

Dismantling Devices with Cathode Ray Tubes (CRTs)

Health & Safety



Wear personal protective equipment¹



Do not test equipment prior to dismantling²



Tube is under pressure – handle with care!



Wash hands & keep workplace clean



Step 1
Carefully place CRT on workbench



Step 2
Remove the power cable, remove all screws and take off the case



Step 3
To discharge, insert isolated, earthed screwdriver under flap³



Step 4
Carry-out this step one-handed! Place other hand behind back! Make sure metal-part of discharging-device gets in contact with metal wires under flap⁴



Step 5
Carefully remove flap



Step 6
Place screwdriver where flap was attached to tube. Punch a small hole into tube until you hear air streaming



Step 7
Clip cables and remove electronic parts. Remove all capacitors with a diameter > 25 mm for separate storage and treatment⁵



Step 8
Carefully remove the magnetic deflector (yoke)⁶



Step 9
Dismantle the deflector into ferrous metals, copper and plastics⁷



Step 10
Peel the metal wire that is placed around the outer part of the tube



Step 11
Separate tube from case and remove remaining parts (e.g. speakers)



Output
(a) Plastics, (b) printed wiring boards, (c) copper, (d) ferrous metals, (e) mixed metals, (f) cables, (g) CRT-tube and capacitors (not in picture)⁸

Further information: www.resourcefever.org

1 Overall, safety boots, work gloves, dust masks, protective goggles.
2 Plugging-in and testing will charge the tube, which can result in potentially fatal electric shocks during dismantling operations. In addition to this principle, all CRT-devices should be actively discharged prior to dismantling (see Steps 3 & 4).
3 It is important that the contact-metal of the screwdriver (or any other discharging device) is well connected with safety earth so that any electric charge is securely removed.
4 Do not touch any metal! Wear dry clothes and work on dry floor!
5 Large capacitors might contain hazardous substances such as polychlorinated biphenyl (PCB). Removed capacitors need to be stored in a way leakage and vapors cannot contaminate the workplace.
6 In case the neck glass is broken during this or any other operation, special care has to be applied for handling the small plate ("getter-plate") that is connected to the electron gun and that was originally placed in inner side of the tube. It contains hazardous substances and requires separate and dry storage and treatment.
7 Breaking of the black metal parts can produce sharp splints.
8 Further processing required for plastics (size-reduction), mixed-metals (further processing to separate the various materials), cables (remove and separate insulation), capacitors (treatment by specialized companies) and CRT-tube (special treatment to safely dispose the lead glass, which is classified as hazardous waste). In addition, large aluminium and steel parts can be removed from the printed wiring board to improve the value of output fractions.