecting the transformers is done always in the same manner so errors coming from different placement or poor contact are eliminated.
- **Speed:**
  Good Fixture allows to maintain good testing speed, connection/interfacing to the testers requires minimum effort. Often customers spending as much time to connect the part or even longer then the test it self when the poor quality or bed designed fixture is used. Minimising connection time reduce the testing cost very significantly.
- **Safety:**
  Badly designed or incompetently produced fixture can cause serious safety issues. Often customers expose them self to the danger of lethal voltages by leaving exposed connections. Safety concerns go as far as fire hazard due to the fact that often wrong gauge of the wire is used and flowing current rapidly increase temperature of the wire to the melting point.
- **Maintenance:**
  Badly produced fixture will cause dirt and solder scrapings deposit in and around connections causing problems with accuracy or even as far as the danger of “flash overs” which either can cause shock to operator or even permanently damage the tester and result in expensive repair. Well designed fixture offer advantage of replacing the weared parts which long term reduces the maintenance cost
- **Multiple Part Testing:**
  Poor design often associated to the bad fixtures either completely eliminating or reducing possibility to test multiple parts on one fixture. If Fixture is not well made and well designed user exclude him self from advantage in speed and cost reducing by testing several parts in one go.
- **Tester Functionality:**
  Good Fixture allow to properly and efficiently compensate the system for contact resistance and stray capacitance. Well designed fixture offer easy and safe way of connecting DC BIAS source. Voltech testers were designed to provide best possible and most efficient testing but this is only fully achieved if the test fixture is up to same standard as tester it self.

KUST Fixturing Solutions:

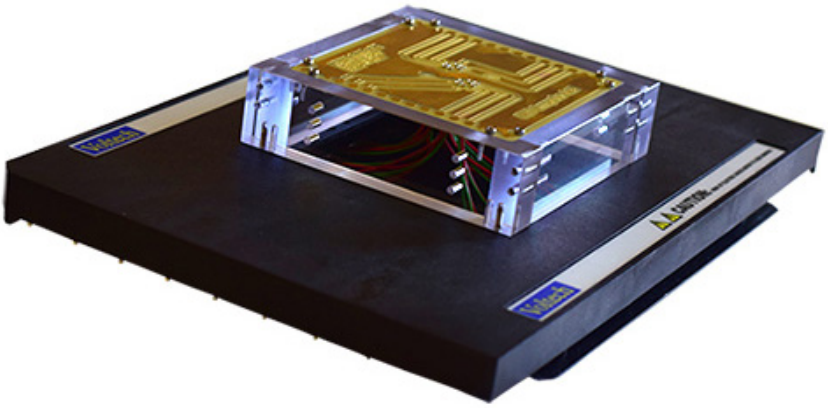
HIGH CURRENT TEST SOLUTIONS:



SMALL SMD PARTS TEST SOLUTIONS:



HIGH QUALITY FIXTURES FOR ANY REQUIREMENT:

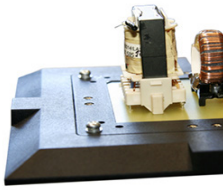


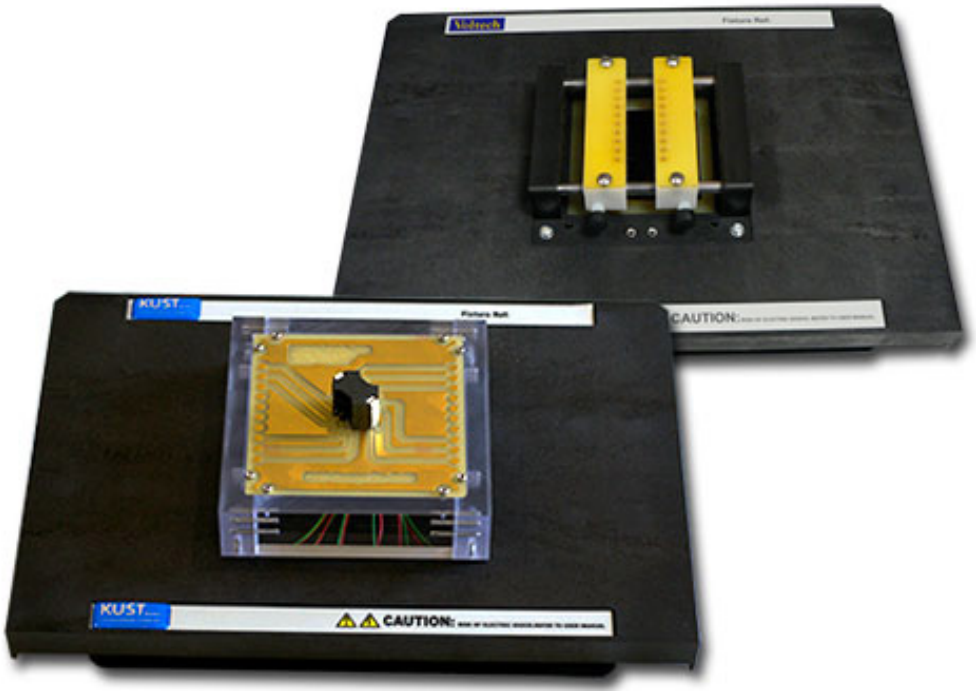
Why to choose KUST as the Fixturing solution provider?

