2.11 ALUMINIZED SCREEN:

A very thin coating of aluminium is provided on the back surface of the screen phosphor on all modern picture tubes. The aluminium coating is connected to high voltage anode coating. Aluminium coating reflects light from the screen.

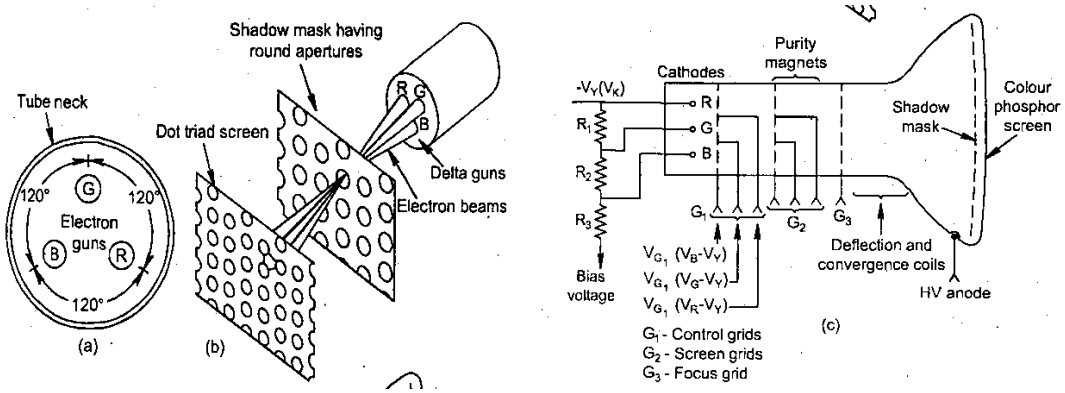
2.12 TYPES OF COLOUR PICTURE TUBES:

The screen of colour picture tube is coated with three different colour phosphor. However the three colour phosphor are separated from each other physically.

Three types of picture tubes are

1. Delta – gun picture tube.
2. Precision – In – Line or Gun – In – Line picture tube.
3. Trinitron picture tube.

- **CONSTRUCTION AND WORKING PRINCIPLE OF DELTA GUN PICTURE TUBES**



DELTA GUN

Radio Corporation of America developed this tube. Arranges in delta shape.

MAIN SECTION

Electron gun consists of three electron guns spaced equally at 120 Screen and shadow mark section.

- **WORKING PRINCIPLE**

The video signals corresponding to each primary colour are given to the three electrons gun. The axis of even electrons beam are adjusted by the purity magnet.And during this time other triode are by the mask.

The overall colour depends upon the phosphor which are being energised and the intensity of each beam.Red and green beams are 'ON', screen become yellow.

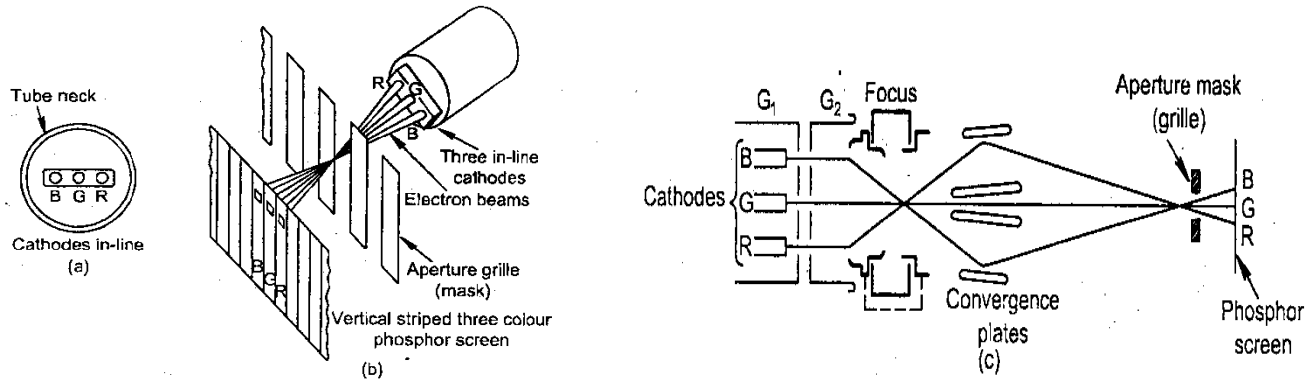
- **DRAWBACKS OF DELTA GUN TUBE:**

Convergence is difficult.

