SWEP REPORT ON AUTODESK INVENTOR

In consideration of the time allotted and the period used for the theoretical, practical and simulation-based knowledge of 3D Design and Prototyping, I have come, to learn to the full harness of my knowledge, the usage of Autodesk Inventor as the main software for 3D (Three-dimensional) design which comprises of **PART, ASSEMBLY, DRAWING** and **PRESENTATION.**

PART

An Autodesk Inventor part model is a collection of geometrically and dimensionally related features that represent a physical object. A part file contains a single part. In Inventor, parts are combined to form assemblies. In an assembly, parts can be created in relation to the geometry and topology of parts already in place.

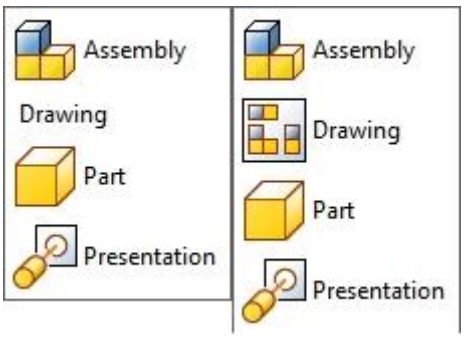

Fig 1.0: Descriptive Image of the Work Features of ***Autodesk Inventor***

ASSEMBLIES

An Autodesk Inventor assembly model is a collection of parts and subassemblies that function as a single unit. Parts and subassemblies are connected by assembly relationships. Relationships control component placement and DOF (Degrees of Freedom).

DRAWINGS

The drawing toolbar in the software helps import, draw and modify the 3D designed in the *Part* toolbar to form projections whether Isometric or Orthographic. It also contains tabs for *Environment, Annotations, and Add-Ins*.

