

Samson Background

Samson Metal is AS9100D with ISO 9001:2015 certified. Our scope of certification includes design and fabrication, including welding, assembly, and testing, for aerospace and commercial industries. Samson is in Lakeland, Florida, a 2-hour drive from the Space Coast. Samson is a 75-year-old, 4th generation, family owned, small business providing design and manufacturing services for the Aerospace, Defense, Entertainment, and Power Generation industries.

Samson is primarily a custom design and fabrication job shop specializing in one-offs or small quantity fabrication. Samson's strengths include the following:

- Company that does what it says it will do and honestly holds to its commitments.
- Ability to react quickly and solve the customers design and fabrication challenges.
- Extensive Engineering, Fabrication, and Manufacturing Expertise, always improving.
- Family culture where everyone works closely together to achieve company and customer goals.
- Adaptability to handle complex fast paced jobs with less than complete drawings.
- Ability to partner closely with the customer's engineers and project managers and act as an extension of the customer's team.
- One-Stop-Shop that has nearly all capabilities under one roof with strongly supporting partners and suppliers.

Engineering & Project Management Capabilities

Samson has four Mechanical Engineers and one Mechanical Designer. Two of the engineers and mechanical designer have over 35 years each of engineering and project management experience in Space, Defense, and Entertainment Industries. The others have 3-6 years of training and ongoing engineering and project management experience.

Samson engineers work primarily with SolidWorks Modeling and Drawing capability. Samson regularly prepares shop drawings and designs from customer provided Models and Presentations.

Samson has PE and GC Licenses and provides manufacturing design input to help reduce cost and schedule.

Load & Functional Testing Capabilities

Samson has large outdoor test stand at their facility capable of loading structures the size of large truck up to 250,000 lbs. This structure can also be modified for functional and cycle testing of equipment.

Machine Shop Capabilities

1.0 Machining Capabilities

1.0.1 **Milling Operations** include boring, tapping, facing, and contouring and are performed on conventional and CNC milling centers as well as conventional knee mills. All machines are equipped with calibrated digital readouts. Major equipment includes:

(A) Conventional Milling Centers, Horizontal., No. 5 Taper, with up to 108" x 72" x 72" + workspace.

(B) CNC milling centers, Vert., with up to 23" x 48" workspace.

(C) Conventional milling centers, Vert., with up to 14" x 48" workspace

1.0.2 **Turning Operations** include grooving, knurling, internal and external threads (standard, metric and acme), facing and boring and are performed on conventional and CNC lathes. Major equipment includes:

(A) Conventional horizontal lathes, up to 48" cut, 360" centers.

(B) Conventional vertical lathes, up to 84" cut.

1.0.3 **Wire EDM Mitsubishi**

(A) Workpiece weight 3300 lbs.

(B) Work travel size 23.6 in x 15.7 in x 12.2 in (size for one setup)

1.0.4 **Other Operations** include surface grinding, internal and external keyway cutting, splining, and polishing.

1.0.5 **Tooling & Fixturing:** Samson has a wide variety of quality tooling and fixturing including end mills, fly cutters, drills, taps, boring heads, indexing tables, angle plates, insert cutters and radius cutters.

1.0.6 **Materials:** Samson has experience machining a wide variety of materials including:

(A) Carbon Steel

(B) Stainless Steel

(C) Aluminum

(D) Bronze

(E) Titanium

(F) UHMW

(G) Teflon

(H) Phenolic

2.0 Fabrication and Assembly Capabilities

2.0.1 **Cutting and Sawing** equipment includes:

(A) Vertical Band saws 18" throat and 22" cut.

(B) Disc saw up to 6" tube capacity.

(C) CNC Burn table with plasma and Oxy-Acetylene processes and 60" x 120" workspace.

2.0.2 **Shearing** equipment includes:

(A) Plate shearing with up to ¾" carbon steel capacity.

- 2.0.3 **Punching and Coping** equipment includes:
(A) Iron Worker machines with hole, slot and pipe coping dies
- 2.0.4 **Rolling** equipment includes:
(A) Pipe and tube bending for forming up to 4” diameter.
(B) Plate roll with 15 sq-in capacity. (up to 60”)
- 2.0.5 **Forming** equipment includes:
(A) 200 Ton Press break with various dies for up to 1” plate capacity and 144” die length.
(B) Box and pan breaks with ½” plate capacity and 120” blade length.
- 2.0.6 **Welding** procedures are qualified per ASME and AWS codes. Pipe welding is performed per ANSI B31.1, ANSI B31.3 and API 1104 as required. All welders are certified per the requirements of the applicable codes and procedures. Samson qualified procedures include the following processes and materials:
(A) GTAW
(B) SMAW
(C) GMAW
(D) FCAW
(E) Materials include carbon steels, stainless steels and aluminums.
(F) In-house CWI who performs NDT in accordance with ASNT-SNT-TC-1H, methods MT, PT, VT.
- 2.0.7 **Assembly and Testing** of various equipment is performed as required. Samson has experience in the following turnkey assembly and testing areas:
(A) Assembly of ground support equipment
(B) Assembly of pumps and mixers
(C) Assembly of ride vehicles
(D) Assembly of power piping skids
(E) Field assembly of structural steel and machinery
(F) Assembly of packaging equipment
(G) Pneumatic and hydraulic pressure testing of vessels and piping
(H) Proof Load testing (static and dynamic)
(I) Operational testing and startup testing (in house and on site)

3.0 Blasting and Painting Capabilities

- 3.0.1 **Surface Preparation** processes include the following:
(A) Sand
(B) Glass bead
- 3.0.2 **Coating** processes include atomized spray and airless.
(A) 20-foot x 70-foot enclosed and vented paint booth.
- 3.0.3 Experience with multi-coat systems and paint over galvanized steel.

