

The logo for Jorgensen Forge, featuring the company name in a bold, sans-serif font. 'JORGENSEN' is in white with a black outline, and 'FORCE' is in red with a white outline. The text is set against a stylized orange and yellow circular background that resembles a flame or a sun.

JORGENSEN *FORCE*



**JORGENSEN FORGE:
FORGING QUALITY,
RELIABILITY & SERVICE
FOR OVER 50 YEARS**

ABOUT: JORGENSEN FORGE

For more than half a century, Jorgensen Forge has built strong client relationships based on exceptional quality, reliability, value and service. We commit to providing the defense, military, nuclear, energy, mining, and industrial markets with on-demand delivery of products to meet and exceed exacting specifications. We offer superior performance under the harshest of conditions.

One of the few forging companies in the United States, we are a complete open die forging and machining facility, with the capabilities and flexibility to help your exploration and drilling operations take shape now — and into the future.

BUILDING A LEGACY OF QUALITY, RELIABILITY AND SERVICE

Operated as a Navy facility by Isaacson Iron Works beginning in 1940, Jorgensen Forge is now a privately held ISO 9001:2008 registered company that manufactures high-quality forgings from material grades including and low alloy steels, 300, 400, ph stainless, aluminum alloys, titanium alloys, and nickel base alloys. Specialty grade items are routinely made to order. Jorgensen Forge has continually expanded capabilities with the addition of premium equipment, advanced technologies and a committed team of experts -- forging the way as a major producer of precision machined products for widely diversified industries.

UPHOLDING THE HIGHEST INDUSTRY STANDARDS FOR QUALITY

Our Quality System has been certified to ISO 9001 and SAE AS 9100 by ABS Quality Evaluations, Inc. and meets the requirements of MIL-I-45208, AS 9100 and ASME NCA-3800. Our quality system is organized in accordance with ISO 9001 and AS 9100 stating the general policies and practices of the system. The Quality System manual is the primary reference document within the company for all quality related activities and is used for auditing the effectiveness of the Quality System. The Quality System is supported by system level procedures and work instructions, which conform to the Quality System manual.

MAINTAINING A HIGHER STANDARD FOR PRODUCTS YOU CAN TRUST

Through stringent testing over and above the required standards, we ensure that our products offer superior performance and value over their life cycle.

- Benchmark Material Cleanliness measured on every bar
- 100% Penetrant inspection of every bar
- Computer Controlled bar straightening
- UT inspection more strict than API

QUALITY SYSTEMS & CERTIFICATIONS

JFC Quality Systems maintain compliance with five (5) markets ▶

In some cases, solutions in one market apply well to challenges in another. Let us find the right solution for your most challenging problem.

- Navy Nuclear (NAVSEA TP's) and Commercial Marine (ABS)
- Aircraft/Aerospace (AS9100, NADCAP Heat Treat & NDT)
- Commercial Nuclear (10CFR50, App.B, NCA-3800, HAF604)
- Commercial/Industrial (ISO 9001)
- Oil & Gas (API)

INDUSTRY CERTIFICATIONS & APPROVALS

NUCLEAR

NCA-3800 • NQA-1 Compliant • 10CFR50 App B • 10CFR21
NNSA HAF604 (China Nuclear Supplier)
NIAC Compliant

UNIVERSAL

SNT-TC1A • NASA Approvals (Boeing ISS Rings)
NADCAP Approved – Heat Treat
NADCAP Approved – Non-Destructive Testing

ENERGY

Meet API Standards
Meeting Many International Standards

MARITIME

EB2678 Qualified • NSTR-99 and MIL-STD-2132 Compliant
Meet Requirements of Many MIL-Spec Standards
Various Converter NSTR Qualifications