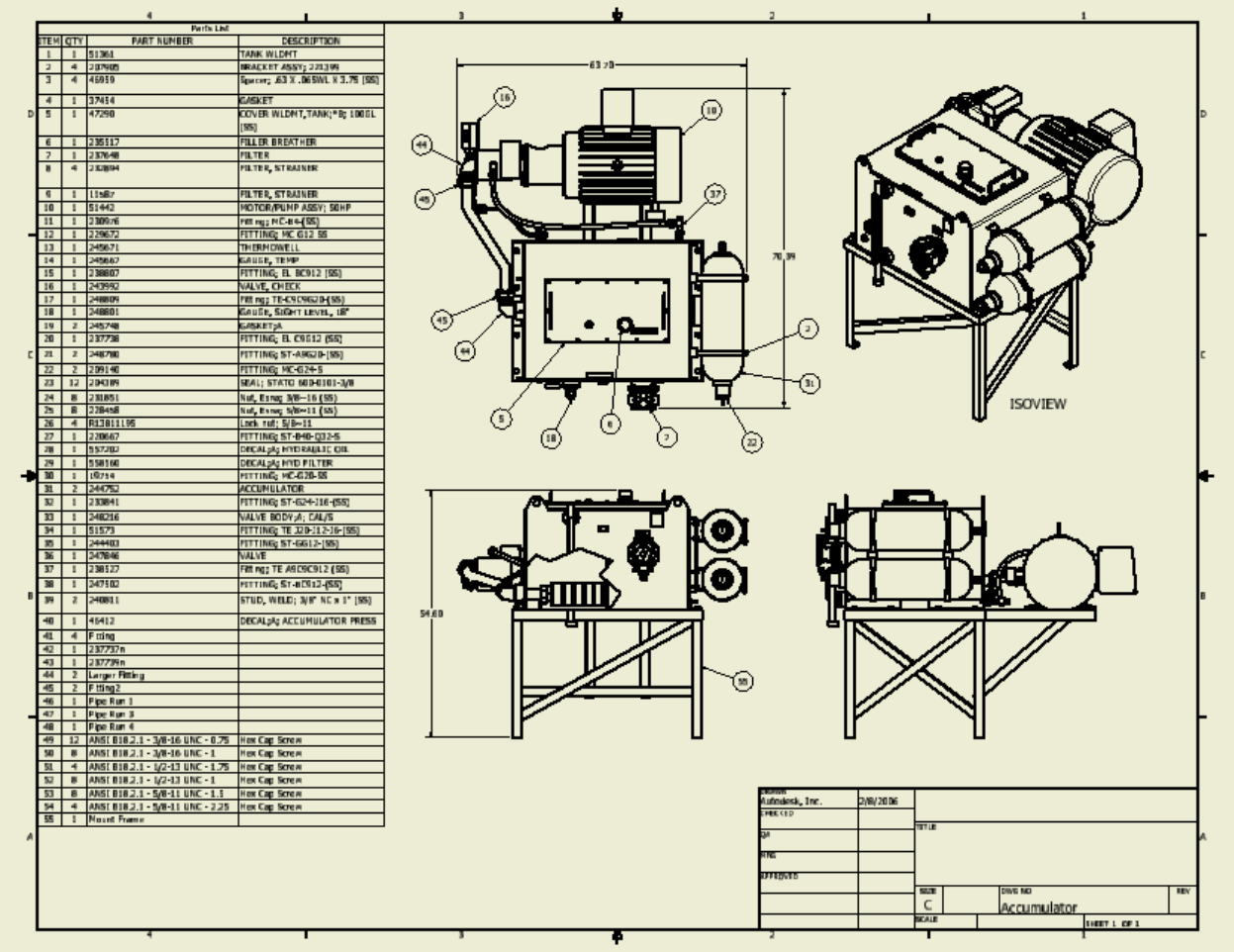

Fig 2.0: Typical dwg format of a Machine with attached list of Materials

PRESENTATION

Presentation work feature allows for insertion of an assembly file to create tweaks, trails, exploded views, raster images and snapshot views or animation to be extracted as video files.

