



Case Studies: Mirror Reworking



Laser Beam Products has seen great success with our campaign to rework used CO₂ laser mirrors.

Managing Director Mark Wilkinson believes it is the perfect response to the economic downturn because it enables LBP customers to cut costs whilst maintaining quality and productivity.

How it works

If you have any mirrors that are lightly damaged simply email us with as much detail as possible or send the mirrors to us.

We will issue you with a quote for repairing the mirrors to a condition that is as good as new.

Once you have accepted our quote and issued us with an order we will go ahead with the repairs and return them to you, as good as new.

Laser welding 24/7

LaserWeld of Cannock is one of the UK's leading laser welding developers and subcontractors. Their 5KW CO₂ laser was working 24 hours a day, 7 days a week for welding engine mounts. The mirrors were repaired rather than replaced at the end of their life.

Laser Beam Products designed a mirror focus system for them that was in operation for over 6 years. It comprised 3 sets of mirrors that could be rotated as follows:

- one set of mirrors was being used
- one set of mirrors was in stock
- one set were being reworked by LBP
- another set of mirrors welded over 11km of Inconel tube.

'The system designed by Laser Beam Products worked extremely well for us. It saved us a lot of time and money and enabled us to operate the laser smoothly 24 hours a day.'

Brian Chatting, LaserWeld

Gas cell malfunction

For his PhD research in to the Infrared Spectroscopy of paint, Andrew Robinson of The University of Wales was using a multi-pass gas cell inherited from a colleague.

When the gas cell was stripped down he found the metal mirrors inside destroyed by the paint.

The original manufacturer was no longer trading so the customer contacted LBP to carry out the repairs.

LBP disassembled the gas cell, re-polished and gold coated the mirrors and sent it back to him as good as new.

He found that the gas cell worked much better than before and was delighted with the results.

"Many thanks for all your time and patience and all the work that you have done on our mirrors. I won't hesitate to recommend your company."

How to contact us:

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Improved productivity for Phoenix Organs Automotive customer saves \$15,000

Phoenix Organs had purchased a laser to engrave intricate markings on the stop inserts of their musical instruments. However the laser was not working anywhere near its' capacity and the optics inside were badly damaged and scratched.

From photographs of the optics in situ, and detailed measurements made by Phoenix Organs, LBP were able to prepare the new optics in advance. Once they were ready, the damaged parts and mounts were sent to LBP and within days had been replaced and sent back.



Phoenix Organs reported a dramatic increase in productivity and efficiency in the production of the organs. Stephen Hamill told us " *Instead of taking ten minutes to engrave the stop inserts it now takes 30 seconds.*"

A European automotive manufacturer recently sent us a collection of used mirrors from their production line that had accumulated burns and scratches and had been swapped out.

The mirrors were large, complex water cooled beam delivery mirrors which we repolished and recoated as good as new and returned in under three weeks. The customer was delighted and LBP have received several more orders for re-working mirrors.

The customer told us recently: " *The last mirrors you reworked for us worked perfectly...they are better than the new ones.*"

Help for high power CO2 laser manufacturer

A customer in South Africa making high power pulsed CO2 lasers had purchased a very expensive aspheric mirror for their beam delivery system. However the coating burnt out within 30 seconds and the original manufacturer needed several months to replace it.

The machine was needed urgently for a sales demonstration to an important customer so they contacted LBP and sent us the mirror for repair. We agreed to re-coat it with gold and sent it back within a week. The customer had already had experience of our gold coating and was confident it would work.

Re-working the mirror has saved money, weeks of time and also hopefully helped to generate new business for our customer. They were very pleased with the results: " *The mirrors look really good, thank you for your effort. We are aligning the beam through our beam path and articulated arm. At full power, the focussed spot from the off axis parabolic mirror looks good and at our focus position.*"



Contact us today and see how we can save you money:

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