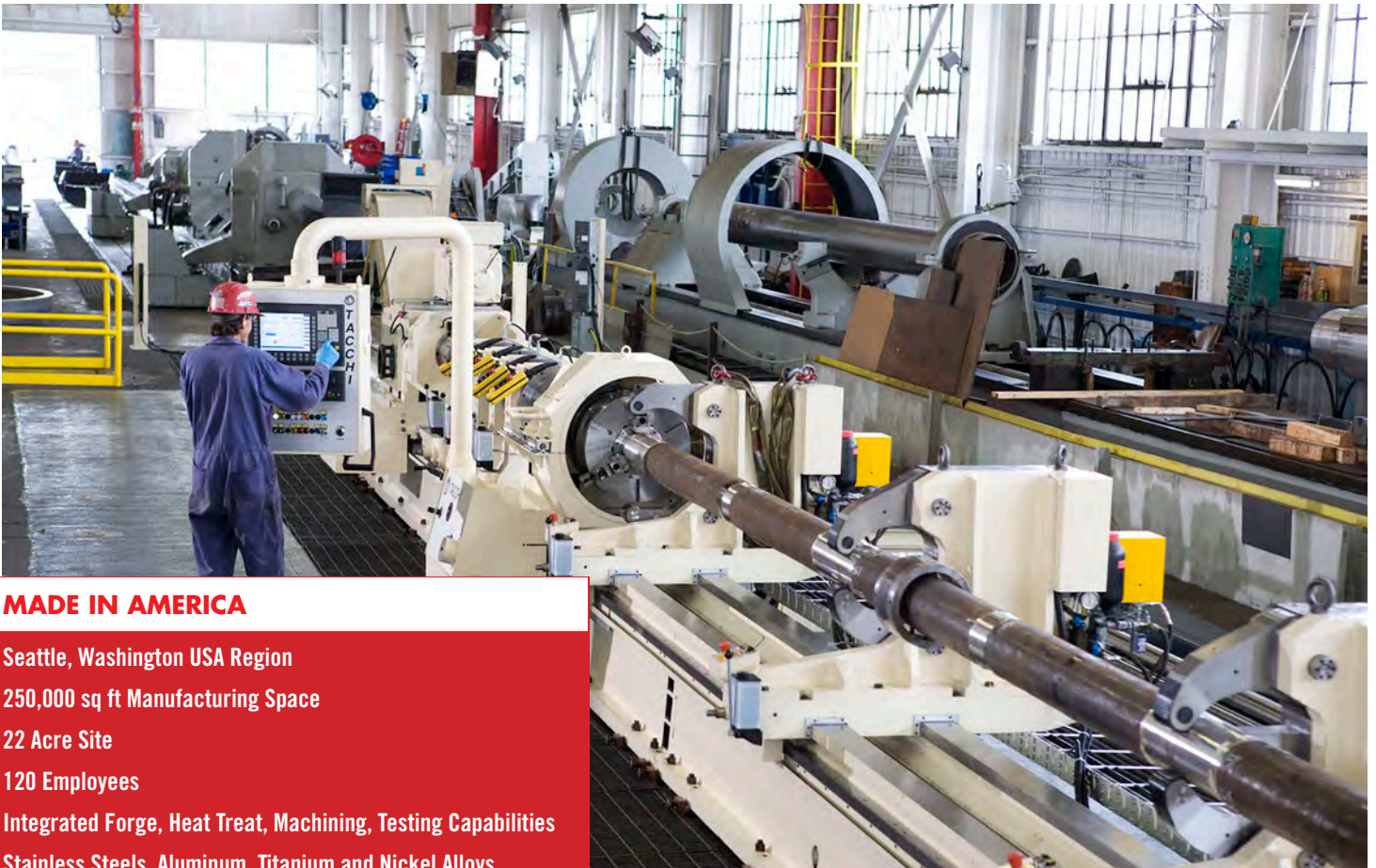
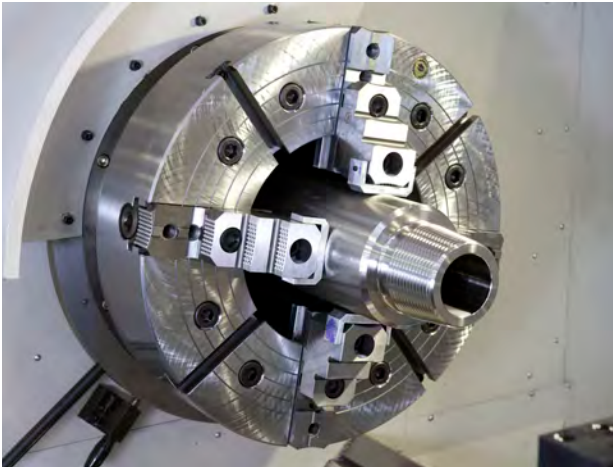
FORGING GLOBAL BONDS FROM DEFENSE TO MARINE/NAVAL TO AEROSPACE TO ENERGY

Jorgensen Forge caters to industrial and technical markets around the world. We are a fully integrated open die forging facility primarily serving marine/ naval, defense, aviation, aerospace, and energy, oil and gas markets. We cater to industrial and technical markets around the world and to meet the demands of these markets, we offer a dramatic range of forging capability from the most advanced marine propulsion shafting to small open die forgings (less than 100 lbs.) for aircraft, marine and general industrial markets.

