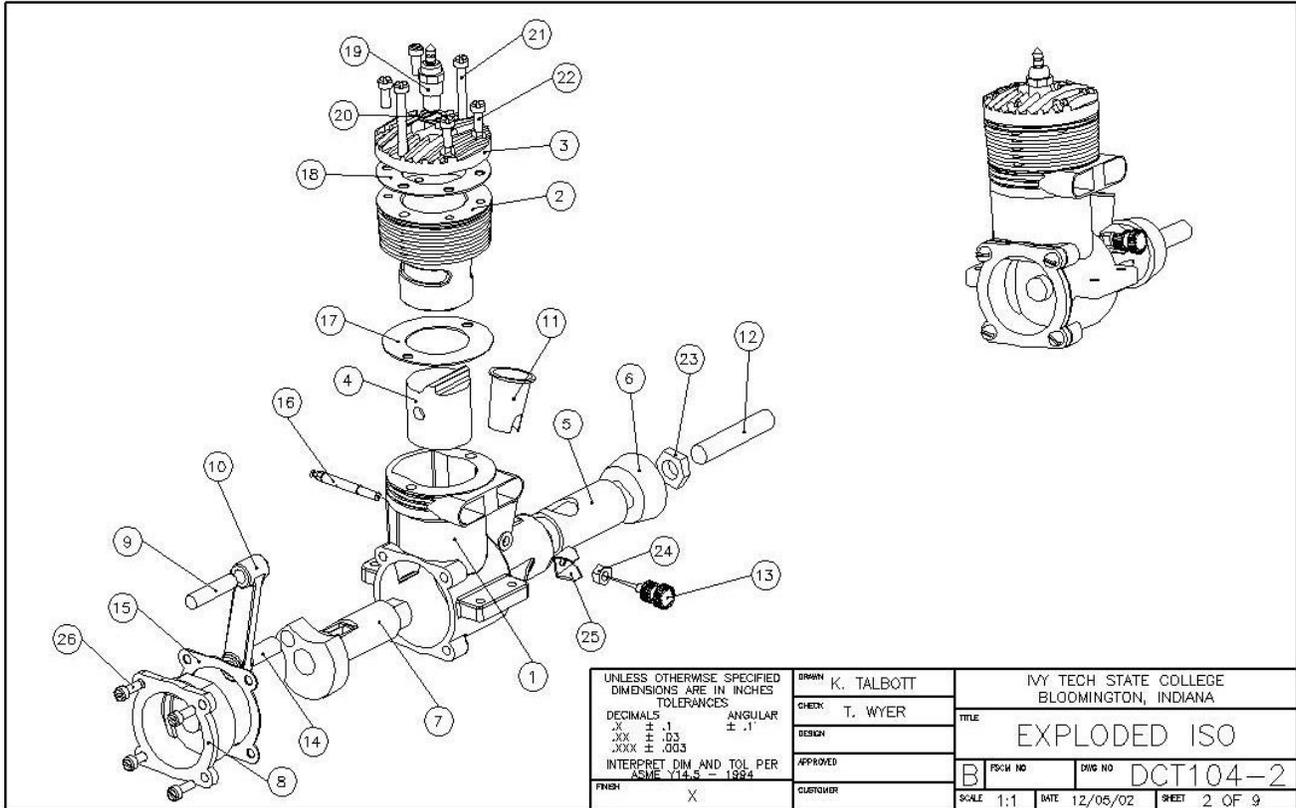


Name: _____

Coshocton High School
Computer-Aided Design

Blizzard Bag 2 – Working Drawings

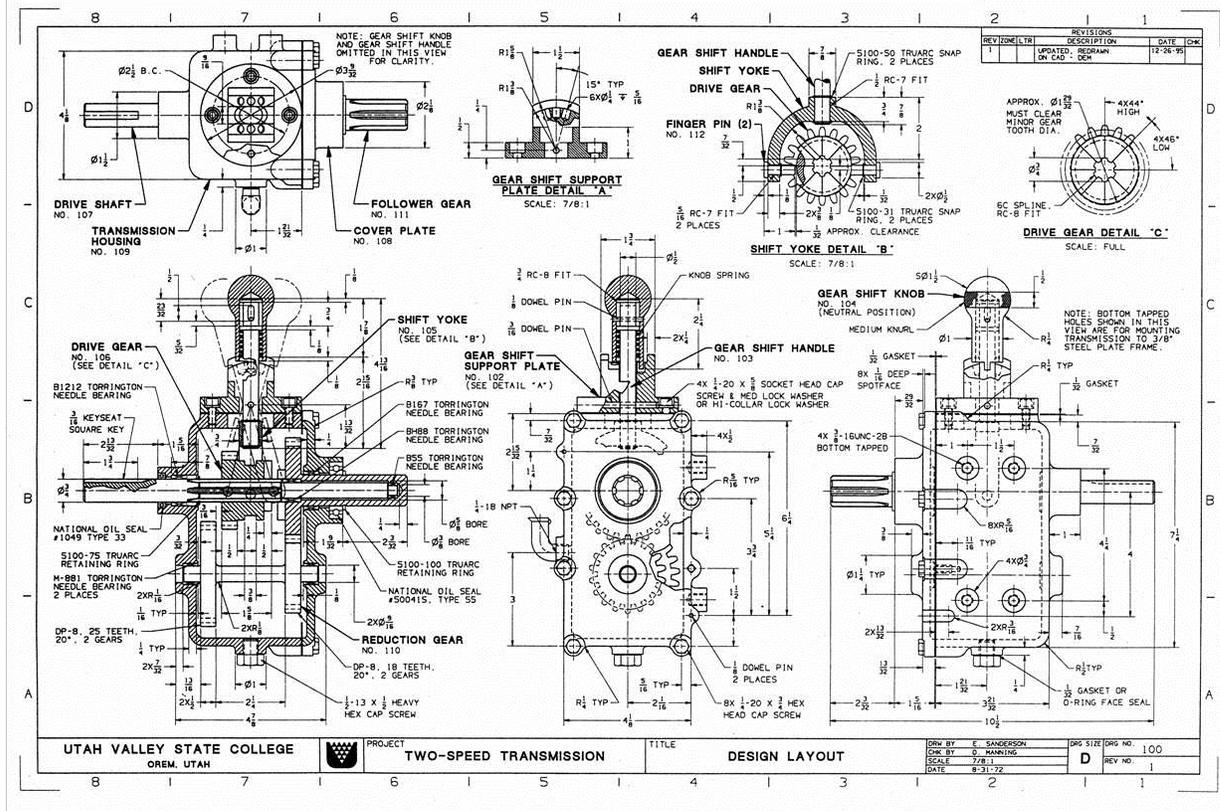


A working drawing is a scale drawing that serves as a guide for the construction or manufacture of something such as a building or machine. The complexity of the design determines the number and types of drawings.

Working drawings may be on more than one sheet and may contain written instructions called **specifications**.

Working drawings are the blueprints used for manufacturing products. Therefore, the set of drawings must:

- completely describe the parts, both visually and dimensionally
- show the parts in assembly
- identify all the parts
- specify standard parts.



A complete set of working drawings for an assembly include:

- detail drawings of each nonstandard part.

A **detail drawing** is a dimensioned, multiview drawing of a single part, describing the part's shape, size, material, and finish, in sufficient detail for the part to be manufactured based on the drawing alone.

- an assembly or subassembly drawing showing all the standard and nonstandard parts in a single drawing.

An **assembly drawing** shows how each part of a design is put together. If the design depicted is only part of the total assembly, it is referred to as a **subassembly**.

An assembly drawing normally consists of:

- All the parts, drawn in their operating position.
- A **parts list** or **bill of materials (BOM)** shows the detail number for each part, the quantity needed for a single assembly or name of the part, the catalog number if it is a standard part, and the company part number.
- Leader lines with balloons, assigning each part a **detail number**, in sequential order and keyed to the list of parts in the parts list.