4.0 Facility and Miscellaneous Equipment

- 4.0.1 **Manufacturing** space is 53,000 square feet.

- 4.0.2 **Materials** receiving and control space is 3,500 square feet.
- 4.0.3 **Overhead Cranes** include:
 - (A) One 10 ton
 - (B) Three 5 ton
 - (C) One 2 ton
- 4.0.4 **Materials Handling/Access** equipment includes:
 - (A) 3-ton and 5 ½ ton fork trucks
 - (B) 3-ton and 5-ton Telehandlers
 - (C) JLG Articulating man lift.
- 4.0.5 **Transportation** includes:
 - (A) Flat/conventional bed trucks & trailers up to 40 ft.
- 4.0.6 **Test Weights:** Samson has approximately 40,000 lb of lead test weights.

5.0 Special Processes and Capacity Overflow Vendors

- 5.0.1 Samson has established a large base of reliable, quality approved vendors for the performance of specialty processes which include:
 - (A) Laser & Waterjet Cutting
 - (B) Heat Treating
 - (C) NDE (Radiograph)
 - (D) Plating / Anodic / Galvanizing
 - (E) Powder Coating
- 5.0.2 Approved vendors for special processes include:
 - (A) Tampa Bay Steel
 - (B) Alro Metals
 - (C) Chatham Steel
 - (D) Freedom Metal Finishers
 - (E) Certified Metal Finishers
 - (F) Advanced Technical Services (3rd party testing)
 - (G) Space Science Services (3rd party welding inspection)
- 5.0.3 Samson has established a network of approved capacity overflow vendors to meet unique customer schedules. These vendors include:
 - (A) B.T.I and Ferrera Tooling (machining)
 - (B) Industrial Painting Solutions (blasting and coating)
 - (C) Supervised material vendor processing for preparation work (TBSC, Alro, etc.)
 - (D) OTR shipping partners that can handle oversize and escorted transports (Webb's, Landstar, Freightcenter). Potential rail spur access as well.

6.0 Quality Assurance Capabilities

- 6.0.1 **Specifications:** Our quality system (QMS) is certified to AS9100D:2016 by NSF. Inspection Software and processes used are in accordance with AS9102. Material traceability in accordance with AS4123.
- 6.0.2 **Quality Responsibilities:** Quality assurance monitors projects from the planning stages through every aspect of the contract until product is shipped

and accepted by the customer. Task responsibility for quality control includes but is not limited to the following:

- (A) Contract Review
- (B) Inspection Planning
- (C) Drawing Control, Engineering management
- (D) Inspections (In-Process and Final)
- (E) Vendor Monitoring, Procurement management
- (F) Materials Receiving and Inspection
- (G) Control of Welding Procedures and Inspections
- (H) Testing Procedures
- (I) Acceptance Data Package (ADP) Maintenance, Product Fulfillment

6.0.3 **Inspection Equipment –**

- (A) Large variety of hand-held, calibrated tools.
- (B) Variety of laser datum devices.
- (C) Fixed Coordinate Measuring Machine (CMM)
- (D) CMM laser inspection device measures features on large components to accuracy of +/- .005”.

6.0.4 **Variety of Hand-Held Inspection Equipment**

Equipment is identified, maintained, and calibrated per QMS to ensure that customer dimensional requirements are met. The following is a partial list of inspection equipment:

- (A) Micrometers from 0” to 36”
- (B) Vernier Calipers from 0” to 42”
- (C) Complete set of plug gauges
- (D) Internal and external thread gauges
- (E) Electronic Profilometer - Surface Tester
- (F) Coatings thickness gauge for ferrous and non-ferrous materials
- (G) Radius gauges
- (H) Dynamometers up to 10 tons
- (I) Hydrostatic pressure testing equipment up to 4000 psi
- (J) Granite surface plates, 18” x 24” and 36” x 48”
- (K) Complete set of bore gauges up to 10”
- (L) Parallels
- (M) Ultrasound test equipment
- (N) Hardness tester

6.0.5 **Acceptance Data Packages** are built and maintained throughout the project and consist of the following as required:

- (A) Certificate of Compliance
- (B) All Requests for Information
- (C) All Deviations and Waivers
- (D) Welding Procedures
- (E) Welding Inspection Records
- (F) Welding Inspector Certifications and Qualifications
- (G) NACE Inspection Records

- (H) Proof load and Operational Test Procedures
- (I) Final Acceptance Test Records
- (J) Materials Certificates and Test Reports
- (K) Special Processes accountability
- (L) Inspection Logs
- (M) Manufacturer's Data
- (N) Customer specific formatting
- (O) Calibration Records, Certificates of Compliance