Trust Your Needs with Our Experts: Give our Metallurgists, Project Managers, Operations, QA and Technical Experts a try with your project needs. We specialize in developing solutions to fit your exacting specifications, working in a collaborative relationship with you to realize your goals, whether they encompass non-magnetic stainless steel nuclear applications, aluminum aerospace structural projects or titanium military uses.

PROUDLY SERVING MULTIPLE SECTORS

- Marine/Naval
- Aerospace
- Defense
- Nuclear & Conventional Power
- Oil and Gas
- General Industrial



MADE IN AMERICA

Seattle, Washington USA Region

250,000 sq ft Manufacturing Space

22 Acre Site

120 Employees

Integrated Forge, Heat Treat, Machining, Testing Capabilities

Stainless Steels, Aluminum, Titanium and Nickel Alloys

MARKET APPLICATIONS:

MARINE/NAVAL

Our facility produces the most advanced propulsion shafting and other types of marine hardware for both defense and commercial applications. From the smaller aluminum bronze-shafted coastal mine sweepers, to the enormous CVN-class aircraft carrier propeller shafts, we have produced and repaired shafts for most surface and subsurface US Naval classes of ships, as well as many commercial variations of ship shafting.

We can provide a finished solid or hollow-bored product for cargo ships, naval vessels, submarines, ferry boats, tug boats and fishing boats. Finishing operations include installation of bearing sleeves, application of protective covering, line reaming of coupling flanges, fitting bolts and dynamic balancing.

- Main Propulsion Shafts & Couplings
- Aircraft Arresting Gear Components
- Periscope Components
- Rudder and Driving Plane Stocks
- Nuclear Reactor Components
- Weapon Guide Rails
- Missile Tube Components
- Valve Bodies
- Propulsion Components
- Classified Forgings



NAVY/NUCLEAR AND ENERGY

We manufacture a variety of conventional and nuclear grade products to meet customer specifications. Stepshafts, sleeves, discs and rings are produced in low alloy, stainless steel, nickel base and titanium alloys to a variety of general and/or specific requirements.

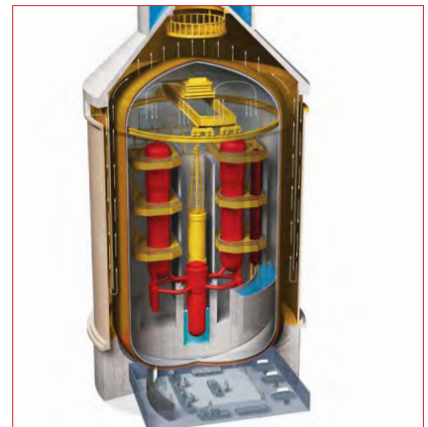
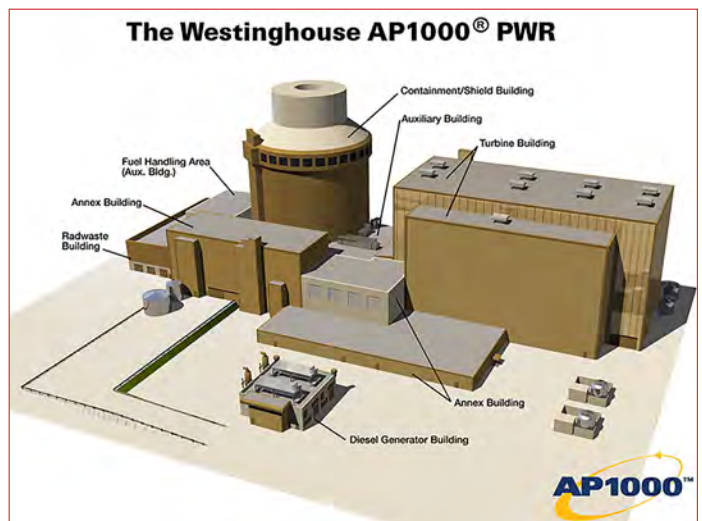
Nuclear Reactor Components for US Naval Submarines and Aircraft Carriers

- Shafts and Couplings
- Nuclear Components
- Housings
- Classified Forgings
- Cooling

Components for AP1000 Nuclear Power Plants including Reactor Vessel Components.

