

Orthographic Projections

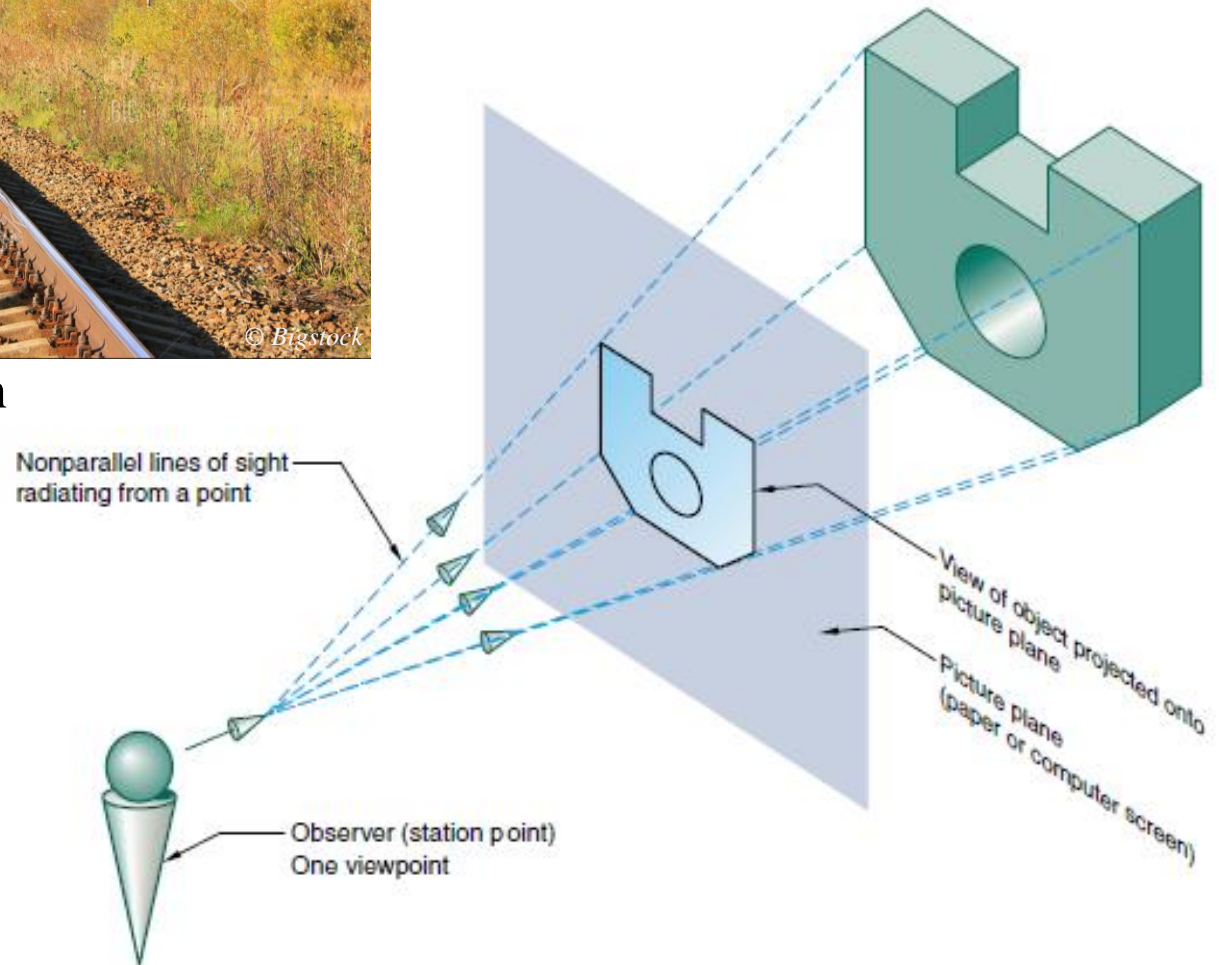


Department of Mechanical Engineering
Indian Institute of Technology Madras, Chennai

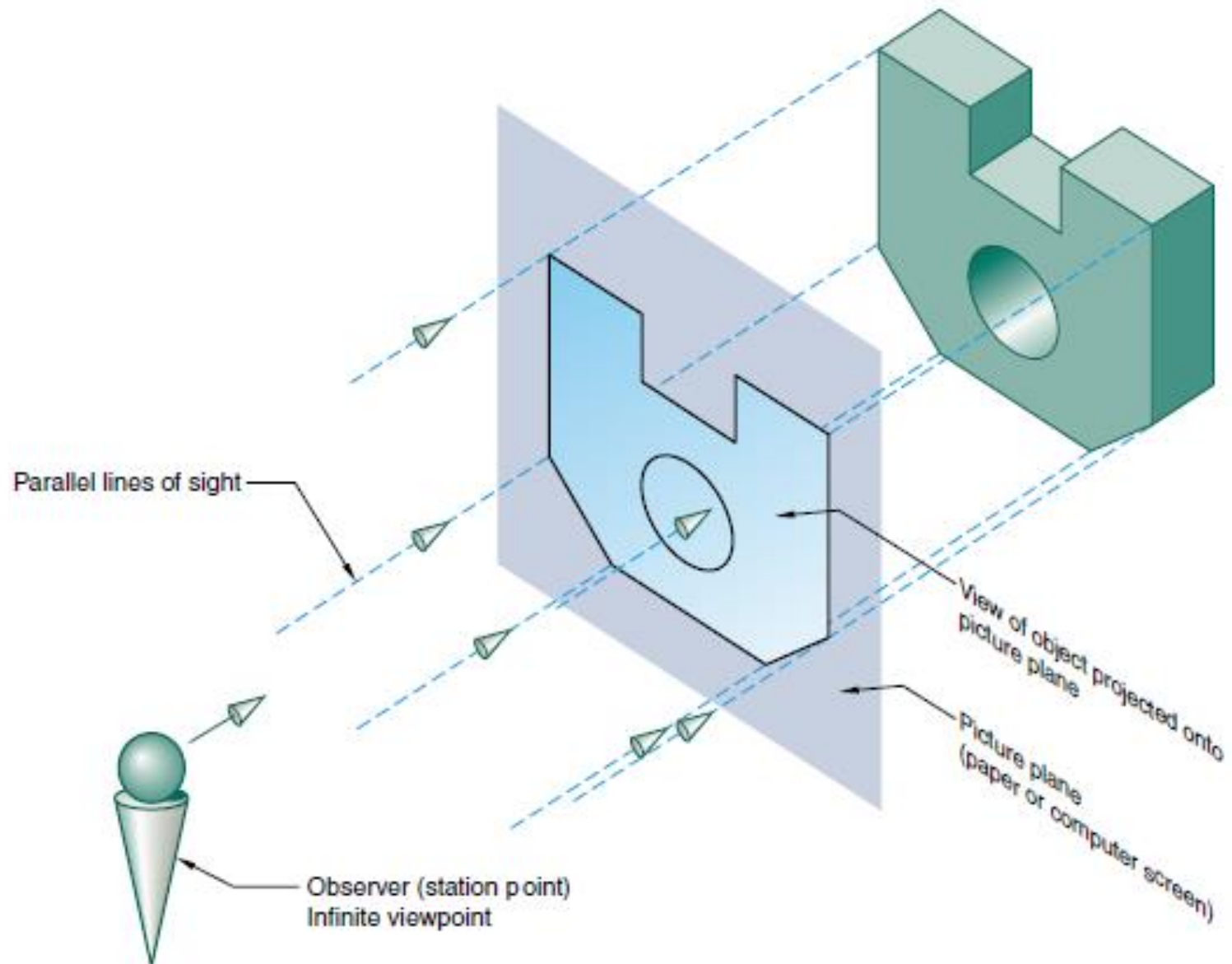
Perspective Projection



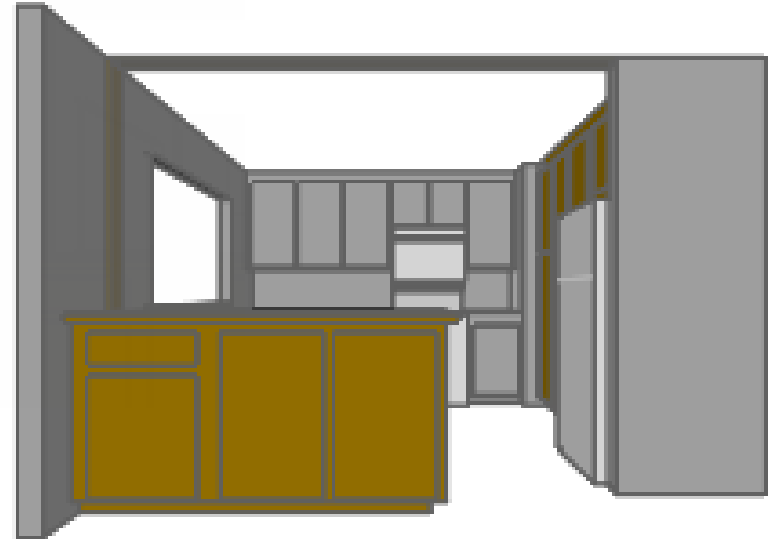
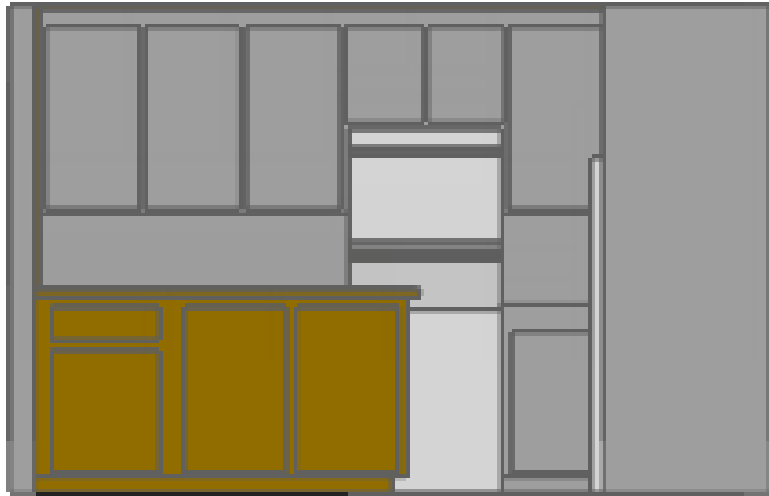
A camera captures views in perspective projection