We have ability and experience, for over 20 years KUST is proudly supporting European Transformer manufacturing Industry. We act as the exclusive and fully authorised Voltech partner for range of their transformer testing products. Years of experience allowing KUST to provide best possible support and respond to any customer needs. Fixturing needs understanding and best possible, effective and time saving solution.

- Every custom fixture is designed and manufactured in Germany with highest workmanship standard.
- Only tested and highest quality materials are used
- We are using our experience to offer best possible solution
- Every Fixturing need is discussed and 100% understood in order to provide 100% satisfaction
- We have probably done it already or something very similar
- European based service and support (English/German)
- We offer discounts for Fixturing contracts
- We have of the shelve designs available - most common bobbin types/distances
- Not only we can offer Fixtures but also Fully approved service for Voltech products
- Fixtures are produced quickly with full customer feedback about progress
- We take care of everything from choosing the contacts and materials to answering design challenges

KUST Fixturing Solutions:





"GOOD FIXTURE WILL"

- Maximise efficiency
- Minimise Cost
- Reduce time
- Increase quality
- Decrees Failures
- Provide confidence
- Assure Safety
- Reduce operator effort
- Simplify maintenance

What is considered when fixture is produced:

- One of the most important factors which affect the design are the magnetic properties of the part, we are always choosing the best way to connect the part and only high quality, carefully selected pins, connectors etc. are used. It is important to learn the expected resistance and inductance values in order to introduce correct connection method

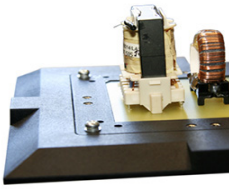
- Expected quantity of tested part can play important role, for smaller batches of components we can choose different quicker wearing materials if the cost saving needs to be introduced. This don't mean that quality is poor, materials have different lifespan or different properties but are still best available.

- Often factor which determine construction and design is related to high Voltage or BIAS current used during test. We have experience in making solutions not only to withstand and work with high voltage but also we have produced fixtures for very high current DC current testing. Safety is a paramount and we do not cutting corners when deadly test signals are present.

