Additive Manufacturing: Standard Terminology for Additive Manufacturing--Coordinate Systems and Test Methodologies

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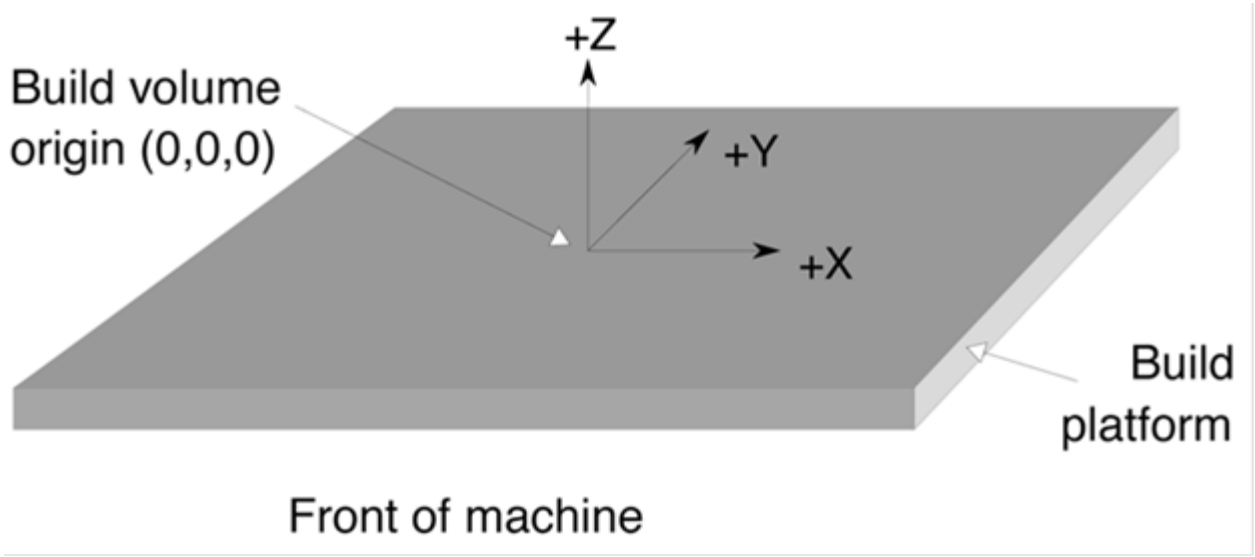
T.E.A.M.
Technician Education in Additive Manufacturing

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NSF

Build Platform

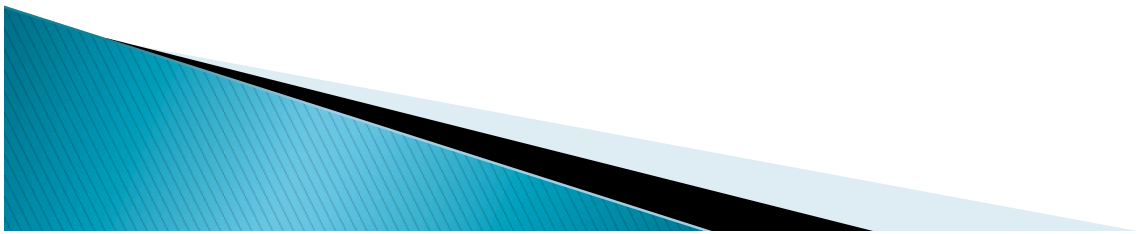
- n, any base which provides a surface upon which the build is started and supported throughout the build process