Parallel Projection

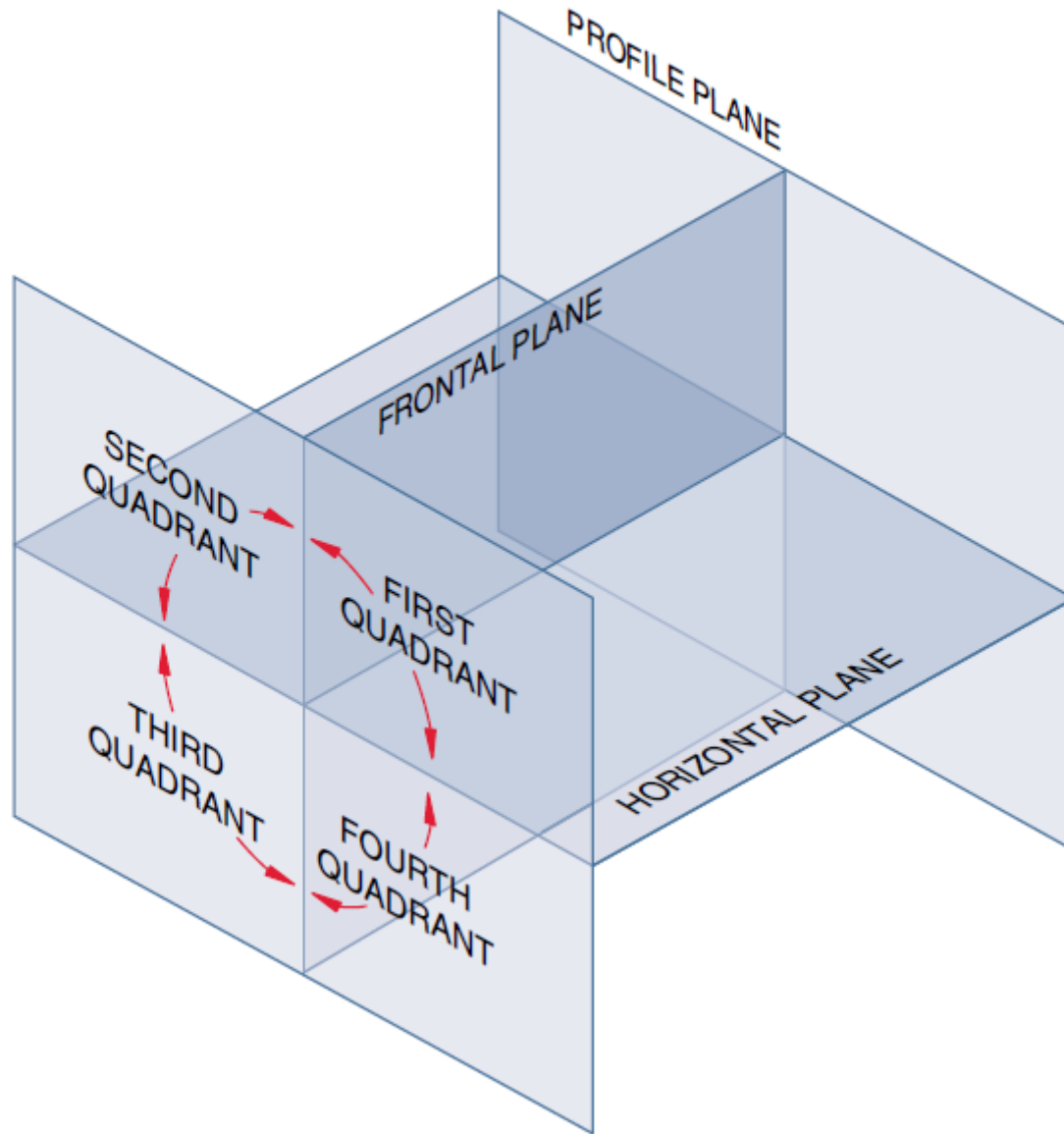


Parallel vs. Perspective Projection



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Principal Projection Planes



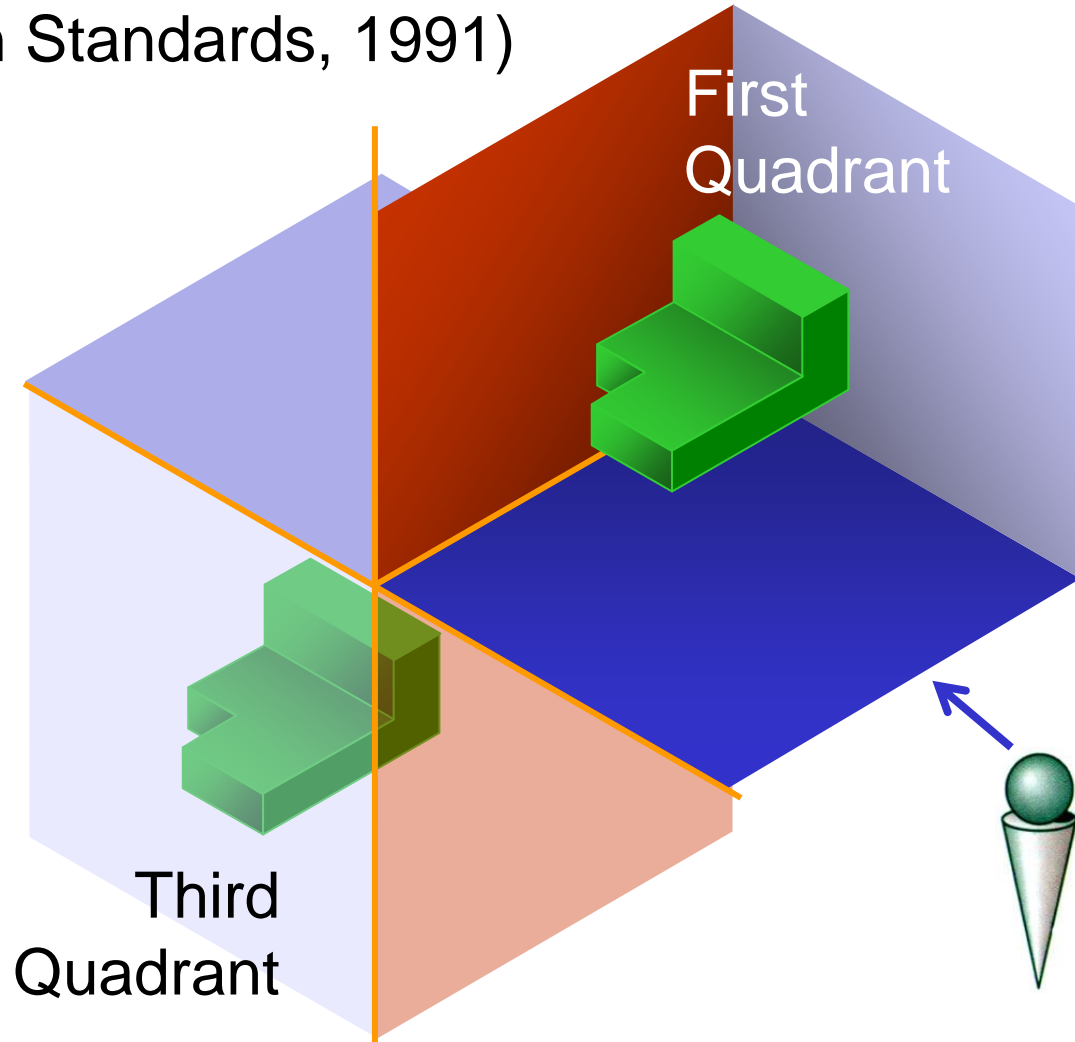
Projection System

1. **First** angle system

- India (Bureau of Indian Standards, 1991)
- European countries
- ISO standard