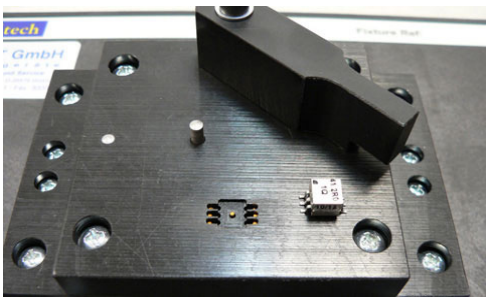
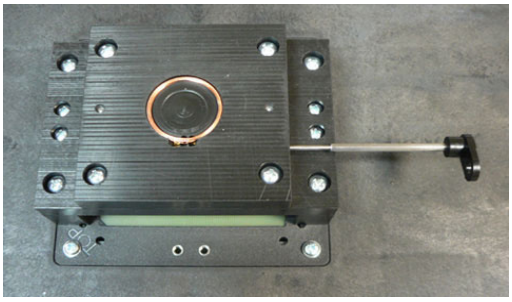
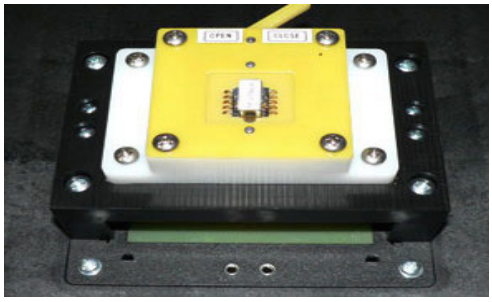
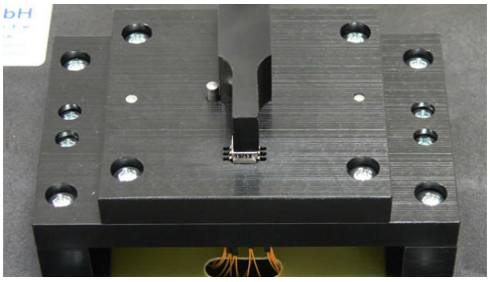
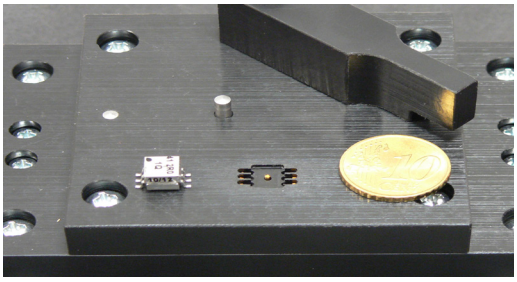
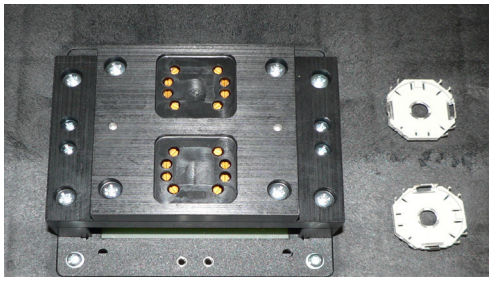
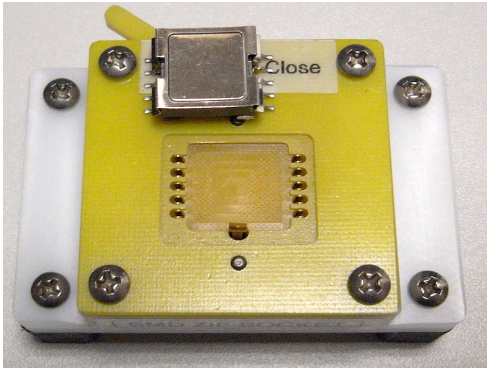
- Size of the tested part can often play a key role when we offer the solution, we are delivering fixtures which can accommodate multiple parts on the one plate/test socket. If part it self uses relatively small amount of nodes and their size is allowing multiple testing then we will research the possibility to offer multi-test fixture.

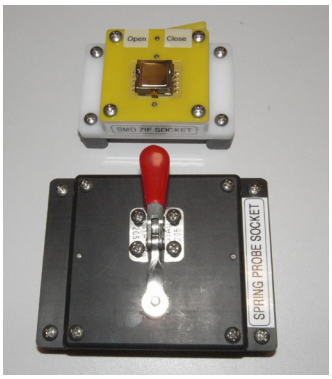
- Length and thickness of the transformer legs or pads is always considered when the fixture is produced, good, stable and reliable contact is one of the most important thing. Connection points sizes and type are always carefully chosen. Good fixture needs to offer contact resistance reduced to absolute minimum and same time needs to offer long life and effortless connection.

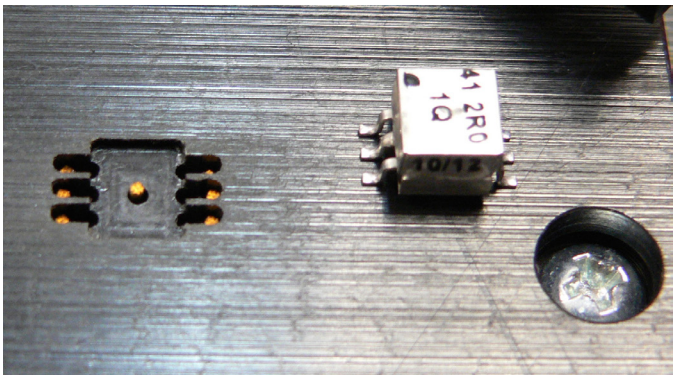
KUST Fixturing Examples:



SMD Components:





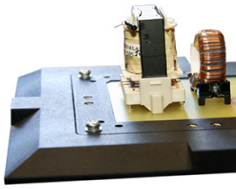
SURFACE MOUNTED PARTS PRESENT MANY CHALLENGES AND ARE MOST DIFFICULT PARTS TO INTERFACE TO ANY TEST EQUIPMENT.

