

1- Design Representation
a- Representation of Forms Using Drawing

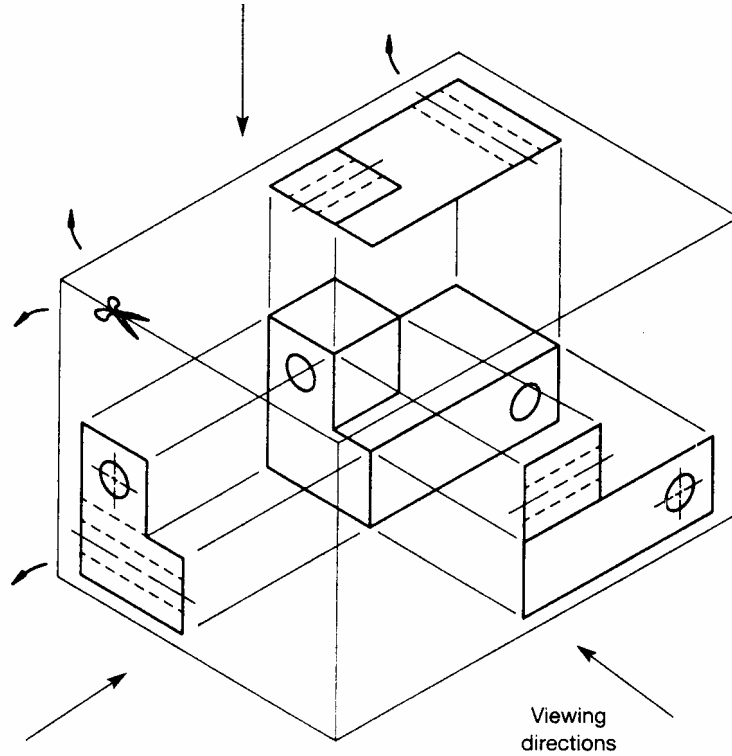


FIGURE 2.1
Orthographic
projection of a
simple shape.

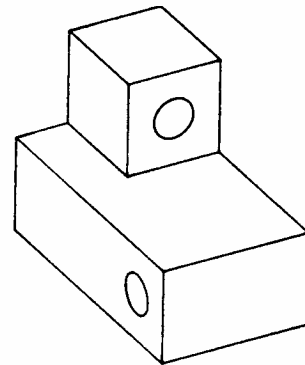


FIGURE 2.2
Parallel pictorial
projection of a
simple shape.

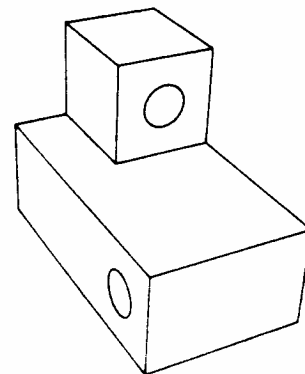


FIGURE 2.3
Perspective
projection of a
simple shape.

1- Design Representation

a- Representation of Structure Using Diagrams

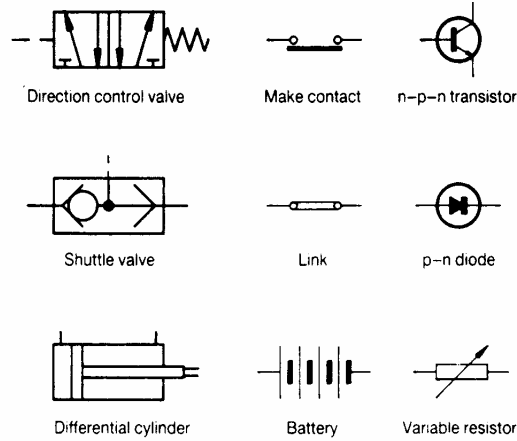


FIGURE 2.4
Examples of
electrical and fluid
power symbols.

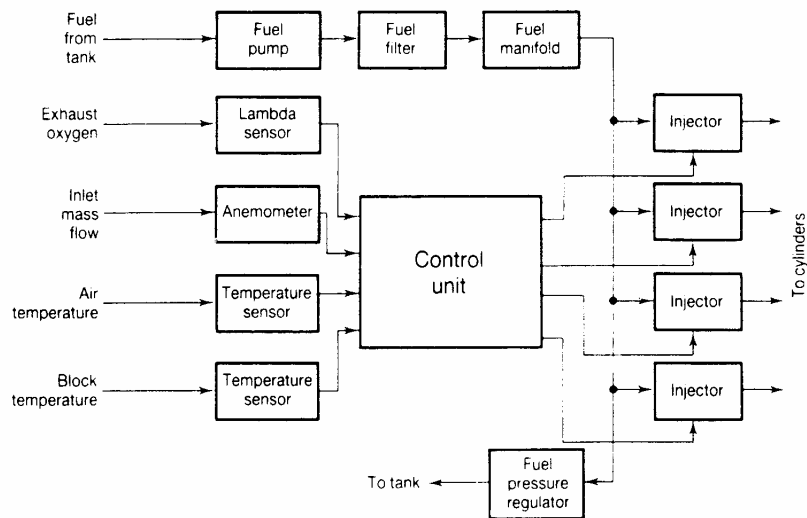


FIGURE 2.5
Example of a block
diagram (for a fuel
injection system).