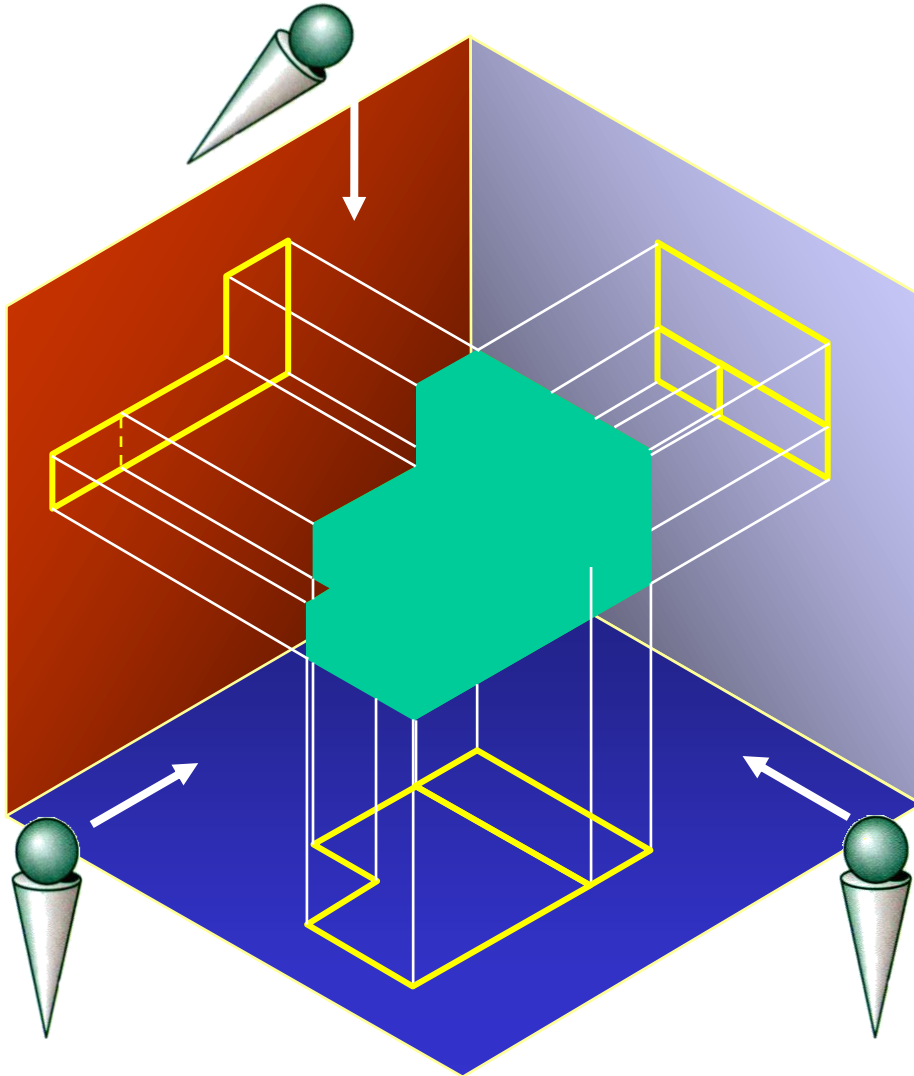
2. **Third** angle system

- Canada
- USA
- Japan, Thailand

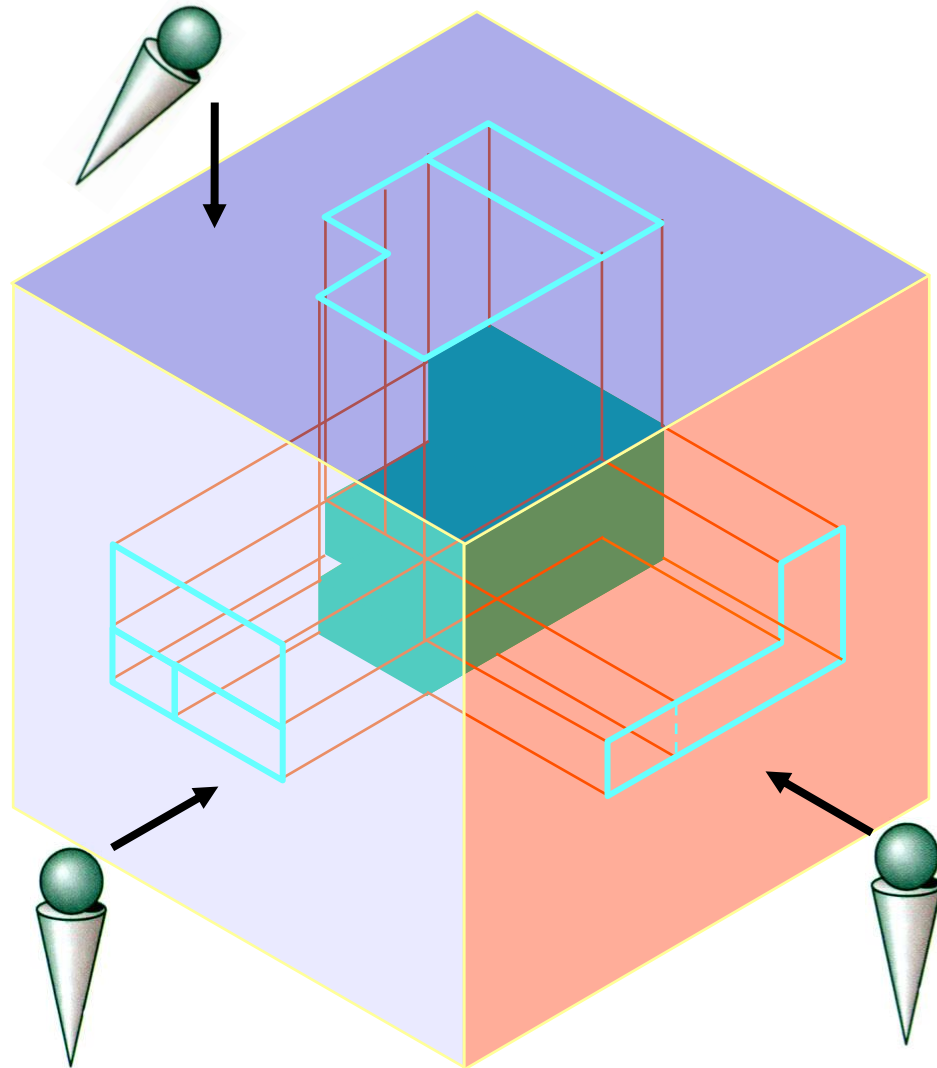


Orthographic projection

1st angle system

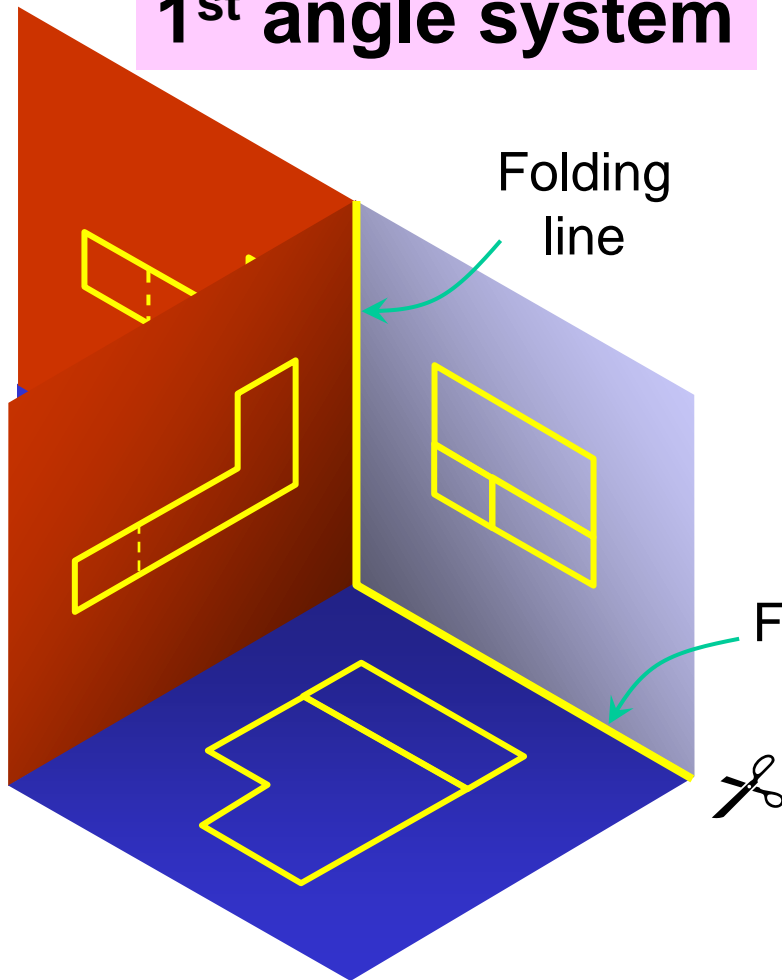


3rd angle system

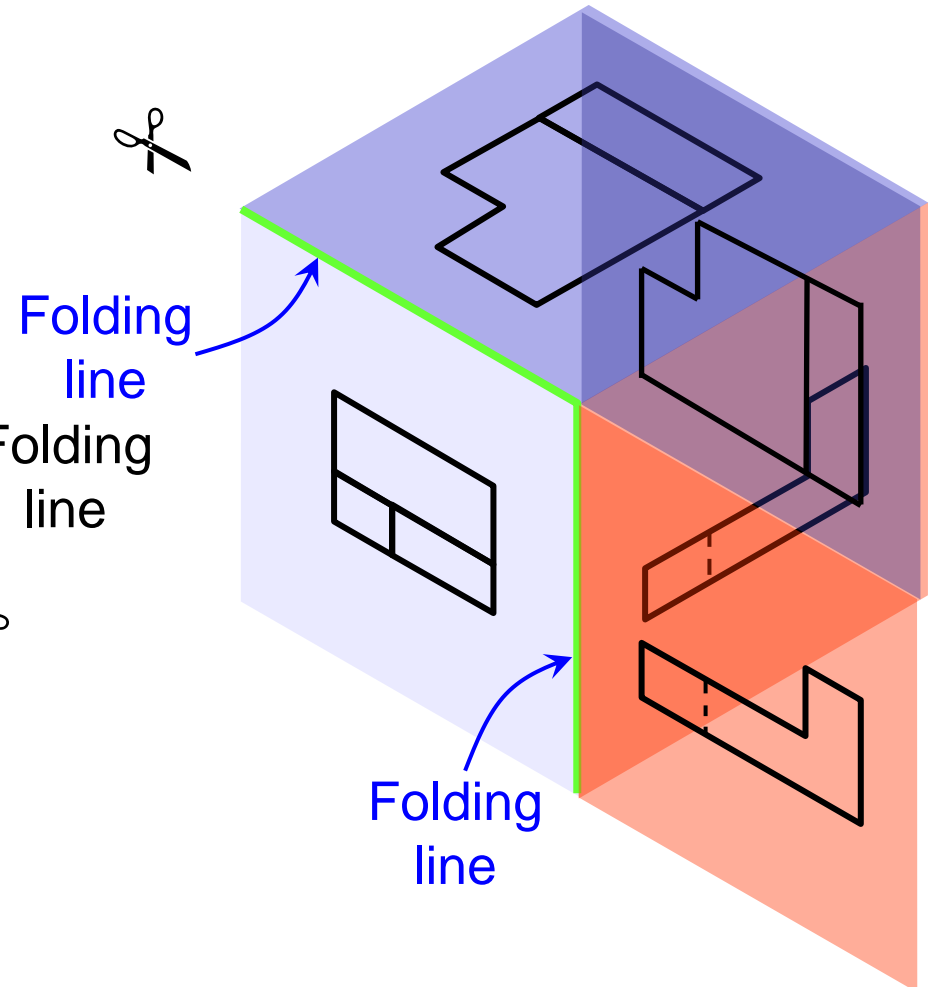


Orthographic Views

1st angle system

