



TECHNICAL  
RECONDITIONING

# Electronic Reconditioning



Property Damage  
Restoration



Temporary  
Humidity Control



Property Damage  
Prevention



APPLICATION

## Overview

It is often believed that replacement rather than restoration is the cost effective route to take when capital electronic items, sensitive electronic items and electrical items are damaged.

In reality the true cost of replacement, will in many cases, far outweigh any restoration costs, once you take into account delivery times for spare parts which can be substantial for special or old machines and the need for original manufacture, its inherent costs on the environment in terms of raw material sourcing, processing, energy consumption, distribution etc.

Munters can provide a software saving service even if the hardware has been destroyed and is experienced in restoring electronics after most kinds of damage, with the ability to where necessary undertake much of the reconditioning work on site. Typical applications include power electronics, computers and office machines, medical equipment, telecommunication devices, electric panels etc. Munters also has fully equipped facilities where equipment can be treated and then tested according to manufacturers/owners specifications.

Munters is an innovator in using CO<sub>2</sub> blasting for the reconditioning of electronics and electrical equipment. The result is the same as using chemicals (also called wet-method), but it is much faster and the reconditioning can be done on site.

Firstly Munters technicians assess the chemical damage generated by the cause of the damage, for example through surface chemical contamination measurements. The electronic Print Circuit Board (PCB) is critical to the future functionality of the item and therefore the cleanliness of the board and its components is vital. The more components held on the PCB and the proximity of the conductive strips, the cleaner the PCB surface must be to guarantee the proper electric surface characteristics. Such surface cleanliness values are measured by established technical specifications.

In cases of slight contamination and powdered parts, Munters chooses between two procedures: the mechanical removal of particles with additional vacuum cleaning or, carbon dioxide blasting. In the presence of heavy contamination, a chemical procedure can be used. These chemical procedures guarantee the removal of chemical contamination, the removal of corrosion products and avoid damaging any protective coatings.



Reconditioning of a damaged computer screen.



# Electronic Reconditioning



## PROCEDURE

Choosing between either CO<sub>2</sub> blasting or the application of a decontamination solution followed by rinsing using deionised water with a very low conductivity. Munters technicians then employ a robust and traceable procedure for electronic reconditioning including:

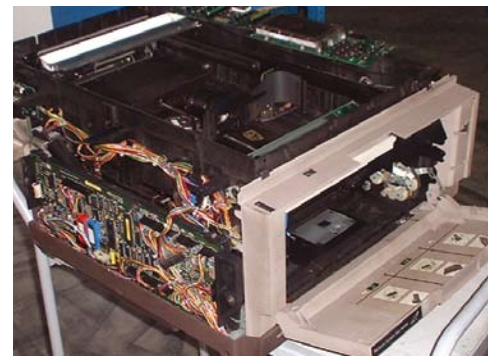
- Complete dismantling using a labelling method to guarantee traceability of all operations
- Masking or removing of components
- Heating in a thermostatic and ventilated oven
- Final drying in a vacuum box
- Final inspection to verify the restoration results
- Reassembling
- Electric isolation measurements (where applicable)
- Power on test



Reconditioning of Printed Circuit Board.

## RESULTS

For electrical goods (including IT), we are achieving a restoration rate in excess of 50% for heavily damaged goods and for light and medium damaged goods, a rate of over 96% - not just delivering significant cost savings to everyone concerned but also considerable environmental benefits by reducing disposal volume and the inherent costs associated with the manufacture of replacement goods.



Complicated mechanical devices can also be cleaned with CO<sub>2</sub>. This copy machine was cleaned within 15 minutes with the help of CO<sub>2</sub>. Conventional disassembling and wet cleaning would have taken days.



Damaged Printed Circuit board.



The same board after reconditioning.

## BENEFITS

Levels of cleanliness comply with industry standards, in fact the expected reliability of restored PCBs can be greatly improved.

The timescale for restoration is often much shorter than the replacement time and with the cost of restoration ranging from 5% to 30% of the cost of buying new equipment, there is a significant financial benefit.