



Lynn Welding

Welding - Machining - Fabrication

Over 40 Years Of Service

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 **Lynn Welding**
Welding - Machining - Fabrication

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Everyday we come into Lynn Welding with a true purpose, to be the best welding company in America. We have the recipe to get there and the key ingredients are our team members. It's imperative to have people on our team that have a passion for what they do. We prioritize creating a fun, positive work environment that promotes growth and career advancement. Our culture and values are apparent to our customers through the excellent customer service, and quality work we deliver every day. Being the best welding company in America is not a destination for us, it's a daily experience!

-Darius Kania
Vice President of Lynn Welding

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The Statue Mounted at the entrance of Lynn Welding's headquarters was designed, fabricated, and welded by one of our very own who has a passion for what he does!

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Lynn Welding
Welding - Machining - Fabrication

LEARN ABOUT LYNN

- 03** Lynn Welding's rich history is a fundamental aspect of its identity. The strong foundation upon which Lynn Welding was established significantly contributes to its ongoing growth and success.

FUSION WELDING

- 05** Specializing in both precision TIG and MIG welding, Lynn Welding provides NADCAP-accredited fusion welding services.

ROBOTIC WELDING

- 07** Lynn Welding provides robotic welding services using a state-of-the-art system designed to weld components at three separate stations.

RESISTANCE WELDING

- 09** With over 25 resistance welding machines, Lynn Welding stands as one of the largest aerospace resistance welding companies in the nation.

TORCH BRAZING

- 11** Lynn Welding is a NADCAP-accredited brazing facility. The company's certified brazers routinely join dissimilar materials to meet x-ray standards.

FABRICATION

- 13** Lynn Welding provides precision fabrication services with a focus on its three core functions: aerospace tooling, aerospace fabrication, and military fabrication.

MACHINING

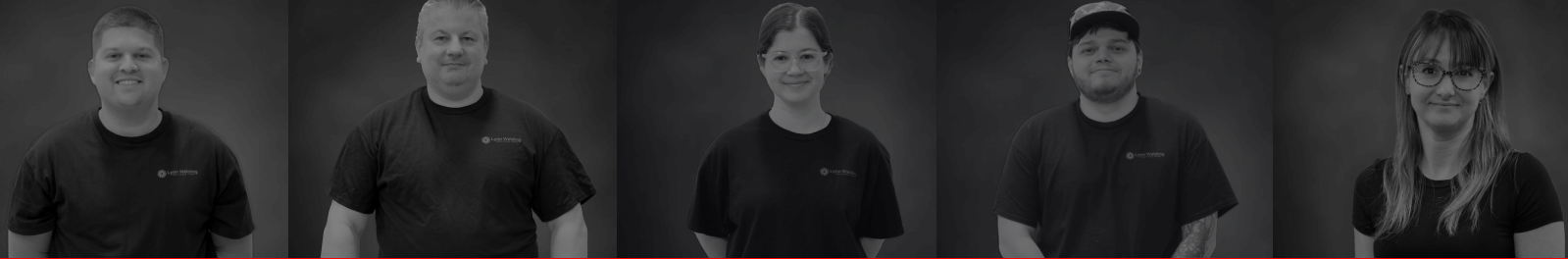
- 15** Lynn Welding's state-of-the-art machine shop offers wire EDM, 5-axis milling, and CNC turning.

FIXTURE BUILDING

- 17** Lynn Welding builds precision fixtures and tooling for welding, assembly, inspection, and machining.

CERTIFICATIONS

- 19** Lynn Welding prides itself on its extensive list of certifications and approvals.



Lynn Welding

Welding - Machining - Fabrication



About Lynn Welding

Lynn Welding's Rich History

Lynn Welding's rich history laid the foundation for its customer-centric, quality-driven approach.

Providing Quality Welding, Machining, and Fabrication Services Since 1979

Today, Lynn Welding stands as a highly recognized leader in welding and machining services for the Aerospace, Defense, Nuclear, Industrial, and Medical industries. From its beginnings as a small one-man welding shop, the company has grown into a trusted provider known for solving complex welding and machining challenges. Lynn Welding's unique capability to weld, machine, and fabricate entire assemblies sets it apart in the industry.



Delivering Certainty

Throughout its growth, Lynn Welding has maintained a strong focus delivering certainty to both its customers and team members alike.

Lynn Welding Customers

Lynn Welding strives to deliver certainty to its customers by prioritizing communication and reliability. The team is trained to provide clear, concise, and frequent updates, ensuring that customers are always informed about the status of their orders.

Lynn Welding Team

Delivering certainty to Lynn Welding's team means providing a safe and stable work environment where employees and their families feel supported. The leadership team is dedicated to ensuring that all employees have ongoing work opportunities and remain satisfied with the company they represent for years to come.



In the last decade
Lynn Welding

47,266

JOBS PROCESSED

3,298,472

PARTS SHIPPED

656

CUSTOMERS SERVED





Lynn Welding Services

Fusion Welding

Lynn Welding provides Nadcap-accredited fusion welding services and specializes in GTAW Welding.

Lynn Welding's reputation becomes evident through the weld bead produced by one of its certified welders. Specializing in Gas Tungsten Arc Welding (GTAW), Lynn Welding's experienced team meticulously adheres to NADCAP requirements, ensuring superior weld quality. Whether working with aluminum or stainless steel, customers can trust that the welds will meet precise tolerances and uphold X-ray quality standards.

Lynn Welding is AWS D17.1 certified and possesses numerous other precision welding approvals. For a comprehensive list of certifications, please refer to page 19.