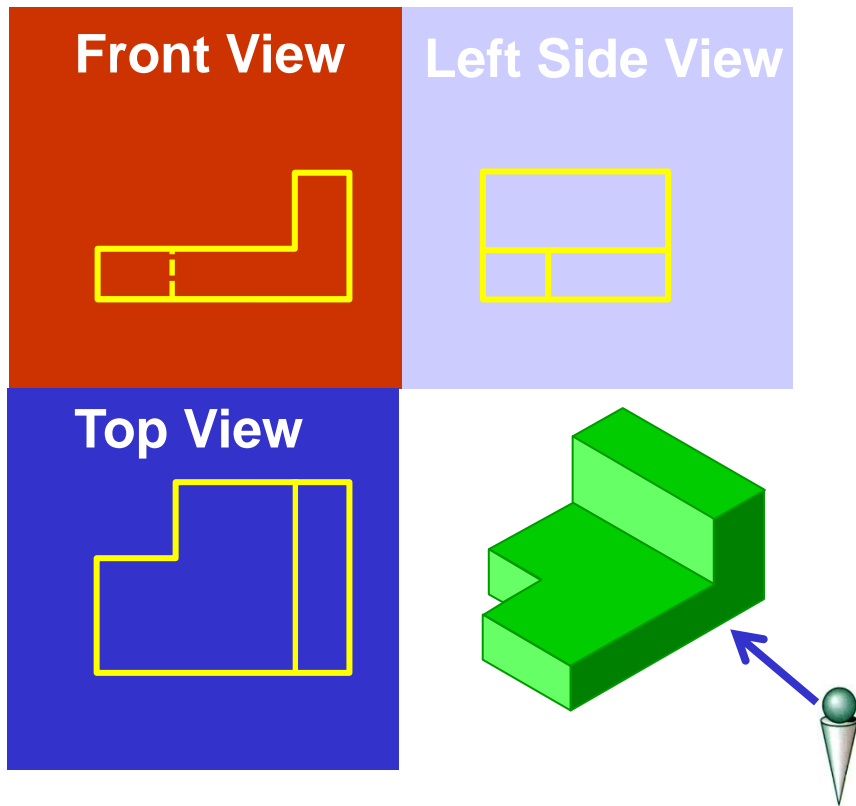


3rd angle system

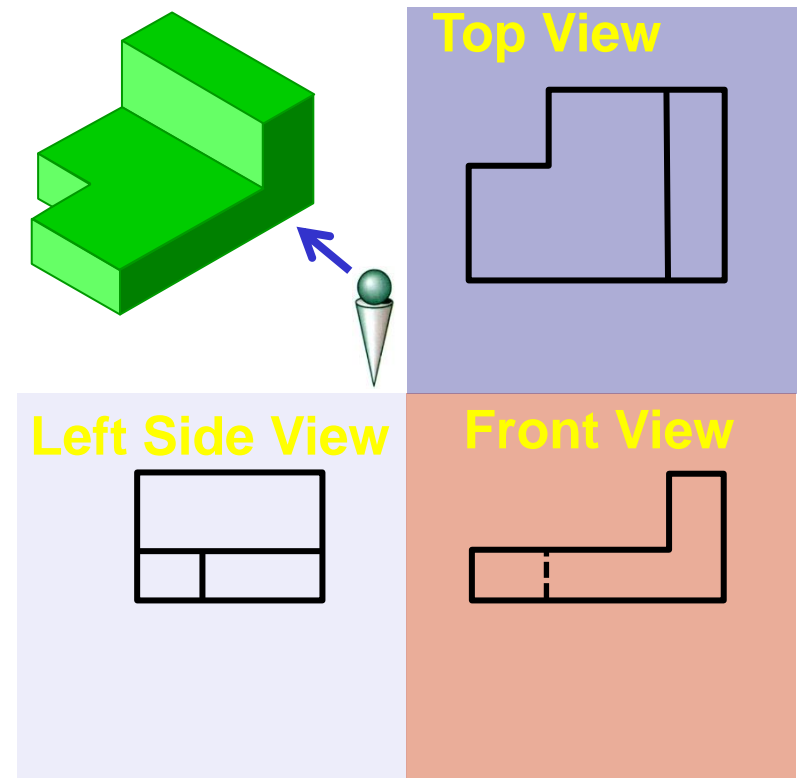


Orthographic Views

1st angle system

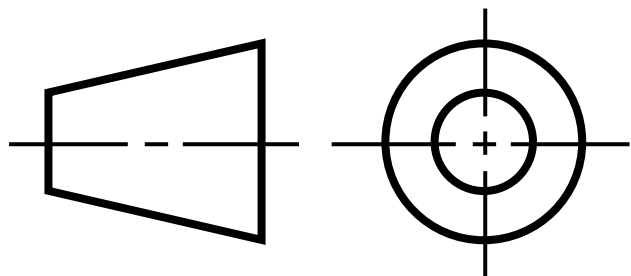
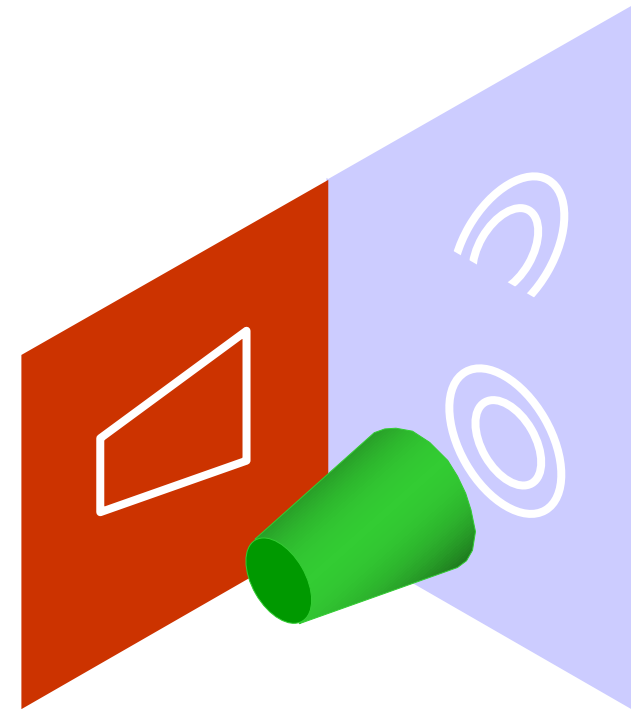


3rd angle system



Projection Symbols

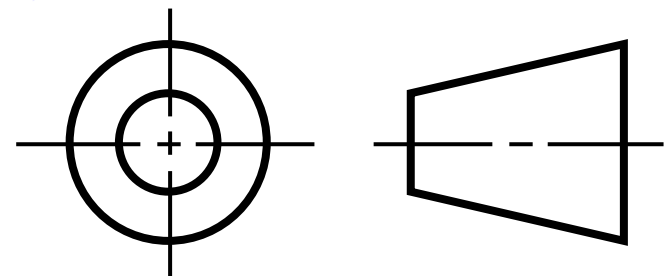
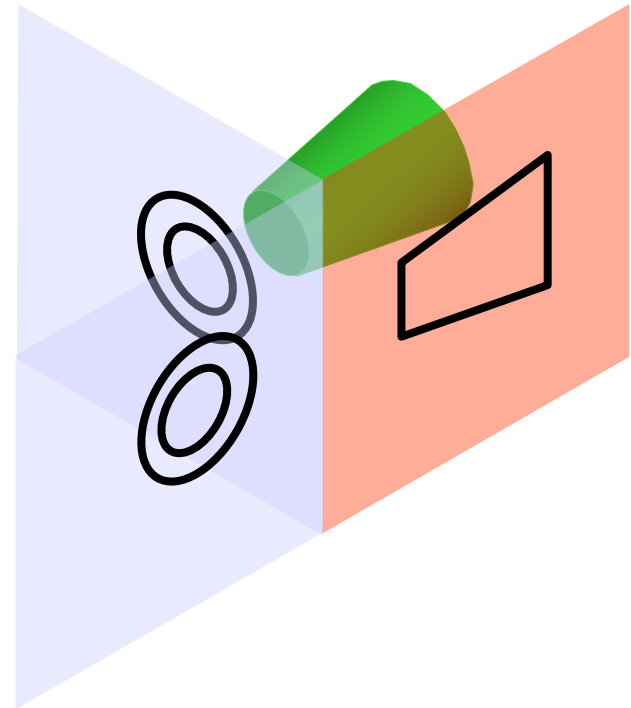
First angle system