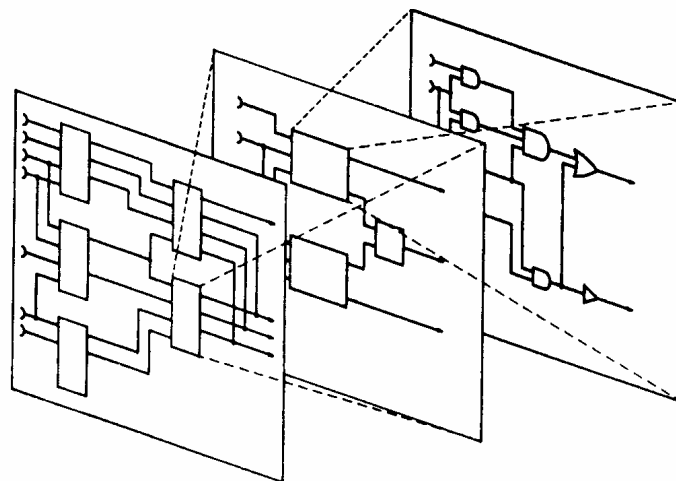


FIGURE 2.6
A hierarchical
arrangement of
diagrams.

2- Computer Representation of Drawing and Diagrams Computer-Aided Draughting

FIGURE 2.7
Geometric entity
types available on a
PC-based CAD
system.

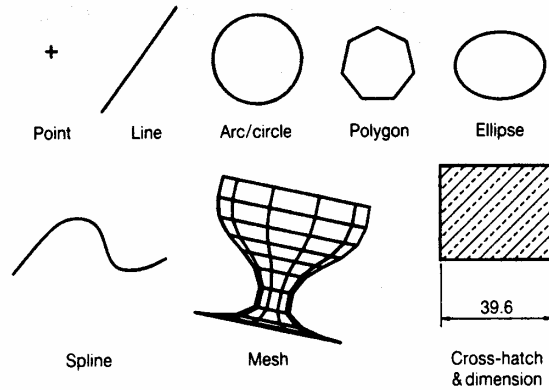


FIGURE 2.8
Methods for point
construction.

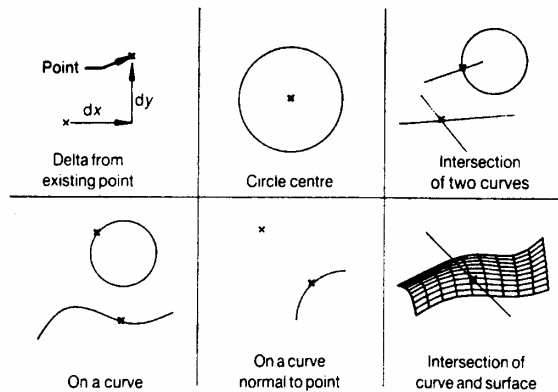


FIGURE 2.9
Methods for line
construction.

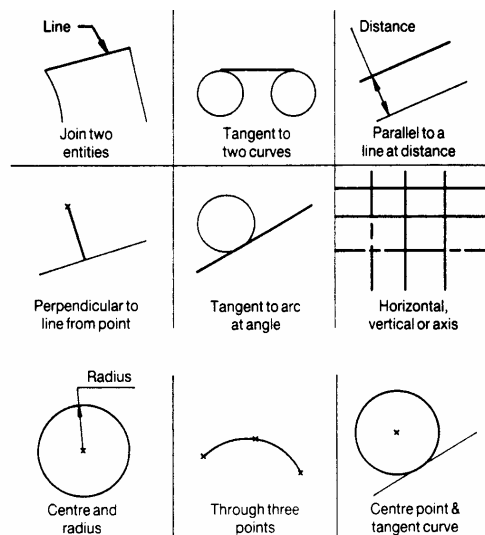
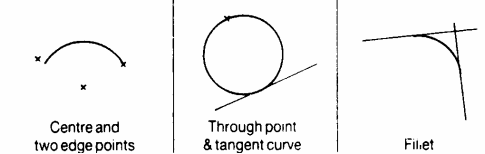


FIGURE 2.10
Methods for arc
construction.