Forged Nuclear Components for:

- Steam Generators
- Vessel
- Pressurizers
- Support Structures



AEROSPACE

Jorgensen Forge has a proven track record as a trusted manufacturer of seamless forged products for the aircraft and aerospace industry. We are a world leader in forging some of the largest diameter aluminum rings in use to exacting specifications for critical flight and space operations. In addition, we offer rectangular and contoured rolled rings of high-strength low alloy, stainless steel, titanium, and nickel-base alloys. Forged aluminum sleeves, blocks, discs and bars are also produced for various applications.

Seamless Rolled Rings for Launch Vehicles:

- Payload Rings
- Engine Mounts
- Fuel Tank Mounts
- Structural Rings

International Space Station Components

- Structural Forgings
- Forged and Finished Components



OIL & GAS

Austenitic, Non-Magnetic Stainless Steel Materials which Resist Corrosion and Cracking

Three (3) Proprietary Alloy Compositions

LWD APPLICATIONS:

- Flex Collars
- Fluid Blocks
- Drill Collars
- Hardbanding
- Solid Bars
- Stabilizers up to 42" Diameter

Collar Connections & Spiraling Made to Specification



GENERAL INDUSTRY

We offer a dramatic range of heavy forged products designed to meet the hardcore demands of both industrial and technical markets — from bars, blocks, discs, and sleeves to large precision shafting and seamless rolled rings in a variety of metal types and alloys.

Our facility features forging, finishing, heat treating and machining capability operating within the framework of an AS9100 / ISO 9001 Quality System.



BUILDING YOUR VISION:

Jorgensen Forge brings a powerhouse of equipment and capabilities to bear to support and build your programs. Whether our customers are looking to take their projects to outer space, underground or out to sea, we have the expertise and resources necessary to get them there.

We offer a proven track record producing seamless rolled rings for aircraft and aerospace products; high-strength, nonmagnetic drill collar materials and other drive related components for oil and gas applications; conventional and nuclear power generation products; and the most advanced propulsion shafting and other types of marine hardware.

FULLY INTEGRATED ON-SITE CAPABILITIES

Through stringent testing over and above the required standards, we ensure that our products offer superior performance and value over their life cycle.

- Four (4) Open-Die Hydraulic Presses
- Ring Rolling
- Heat Treatment
- Vertical & Horizontal Lathe Capabilities
- Milling Capacity
- Testing & Inspection
- Metallurgy



FORGING CAPABILITIES AND SHOP

Jorgensen Forge has been forging components for over sixty years. Focused on delivering forgings, meeting customer expectations of quality and turnaround speed, it is a company strongly positioned to serve your forging needs well into the 21st century.

- Four (4) Open Die Hydraulic Presses: 660, 1250, 2500, & 5000 Ton
- 2500T Press with Glama 15T Manipulator, Integrated Girard Controls
- 5000T Press with Glama 27.5T Manipulator, Integrated Girard Controls



HEAT TREATMENT

- Six (6) Steel Furnaces – sizes ranging from 330 to 2960 cubic feet
- Three (3) Aluminum Furnaces – One (1) drop bottom and Two (2) aging furnaces

Heat Treat Facility is Certified to:

- Steel – NADCAP, AMS-H-6875, AMS-2759, and MIL-STD-1684
- Aluminum – AMS-2772
- All Pyrometry Compliant with AMS-2750

MACHINING

Lathe

- Horizontal – up to 6 feet dia., 75 ft length
- Vertical – up to 20 feet diameter, 8.2 feet high
- Solid Boring, trepanning capacity – 2 in. to 36 in. I.D. up to 900 in. long

Mill

- CNC Horizontal Mill – with 20 feet horizontal travel x 8 feet vertical travel
- Conventional Planer Mill – with table size 24 feet x 8 feet



SEAMLESS ROLLED RINGS

Whether your requirement calls for 13" diameter or 225" diameter rings, Jorgensen Forge is your full service supplier. With two ring mills and a computer controlled hydraulic ring expander to serve your needs, Jorgensen Forge can meet your exacting standards. We provide seamless rolled and mandrel ring forgings produced from a variety of alloys. Experience the forged advantage!