Certifications Industry Specific Approvals & Certifications

Raytheon Technologies
Boeing
Bell Helicopter
Rolls-Royce
GE Aviation
Collins Aerospace
Kaman Aerospace
Pratt & Whitney Canada
Northrop Grumman
United Launch Alliance
Sikorsky
General Dynamics
Pratt & Whitney
Gulfstream
Beechcraft

Fusion Welding Equipment List & Facility Specifications

- 20 Miller Dynasty 350 tig welders
- 3 Miller Maxstar 200 tig welders
- 1 Miller Syncrowave 300 tig welder
- 1 Miller Syncrowave 500 tig welder
- 1 Miller Dynasty 280
- Millermatic 350P mig welder
- Weldlogic automatic tig welding system
- Custom 48" x 48" x 36" vacuum welding chamber
- Custom 72" x 48" x 32" purge welding chamber
- Mbraun 48" x 36" x 36" vacuum welding chamber
- CWI (certified welding inspectors)
- 10,000 sq ft welding department
- Approved weld procedures for most alloys
- Metallurgical lab for performance and procedure qualification

Fusion Welding Material Capabilities

Stainless Steel, Greek Ascology, Titanium, Inconel, Aluminum and, Chromalloy

Learn more about Lynn Welding's
Fusion Welding services



Tig (GTAW) Welding

Lynn Welding provides TIG welding for aerospace and defense applications. The facility is qualified to perform the GTAW process in accordance with AWS D17.1 standards.

Mig (GMAW) Welding

Lynn Welding also provides professional MIG welding services. The facility is qualified to perform the GMAW process according to AWS D1.1, D1.2, and D1.6 standards.



Lynn Welding Services Robotic Welding

Lynn Welding provides GTAW Robotic Welding for high volume projects

Lynn Welding's robotic welding system operates at three distinct stations for enhanced flexibility and reduced tooling changeover. One station features a two-axis positioner with three tooling stations, allowing a six-axis welding robot to work efficiently under a light curtain safety system, ensuring quick and safe operator intervention. The other two stations are equipped with a 2'x4.5' weld tooling table, protected by pneumatic telescoping barrier doors.

This versatile system incorporates an ABB 6-axis robotic arm integrated with Fronius TIG welding equipment to achieve the required quality and throughput of parts.

Capabilities Why Choose Robotic Welding?

- Increased accuracy
- Process reliability
- Reduced welding cost
- Exact repeatability
- Increased productivity
- Welding on multiple axes
- Circumferential welding
- Linear seam welding
- Multiple location welding



Robotic Welding Facility Specifications

ABB IRB 1600

- 6-Axis robotic arm
- 10 Kg. payload & 1.45m reach

ABB IRBP A-250

- 2-Axis workpiece positioner
- Up to 250 Kg weight capacity
- 1.18 Diameter part envelope

ABB IRBP L-300 tail stock

- Helps support long parts with A-250
- Increases A-250 load capacity to 500 Kg.

Fronius MagicWave 3000 TIG

- Tig welding up to 300A

Arc voltage control

- Enables through-the-arc seam-tracking for tig process

Robotic Welding Material Capabilities

Stainless Steel, Greek Ascology, Titanium, Inconel, and Aluminum





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Lynn Welding Services

Resistance Welding

Lynn Welding provides Nadcap-accredited Resistance spot and seam welding services

Lynn Welding offers NADCAP-accredited resistance welding solutions and operates over 25 resistance welding machines. The department utilizes SCIAKY welders, renowned globally for maintaining the strictest tolerances required by the aerospace industry. The internal quality department meticulously monitors resistance welding operations to ensure compliance with NADCAP guidelines. Lynn Welding offers resistance spot welding, resistance seam welding, projection welding, and micro-resistance welding for Stainless Steel, Titanium, Inconel, Aluminum and, most other metals.

Lynn Welding is AWS D17.2 certified and possesses numerous other aerospace welding approvals. For a comprehensive list of certifications, please refer to page 19.

Certifications Industry Specific Approvals & Certifications

Raytheon Technologies
Boeing
Bell Helicopter
Rolls- Royce
GE Aviation
Collins Aerospace
Kaman Aerospace
Northrop Grumman
United Launch Alliance
Sikorsky
General Dynamics
Pratt & Whitney
Pratt & Whitney Canada
Gulfstream
Beechcraft
Honeywell

Learn more about Lynn Welding's
Resistance Welding services



Resistance Welding Equipment List & Facility Specifications

- 1000 ADP Miyachi micro resistance welder
- 200 KVA Sciaky resistance spot welder
- 200 KVA Sciaky resistance seam welder
- 150 KVA Sciaky resistance spot welder
- 150 KVA Sciaky resistance seam welder
- 125 KVA Sciaky resistance spot welder
- 100 KVA Sciaky resistance spot welder
- 150 KVA Sciaky resistance seam welder
- 100 KVA Sciaky spot welder
- 90 KVA Sciaky resistance spot welder
- 30 KVA Miyachi micro-resistance welder
- 23 KVA Techna portable gun welder
- 20 KVA Joyal micro-resistance welder
- 0-100 Micro-ohm resistance surface analyzer
- Metallurgical laboratory

Resistance Welding Metallographic Laboratory

Lynn Welding's metallographic laboratory is NACAP-approved, Boeing-approved, and Pratt and Whitney LCS-approved. The laboratory undergoes regular internal and external audits to maintain these approvals and ensure full compliance with all customer and government requirements. Equipped with highly specialized tools, the laboratory facilitates metallurgical evaluation of resistance-welded coupons. It features two identical stations equipped with grinding, polishing, etching, and evaluation capabilities.

- 20x-100x video microscopes with digital readouts
- 10x-80x video videoscope with digital readouts
- 2lb-20,000lb pull tester
- Acid etching and sample mounting station





Lynn Welding Services Torch Brazing

Lynn Welding provides Nadcap certified brazers routinely join dissimilar materials to meet X-ray standards.

Certified torch brazing is increasingly difficult to find in the aerospace market due to a shortage of experienced professionals. Fortunately, Lynn Welding's skilled brazing technicians bring years of expertise to every project. Whether brazing flight-critical fuel supply lines or pitot probes, Lynn Welding's team handles assemblies with unmatched precision and skill. The NADCAP-approved torch brazing cells and technicians meet most aerospace brazing specifications, including Mil-B-7883, AWS C3.4, AWS C3.5, AMS2664, and AMS2665.

