

Electron Gun Assembly

▶ TRIODE SECTION

Heater

Cathode

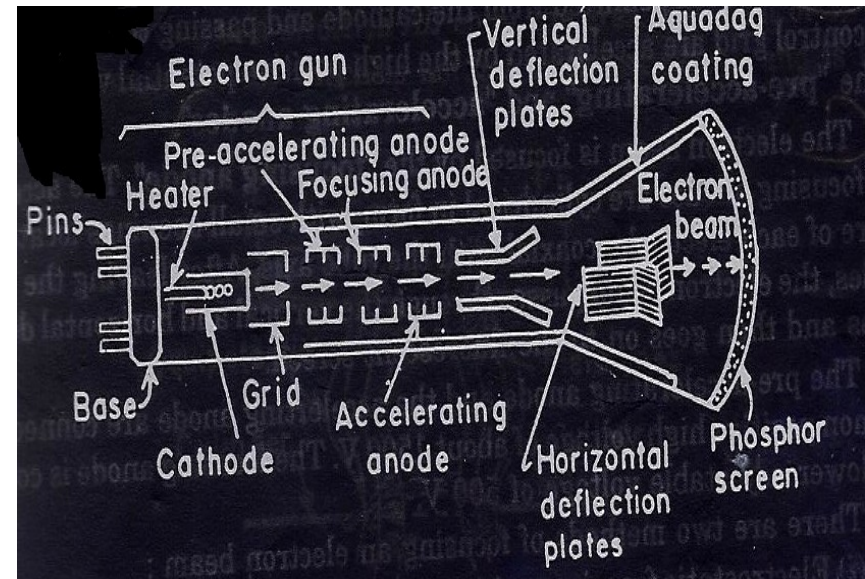
Grid

▶ FOCUSING SECTION

Anode Pre-accelerating

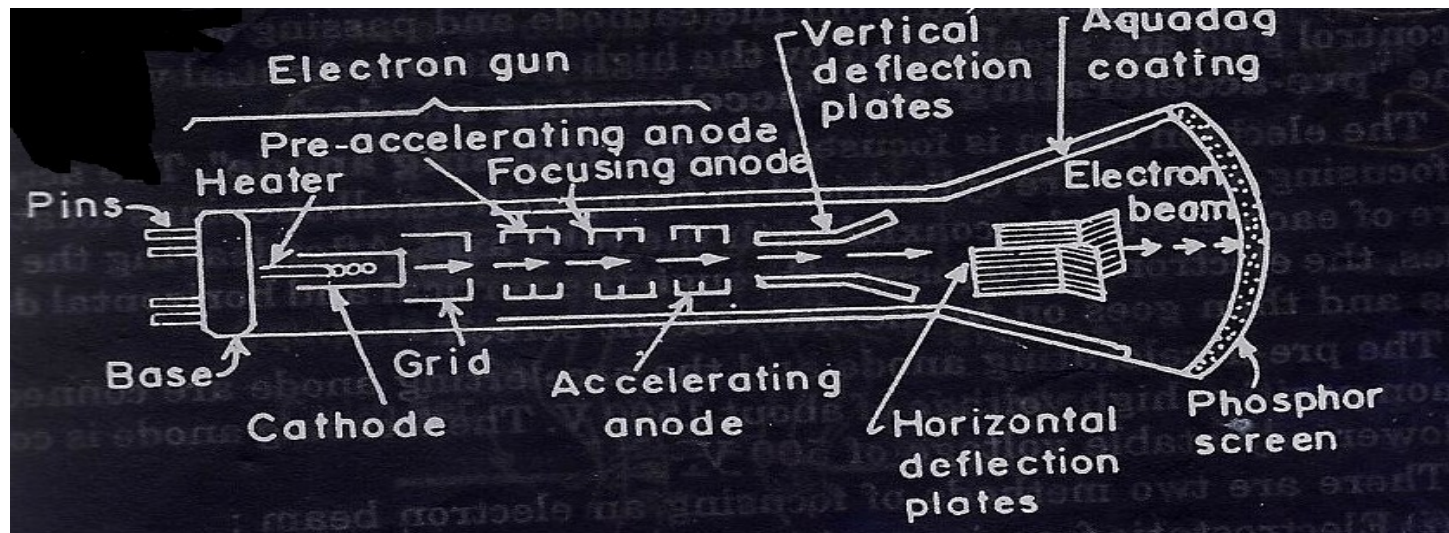
Focusing

Accelerating



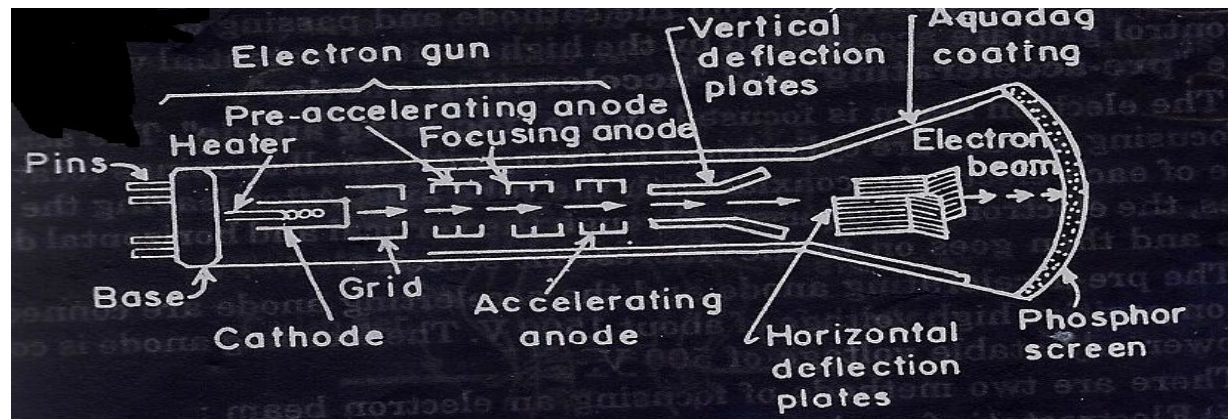
Deflection Plates

- ▶ **Vertical deflection plates or Y-plates**–
