

Minimum to Manufacture Documentation Procedure

Electronic 3D solid geometry files are replacing drawings as the controlling documentation for part and assembly configuration. This transformation presents unique challenges for contract manufactures.

Manufacturing operations use both common information, such as standards and procedures and product specific information, such as BOM's and drawings to produce a product. Drawings document more than just the geometric specifications, for example material, tolerances, and finishing.

Minimum to Manufacture Documentation (MMD) recognizes the need to supply more information than just geometry description. This information must still be transmitted when using electronic 3D solid geometry files.

Following are some suggested guidelines for

- MMD is a drawing with associated geometry. It is recommended that the non-geometric information be stored in the CAD model as variables and shown on the drawing as associated values.
- Each part has its own drawing, this includes one for each mirrored parts. Family parts are detailed using a family table placed on a drawing of the generic part.
- Parts are shown as a standard 3-view projection. Acceptable scales are 1:1, 1:2, and 1:4. Broken views are acceptable for parts with disproportionate length to width dimensions.
- An isometric view should also be presented (shaded preferred), but may have its own scale.
- Tolerance requirements must be communicated either by standard (ex. ANSI Y14.5), by specific dimensions (ex ± 0.001), or by discussions with the program manager.
- Each drawing must include material, color, and finish specifications, if required.
- The Title Block must be filled out with a minimum of part name, part number and a revision date. This information must be referenced in all communications.
- All internal company standards that are referenced on the drawing must be included or translated on the drawing.
- Manufacturing and process notes should be carried on the drawing. For example locations of push out pins or part number identification location.
- Maximum width, height and depth dimensions should be shown and easily located.