Certifications Industry Specific Approvals & Certifications

Raytheon Technologies
Gulfstream
United Launch Alliance
Boeing
GE Aviation
Sikorsky
Pratt & Whitney
Collins Aerospace

Advantages of Torch Brazing

- Properly brazed joints are pressure-tight.
- Brazing allows the joining of dissimilar metals.
- Precision dimensions can be maintained while brazing machined components.
- Extremely thin-walled material that cannot be welded can be joined by brazing.
- Brazing can join fabrications economically
- There is less heat "shock" and distortion when brazing

Certified Brazing Material Capabilities

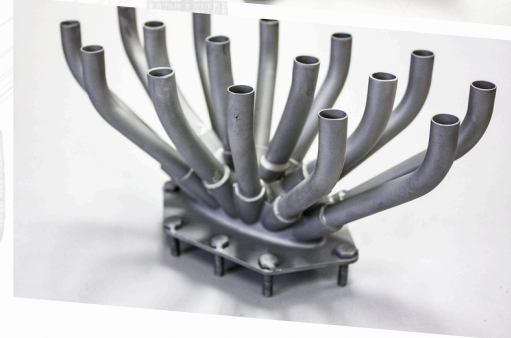
Base Metals: 300 Series stainless steel, 400 Series stainless steel, Inconel, Mild Steel, Copper, Carbide, Tungsten, and Aluminum.

Braze Alloys: Silver, Nickel, Copper

Solder Alloys: Tin/lead solder, Gold/tin solder (80 & max au)

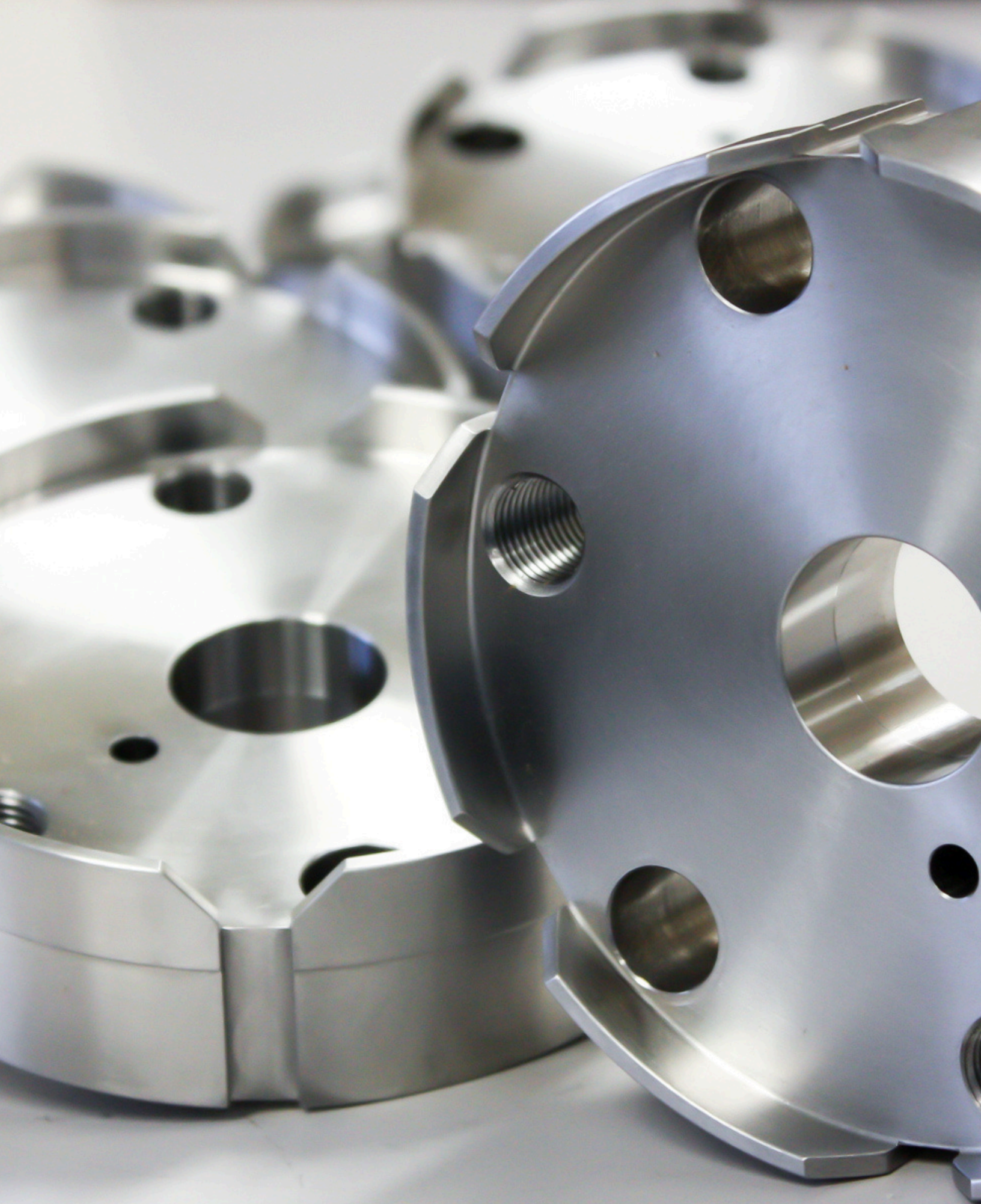
Common Brazing projects

Tubes/ferrules, engine seals, nut plates, electronics, and fuel filters.



Learn more about Lynn Welding's
Brazing services





Lynn Welding Services Machining

World class machining services

Lynn Welding employs a full-time team of machinists with decades of experience in programming and operating CNC equipment. Our skilled machinists excel in producing highly complex and dimensionally critical parts using a wide range of standard and exotic materials. The machine shop at Lynn Welding features capabilities in 3-axis, 4-axis, and 5-axis CNC milling, as well as manual milling, CNC turning and Wire EDM.

