Tech Wars 2020 – Niagara County Community College

Competition Category: **2D Technical Drawing using CAD**
Level of Competition: **High School**
Event Coordinator: **Steven Maranto smaranto@clevehill.org**
Any questions email the event coordinator

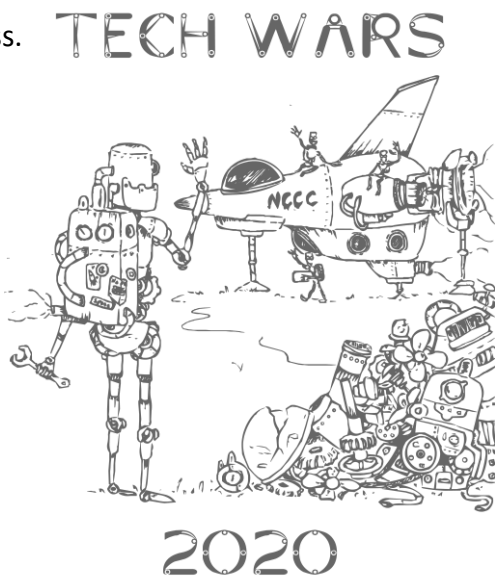
Description of the Competition:
This category allows for high school students to display their very best technical drawing. This category is for 2D CAD drawings. This year's drawing will be a specific design that is shown on the next pages. You are required to develop all the necessary views to represent the "Ejector Base" orthographically for production in a manufacturing setting. Drawings must be an orthographic projection/multi-view drawing front, top, and right side view minimum. Include detail views, sections views, auxiliary views, and partial views as needed to clarify details. This competition is a display of the students' ability to create "real world" technical drawings, while adhering to ANSI and ISO standards.

Judges will base their scores on: neatness, completeness, difficulty, ANSI, ISO standards followed, and mechanical CAD drawing skills.

Rules of Competition:
1. Limited to one entry per student.
2. Project must be a single student's work.
3. Students can utilize any software they choose, as long as the final submission is presented in proper 2D drawing format, with emphasis on orthographic projection, ANSI and ISO standards etc.
4. Design must be in third angle projection standard view arrangement.
5. Professional looking title block.
6. A complete drawing is required.
7. Student does not need to be present, it is a drop off project.

Scoring/Evaluation:
- Judges will review all projects on display.
- Judges will award points based on the size, completeness, difficulty, ANSI/ISO standards, and drawing skills.
- A perfect score will be 40 points.
- Judges will use scoring rubrics in the evaluation process.