- Machining and assembly operations and critical dimensions related to these functions.

- a bill of materials (BOM).

A complete set of working drawings must include a detailed parts list or bill of material. Based on ANSI standards, a parts list should be located in the lower right corner above the title block.

The information normally included in a parts list is as follows:

- Name of the part.
- A detail number for the part in the assembly.

- The part material, such as cast iron or bronze.
- The number of times that part is used in the assembly.
- The company-assigned part number.
- Other information, such as weight, stock size, etc.

□ a title block.

Title blocks are used to record all the important information necessary for the working drawings. The title block is normally located in the lower right corner of the drawing sheet.

Title blocks should contain the following:

- Name and address of the company or design activity.
- Title of the drawing.
- Drawing number.
- Names and dates of the drafters, checker, issue date, contract number, etc.
- Design approval, when subcontractors are used.
- Additional approval block.
- Predominant drawing scale.
- Federal supply code for manufacturers (FSCM) number.
- Drawing sheet size letter designation.
- Actual or estimated weight of the item.
- Sheet number, if there are multiple sheets in the set.

□ Scale and Tolerance Specs.

-The designations METRIC or SI appear in or near the title block to show that metric dimensions and scale are used on the drawing. A graphics scale can also be used, especially on mapping drawings.

-Tolerances are specified in a drawing using toleranced dimensions. For those dimensions that are not specifically toleranced, a **general tolerance note** is used.

IDENTIFY 3 items / mechanisms in your house that would require a working drawing for their manufacture.

1. _____

2. _____

3. _____