CNC Machining

Lynn Welding's full time staff of machinists have decades of experience in programming and operating CNC and manual equipment. Lynn Welding's machinists are capable of running highly complex and dimensionally critical parts consisting of most standard and exotic materials.

Wire EDM

Lynn Welding's Wire EDM machines maintain tolerances typically within .0005 inches, can handle up to 30 degrees of taper, and are equipped to use both .004-inch and .010-inch diameter wire. Our capabilities include Wire EDM machining for internal and external splines, gears, square holes, and more.

Learn more about Lynn Welding's
Machining services



Machining Equipment List & Facility Specifications

Wire EDM

- Fanuc robotic a-1B wire EDM (X 18", Y 12", Z 8")

Turning

- Southwestern Trak TRL 1840 CCS (X 18", Z 31")
- Doosan lynx 2100A turning center
- (2) Hardinge lathe. 6" max dia.
- Wasino lathe. 22" max dia.

Milling

- Matsuura vertical CNC milling center 4-axis. (X 30", Y 19", Z 19")
- Leadwell vertical CNC milling center 3-axis. (X 30", Y 19", Z 18")
- Doosan vertical CNC milling center 3-axis (X 25", Y 17.1", Z 20")
- Doosan 5-axis
- DNM-200 machining center
- (2) Southwestern Trak DPM3 (X 28.5", Y 17.5", Z 13")
- (2) Southwestern Trak K3SX (X 32", Y 16", Z 15.5")
- Bridgeport milling





Lynn Welding Services Fabrication

Lynn Welding offers fabrication services for aerospace and defense applications

Lynn Welding's team specializes in aerospace tooling, aerospace fabrication, and military fabrication services. With over 60 years of combined experience, they excel in fabricating assemblies such as tube assemblies, duct assemblies, crew door components, and many other aerospace assemblies.

Aerospace Tooling

Aerospace Tooling fabrication of pressure vessels, enclosures, piping systems, tanks and custom assemblies.

Lynn Welding's highly experienced toolmakers and CNC programmers specialize in aerospace tooling services. They assist numerous customers, including the military, with aerospace tooling for various programs such as the Black Hawk and Humvee.

Military Fabrication

High-precision fabrication for the military and defense industries.

Lynn Welding's highly skilled fabricators bring decades of experience in fabricating assemblies, including ground support equipment, maintenance stands, dollies, and tooling for various military platforms.

Aerospace Fabrication

Lynn Welding has over 60 years of combined experience in fabricating assemblies.

Lynn Welding specializes in fabricating assemblies for the aerospace industry, including tube assemblies, duct assemblies, and crew door components. Their aerospace fabrication services support various government programs, including the F-35, F-16, A-10, and UH-60 Black Hawk.

Fabrication solutions Fabrication Department Capabilities

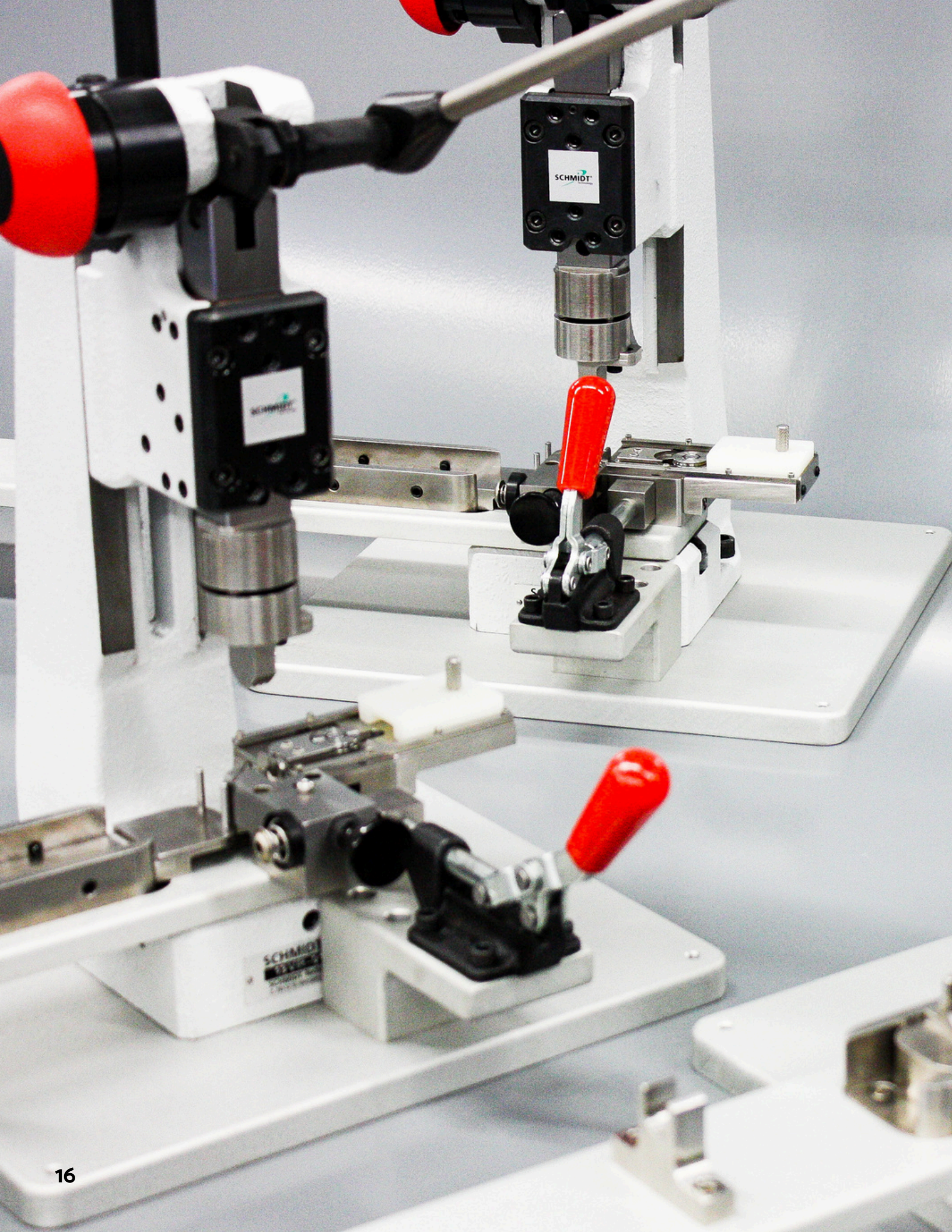
- Pressure vessels
- Tanks
- Pipe assemblies
- Jet engine assembly carts
- Blade transport carts
- Dollies
- Racks
- Enclosures
- Custom assemblies
- Scaffolds

