

Name _____ School _____ Contestant Number _____

**2016 Wyoming State FFA CDE
Agricultural Technology and Mechanical Systems
Structural Systems – Welding Skill**

You are currently enrolled in courses at Tulsa Welding School, and you are completing an internship program that emphasizes the welding trades. To satisfy this requirement, you have become employed with D&P Cattle Company out of Cheyenne, a well-established cattle operation in Southeastern Wyoming. The manager has decided that to best meet your educational needs, you will be building and installing new cattle guards on the property. Before starting this project the manager has asked that you practice joining pieces similar to what you will be expected to join on the cattle guards.

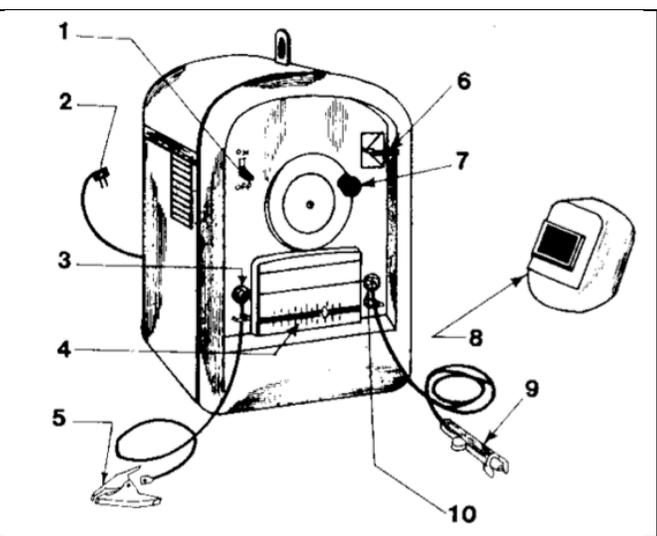
Using the metal provided, weld a continuous pass on both sides of the pipe perpendicular to the cross member of the cattle guard according to the example provided.



Using the E7018 1/8" diameter electrodes provided, complete the appropriate welds. Do not adjust the polarity.

Using the word bank provided, identify the following:

| | | | | | | | | | | | |
|--|----------------------------------|-------------------------|------------------|-------------------------------|------------|------------------------------|---------------------|----------------------|----------------|---------------------------|------------------|
| 1. J – Switch | 6. H – Polarity Switch | | | | | | | | | | |
| 2. I – Power Cord | 7. A – Amperage Adjustment | | | | | | | | | | |
| 3. E – Ground Cable Terminal | 8. G – Helmet | | | | | | | | | | |
| 4. B – Amperage Output indicator | 9. D – Electrode Holder | | | | | | | | | | |
| 5. F – Ground Clamp | 10. C – Electrode cable Terminal | | | | | | | | | | |
| <table border="0"> <tr> <td>A - Amperage Adjustment</td> <td>F – Ground Clamp</td> </tr> <tr> <td>B - Amperage Output Indicator</td> <td>G – Helmet</td> </tr> <tr> <td>C - Electrode Cable Terminal</td> <td>H – Polarity Switch</td> </tr> <tr> <td>D - Electrode Holder</td> <td>I – Power Cord</td> </tr> <tr> <td>E - Ground Cable Terminal</td> <td>J – Power Switch</td> </tr> </table> | | A - Amperage Adjustment | F – Ground Clamp | B - Amperage Output Indicator | G – Helmet | C - Electrode Cable Terminal | H – Polarity Switch | D - Electrode Holder | I – Power Cord | E - Ground Cable Terminal | J – Power Switch |
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The welding rod used in this skill is the E7018. Using the reference chart provided answer the following.

1. What is the tensile strength of the rod? 70,000 PSI
2. What welding position is this rod designed for? All Flat Horizontal Overhead
(Circle the most correct answer)

| | |
|--|--------------------------------|
| | A- Electrode |
| | B- Tensile Min. (In PSI) |
| | C- Position |
| | D- Type of Coating and Current |

| Criterion | Points Possible | Points Earned |
|--------------|-------------------|---------------|
| Wiring skill | 15 | |
| Questions | 12 (1 point each) | |
| Safety | 3 | |