



Ohio Capability

FOR BASELOAD ADVANCED ENERGY SYSTEMS



MANUFACTURING
SOURCE DIRECTORY

2013 EDITION

Sponsored by:

Ohio

Development
Services Agency

John R. Kasich, Governor

David Goodman, Director

Issued June, 2013 - Subject to Update



JOHN R. KASICH
GOVERNOR
STATE OF OHIO

Dear Ohio Baseload Energy Suppliers,

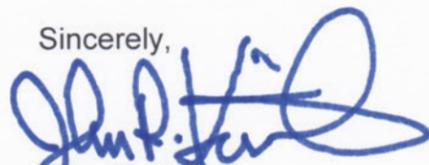
I am pleased to bring you Ohio's inaugural Baseload Energy Suppliers Catalog. This catalog is a starting point for power generation Engineering, Procurement and Construction (EPC) personnel, providing a listing of foundries, forges, extruders and fabricators of their most critical needs.

We understand that our power generation industry relies upon a base of suppliers to manufacture the components needed for producing energy. Therefore, we asked the domestic fossil and nuclear system builders to define their most critical needs, and used this information to identify the types of firms and capabilities that would meet these needs.

Plans are to continually update and augment the catalog as well as make it available in a web based edition. Making Ohio a Baseload Energy supply hub for heavy components is a natural fit given our extensive manufacturing experience, strong workforce, access to markets and world-class transportation systems.

The suppliers represented in the catalog can provide tremendous energy load for your customers and the potential for spurring on-shore job growth and retention. We look forward to working with you and creating reliable energy sources in Ohio.

Sincerely,



John R. Kasich
Governor

77 SOUTH HIGH STREET • 30TH FLOOR • COLUMBUS, OHIO 43215-6117 • 614.466.3555



OHIO'S
ADVANCED
ENERGY
SUPPLIER BASE
FOR
CLEAN COAL,
NATURAL GAS,
AND
NUCLEAR
POWER SYSTEMS

Energy Industries of Ohio

Park Center Plaza, Suite 200
6100 Oak Tree Boulevard
Independence, OH 44131

www.energyinohio.org
216.643.2952

Energy Industries of Ohio

Nancy Horton -
Program Manager
Horton@energyinohio.org

Roy Sheppard -
Technical Specialist
Sheppard@energyinohio.org





INTRODUCTION AND SCOPE

The Energy Industries of Ohio has prepared this catalog under a grant from the Ohio Development Services Agency and wishes to extend its gratitude to the many supporting personnel and organizations that have contributed to one of the Industry's most complete Baseload Supply Chain Catalogs.

Particular recognition goes to FirstEnergy Corporation whose direct involvement and support were key for gaining the active participation and input from potential users in both the nuclear and fossil arenas. The on-going collaboration with Baseload Energy Procurement and Construction Industries has permitted this catalog to become one of the most complete resources for meeting critical and hard to obtain components.

This manufacturing source directory is specifically geared to these Baseload Energy plant manufacturers, contract fabricators and plant operators and is focused on the "pinch points" where constrained availability for hard to source large castings, forgings, extrusions and fabrications exist. The catalog includes an additional section detailing special processes of interest to the powergen industry, such as emerging technologies, special coatings, control systems, etc.

WHY LOOK TO OHIO FOR YOUR MANUFACTURING NEEDS?

Ohio is an economic powerhouse, the seventh largest in population and eighth in gross state product. If Ohio were a separate country, it would have the 22nd largest economy in the world. Ohio ranks regularly between 3rd and 5th in the nation for total manufacturing employment and output, with 40% of our industry related to basic metals, fabricated metal products, industrial machinery and equipment, and transportation equipment. In fact, Ohio is 1st in the nation in the production of primary metals and has the most metal casting foundries in the US!

Strategically located between Lake Erie and the Ohio River, Ohio is at the transportation crossroads of the nation served by several interstate highways, all major rail carriers, oceangoing shipping via St. Lawrence Seaway and the Gulf Coast/Mississippi River, and several international airports. Companies located in Ohio are within one day's drive of 62% of all U.S. manufacturing facilities and within 600 miles of 59.5% of the U.S. population.