Generic (upward building) AM Machine/System

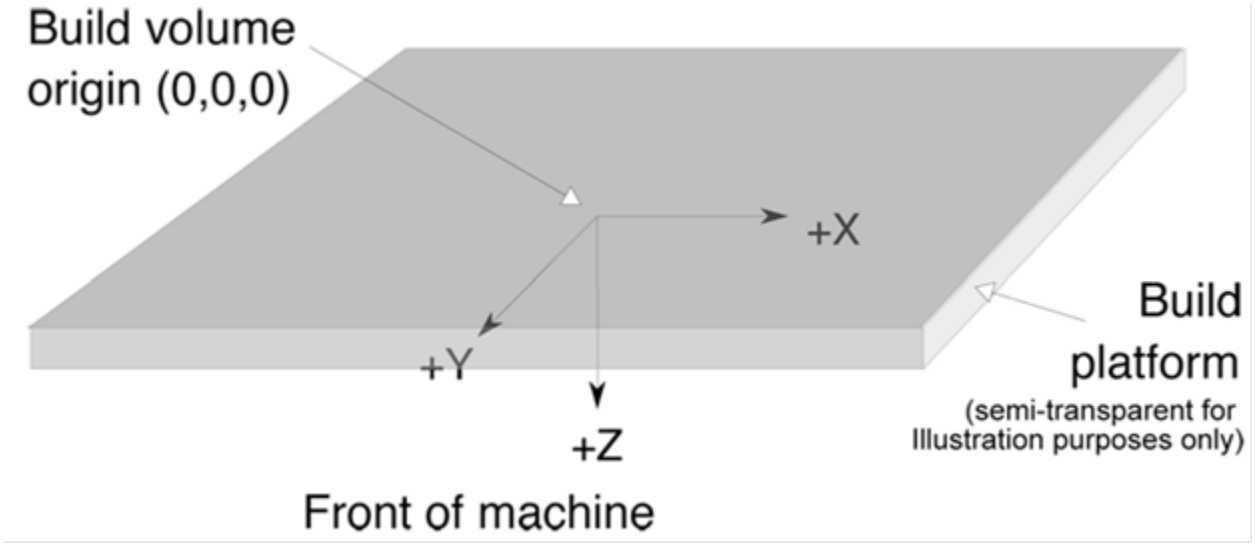
Build Surface

- n—area where material is added, normally on the last deposited layer which becomes the foundation upon which the next layer is formed.

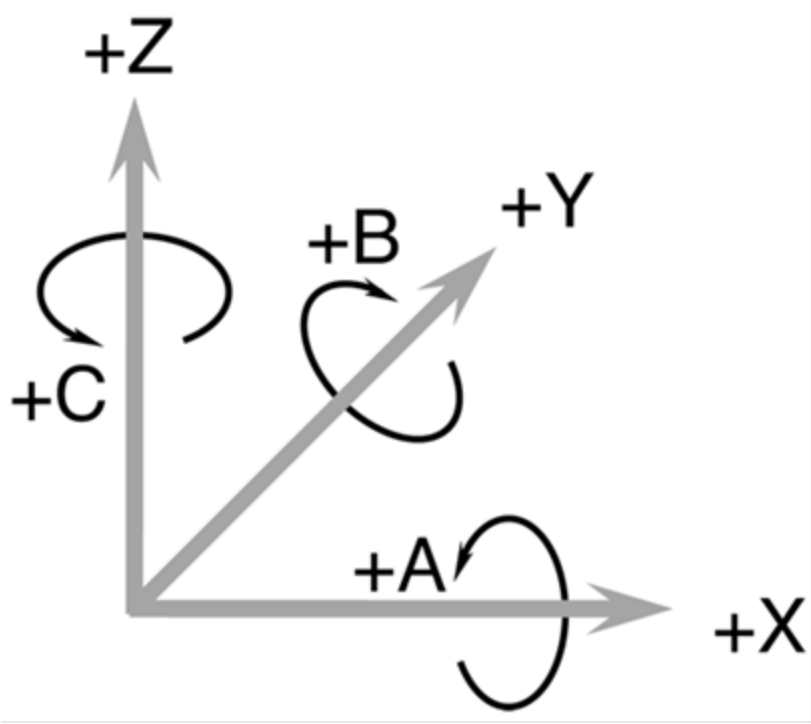


Machine Coordinate System

- n—a three-dimensional Cartesian coordinate system as defined by a fixed point on the build platform “with the three principal axes labeled X, Y,and Z, with rotary axes about each of these axes labeled A, B, and C, respectively”