3- Three-Dimensional Modelling Schemes
a- Wire-Frame Geometry

FIGURE 2.17
A wire-frame model
of a group of
buildings.

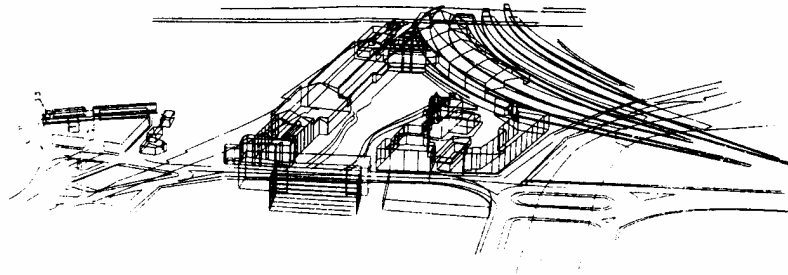
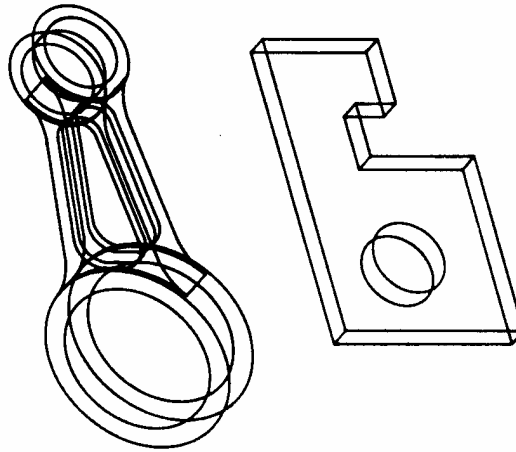


FIGURE 2.18
Shapes constructed
with 2.5D
representation.



3- Three-Dimensional Modelling Schemes

b- Surface Representation Scheme

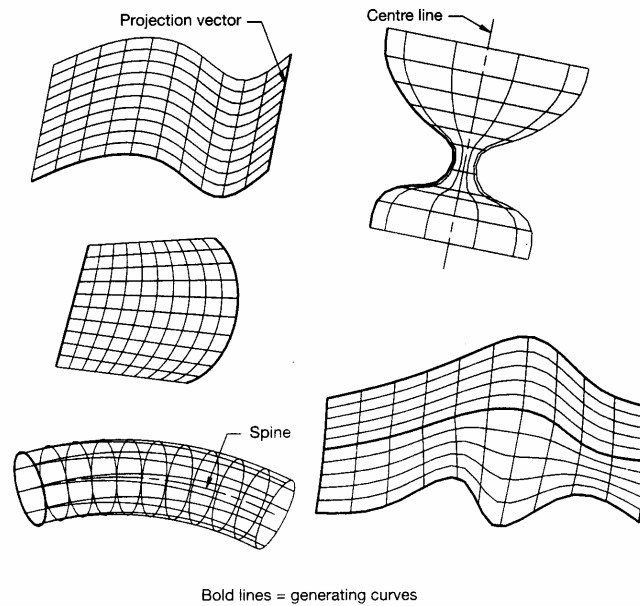


FIGURE 2.20
Examples of
surfaces defined
from curves.

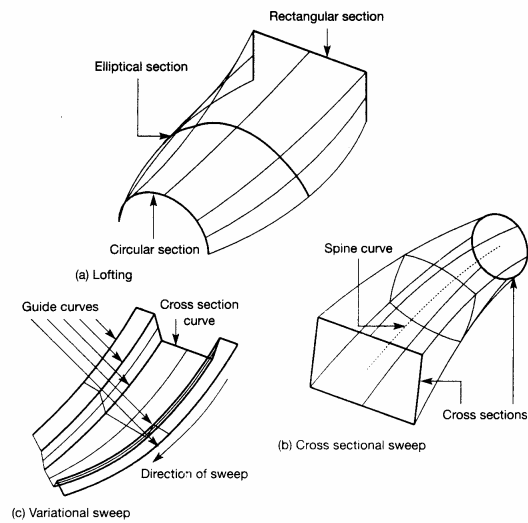


FIGURE 2.22
Examples of
skinned and lofted
surfaces.

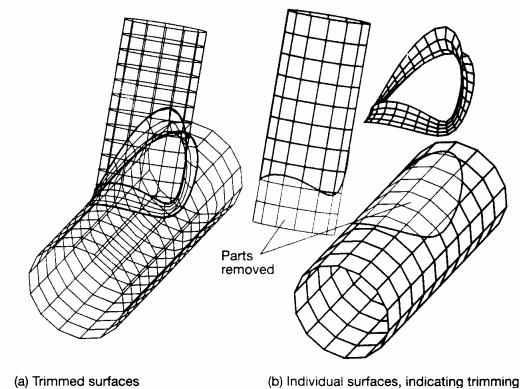


FIGURE 2.23
Filleted intersecting
cylinders
represented by
trimmed surfaces.