Fabrication Capabilities

Machining, Forming, Cutting, Bending, Welding, Assembling, and Painting

Learn more about Lynn Welding's
Fabrication services





Lynn Welding Services Fixture Building

Building precision fixtures and tooling for welding, assembly, inspection and, machining.

Lynn Welding understands the critical importance of tooling and the need for a creative approach to solving client challenges. They streamline the entire fixtures and tooling development process, offering advanced functionality and step-by-step guidance to tackle even the most complex designs.

Fixture solutions Fixture Building Applications

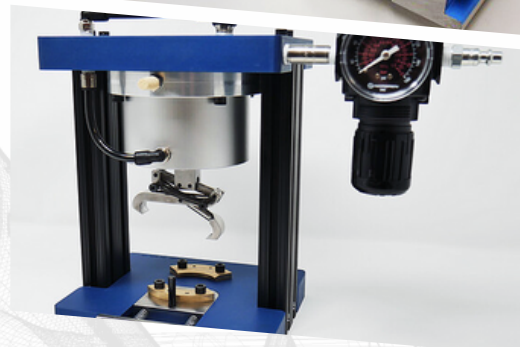
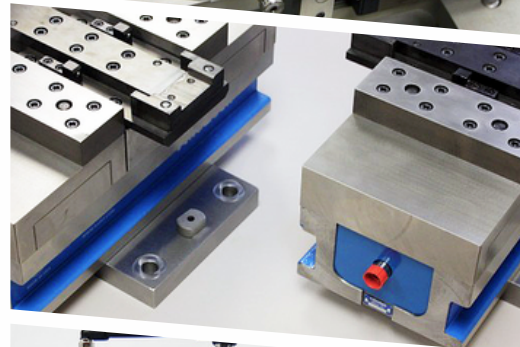
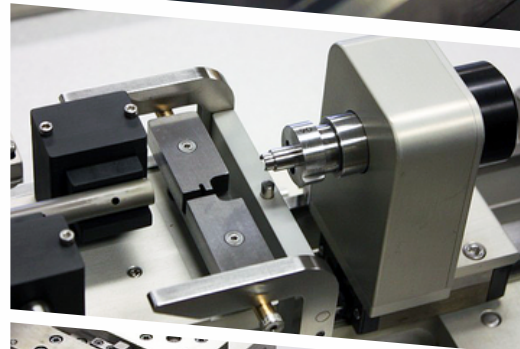
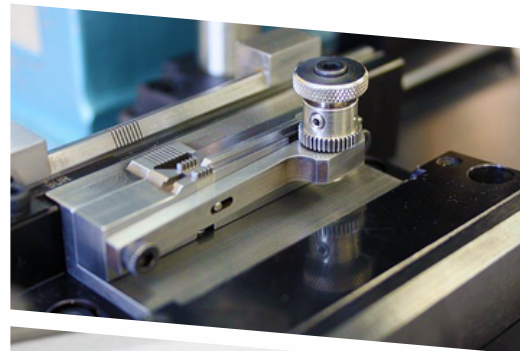
High tolerance CNC
machining fixtures
Machined components
gages
Part qualification test
fixtures
Switch tester
Contact testers
Cable
cutter/measure/testers
Feeding systems
Inspection systems
Assembly systems
Micro resistance welding
systems
Machining services
Assembly services

Fixture & Tooling

Lynn Welding specializes in manufacturing custom vertical and horizontal machining fixtures. Their fixtures are available with hydraulic, pneumatic, and manual options, including captured oil accumulators built into the fixture and spring clamps with air and hydraulic unclamp actuation. Their machining fixture capabilities encompass concept development, installation, repair, refurbishing, and assembly. They provide CAD and detailed drawings, as well as commercial items suitable for various high-volume manufacturing applications.