Front View

Left Side View

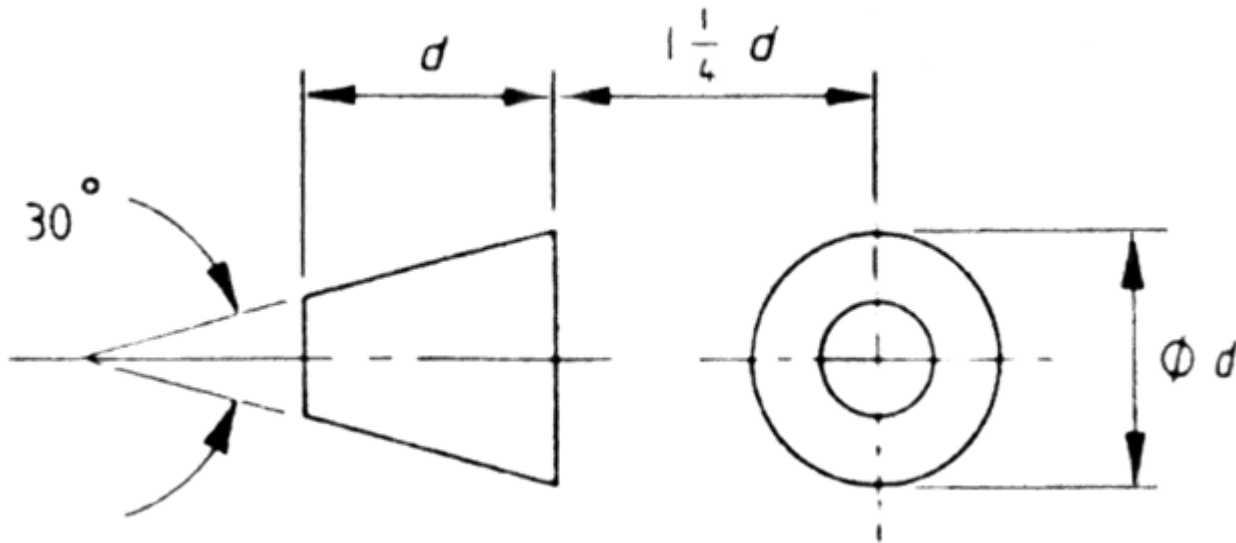
Third angle system



Left Side View

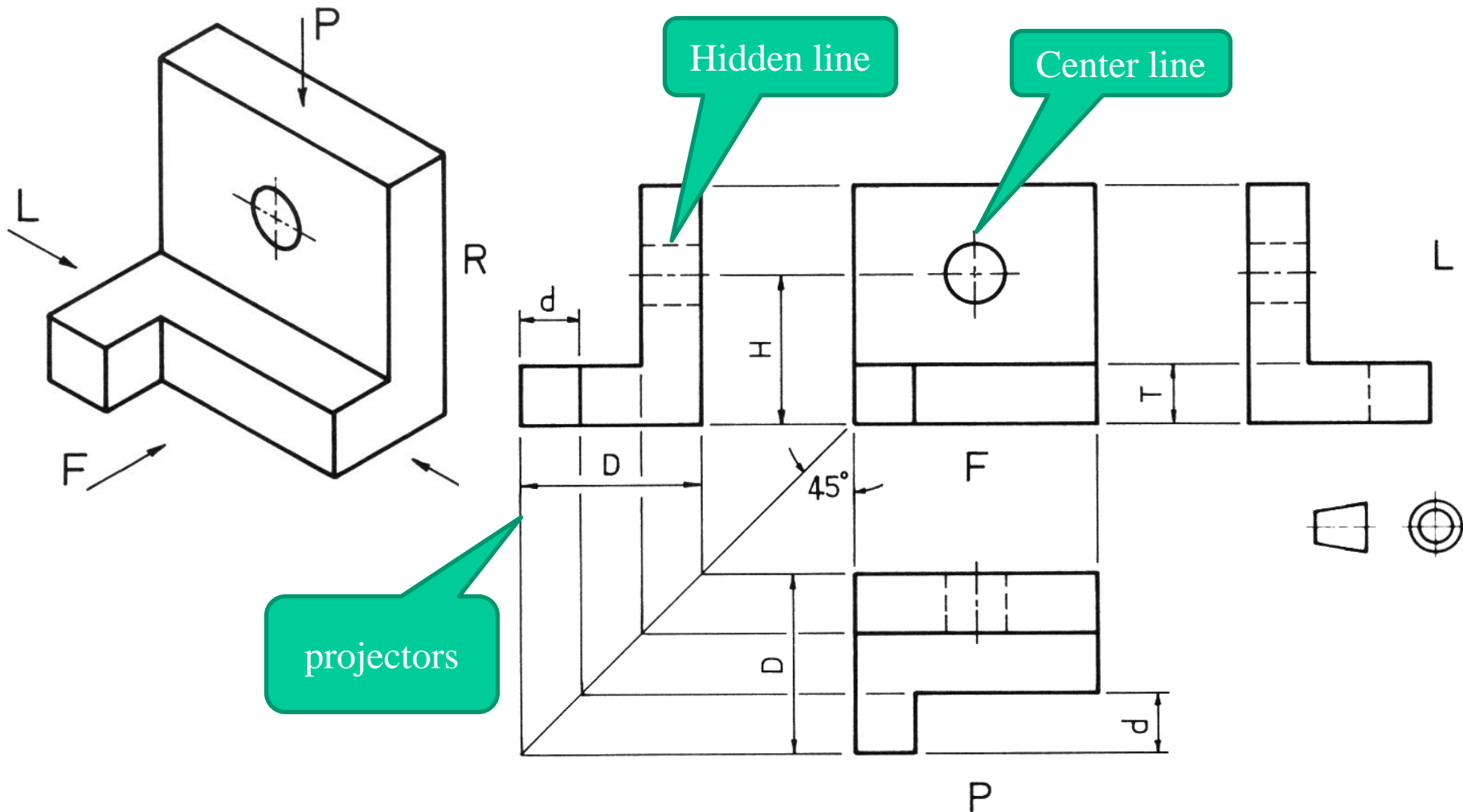
Front View

First Angle Projection Symbol Proportions

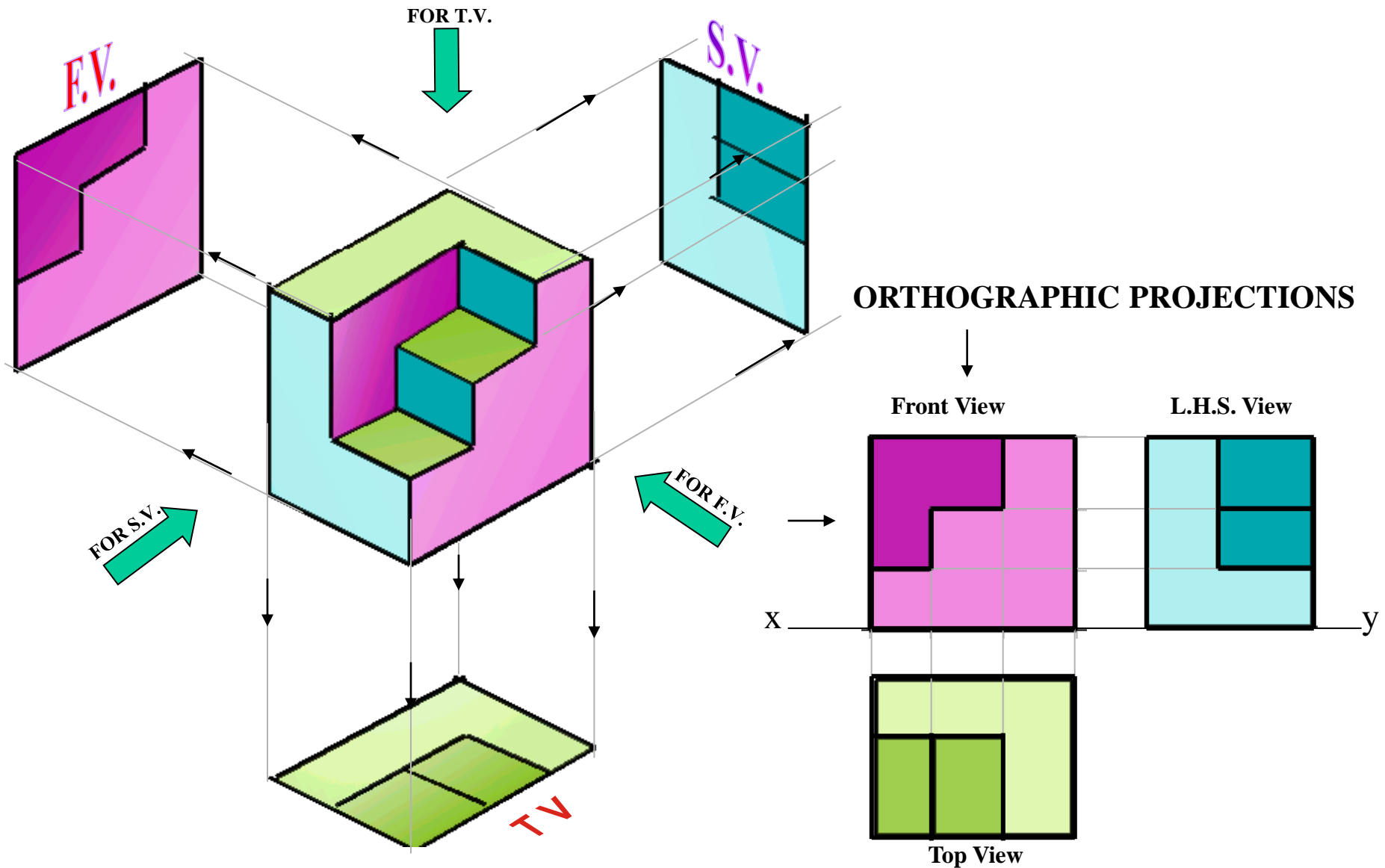


Hidden Lines

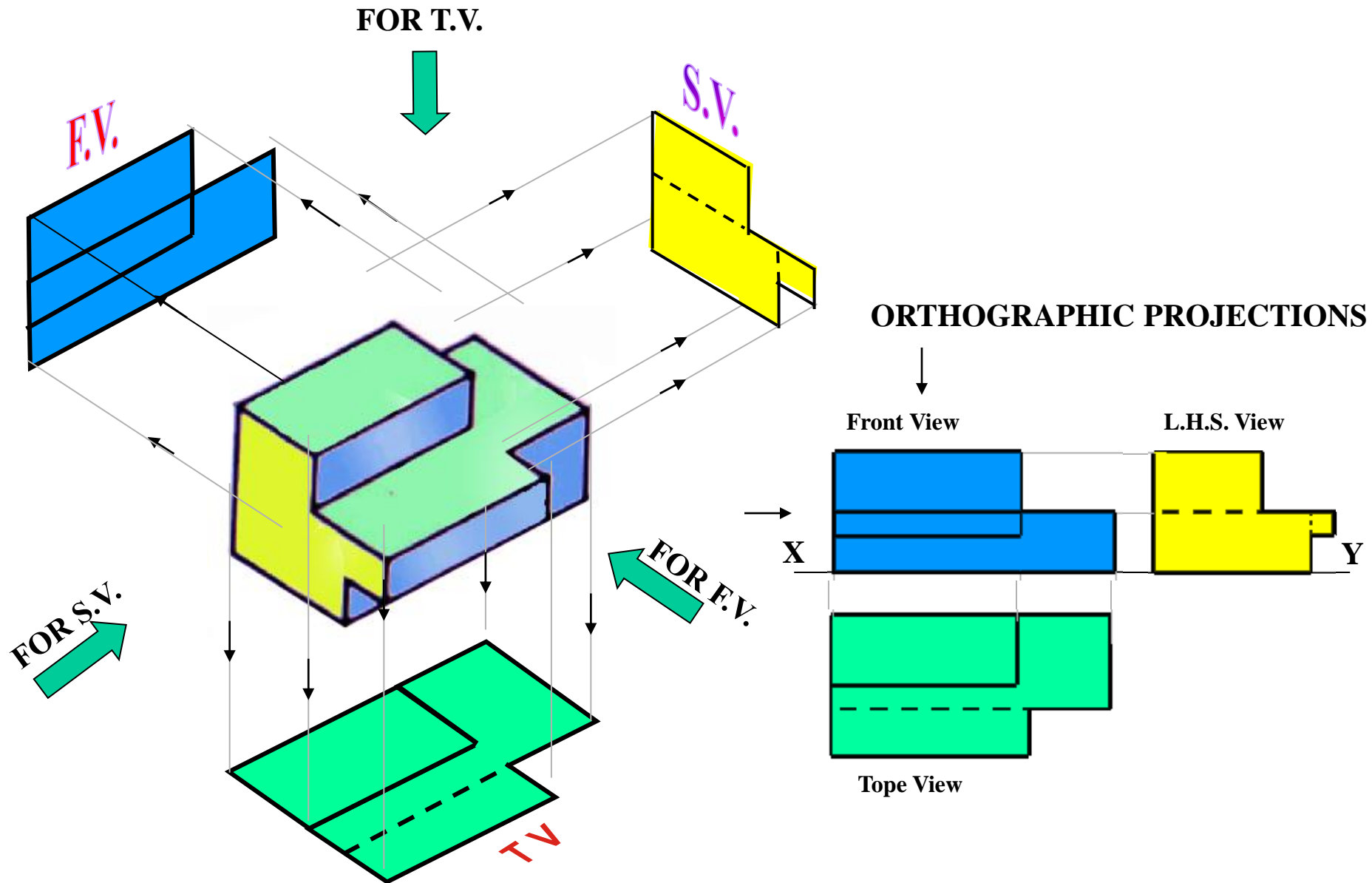