Focus cannot be sharp over the entire screen, electron transparency of the mask.

2.13 TRINITRON COLOUR PICTURE TUBE:

This type of tube was developed by Sony corporation of Japan. These tubes are having a single gun with three in-line cathodes.



- **ELECTRON GUN SECTION:**

Here their is only one electrons gun, but with three cathode for each primary colour, screen and mask construction.The outer plates are supplied with above 450V less than the final anode voltage.

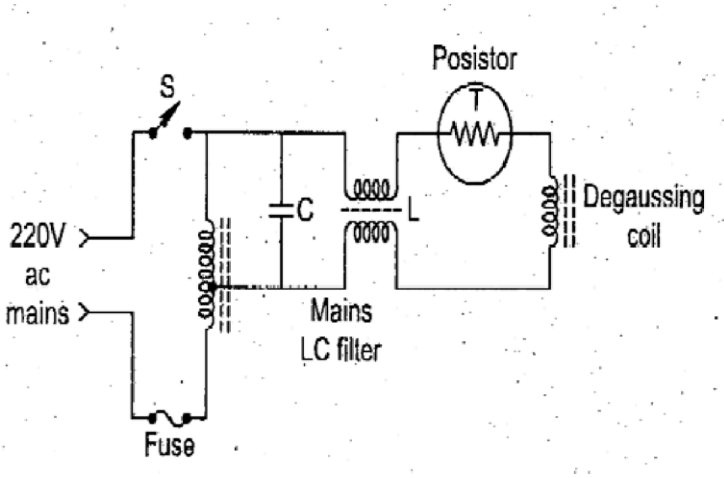
Four convergence plates are used. Since green beam is in centre, it passes through the centre plate. But red and blue beams pass between other plates. Since centre plate are connected internally to final anode, zero potential is found between these plates. So green beam is not affected by convergence voltage.

Due to voltage difference, an electronic force is developed and converging action taken place. So convergence is done for red and blue beams.

- **ADVANTAGES:**

1. Construction is simple.
2. Brightness is more.

2.14 AUTOMATIC DEGAUSSING:



Degaussing means demagnetizing. It is the process of removal of magnetic flux from magnetized parts in TV. Steel Chasis and internal frames that hold mask are subject to induced magnetization, whenever picture tube is switched off.

These induced magnetic fields can affect the electron beam path and produce errors in colour purity. To prevent such effect picture tubes are magnetically shielded. For this a thin silicon steel is housed around belt of tube. Mask structure and shield material have non zero retentivity and so they get weakly magnetized by magnetic field of earth.

Automatic degaussing circuit is shown. When the receiver is switched ‘ON’, a strong main current passes through the degaussing coil. After a few seconds this current is dropped to very low level.

REVIEW QUESTIONS

PART-A

1. What is camera tube?
2. What is picture tube?
3. Mention the characteristics of camera tube.
4. Define spectral response of a camera tube.
5. Define sensitivity.
6. Define dark current.
7. Define lag characteristics.
8. Define resolving power.
9. Mention the types of camera tubes.
10. Mention the specification of picture tube.
11. What type of focusing and deflection is used in monochrome picture tube.
12. Mention the types of color picture tube.
13. Define degaussing

PART-B

1.What is screen burn?

2.Explain aluminized screen.

3.Explain automatic Degaussing

PART-C

1. With neat block diagram explain the working and construction of Videocon camera tube.

2. With neat block diagram explain the working and construction of plumbicon camera tube.

3. Compare various camera tube

4. With neat block diagram explain the working and construction of CCD image sensor.

5. Explain with neat diagram the video processing of camera pickup signal.

6. With neat block diagram explain the working of colour TV camera.

7. With neat block diagram explain the working of monochrome picture tube.

8. With neat block diagram explain the working of delta gun picture tube.

9. With neat block diagram explain the working of Trinitron picture tube.