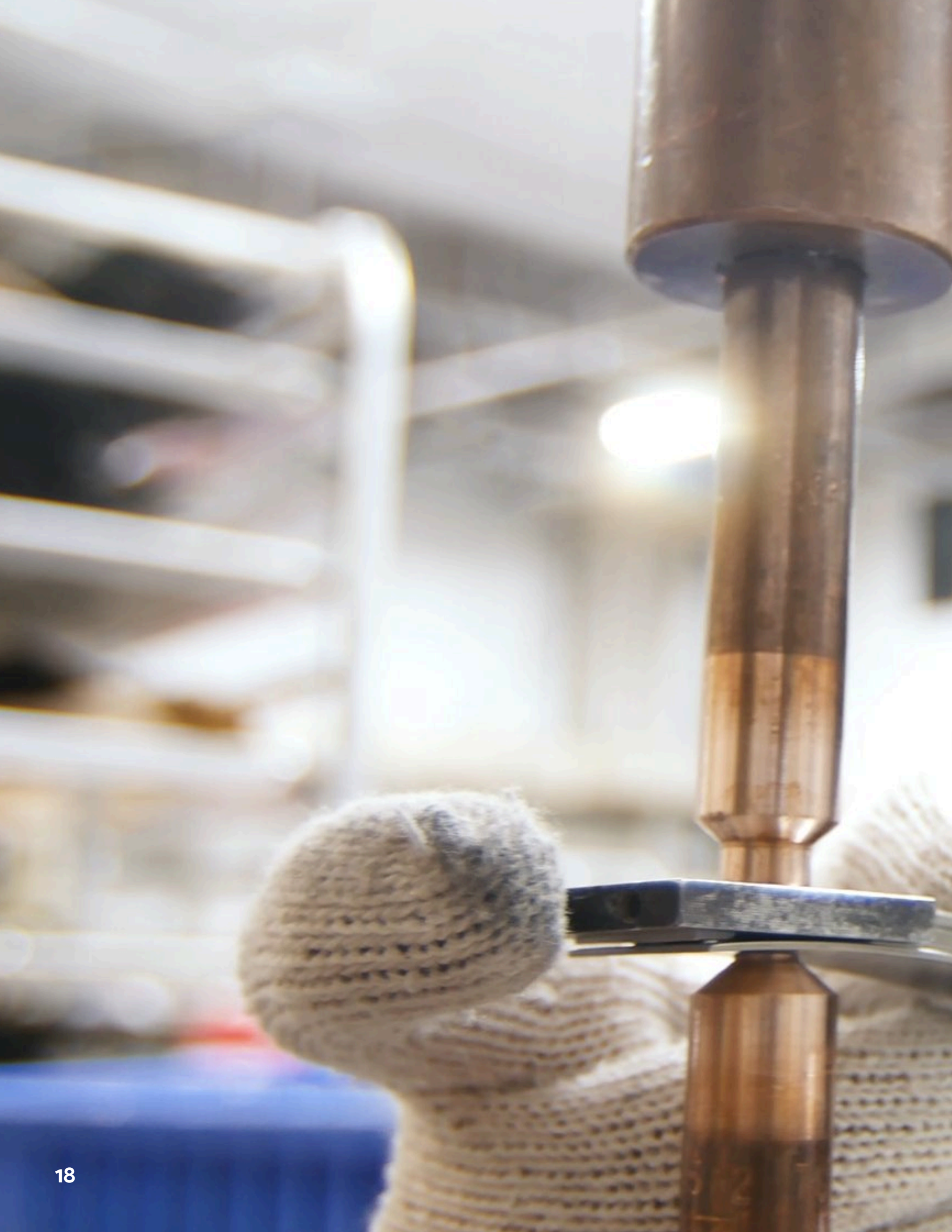
Fixture & Tooling Capabilities

welding fixtures, machining fixtures, semi-automatic fixtures, and assembly fixtures.



Learn more about Lynn Welding's
Fixture & Tooling services





Certifications

Industry Specific Approvals & Certifications

Lynn Welding's approval list is continually expanding, and they may be in the process of obtaining additional approvals. Contact Lynn Welding to discuss which additional approvals you require.



Pratt & Whitney

A United Technologies Company

Fusion Welding (LCS Approved Facility)

PWA 16-1 (carbon and low alloy steel)
PWA 16-2 (corrosion-resistance steels other than precipitation-hardenable)
PWA 16-22 (precipitation-hardenable, corrosion-resistance steel)
PWA 16-3 (nickel and non precipitation-hardenable nickel alloys)
PWA 16-33 (precipitation hardenable nickel alloys)
PWA 16-37 (NI & Non precipitation-hardenable nickel alloys welded to cobalt alloys)
PWA 16-333 (NI & Non precipitation-hardenable nickel alloys welded to precipitation-hardenable nickel alloys)
PWA 16-4 (aluminum alloys)
PWA 16-6 (commercial pure titanium)
PWA 16-66 (titanium alloys)
PWA 16-666 (titanium alloys, special alloy filler metal requirement)
PWA 16-7 (cobalt alloys)
PWA 16-777 (cobalt to nickel alloys)

Resistance Welding

PWA 15 seam resistance welding (thickness range .015-.123)
PWA 15 spot resistance welding (thickness range .0009-.123)

Brazing

AMS 2664 high temp manual braze, torch braze
AMS 2665 low temp manual braze, torch braze

Tack Welding

PWA 36951



Fusion Welding

AWS D17.1/MIL-STD-2219
Carbon and low alloy steels
Corrosion resistance steels other than precipitation-hardenable
precipitation-hardenable, corrosion-resistance steel
Cres. precipitation-hardenable alloys
Nickel and non precipitation-hardenable nickel alloys
Precipitation-hardenable nickel alloys
Aluminum alloys
Commercial pure titanium
Titanium alloys
Titanium alloys, special alloy filler metal requirement
Cobalt alloys
Cobalt to nickel alloys
NI & non precipitation-hardenable nickel alloys welded to cobalt alloys
NI & non precipitation-hardenable nickel alloys welded to precipitation-hardenable nickel alloys

Resistance Welding

AWS D17.2
MIL-W-6858
SAE-AMS-W-6858

Brazing

SS8731/ MIL-B-7883



Pratt & Whitney Canada

A United Technologies Company

Fusion Welding (LCS Approved Facility)

CPW 24-1A (Carbon & low alloy steel)
CPW 24-2A (Corrosion-resistance steel and other precipitation-hardenable)
CPW 24-2J (Corrosion-resistance steel and other precipitation-hardenable)
CPW 24-22A (Precipitation-hardenable, corrosion-resistance steels)
CPW 24-3A (Nickel and non precipitation-hardenable nickel alloys)
CPW 24-3J (Nickel and non precipitation-hardenable nickel alloys)
CPW 24-33A (Precipitation-hardenable nickel alloys)
CPW 24-33J (Precipitation-hardenable nickel alloys)
CPW 24-4A (Aluminum alloys)
CPW 24-4J (Aluminum alloys)
CPW 24-6A (Commercial pure titanium)
CPW 24-6J (Commercial pure titanium)
CPW 24-66A (Titanium alloys)
CPW 24-66J (Titanium alloys)
CPW 24-7A (Cobalt alloys)

Resistance Welding

CPW 23 Seam Resistance Welding (Thickness range .015-.0123) Spec YC-1
CPW 23 Spot Resistance Welding (Thickness range .015-.123) Spec YC-1



**Raytheon
Technologies**

Fusion Welding (LCS Approved Facility)