Some parts of the object cannot be seen from the position of the observer, as they are covered by portions of the object closer to the observer's eyes. The edges of such hidden parts are shown by **dashed lines**.



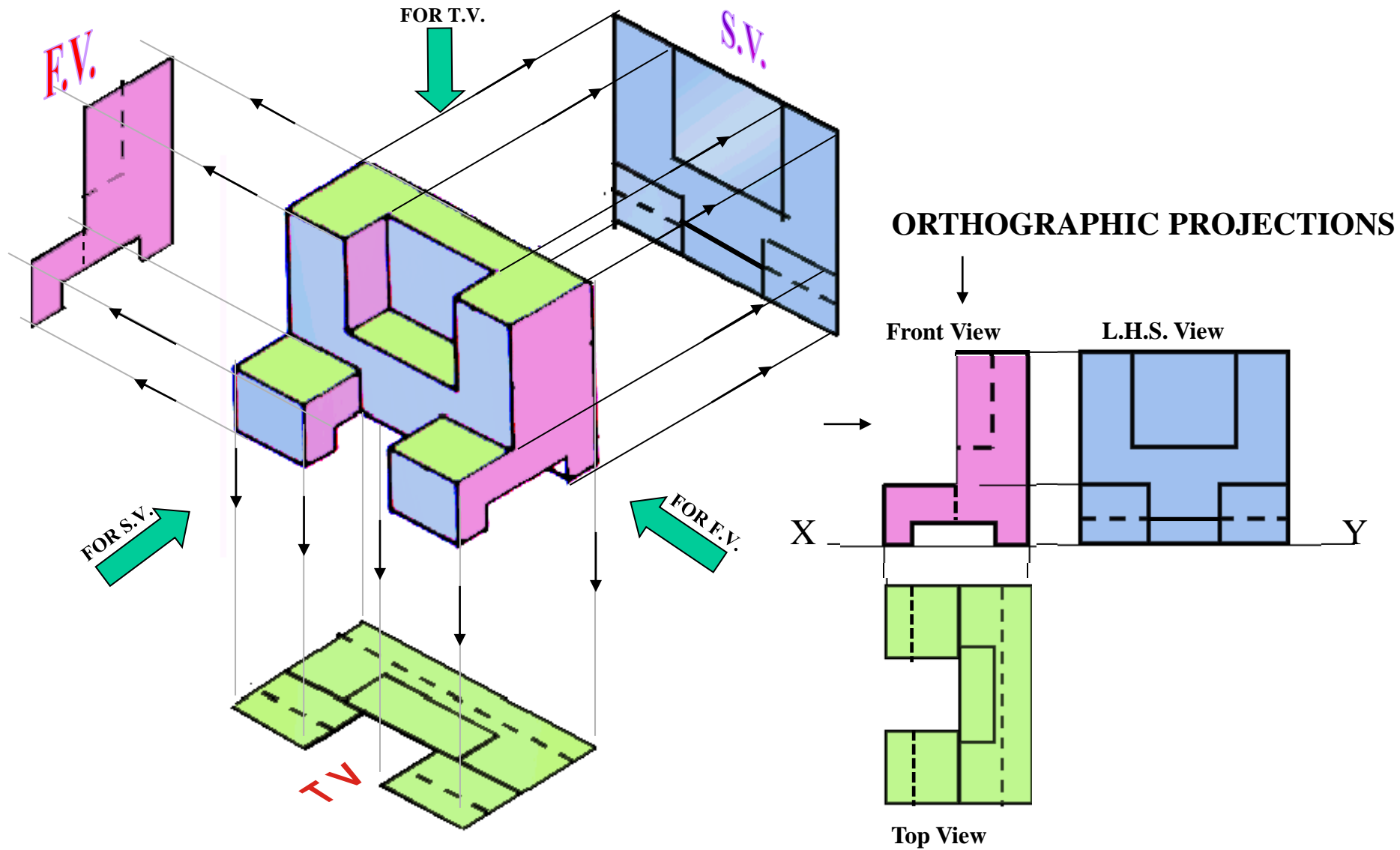
First Angle Projection (Example)



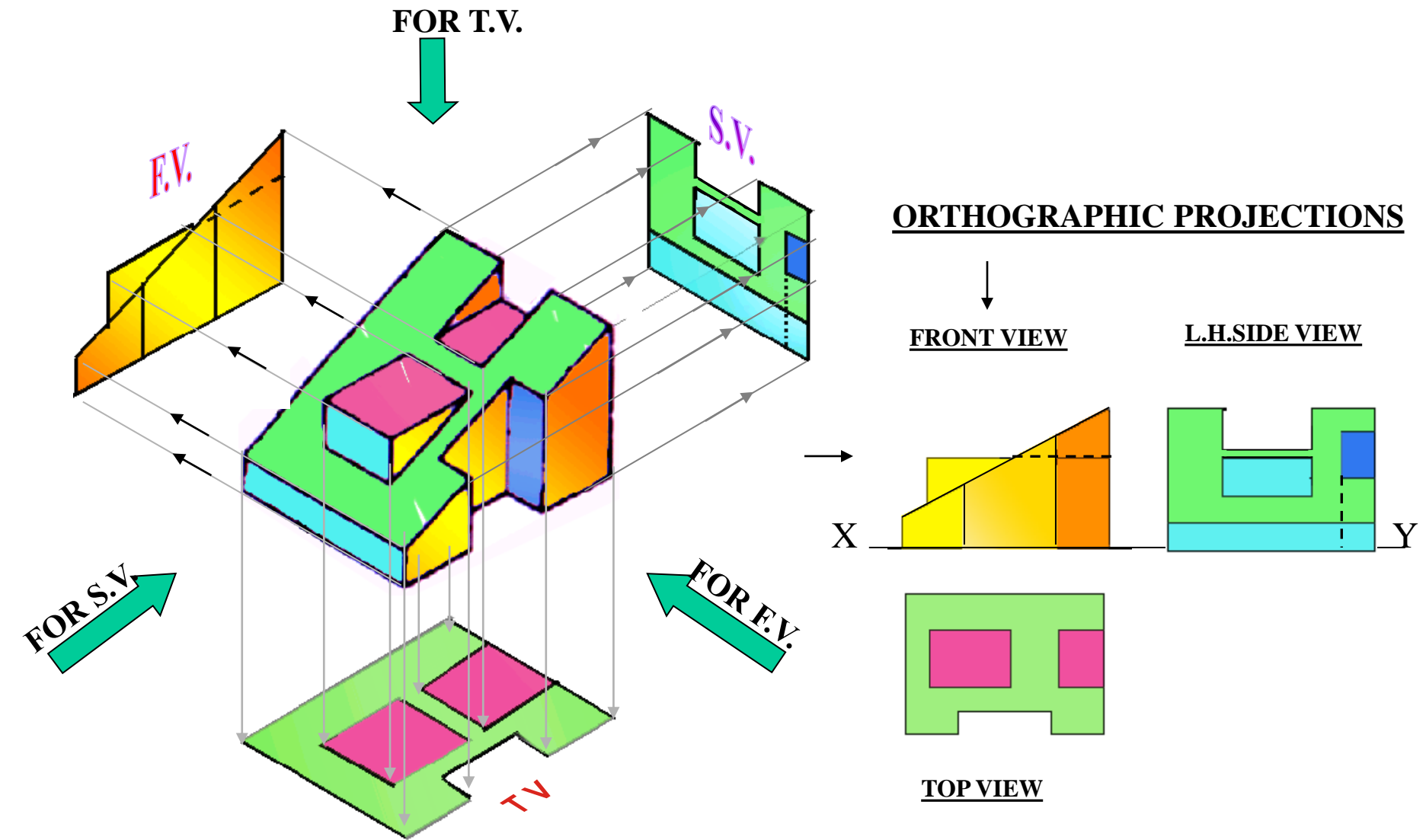
First Angle Projection (Example)