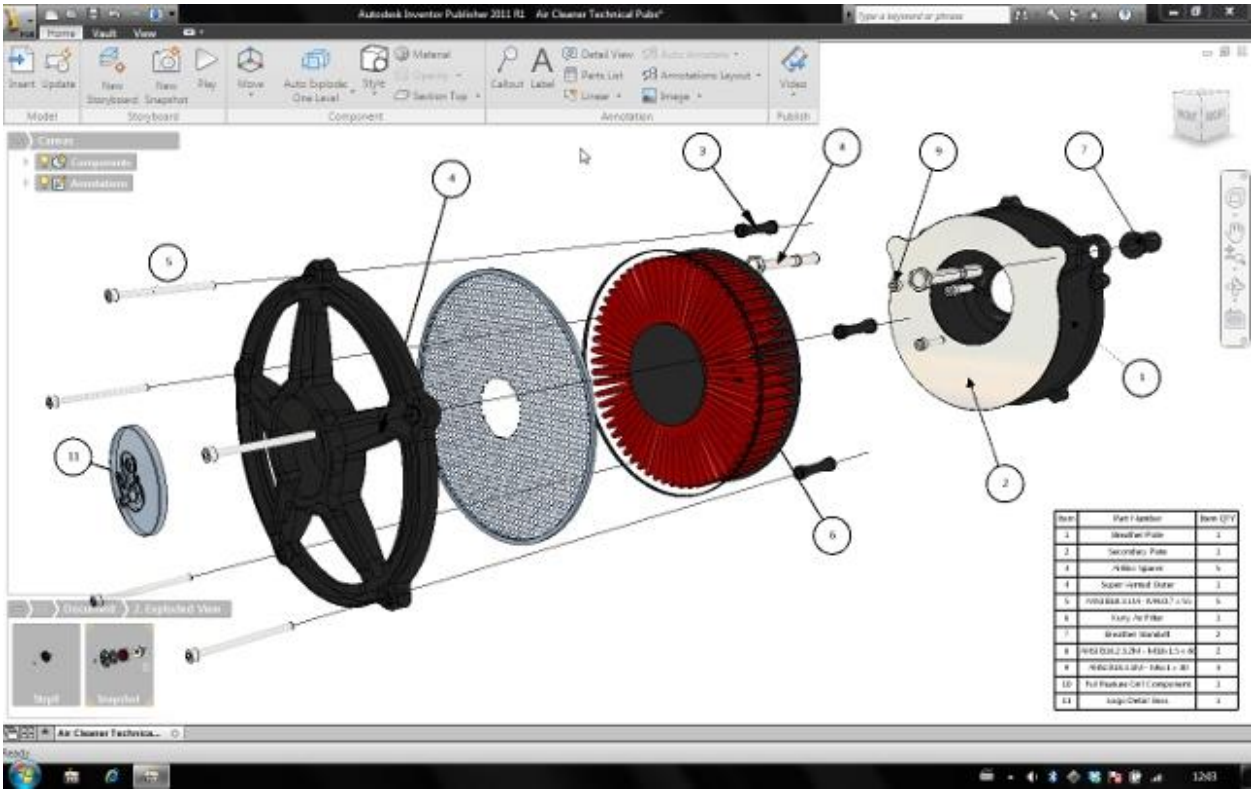

Fig 3.0: Exploded view of a simple Starting System of a Machine

TYPICAL DESIGNS CREATED DURING THE SWEP

Fig 4.0

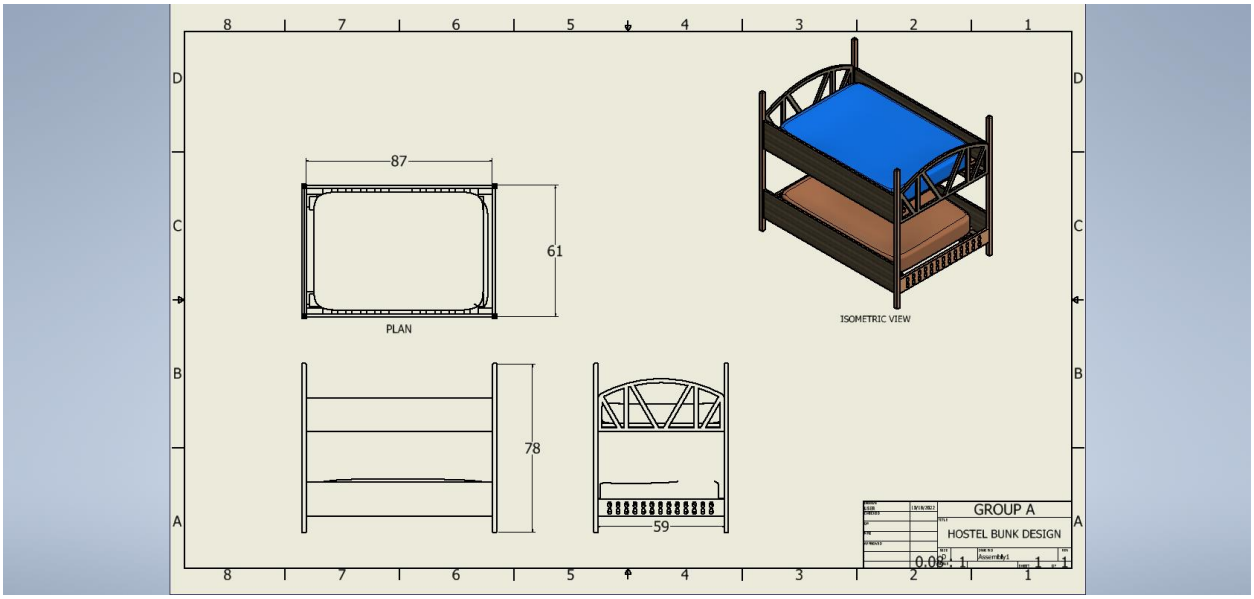

Fig 4.1