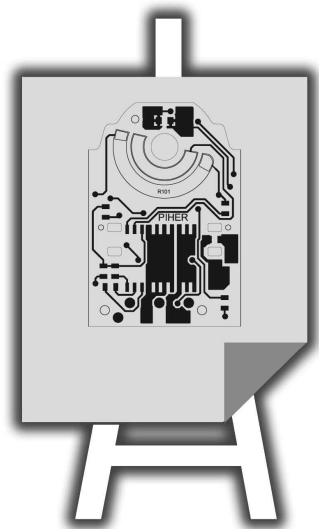


# Printed PCB resistors

Down to a *fine art*



INDUSTRY SECTORS



Automotive



Agriculture



Construction



Material  
handling



Industrial



Marine



Medical

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# Carbon printing at the cutting edge of laser-trimming technology.

We're known for the fine art of laser trimming, delivering the very low tolerances at very high volumes needed to keep pace with automotive innovation in electronics.

Actually, we're old masters of every aspect of the printed PCB resistor process, eliminating programme risk as we deliver around the world from our plants in Europe and China.

We print on the main substrates, with the confidence to explore more.

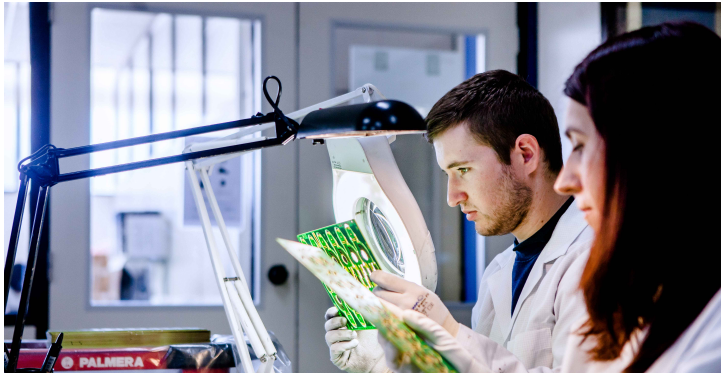
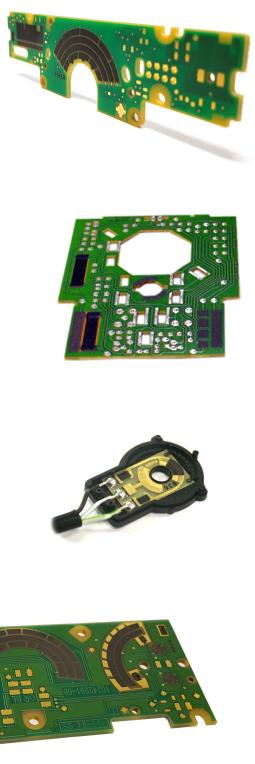
We're as easy with complex carbon as simple silver.

Dielectric? No problem.

We live, breathe and think ink. That's why our customers value our input on product design, knowing we can make them as cost-effectively as possible without compromising the original specification.

And why they don't have sleepless nights worrying about on-time delivery to the highest quality, even when they want us to vary product lines at high volumes.

- + Rotary, linear and stepped tracks can be freely printed.
- + Sizes and shapes can be tailored according to customer's constraints and automatic production requirements.
- + Full sensor assemblies can be delivered based in PCB and special features such as complex gearing for multiturn rotary or linear position sensing and special connector configurations.



## Freedom to build.

- + Low cost.
- + No insertion costs, errors or soldering problems.
- + Unlimited fixed and variable resistor combinations.
- + Voltage-divider calibration.
- + Special ohmic values.
- + Resistive values can be laser trimmed for accurate tolerances.
- + Wiper interfaces to your specification.
- + Low profile.

Discover how world-class laser-trimming technology delivers high accuracy in carbon printing.



## Application examples

AUTOMOTIVE

- Climate control:
  - Temperature.
  - Air flow.
  - Distribution.
- Headlight positioning control.
- Mirror position sensor.
- Headlight position sensor.
- Power sunroof controls.
- Fuel tank level sensor.
- Pedal sensors.
- Instrument panel controls.
- Dimmers for lighting.
- Seat position sensor.
- Steering column controls.