AWS D17.1 & WS33739 class A,B & C
AWS D1.1 & WS33739 welding of carbon steel
AWS D1.1 & WS33739 welding of aluminum
AWS D1.6 & WS33739 welding of stainless steel
AWS D9.1 & WS33739 welding of sheet metal
AWS D1.3 welding of sheet steel
AWS D14.1

Resistance Welding

AWS D17.2 class A, B & C

Torch Brazing

AWS C3.4

Certifications

Industry Specific Approvals & Certifications

Honeywell

Fusion Welding

AMS2685 - Welding, Tungsten Arc, Inert Gas (GTAW Method)
AMS2689 - Fusion Welding Titanium and Titanium Alloys
AWS D17.1/D17.1M - Specification for Fusion Welding for Aerospace Applications
GPS4100-1 - Welding, Fusion arc
GPS7024-1 - Welding, Fusion arc (F-18)
GPS7315-1 - Joining (Grimes)
GPS7320-1 - Welding, Manual gas tungsten arc, Aluminum alloys (Grimes)
P6200 - Process for Fusion Welding
P6207 - Welding, Titanium, Gas Tungsten Arc, Process for
S9074-AR-GIB-010/278 - Requirements for fabrication welding and inspection, and casting inspection and repair for machinery, piping, and pressure vessels
WBS28 - Fusion welding supplement to AWS D17.1/D17.1M
WBS5018 - Fusion arc welding

Resistance Welding

91547-P6201 - Process for Resistance Welding
AWS D17.2/D17.2M - Specification for Resistance Welding for Aerospace Applications
GPS7321-1 - Welding, Resistance spot & seam (Grimes)
M693284 - Manufacturing Specification for Spot Welding Under Special Conditions
MIL-W-12332 - Welding, Resistance, spot, seam, and projection; for fabricating assemblies of low-carbon steel
NGPS 2 - Spot welding of aircraft parts
P6201 - Welding, Resistance, Process for



Rolls-Royce®

Fusion Welding

EDS 1306
EPS 14500
AWS D17.1
EIS 1200 acceptance criteria for fusion welding
EPS 14530 projection welding

Resistance Welding

EPS 14523 projection welding
EPS 14520 resistance welding (spot & seam) of ferrous, nickel and cobalt based alloys.



Collins Aerospace

A United Technologies Company

Fusion Welding

AWS D17.1
MIL-STD-2219
HS 191 CL1A
HS 191 CL1B
HS 191 CL1C
HS 191 CL2A
HS 191 CL2B
HS 191 CL3

Resistance Welding

AWS D17.2
HAWS-W-6858
HS 3944
HS 91
MIL-W-6858
SAE-AMS-W-6858

Torch Brazing

HS 198 TYA3
PN 05.41
ON 05.41-11
Mil-B-7883

KAMAN

Fusion Welding

Fusion AWS D17.1 -process code: 241-1 welding
Fusion, qualification AWS D17.1 -process code 241-5 welders

Resistance Welding

Resistance stitch SAE-AMS-W-6858 -process code: 241-2 welding
Resistance spot SAE-AMS-W-6858 -process code: 241-3 welding
Resistance seam SAE-AMS-W-6858 -process code 241-1 welding



Resistance Welding: Spot, Seam & Stitch

Sta-100-81-15 A spot welding spec



Westinghouse

Fusion Welding

QMSP-1012

LOCKHEED MARTIN



Fusion Welding

AWS D17.1/ D17.1M



Fusion Welding

Fusion welding- CRES heat resistance nickel-cobalt alloys BAC5975/ process code: 201 /specification title: fusion welding of metals
 Fusion welding of aluminum alloys- BAC975/ process code: 210 / specification title: fusion welding for aerospace applications
 Fusion welding for aerospace applications- aluminum alloys MIL-STD-2219/ process code: 211 / specification title: fusion welding for aerospace applications
 Fusion welding for aerospace applications- aluminum alloys AWS d17.1/ process code: 211A / specification title: fusion welding for aerospace applications
 Fusion welding for aerospace applications- aluminum alloys AMS-STD-2219/ process code: 211B / specification title: fusion welding for aerospace applications
 Fusion welding for aerospace applications- aluminum alloys MIL-W-8604/ process code: 211C / specification title: fusion welding for aerospace applications
 Fusion welding- titanium - titanium alloys BAC 5975/ process code:214 / specification title: fusion welding of metals

Resistance Welding

Resistance welding- steel alloys BAC 5977/ process code: 220 / specification title: resistance spot/roll spot/seam
 Resistance welding- Ni.-Co. base alloys BAC5977/ process code: 222 / specification title: resistance: spot/roll spot/seam
 Resistance welding- aluminum alloys MIL-W-6858/ process code: 234 / specification title: resistance spot-seam
 Resistance welding- titanium alloys BAC 5977 / process code: 234 / specification title: resistance spot/roll spot/seam
 Resistance welding- titanium alloys MIL-W-6858 / process code: 235 / specification title: resistance spot-seam
 Resistance welding- aluminum alloys PS 22010/ process code: S230 / specification title: resistance welding aluminum
 Resistance welding- PS 22010 resistance welding of aluminum alloys using a weld-through sealant
 Resistance welding- material group II PS22000 (Thickness range .032"- .125" -precleaning to be done by an outside source/ process code: S220 /specification title: resistance spot-seam

Brazing

Silver brazing of steel, copper, nickel-cobalt alloys- torch-induction BAC5940/ process code: 251 /specification title: silver brazing

Other

Metallurgical testing met. testing/ process code: 803 / Specification title: metallurgical testing
 Processor basic quality system for D1-4426 approval only quality system/ process code: 003 / specification title: processor quality system
 Welders and weld operator qualification/ process code: 808 / specification title: qual/cert



Fusion Welding

AMS-STD-2219 fusion welding (all types)
 AC 7004/ AS 9003 NADCAP accreditation to AS9001
 AC7110/5 NADCAP audit for fusion welding