Difficulties are often associated to small sizes, thin pads and very small gaps between testing points. Also connection method can present challenges, to achieve a good result the True Kelvin method is required. Over the years we helped many customers who have struggle with small SMD parts, our solutions are designed around footprint of the tested parts so fragile legs/pads are never damaged in any way.

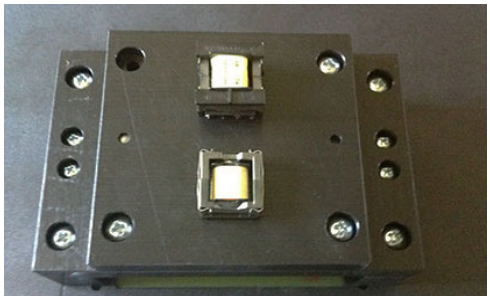
Properly designed Fixture speed up the testing dramatically, there is no issue with handling of the parts or placement during the test. Time consuming connection of all sorts of clips, wires or tweezers is eliminated so testing of the components is cheaper.

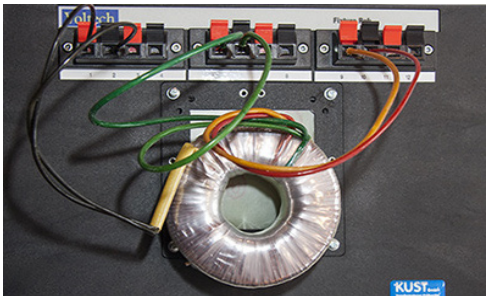
KUST offer expertise in design and manufacturing of the small factor test sockets.

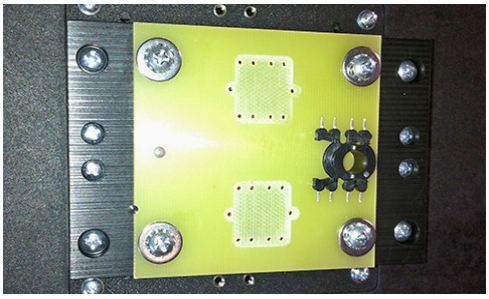
KUST Fixturing Examples:

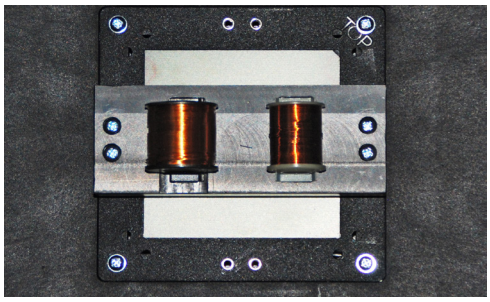


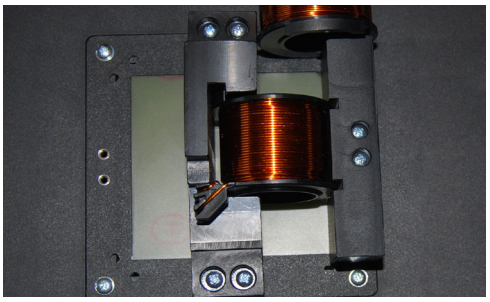
Miscellaneous Fixtures:

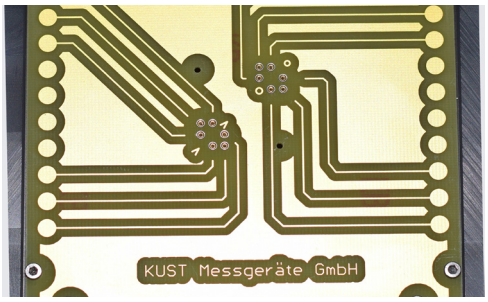


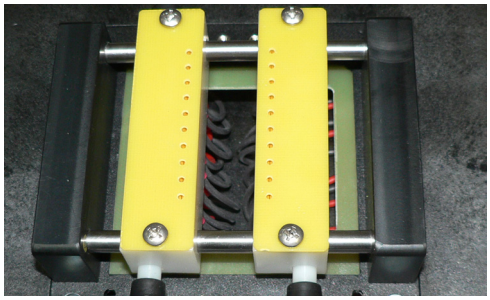


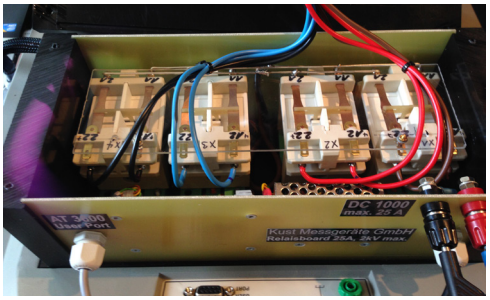


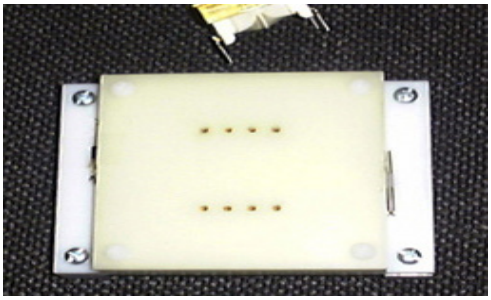






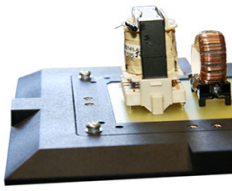




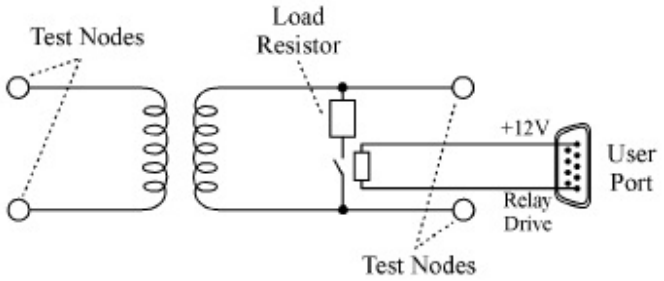


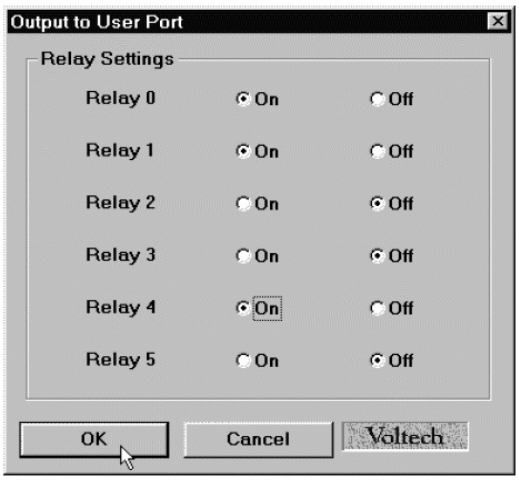
Some of our designs produced according to part spec and customer needs, We have experience in producing test fixtures for all the forms and factors: toroidal transformers, round chokes, common pin distances like 2.54 or 5.08mm.
We can often offer solutions to test more than one part in one test run.
We also specialising in custom design of specific and application orientated solutions:
High Current testing
High Voltage testing
Additional Nodes by extra relays

KUST Relay Extension Board:



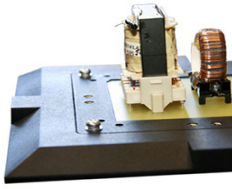
Relay Extension Board connects to AT User port and programming gets done through Voltech AT editor. “OUT” test is required to operate the extension fixture.