 - mounted horizontally
 - produces an electric field in the vertical plane.
 - produces a vertical deflection.



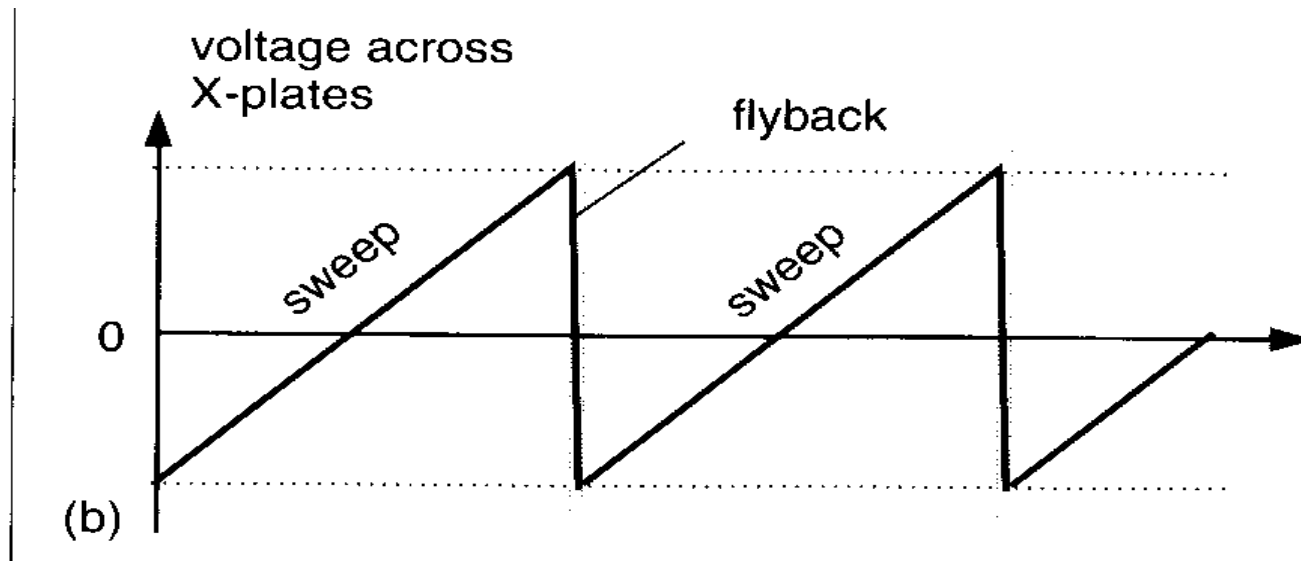
Deflection Plates

- ▶ **Horizontal deflection plates or X Plates**–
 - mounted vertically
 - produces an electric field in the horizontal plane.
 - produces a horizontal deflection.