WNYTEA
Western New York Technology Educators Association
Erie & Niagara Counties



2020 NCCC TECH WARS 2D COMPETITION DRAWING

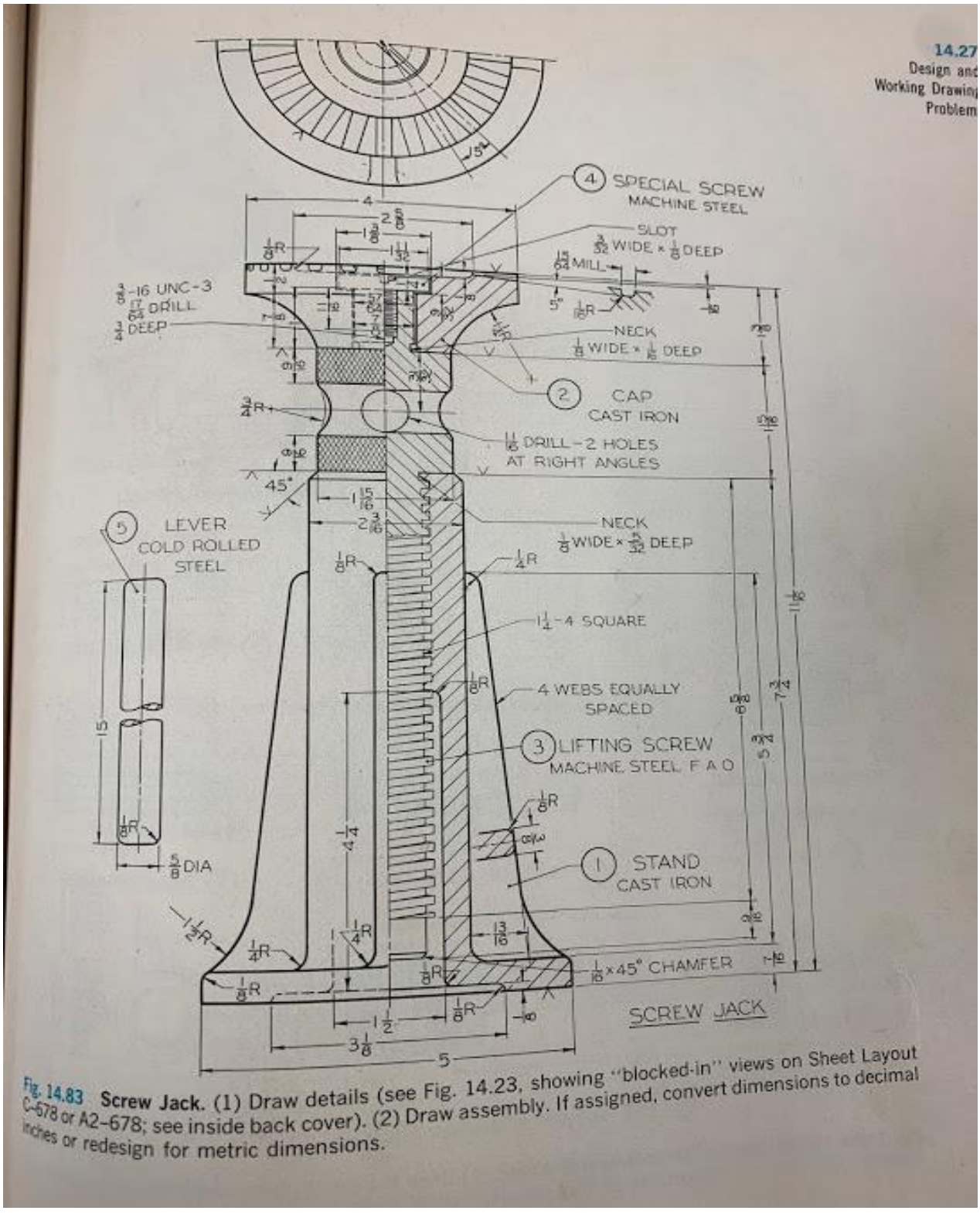


Fig. 14.83 **Screw Jack.** (1) Draw details (see Fig. 14.23, showing "blocked-in" views on Sheet Layout C-678 or A2-678; see inside back cover). (2) Draw assembly. If assigned, convert dimensions to decimal inches or redesign for metric dimensions.

40pt. Judging Rubric for: Technical Drawing Judges Score_____

Category: Traditional Mechanical 2D - CAD Drafting
Student Name: _____
School: _____
Project Description: _____

CRITERIA	ENTER SCORE HERE ⇓	9 – 10 pts	7 – 8pts	5 – 6pts	0 – 4pts
Project Size/ Completeness		Drawing is very detailed/complex. There are many features on the part. The drawing has no missing lines, dimensions, or other drafting features.	Drawing is somewhat detailed/complex. There are many features on the part. The drawing has few missing lines, dimensions, or other drafting features.	Drawing is not detailed/complex. There are few features on the part. The drawing has some missing lines, dimensions, or other drafting features.	Drawing is not detailed/complex. There very few features on the part. The drawing has many missing lines, dimensions, or other drafting features.
Degree of Difficulty		The drawing has advanced features such as additional views, auxiliary views, section views, detail views, or other complex features.	The drawing has an advanced feature such as additional views, auxiliary views, section views, detail views, or other complex features.	The drawing has no advanced features but has marginally complex features.	The drawing is below average with minimal detail.
Drawing Standards		All ANSI standards will are included where all drawings contain correct: orthographic projection, view selection, line weight and line style usage, dimensioning standards, use of scales, use of title blocks and borders and are neat with an excellent overall visual presentation. Appropriate text size is used for general text, titles, and notes.	Most ANSI standards are included in orthographic projection, view selection, line weight and line style usage, dimensioning standards, use of scales, use of title blocks and borders and are neat with an average overall visual presentation. For the most part, appropriate text size is used for general text, titles, and notes.	Some ANSI standards are included in orthographic projection, view selection, line weight and line style usage, dimensioning standards, use of scales, use of title blocks and borders. The visual presentation is below average. Some text size is appropriately used for general text, titles, and notes.	Many ANSI standards are missing in orthographic projection, view selection, line weight and line style usage, dimensioning standards, use of scales, use of title blocks and borders. Overall visual presentation is poor. Inappropriate text size is used for general text, titles, and notes.
Drawing Skills/ Neatness		The drawing(s) represents skills that reflect a thorough knowledge of CAD. Line weights and line styles are accurate. Geometry is accurately located. Drawing layout is aesthetically pleasing.	The drawing(s) represent an adequate knowledge of CAD. Line weights and line styles are mostly accurate and neat. Lines are mostly straight, square, and precise. Drawing layout is organized.	The drawing(s) represent a fair knowledge of CAD. Line weights and line styles are fairly accurate and neat. Lines are fairly straight, square, and precise. Drawing layout is average.	The drawing(s) represent little knowledge of CAD. Line weights and line styles are not accurate or neat. Lines are not straight, square, and precise. Drawing components are layed out haphazardly.