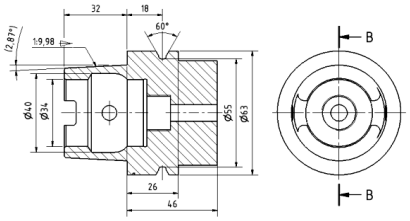


The User Port on the AT3600 has 6 ‘Relay Driver’ outputs associated with it. The OUT test allows programming of the User Port relay driver outputs to perform additional relay switching as part of the test program.
An example of this would be an application where a transformer has two separate primary windings.
An OUT test could be used to connect them in series, allowing them to be tested as a single primary with twice the working voltage.
A second example is the switching of additional resistors mounted on the test fixture allowing tests to be included in a program on a transformer with a loaded secondary winding.
Each of the relay driver outputs can be set to on or off.

KUST Fixturing Examples:

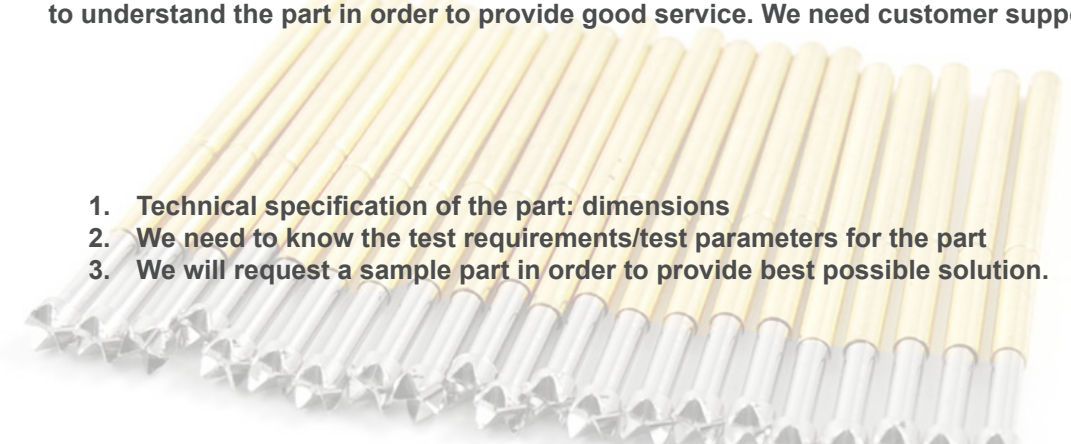


Process of obtaining the fixture:

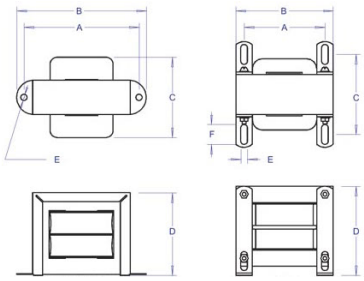


"We take care of everything:
Design
Manufacturing
Delivery
No stress for customer"

- Every request start with discussion about purpose, type and application for the tested part, It is important for us to understand the part in order to provide good service. We need customer support in form of the:



1. Technical specification of the part: dimensions
2. We need to know the test requirements/test parameters for the part
3. We will request a sample part in order to provide best possible solution.



- "Why the sample part is so important?" We would like to build a fixture to work well and for that reason sample part is used at both: design stage and also to check and confirm correct functionality of the fixture when we finish We can either sign disclosure for the parts, destroy it after fixture is produced or simply return it to you. KUST do not share any details or specification with anyone.

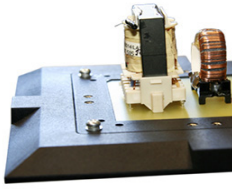
- No fixture is assumed as finished without us fully testing it and confirming that it is fit for purpose.

- We offer post sale support and of course service facilities to replace the wearing parts. Our designs are orientated towards years of stress free testing however if there is a need to repair or recondition your test fixture we will take care of that as well. We always have stock of contacts pins, blades.

- If there is ever need to reorder the fixture then this is done quickly and efficiently, we store all the design files and we can re-produce any design at customers request.

- We often have stock of fixtures most commonly used, transformer footprint with pin distances like 2.54 or 5.08mm can be purchased of the shelve as cost effective test socket - please contact us to check the availability.

Contact KUST:



Contact:

0049 (0) 6441 4471223

www.kust.de

info@kust.de

KUST Messgeräte GmbH
26 Friedenstraße
D-35578 Wetzlar
Germany

KUST Messgeräte GmbH:

- Sales & Service of Voltech testers
- Fixturing services
- Accessories and Software for Voltech testers
- Application Support