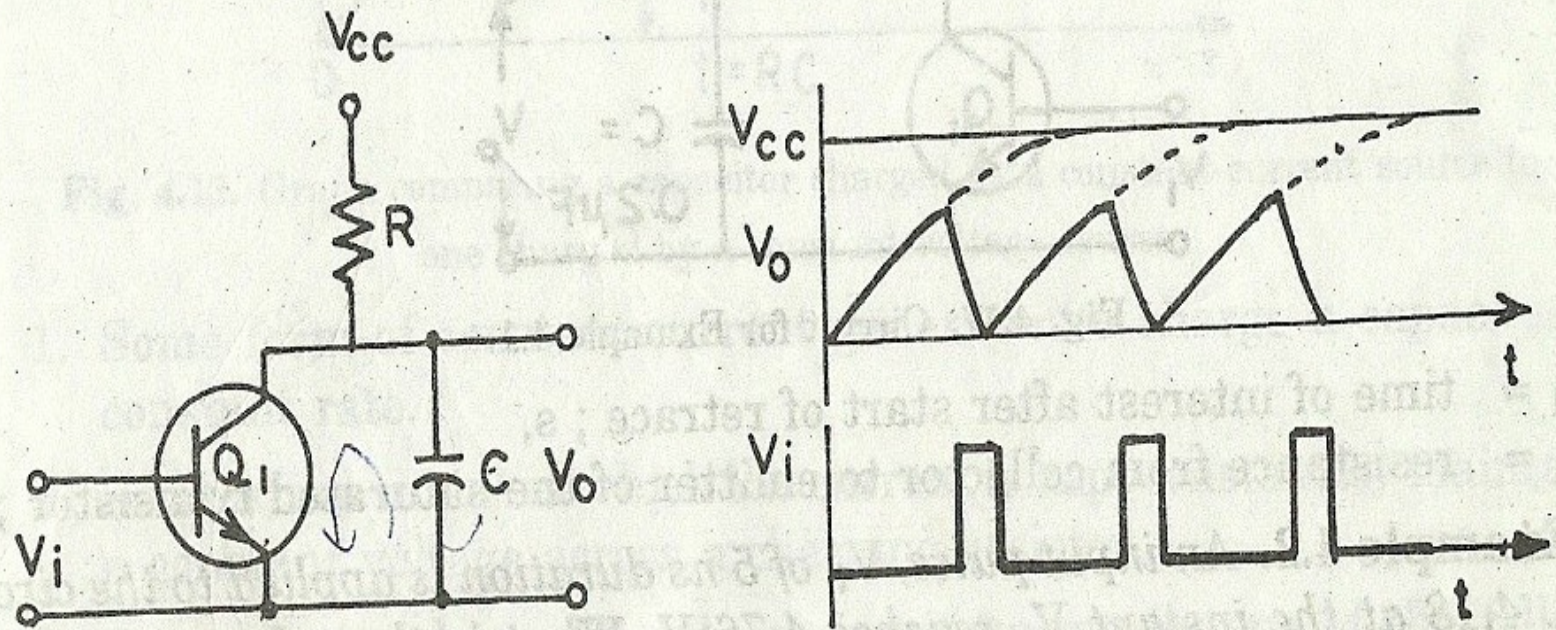


Time Base


- ▶ Sawtooth potential difference
- ▶ Time period control



Time base generator



Screens for CRTs

- The front of the CRT is called the face plate.
 - It is flat for screens sizes upto about 100mm x 100mm, and slightly curved for larger displays.
 - Face plate is formed by molten glass or fibre optics.
 - Inside surface of face plate is coated with phosphor.
 - phosphor converts electrical energy to light energy
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Screens for CRTs

- ▶ **Cathodoluminescence:**—When an electron beam strikes phosphor crystals it raises their energy level.
- ▶ **Fluorescence:**—Light is emitted during phosphor excitation.
- ▶ **Phosphorescence or Persistence:**—When the electron beam is switched off the phosphor crystals return to their initial state, and release a quantum of light energy..

Screens for CRTs

- ▶ **P1,P2,P11,P31**-SHORT PERSISTENCE
PHOSPHORS(LABORATORY OSCILLOSCOPES)
- ▶ **P7 AND P39**- LONGER PERSISTENCE
PHOSPHORS(STORAGE OSCILLOSCOPE)
- ▶ **P19,P26,P33** –VERY LONG PERSISTENCE
PHOSPHORS(IN RADARS)