



# CRT Monitor Disassembly

test

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## INTRODUCTION

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### **Introduction**

A CRT monitor consists of a plastic case (ABS/PC), a cathode ray tube (CRT) with an attached magnetic deflector and electron gun, printed wiring boards (PWB) and cables. The CRT glass contains a large amount of lead which may be released when it breaks. Therefore it is crucial to only conduct dismantling operations on monitors in adequate facilities. Further processing of CRT glass should only happen in industrial channels that have adequate facilities.

### **Health and Safety**

Equalize the pressure in the CRT glass body in the very beginning to prevent explosion.

Wear protective equipment to smash the magnetic deflector with a hammer as flying splints can injure personnel.

CRTs must be handled carefully also after pressure equalizing to ensure that no substances of concern are released. CRT glass bodies should be further processed only in industrial channels with adequate facilities.



## TOOLS:

- [Several screwdrivers \(T1\)](#) (1)
  - [Flathead Screwdriver \(T2\)](#) (1)
  - [Side cutter \(T4\)](#) (1)
  - [Hammer \(T3\)](#) (1)
  - [Pliers \(T5\)](#) (1)
  - [Industrial Scissors \(T6\)](#) (1)
  - [Power Screw Driver \(T8\)](#) (1)
  - [Industrial scale \(T9\)](#) (1)
  - [Putty Knife \(T10\)](#) (1)
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## Step 1 — CRT Monitor Disassembly



- Before doing anything the monitor has to be placed face down to protect the monitor screen from breaking.

## Step 2



- Remove the plastic casing by unscrewing all the screws in the cover (generally around 4). Clean the casing properly by removing all the foreign materials in the plastic such as labels, rubber mountains etc.

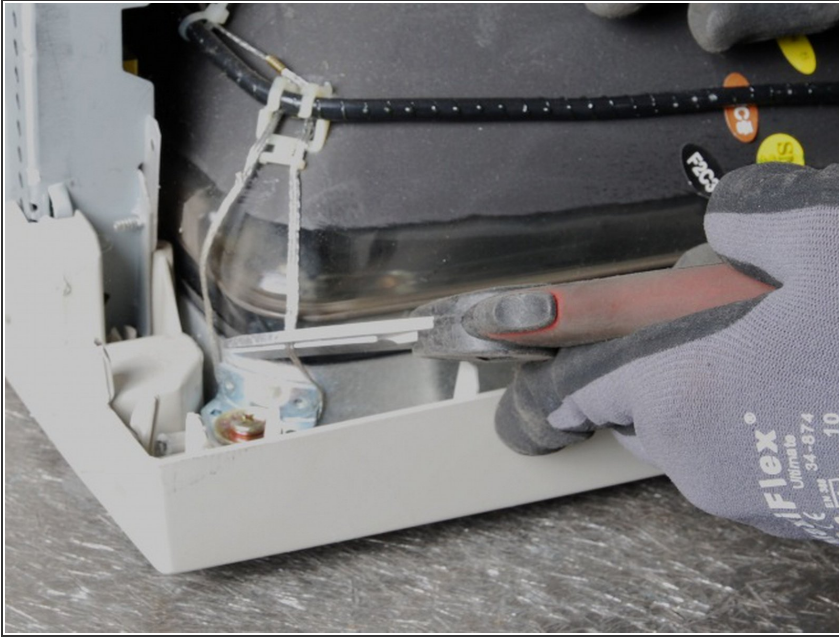


## Step 3



- Before removing other parts from the monitor it is crucial to equalize pressure in the CRT glass body. Therefore place the side of the monitor screen with the flap (anode connection) away from your face.
  - Remove the flap in the monitor screen with a flat screw driver and punch carefully a hole into the CRT glass where the flap was fixed.
- ⚠ Equalize the pressure carefully and wear protective equipment! As the CRT body is under vacuum this dismantling step has to be completed before further treatment steps to avoid possible implosion of the CRT body.

## Step 4



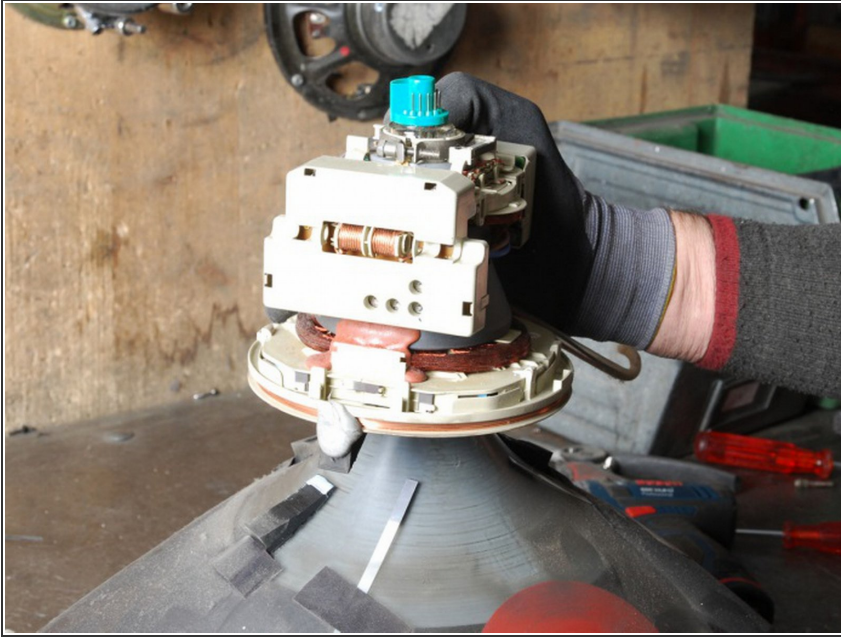
- Remove the cable ties around the wires, so that you can freely remove the wires from the monitor.

## Step 5



- There are generally two Printed Wiring Boards (PWB) in a monitor. A small PWB is attached at the base of the monitor screen by glue or a screw. A bigger PWB is attached at the back. Particularly the bigger PWBs might need further dismantling.

## Step 6



- Cut off all the wires around the monitor to be able to remove the magnetic deflector (on top of the CRT glass) that is surrounded by copper windings.

⚠ Remove the magnetic deflector carefully to avoid that the electron gun on top of the CRT gets destroyed.



## Step 7



- Remove the copper from the Magnetic Deflector by crashing it with a hammer. Strip the big wire around the monitor screen with a knife or side cutter and remove the copper. Clean the copper, plastic and steel and place it aside separately.
- ⚠ Wear protective equipment. Especially goggles and gloves are crucial as splints can injure arms, hands and eyes.

## Step 8



- Unscrew the CRT glass from the front plastic casing and break off the electron gun from the tube with a hammer or a small axe just below the gun.

⚠ Be careful so that only the glass just below the electron gun breaks (and not the complete funnel glass)!

## Step 9



- Separate the remaining materials according to their type (e.g. aluminium, ferrous metals, plastic, further PWBs, etc.).
- Make sure the plastic parts are completely free of metal pieces.
- For information about storage and handling refer to chapter 3 (Output Fractions).
- Continue to [separate the CRT glass](#) into [these](#) components.
- **Output Fractions:** Metals ([steel](#), [aluminium](#), [copper](#)), [PWBs](#), [plastics](#), mixed fractions ([cables](#), mixed scrap), and CRT specific fractions ([CRT glass](#), CRT deflection coil, [CRT gun](#)).

## Step 10



- The CRT glass body can be separated into panel glass, funnel glass, shadow mask and phosphor coating (as shown in the picture on the right: CRT dismantling equipment at the WEEE Centre, Nairobi, Kenya).