HOME APPLIANCES

- Light dimmers.
- Speed control for power tools.
- Sewing machine controls.
- Rotary switches.

INDUSTRIAL

- Heavy-duty equipment.
- Material handling equipment.
- Marine grade sensors.
- AG and farm equipment.

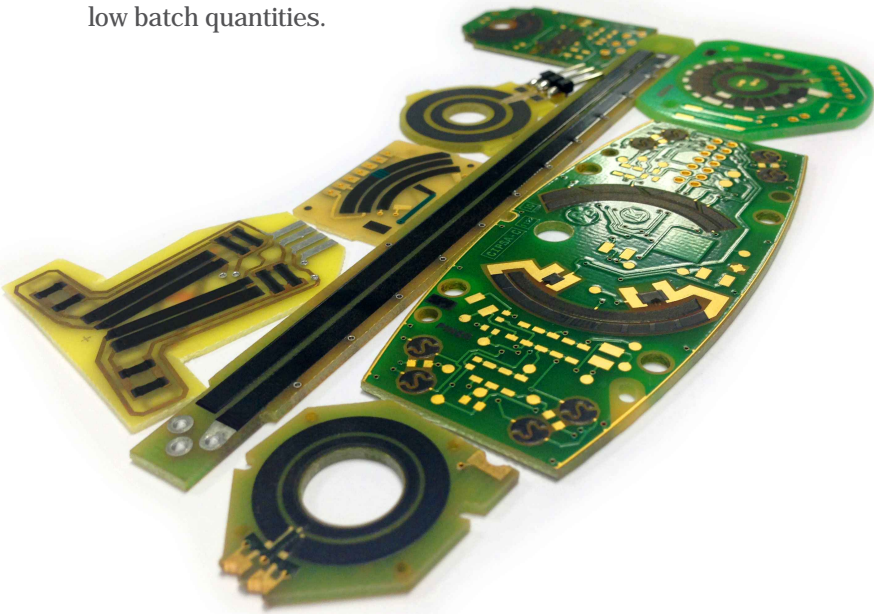
- Service +
- Headquarters.
  - Engineering.
  - Manufacturing plant.
  - Sales offices.



# Repeatable high volume to accurate tolerances.

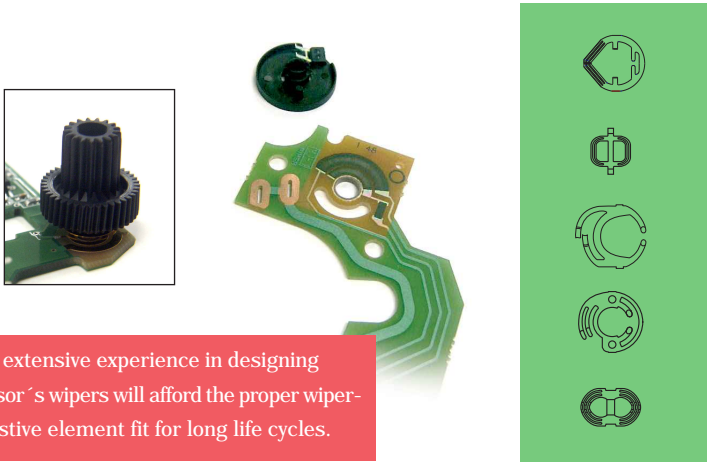
Printed Resistors PCB are thick-film resistive ink elements designed around customers' unique assemblies. PIHER's thick film inks can be printed on a wide range of substrates — from high temperature ceramics to common PCB materials.

Our market-leading thick-film technology can be used to deposit any combination of fixed resistors, switches, potentiometer tracks and conductors onto virtually any size, shape or PCB form. This versatility offers an enormous range of design possibilities at competitive prices, even in low batch quantities.



Once screened and cured, these resistive tracks can be individually laser trimmed to obtain very accurate tolerances in high volume.

We also offer custom wiper (contact) assemblies as standard products or we can design and manufacture according to customers' bespoke design requirements.



Our extensive experience in designing sensor's wipers will afford the proper wiper-resistive element fit for long life cycles.

This technology is ideal for three-wire voltage-divider (potentiometer) designs. Here, we offer in-process calibration and resistive (ohmic) process control, allowing for tight matching within lots and high precision voltage ratios between key points in the circuit.