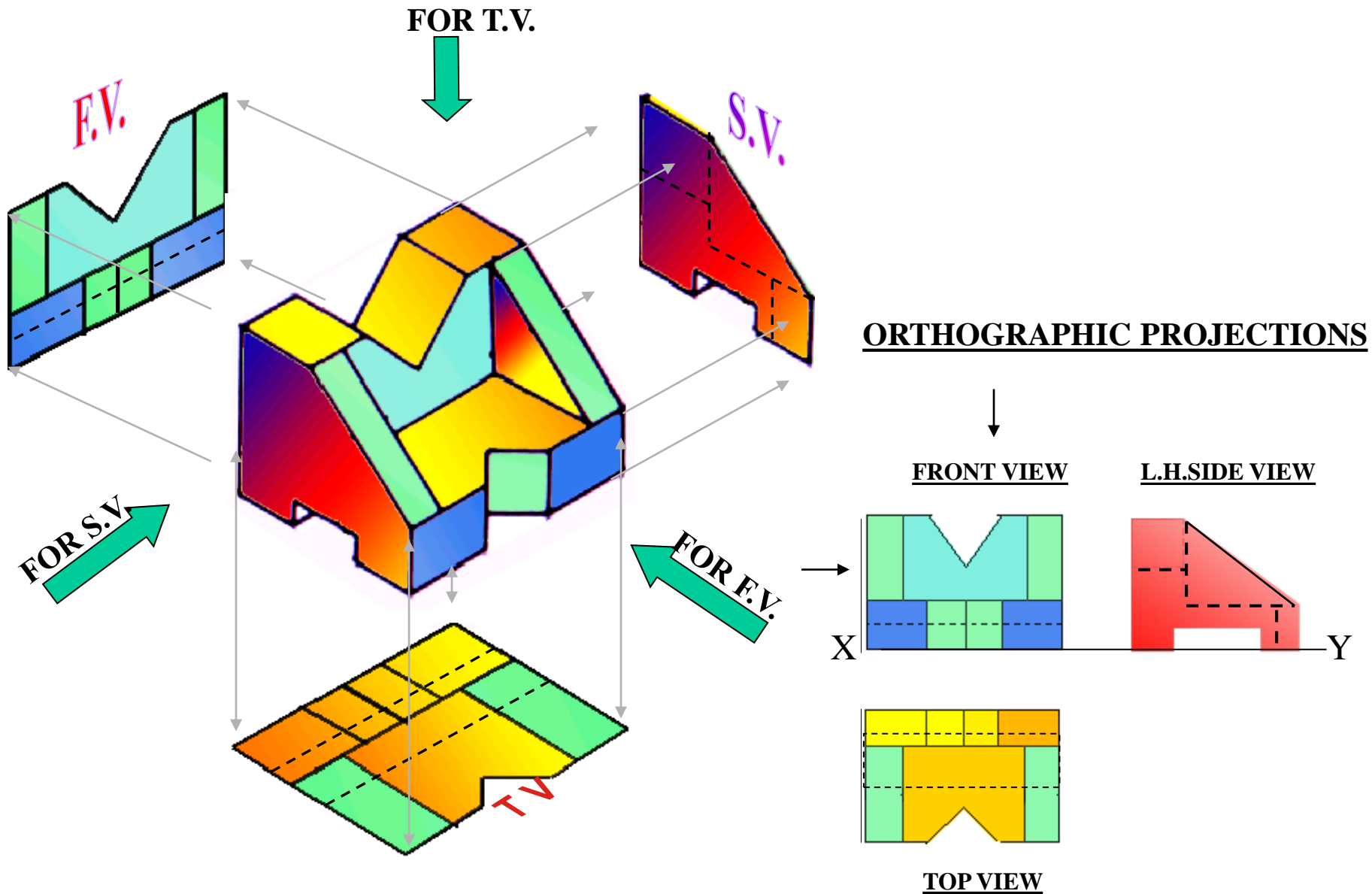
First Angle Projection (Example)



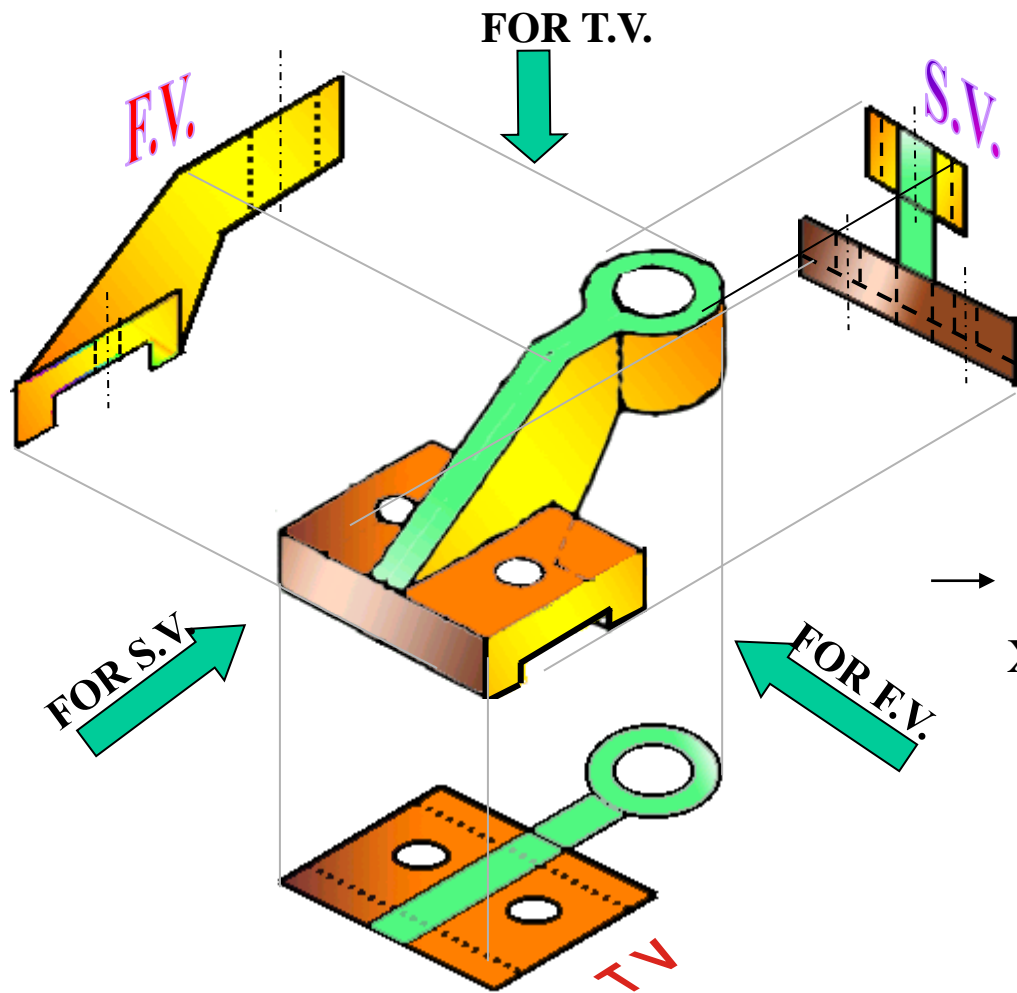
First Angle Projection (Example)



First Angle Projection (Example)



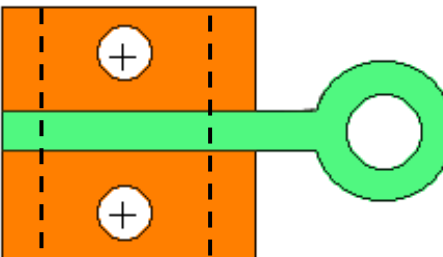
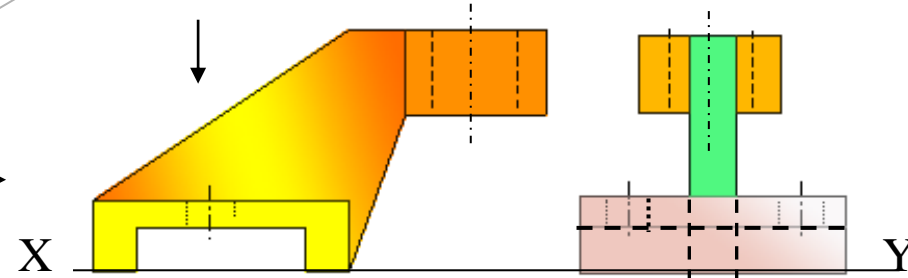
First Angle Projection (Example)