Two (2) Ring Rolling Mills with Integrated Manipulator and 2400 Ton Ring Expander

- **Aluminum Rings:**
Max diameter: 225"
Max height: 30"
Max weight: 12,000 lbs
- **Titanium Rings:**
Max diameter: 160"
Max height: 20"
Max weight: 6,000 lbs
- **Nickel Base Rings:**
Max diameter: 130"
Max height: 20"
Max weight: 5,000 lbs
- **Stainless Steels:**
Max diameter: 150"
Max height: 30"
Max weight: 10,000 lbs
- **Carbon and Low Alloy Steels**
Max diameter: 170"
Max height: 30"
Max weight: 15,000 lbs

Mandrel Rings 125" Max Outside Diameter

- **Aluminum Alloys:**
Max weight: 15,000 lbs
- **Titanium & Nickel Base:**
CP-Ti Max wt: 15,000 lbs
Ti 6-4 Max wt: 5,000 lbs
Inconel Max wt: 7,000 lbs
- **Stainless Steels:**
Max weight: 35,000 lbs
- **Low Alloy Steels**
Max weight: 60,000 lbs



BARS

We are capable of supplying forged bars fully heat treated, rough turned, finish machined and non-destructively tested to meet your needs.

- **Aluminum Rings:**
Min/Max diameter: 4" to 36"
Max weight: 13,000 lbs
- **Titanium & Nickel Base Alloys:**
Min/Max diameter: 4" to 16"
Max weight: 15,000 lbs
- **Stainless Steels:**
Min/Max diameter: 4" to 40"
Max weight: 70,000 lbs
- **Carbon and Low Alloy Steels (Airmelt & VAR, ESR)**
Max diameter: 55"
Max weight: 200,000 lbs

BLOCKS • DISCS • SLEEVES

Jorgensen Forge can manufacture to meet a variety of size and material needs.

GRADES OF MATERIALS COMMONLY FORGED Not All Inclusive, Please Inquire for other Alloys and Materials

We forge a wide variety of materials and components. We can meet your exacting standards. Experience the forged advantage!

ALUMINUM ALLOYS GRADES WORKED

2014, 2219, 2618, 5083, 6061, 6063, 7050, 7075/7175, 7079

TITANIUM BASE ALLOYS GRADES WORKED

CP GRADES 1, 2, 3 AND 4;
Ti 6Al-4V, Ti 6Al-4V ELI, Ti 3Al- 2.SV, Ti 6Al-2Sn-4Zr-2Mo

NICKEL BASE ALLOYS GRADES WORKED

ALLOY 600, ALLOY 625, ALLOY 690, ALLOY 718

STAINLESS STEELS GRADES WORKED

304/304L, 310, 316/316L, 317/317L, 321, 347, 348, 403, 410, 416, 422, 15-5 PH, 17-4 PH, 13-8 MO, A286™, F51, F6NM;
NMS 100™, NMS 140™, J38™

CARBON AND LOW ALLOY STEELS GRADES WORKED

10XX, 41XX, 43XX, 4820, 86XX, 93XX, ASTM A470, ASTM A508, ASTM A723, NITRALLOY 135™; HY-80/100 (MILS-23009); NIMO (MILS-23284); COMP A, COMP F (MIL-DTL-23194), 300M, D6AC

MAINTAINING A HIGHER STANDARD FOR PRODUCTS YOU CAN TRUST TESTING & INSPECTION IN-HOUSE

- Ultrasonic
- Magnetic Particle
- Dye Penetrant
- Conductivity
- HBW Hardness
- Chemical Analysis
- Alloy Identity
- Tensile
- Impact (RT to -300 deg F)

Inspection and measuring test equipment meets both ANSI Z540-1 and MIL-STD-45662.

Nondestructive testing personnel are qualified to SNT-TC-1, NAS410, MIL-STD-271 and MIL-STD-2132.

Ultrasonic Inspection: NADCAP accredited for Aerospace to SAE AC7114.



ISO 9001:2008 / AS9100 Rev C
NADCAP Approved: Heat Treat & Nondestructive Testing
ITAR Compliant | Small Business | Cage Code 4E769



POSITIONED TO DELIVER WHEN YOU NEED IT

We offer a variety of products in numerous sizes, diameters and lengths at the following locations to accommodate your on-demand needs.

- Seattle, Washington, USA
- Aberdeen, United Kingdom

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Jorgensen Forge is committed to delivering products which meet or exceed your quality, performance and delivery expectations. If you have any questions about our capabilities, would like to place an order or schedule a meeting, call us at +1.206.762.1100 or toll free +1.800.231.5382.

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