3- Three-Dimensional Modelling Schemes

c- Solid Modelling

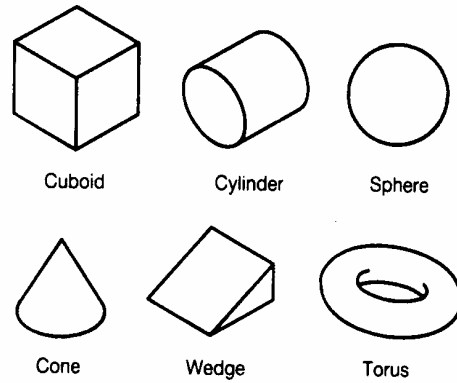


FIGURE 2.26
Primitives offered by
a solid modelling
system.

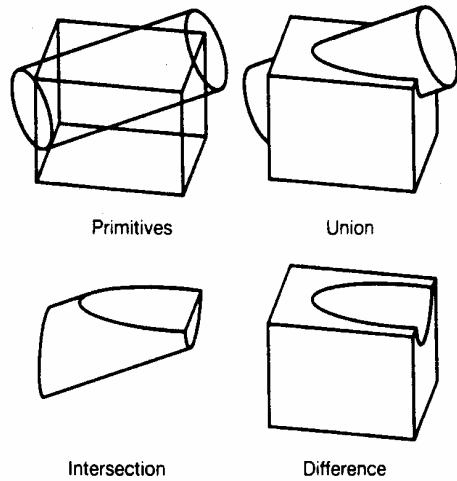


FIGURE 2.27
Boolean operations
on a block and
cylinder.

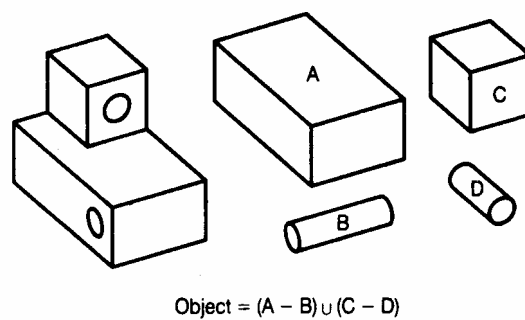


FIGURE 2.28
Constructive solid
model of a simple
block.

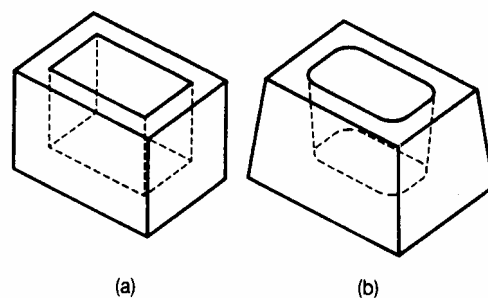


FIGURE 2.29
Solid models of a
simple block.

3- Three-Dimensional Modelling Schemes
c- Solid Modelling (Boundary Representation)

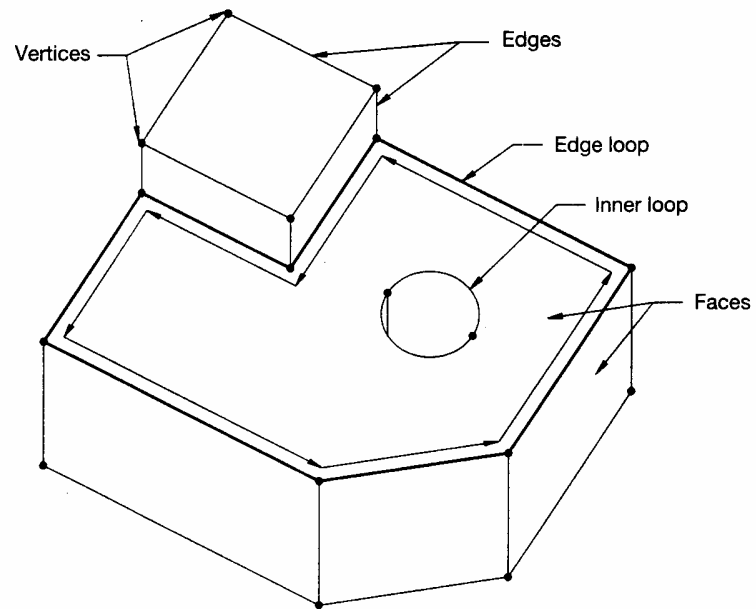


FIGURE 2.31
Elements of a
boundary
representation
model.