AMADA WELD TECH INC.

Laser Welding Training Program

(Day One)

Module	Title	Learning Objectives
	AMADA WELD TECH INC.	**OVERVIEW**
Introduction	Overview of Laser Welding	Describe the laser and how it works. Power Density Comparison, Laser Welding Features, & Micro-Welding Applications
Module 1	Laser Welding Design	Materials-Selection & laser sizing, Joint Geometry & Fit-up Guidelines, Tolerances, Tooling, & Design Rules
Module 2	Laser Welding Equipment	Integration Overview: Laser – Delivery Fiber – Focusing optics - Motion
Module 3	Laser Welding Parameters	Peak Power, Pulse Width, & Pulse Energy Parameters. Seam Welding, CW Welding, Focus Spot Size, & Assist Gas.
Hands- On 1	Laser Welding Sources, YAG, Fiber, Blue	Choose power supply for Laser Welding process, Fiber Connections to laser source and or Laser Focus Head, Settings on Unit.
Module 4	Determining Successful Laser Welding	Success Criteria – Conductivity, Hermeticity, & Pull Strength. Pull Testing, Cross Sectioning, & Optimizing the Results.
Hand- On 2	Prepare Laser for Welding	Focus Laser, Make camera coplanar with laser focus, Center spot in optics, measure spot size,
Module 5	Ensuring Laser Welding Success	Equipment Monitoring – Power Checks & Focus Checks. Process Monitoring – Thermal Signatures of the Weld.
Hands-On 3	Laser Welding Optimization	Application Perspective, Pulse Shaping Techniques, Spot Placement, Shielding Gas Placement and Flow Rate

AMADA WELD TECH INC.

Laser Welding Training Program

(Day Two)

Module	Title	Learning Objectives
	AMADA WELD TECH INC.	**OVERVIEW**
	Overview of Laser Welding Training (Day One)	Question and Answers from Day One Training
	AMADA WELD TECH INC.	**FACILITY TOUR**
Module 6	Laser and Laser System Maintenance	Handling Optics – Do's & Don'ts. Cleaning Output Cover Gas. Filters – (Air & Water)
Hands-On 4	Welding sample parts	Dial in settings and process for sample parts
Module 7	Programing in a Delta Motion	Common Commands – M & G. Creating Routines – Stich, Circle, etc.
Hands- On 5	General Maintenance	Check Optics for Damage or Debris, Clean Optics, Check Air, Water Filters
Module 8	Laser Welding Product range and Applications	How to determine applicable equipment
Hands- On 6	Writing Basic Program for Delta Motion	Example of Program Including difference between G codes and M Codes, Feed rates, Square, Circle and Stitch Routines
Module 9	Ensuring production and manufacturing success	Tips and tricks to maintain process success in production and manufacturing.
Hands- On 7	Destructive and Non-Destructive Testing. Cross Sectioning, Pull Testing, Leak Checking Equipment	Cross Section, Pull Test, Helium Leak Check, Gross Leak check Samples