SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

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DEPARTMENT OF AUTOMOBILE ENGINEERING

19AUT303 – Additive Manufacturing and its applications

III YEAR / V SEM

UNIT – 3 LIQUID AND SOLID BASED ADDITIVE MANUFACTURING

Topic – Laminated Object Manufacturing

Laminated Object Manufacturing(LOM)

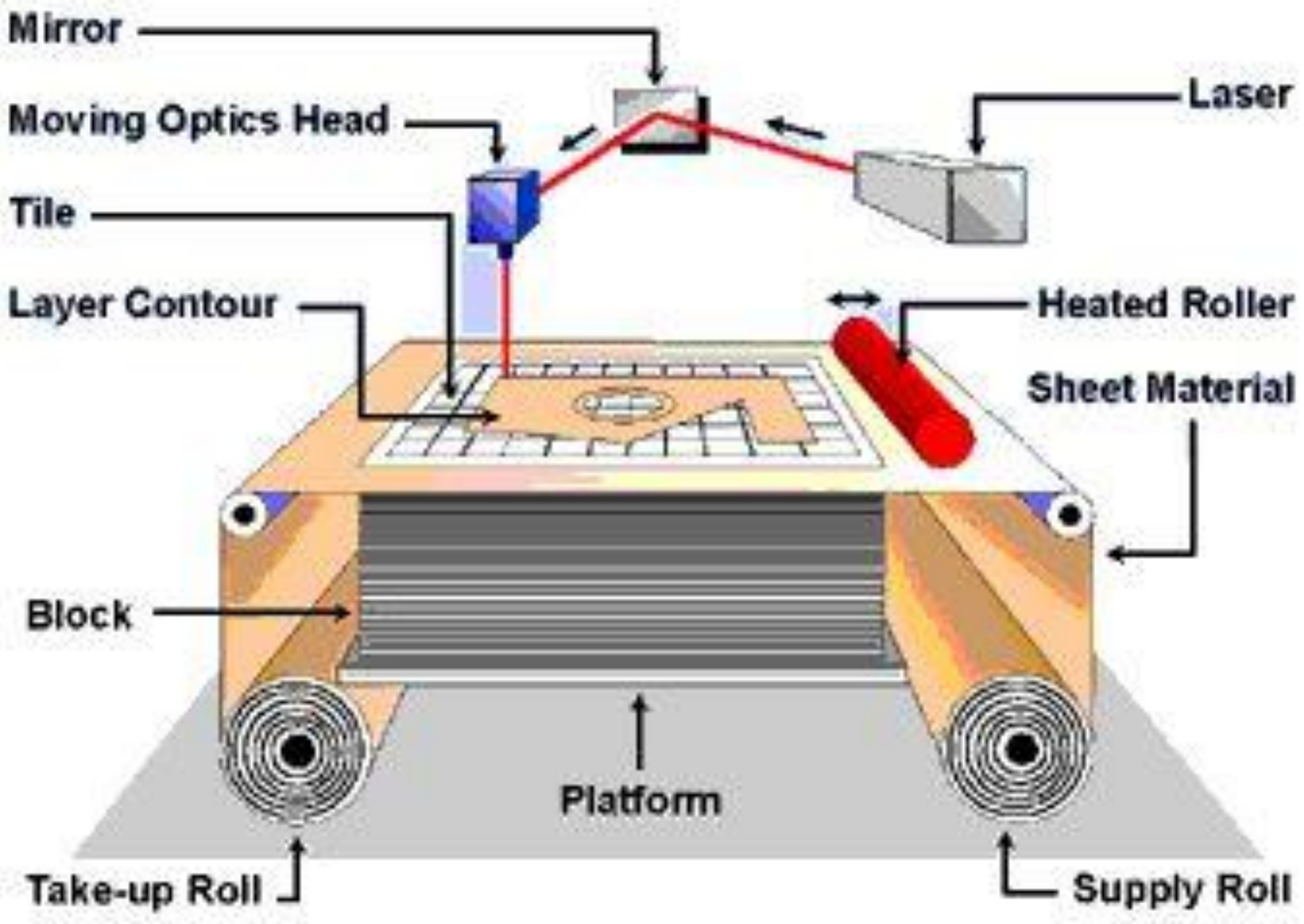
Definition

Laminated object manufacturing (LOM) is a rapid prototyping system originally developed by Helisys Inc.

