

**2001 State Competition**  
**FFA Agricultural Mechanics Contest**  
**University of Missouri**  
**50 points**

**Contestant #** \_\_\_\_\_  
**Contestant Name** \_\_\_\_\_  
**Chapter** \_\_\_\_\_

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## ARC WELDING

**Problem:**

Weld the pipe to the plate provided so that the pipe will be able to hold water

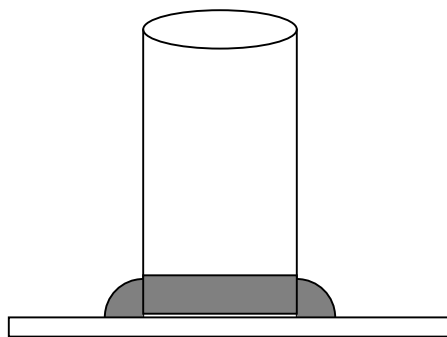
**Materials:**

1- 1/4" x 4" x 4" metal plate. 1-2" x 3" pipe

Appropriate electrode(s) selected from those in the welding booth. 1 – Firebrick to rest metal against.

**Directions:**

- Prepare the metal, grinding, cleaning, etc.
- Secure the metal.
- Select electrode from the Contest Official and set welder amperage.
- Have the Contest Official record the type of rod and welder amperage.
- Position metal as shown.
- Tack as needed.
- Perform weld, welding on outside of pipe only.
- Using your pliers, hand your weld to a contest official. They will cool your metal.
- Put contestant number on the backside of the welded plates and on this sheet.
- Turn in work and this sheet.



\*Welder Number/Name \_\_\_\_\_

\*Amperage setting \_\_\_\_\_

\*Rod number \_\_\_\_\_

\*Note: A contest official must record this information.

## Evaluation Score Sheet

<b>Points</b>		
<b>Evaluation Item</b>	<b><u>Possible</u></b>	<b><u>Earned</u></b>
Pipe positioned properly, centrally	5	_____
Proper selection of electrode	5	_____
Correct welder amperage (correct arc length)	5	_____
Distortion	5	_____
Weld appearance (temperature, width, and face)	5	_____
Correct Number of Passes	5	_____
Weld passes the 600 psi pressure test	10	_____
Points from identification and problem solving	10	_____
<b><u>Improper Safety clothing and supplies</u></b>	<b>-40</b>	_____
Total -----	50	_____

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## ARC WELDING PROBLEM SOLVING

1. Which of the following electrodes has the highest tensile strength?
  - a. rod 1a
  - b. rod 1b
  - c. rod 1c
  - d. rod 1d
2. Which of the following lenses are appropriate for MIG welding?
  - a. lens 2a
  - b. lens 2b
  - c. lens 2c
  - d. lens 2d
3. While arc welding you are having trouble striking an arc, which of the following controls should you adjust?
  - a. knob/item 3a
  - b. knob/item 3b
  - c. knob/item 3c
  - d. knob/item 3d
4. Which of the following electrodes should be used to weld the piece of metal labeled #4?
  - a. rod 4a
  - b. rod 4b
  - c. rod 4c
  - d. rod 4d
5. What is the rated duty cycle of welder #5
  - a. 40%
  - b. 25%
  - c. 20%
  - d. 35%
6. Note the MIG welder tagged #6. Identify the knob that adjusts amperage.
  - a. knob/item 6a
  - b. knob/item 6b
  - c. knob/item 6c
  - d. knob/item 6d

