



Welding Theory

Table of Contents

- 1. Introduction to Daihen**
- 2. Safety**
- 3. General Theory**
 - a. Basic Definitions**
 - b. Common Terms (including polarity)**
 - c. Principles of Operation (equipment layout)**
 - d. Transfer Modes w/Pulse**
 - e. Advantages and Disadvantages (vs. TIG, Stick, Pulse, Short)**
- 4. Equipment**
 - a. Inverter vs. Rectifier and IGBT vs. SCR (size differences/heat)**
 - b. Duty Cycle**
 - c. Daihen Power Sources**
 - d. Physical Equipment (wire feeder, torch, drive rolls, technique, basic set-up)**
- 5. Shielding Gas**
 - a. Different Gasses**
 - b. Combinations**
 - c. Penetration Patterns**
- 6. Materials**
 - a. Electrode (classification, S3 vs. S6, mild steel chart)**
 - b. Chemistry**
- 7. Variables**
 - a. Stick Out**
 - b. Voltage and Bead Shapes**
 - c. Torch Angles**
- 8. Basic Welding Symbols**
- 9. Basic Definitions**
- 10. Daihen Differences (Synchro-short pulse, short arc control, pulse breakdown, EN and AC modes)**
- 11. Troubleshooting**