Ohio's workforce has a long-standing history in unique manufacturing techniques and is supported by an extensive system of higher education, including 52 community colleges and 70 four-year colleges and universities. Three major Federal R&D installations call Ohio home: the Environmental Protection Agency Laboratory in Cincinnati; Air Force Research Laboratories at Wright Patterson Air Force Base in Dayton; and the National Aeronautics and Space Administration (NASA) Glenn Research Center in Cleveland.



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Powdered metal, additive manufacturing, coatings, specialty processing, measurement and controls, and advanced pattern materials

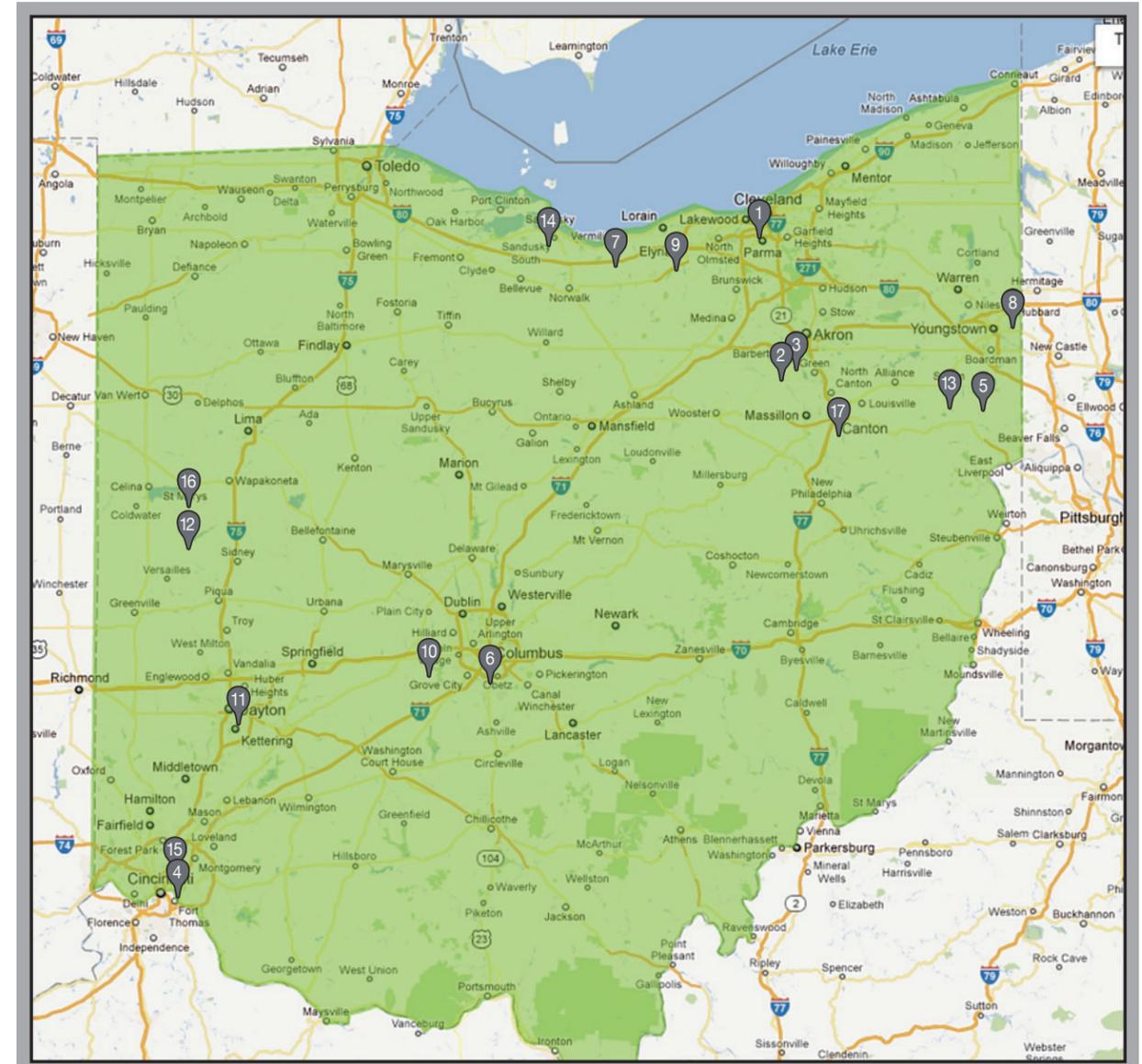
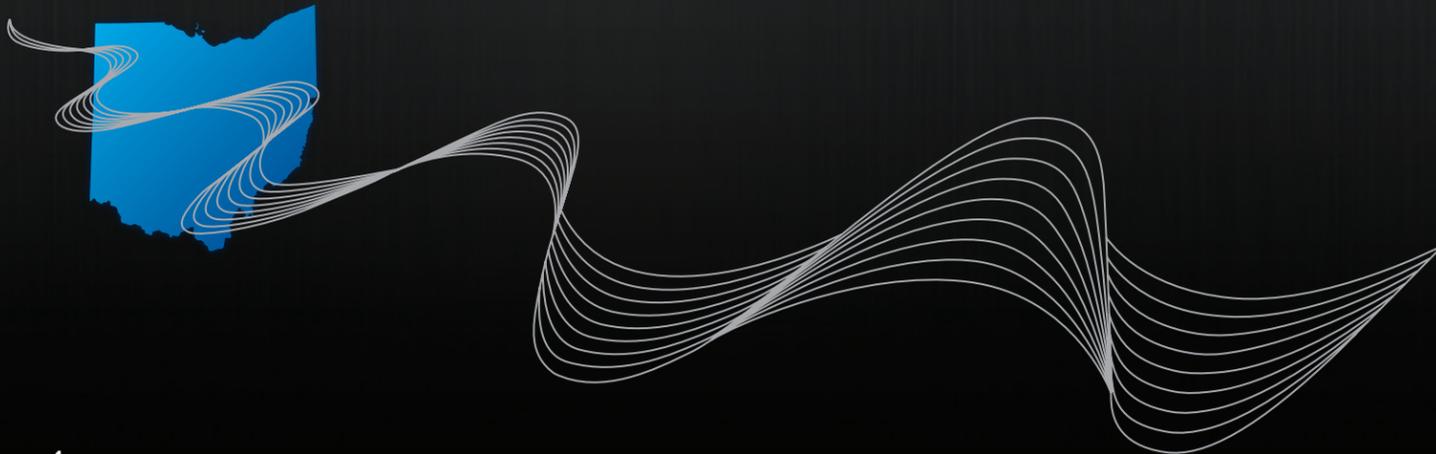


