

2014 SkillsUSA Oklahoma Welding Fabrication Competition

Congratulations on your accomplishments thus far. Please review these instructions for the state competition in April. Now is the time to brainstorm, practice, and design your project to be built. Your team will have ~5 hours to complete your project. Keep in mind your team & project will be judged throughout your 5 hours. Manage your time wisely. **Please note a CD of your design must be ready to turn in at orientation. (See items supplied by teams)**





- **Project Theme: “Portable Welding Cart”**

Portable Welding Cart for MIG/Flux Cored Welding Machine



- Cart must be designed to fit portable 115-120 volt MIG Welders such as Lincoln Power MIG 140, Millermatic 140, Hobart Handler 140, Etc.
- Can be designed with or without gas cylinder rack.

- **Material Supplied by Committee**

- 4 ea = 4' of 1" x 1" x 3/16" angle iron
- 2 ea = 4' of 10 ga x 1" x 1" square tubing
- 2 ea = 10 ga x 12" x 24" mild steel plate
- 2 ea = 3/16" x 12" x 24" mild steel plate
- 2 ea = 4' x 5/8" solid round steel bar
- 2 ea = 8" solid rubber wheel for 5/8" axle
- 2 ea = 5/8" push on end cap for axle 
- 2 ea = 3" swivel caster wheel (to be welded on cart) 

- **Welding Consumables Supplied by Committee:**

- .035 Lincoln Electric SuperArc L-56 (AWS ER70S-6)
- 3/32" & 1/8" Lincoln Excalibur E7018 SMAW Electrodes
- 3/32" & 1/8" Lincoln 5P+ E6010 SMAW Electrodes

- **Minimum Project Requirements:**

- 3 SMAW E7018 Welds of 5" or greater (One 3F vertical up weld required)
- 3 SMAW E6010 Welds of 5" or greater (One 3F vertical up weld required)
- 3 GMAW Welds of 5" or greater (One 3F vertical up weld required)
- Minimum of 20" of exposed cut material using OFC process in total
 - Each exposed cut must be 5" or greater in length.
 - Unexposed cuts may be ground to prep for welding
- 80% of Total Weight of Material is required for project.
 - **50 bonus points for using 100% all materials supplied.**

- **Judging Categories:**
 - Safety
 - Welding Skills
 - Cutting Skills
 - Teamwork
 - Fabrication Accuracy
 - Blueprint minimum requirements
 - Title block
 - Proper Critical Dimensions
 - No tolerances are acceptable
 - Proper Welding Symbols
 - Proper Finishing Symbols
 - Proper views needed to fabricate the project
 - Written Test
 - Verbal Project Description of design

- **Items Supplied by Teams**
 - All Personal Protective Equipment (Including welding jacket, welding gloves, jeans without frayed ends, steel toed boots, welding helmet, safety glasses, face shields, etc.)
 - **A CD containing all electronic file(s) must be turned in at orientation: a (.pdf) file and if possible a (.dxf) file**
 - **(5)Printed 11"x 17" Copies of Project Print(s) : 1 set for team, 3 sets for judges, 1 set for chairman**
 - Teams must bring own hand tools (Including 4 ½" Grinder with stone grinding wheel only, chipping hammer, wire brush, file, center punch, pliers/welpers, tip cleaners, soap stone/marker, scribe, tape measure, combination square, striker, compass)
 - Note: Only one grinder per team allowed
 - No templates may be used
 - One-page, typewritten resume for each team member

- **Tools Supplied by Committee to each team:**
 - Welding Machines
 - Lincoln Electric POWER MIG 350MP GMAW and SMAW
 - Note: Only one welding machine per team
 - **One 4 ½" X .045 cut off wheel** will be provided (Be sure to bring your own backing flange and nut to mount on grinder)
 - Environmental Equipment
 - Built in system supplied
 - Harris Calorific OFC Torches
 - Note: Only one torch per team
 - Materials from Bill of materials

- **Other Information**
 - This year we are providing a single cut off wheel. Be sure to designate the OFC cutting areas on your prints to allow the judges an opportunity to score the correct areas. (Note: Do not file or grind your OFC cuts; 0 points will be given for this infraction.)
 - When fabricating, sometimes parts are not supplied with the correct dimensions. If the dimensions are different than your prints, “on the job” corrections will be made with no penalty. Be creative with your designs but be aware of your time constraints. You will likely lose more points for not finishing with a very unique design than finishing on time with a simple design.
- **Safety**
 - Face Shields must be worn while grinding
 - Helmets or oxyacetylene goggles must be worn while cutting
 - Welding jackets must be worn while welding
 - Safety glasses must be worn at all times
 - Grinding sparks on the welding equipment or other people will result in a deduction of points