Resistance Welding

AC7100/4 NADCAP audit for resistance welding

Brazing

AC7110/1 NADCAP audit for brazing (torch/induction)
 AC7110 NADCAP audit for welding/brazing

Other

AC7110/13 NADCAP audit for metal evaluation of welds
 AC7110-12 NADCAP audit for operator qualification



Fusion Welding

All procedures are GTAW-MA (gas tungsten arc weld-manual)
 AWS D17.1
 Code 6.01 welding, fusion titanium, aluminum, and steel)
 GAMPs 2302 fusion welding-inconel and steel
 GAMPs 2308 fusion welding-titanium
 GAMPs 2309 fusion welding-aluminum

Resistance Welding (spot)

GAMPs 2301 resistance foil, mesh and steel

Torch Brazing

AWS C3.4
 Code 6.05 brazing, torch

Other

Code 5.03 material test, metallographic
 Code 5.04 material test, physical



Resistance Welding

Mil-W-6858 resistance welding



Resistance Welding

RAPWA15 resistance weld

Certifications

Industry Specific Approvals & Certifications



S9074-AQ-GIB-010/248

NAVSEA technical publication: requirements for welding and brazing procedure and performance qualification.

S9074-AQ-GIB-010/278

NAVSEA technical publication: requirements for fabrication welding, inspection, casting inspection, repair for machinery, piping, and pressure vessels.

NAVSEA T9074-AD-GIB-010/1688



GE Aviation

Fusion Welding

CS- welding, titanium CS00 **M50T1; P8TF3; P8TF11; P21TF6
CF- welding, gas shielded arc, CF01 *P8TF3; M50T1A; P8TF11; P21TF6; AWS D17.1;
MILTT-5021

Resistance Welding

CE- welding, resistance, CE000 spot; seam; stud resistance welding; P8TF4; AWS D17.2

Brazing

CD- brazing, cd02*** M50T1; P9TF1; ANSI/AWSC3.4



Fusion Welding

CSMP039- fusion welding of aluminum, steel, nickel, and titanium alloys

Resistance Welding

CSMP007- resistance welding (spot and seam)



Fusion Welding

BPS 4404 fusion welding

Resistance Welding

QPS 101
BPS 4115 resistance welding
BPS 4113 preparation of metals for resistance welding
MIL-W-6858 resistance welding spot & seam



BY TEXTRON AVIATION

Fusion Welding

36B1 fusion-aluminum alloys
36C1 fusion-magnesium
36D1 fusion-steel alloys
36EA fusion-titanium alloys

Resistance Welding (spot)

36F resistance-aluminum
36G resistance-magnesium
36H resistance-nickel and cobalt
36I resistance- steel
36J resistance-titanium
36K resistance-seam

NORTHROP GRUMMAN

Fusion Welding

All procedures are GTAW-MA (Gas tungsten arc weld-manual)
MIL-STD-278
AWS D17.1

Resistance Welding (spot)

MIL-W-6858D



BLUE ORIGIN

Fusion Welding

AWS D17.1

Resistance Welding

AWS D17.1



Scope of Accreditation- Welding

AC7000 - AUDIT CRITERIA FOR NADCAP ACCREDITATION

AC7110 Rev G - NADCAP audit criteria for welding/ torch and induction brazing and additive mfg
AC7110S - NADCAP supplemental audit criteria for welding, torch and induction brazing, and AM
U1 Honeywell

AC7110/1 Rev H - NADCAP Audit Criteria for Brazing (Torch/Induction)

Baseline (All Audits)

Supplement A - torch (additional requirements)
Supplement G - processes using gas (additional requirements)
Supplement H - processes using flux - (additional requirements)

AC7110/4 Rev I - NADCAP Audit Criteria for Resistance Welding (Spot, Seam, Projection)

Baseline (All Audits)

Projection welding - sheet
Seam welding - sheet
Seam welding -foil
Spot welding - foil
Spot welding - sheet
Supplement A - aluminum / magnesium (additional requirements)
Supplement B - shear Testing (additional requirements)
Supplement F - metallographic evaluation of resistance welds (qualification and / or process control)
(additional requirements)

AC7110/4S Rev G - NADCAP Supplemental Audit Criteria for Resistance Welding

U10 GE Aviation
U11 The Boeing Company
U3 Rolls Royce

AC7110/5 Rev I - NADCAP Audit Criteria for Fusion Welding (to be used on audits on/after 6 Jan 2019)

Baseline (All Audits)

Supplement D - titanium (additional requirements)
Supplement F - filler materials (additional requirements)
Supplement G - processes using gas (for example GTAW, PAW) (additional requirements)
Supplement H - pre/Interpass heat treatment (additional requirements)
Supplement J - tack Welding (additional requirements)
Supplement K - metallographic evaluation of qualification welds (additional requirements)

AC7110/5S Rev F - NADCAP Supplemental Audit Criteria for Fusion Welding

U1 Honeywell
U10 GE Aviation
U11 The Boeing Company
U3 Rolls Royce

AC7110/12 Rev F - NADCAP Audit Criteria for Welder/Welding Operator Qualification

Baseline (All audits)

Supplement A - metallographic evaluation of qualification welds (additional requirements)

AC7110/12S Rev H - NADCAP Supplemental Audit Criteria for Welder/Welding Operator Qualification

U1 Honeywell
U10 GE Aviation
U11 The Boeing Company
U3 Rolls Royce



**American
Welding Society**

Qualified Procedures In-House

AMS-STD-1595
AMS 2668
AWS CS.5
AWS D17.1
AWS D1.1
AWS D1.2
ASMSE Section IX

**GENERAL
DYNAMICS**

Fusion Welding

A10458 AWS D17.1
MIL-STD-2219

Resistance Welding (spot)

MIL-W-6858D



Ground Combat Vehicle Welding Code

Steel 12479550 GTAW and GMAW
M1 to M1 GTAW method
M1 to M1 GMAW method



Lynn Welding

Welding - Machining - Fabrication



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