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SECTION 1



CASTINGS



CASTING COMPANIES

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| 6. Columbus Castings , Columbus | 15. Sawbrook Steel Casting , Cincinnati |
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CASTING COMPANIES

Alcon Industries

7990 Baker Avenue
Cleveland, OH 44102



ALCON

Phone: 216-961-1100 • www.alconalloys.com
Contact: Kurt Shubert • kshubert@alconalloys.com
Jim Montemagno • jimmonte@alconalloys.com

Max casting 1,500 lbs - heat & corrosion resistant alloys, high nickel alloys

Alcon Industries, Inc. is a leading heat and corrosion resistant alloy foundry and fabricator based in Cleveland, Ohio. Casting high nickel alloys, Alcon is a complete source for sand, centrifugal and investment castings, as well as rod, wire sheet and plate fabrications. Castalloy Division produces investment castings. Alcon has a diverse customer base including powergen, petrochemical, aerospace, automotive and off road. Working to MIL 45208-A, Alcon is also ISO-9001 compliant and has full in-house solidification modeling and metallurgical lab.

The Babcock & Wilcox Company

P.O. Box 271
Barberton, OH 44203



Phone: 330-753-4511 • www.babcock.com

Max casting 30,000 lbs – gray & ductile, carbon & low alloy steels.

B&W's Barberton operations are involved in all aspects of the powergen market. Pouring castings in gray and ductile iron, carbon steels, low alloy steels, heat resistant and corrosion resistant steels in airset/nobake. This facility works to all military and commercial nuclear specifications.

Barberton Steel Industries, Inc.

240 E. Huston Street
Barberton, OH 44203



Phone: 330-745-6837 • www.barbertonsteel.net
Contact: Jim Krivanek • jkrivanek@barbertonsteel.net

Max casting 50,000 lbs – gray & ductile, carbon & low alloy steels, stainless steels

BSI manufactures ferrous castings from 100 – 50,000 lbs. Utilizing no-bake sand molding, BSI pours alloy, carbon and stainless steels as well as gray and ductile iron. Barberton has full in-house NDT capabilities and is certified to AMS and ABS specs. Industries served include pump and valve, oil field and hydraulic equipment, construction machinery and military (US Navy).