ORTHOGRAPHIC PROJECTIONS

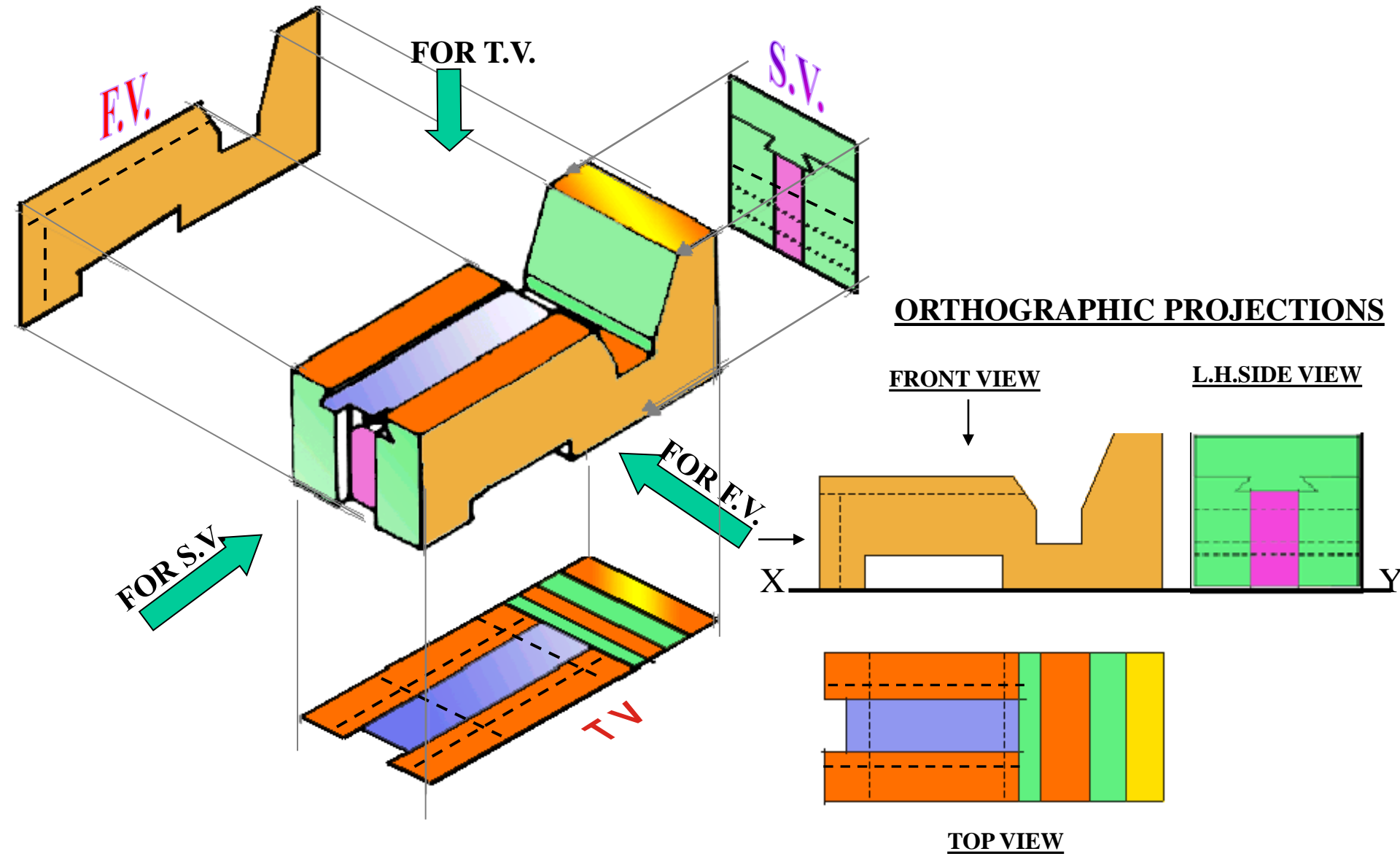
FRONT VIEW

L.H.SIDE VIEW



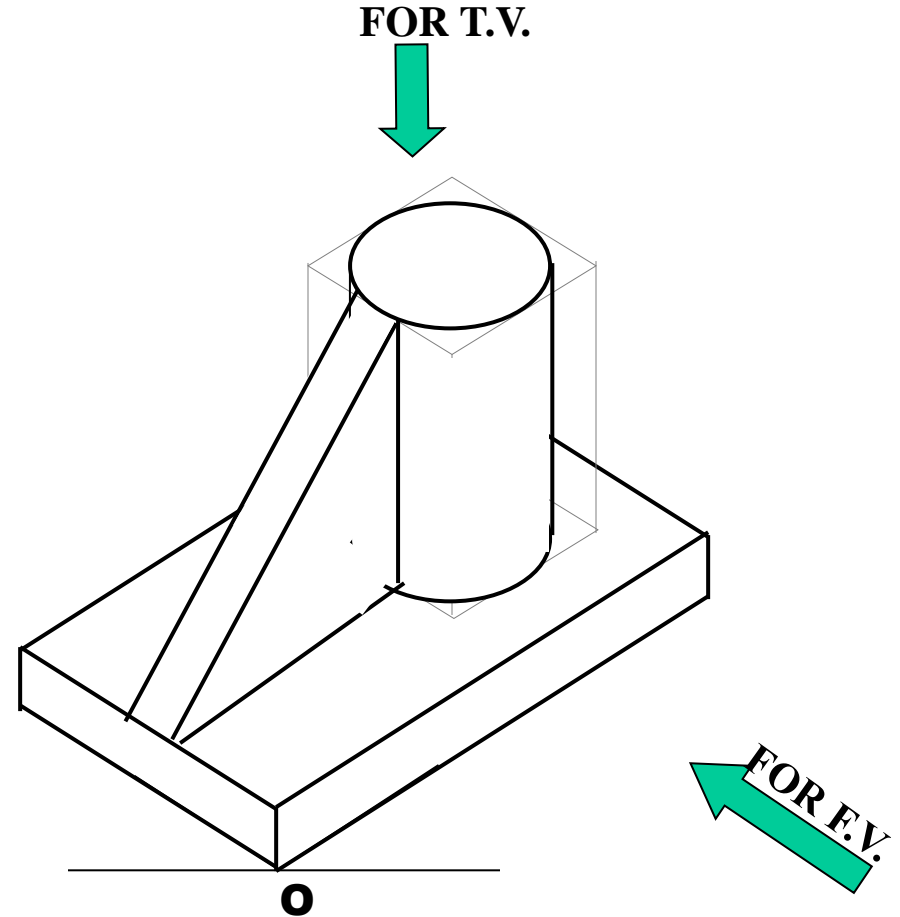
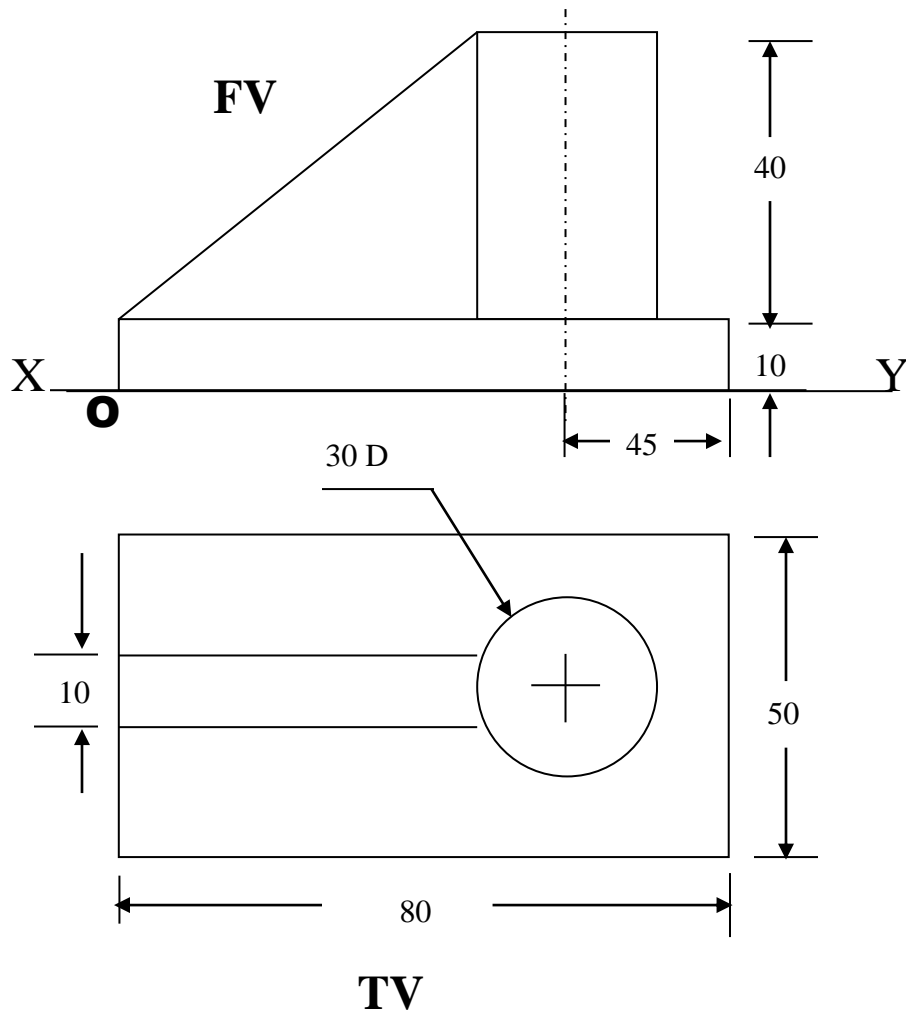
TOP VIEW

First Angle Projection (Example)



First Angle Projection (Example)

ORTHOGRAPHIC PROJECTIONS



Thank you