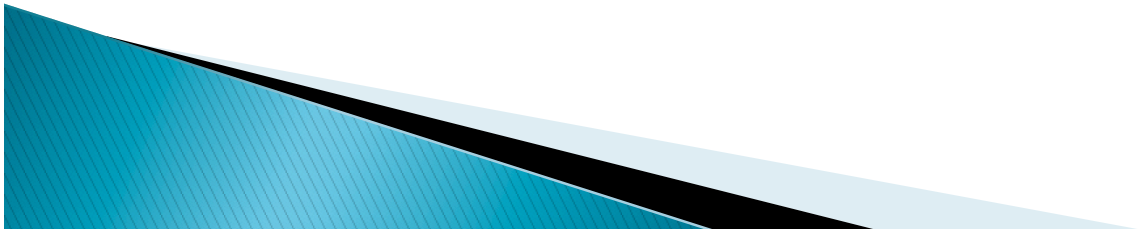
Machine Coordinate System (cont.)



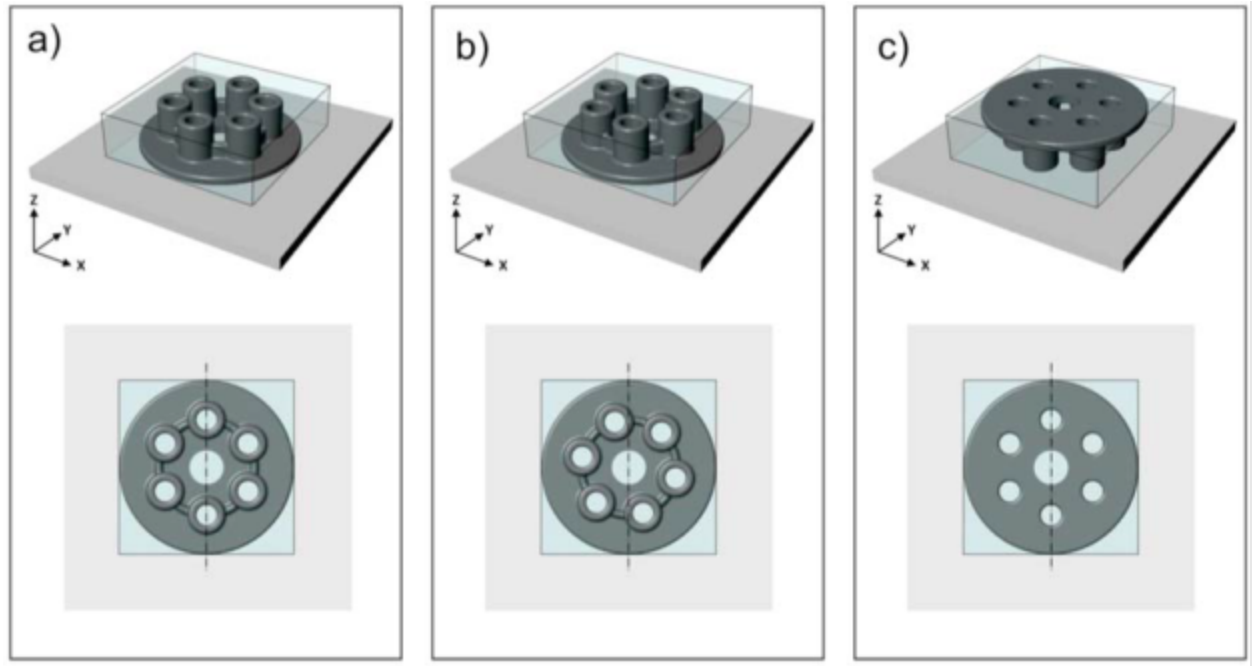
Right hand rule for Positive Rotation with reference to the Build volume origin

Part Orientation

- Origin: n—a designated reference point at which the three primary axes in a Cartesian coordinate system intersect. Synonyms: zero point, or (0, 0, 0) when using X, Y, and Z coordinates.
- X axis: n—of a machine, shall run perpendicular to the Z axis and parallel to the front of the machine.
- Y axis: n—of a machine, shall run perpendicular to the Z and X axes with positive direction defined to make a right hand set of coordinates.
- Z axis: n—of a machine, for processes employing planar layer wise addition of material, shall run normal to the layers.



Build Orientation



Initial Build Orientation

Questions??