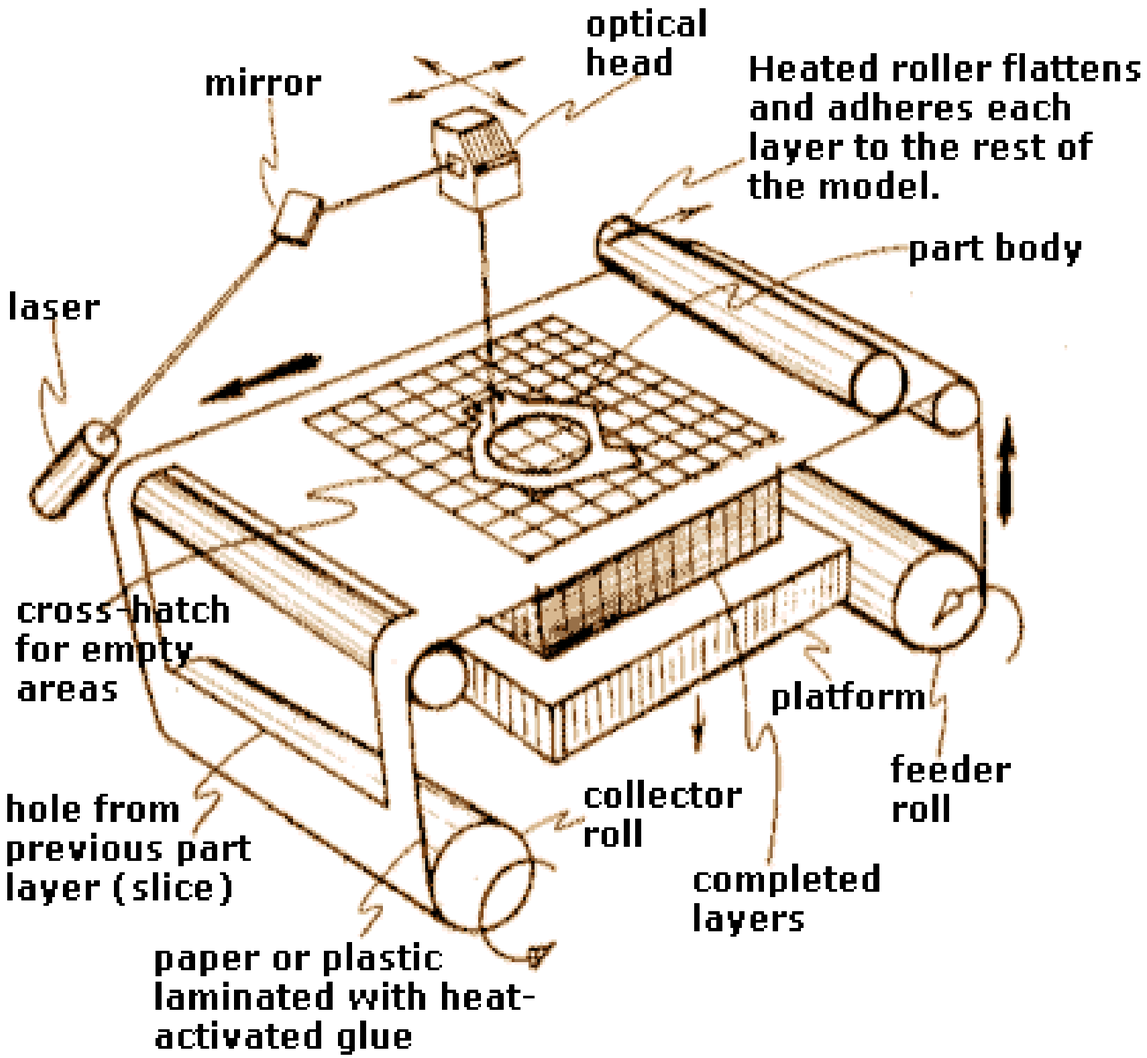
LOM technology uses adhesive-coated paper, plastic, or metal laminates as a 3D printing medium.

These sheets of material are glued together layer-by-layer and cut into shape using a knife or with laser cutting.

Working


Mirror
Moving Optics Head
Tile
Layer Contour
Laser
Heated Roller
Sheet Material
Block
Platform
Take-up Roll
Supply Roll

Working (Contd.,)



Working (Contd.,)

•It involved using paper material sheets, on which the layer geometry was created by cutting with a C02 laser, where each sheet of paper corresponded to a layer of the part.

•The layers are bonded together by gluing or adhesive bonding

•Support structures are not required since the part is easily supported by the previous solid sheets of material

Working (Contd.,)

•However, removal of the material which is not contained in the final part can be a problem.

•This was addressed by slicing the material to be removed and making it easy for removal.

•The LOM process in its original form no longer exists, however a number of processes based on sheet lamination using other building material (polymer sheets, metal sheets) using other cutting techniques (computer controlled knives) and bonding techniques (thermal bonding, ultrasonic welding, etc.) have evolved to further develop this class of AM processes.

Thank You