Cast-Fab Technologies

3040 Forrer Street
Cincinnati, OH 45209



Phone: 513-758-1081 • www.cast-fab.com
Contact: Gary Powers • gpowers@cast-fab.com

Max casting 80,000 lbs – gray & ductile

Cast-Fab Technologies steel foundry manufactures precision gray and ductile iron castings using green and no-bake sand molding lines. Finished metal castings have been produced from CAD drawings in as little as 4 days. Carefully selected raw materials produce a superior metallurgy, saving up to 20% in roughing and finish machining time. A just-in-time strategy has been implemented to reduce costs, lead times, work-in-process and inventory. Cast-Fab pours castings up to 80,000 lbs. Certified to ISO-9001:2000, Cast-Fab maintains full sand-chem-mech and met labs, plus NDT and ultrasonic testing. Current customers include powergen, turbine, machine tools, pumps and construction/mining.

Columbiana Foundry

501 Lisbon Road
Columbiana, OH 44408



Ph: 330-482-3336 • www.columbianafoundryco.com

Max casting 15,000 lbs – gray & ductile, carbon & alloy, stainless & tool steel

The Columbiana Foundry is renowned for high integrity and service as a versatile producer of quality gray, alloy, and ductile irons, plus carbon, alloy, stainless and tool steels. A total quality system is maintained throughout all plant processes. In-house testing includes metallographic examination, spectrographic, and N.D.T. (including magnetic particle, dye penetrant, and ultrasonic). Gating, risering and weight calculations are computer-generated.

Columbus Castings

2211 Parsons Avenue
Columbus, OH 43207



Phone: 614-437-2241 • www.columbuscastings.com
Contact: John Zapalik, VP Sales and Marketing
jzapalik@columbuscastings.com

Max casting 70,000 lbs – carbon & low alloy steels

Columbus Castings is widely recognized as a premier North American manufacturer of large, complex, value-engineered steel castings. Being ISO 9001:2008 registered and AAR M-1003 certified, their quality operating system is capable of meeting the demanding requirements of the powergen industry. Columbus Casting's fully integrated manufacturing facility features on-site scrap recycling, a large melt capacity of 70T, pattern design and development, flexible mold and core making equipment, advanced foundry technology, extensive heat treat and quench capacity, cost effective finishing and processes, and on-site machining capability. The foundry offers complete design verification and validation testing in their Advanced Technology Center.

Concast Metal Products Co.

14315 State Route 113,
Birmingham, OH 44816



Phone: 440-965-4455 • www.concast.com

Max casting 4,700 lbs – copper bronze alloys

Concast Metal Products Co. supports the needs and demands of the metals industry with a complete line of copper alloy products. Their primary focus is the production of copper alloys (in bars, rods, tubes and rectangles), custom alloys, and wrought drawn products, including alloy C63000 and C64200. In operation since 1960, Concast is the largest producer of specialty copper alloys in North America.

Ellwood Engineered Castings

7158 Hubbard Masury Road
Hubbard, OH 44425



Phone: 330-568-3040 • www.elwd.com
Contact: Brian Connell • bconnell@elwd.com

Max casting 200,000 lbs – gray & ductile

ECC is part of the Ellwood Group. The company includes multiple forge shops and casting houses. Their Hubbard facility pours ductile iron castings up to 200,000 lbs, specializing in ingot molds for the forging industry.

Elyria Foundry

120 Filbert Street, Elyria, OH 44036



Phone: 440-322-4657 • www.elyriafoundry.com

Max casting 200,000 lbs – gray & ductile

The Elyria Foundry Group is a leading producer of high integrity and complex gray and ductile iron castings for a large variety of markets including the fossil fuel and wind power industry. The Elyria campus specializes in castings from 40 to 10,000 lbs while Elyria's sister facility, Hodge Foundry, produces castings from 3,000 up to 200,000 lbs. Combined, Elyria and Hodge produce over 35,000 tons of gray and ductile iron annually. Both facilities are ISO-9001 certified with full NDT testing including microstructure, ultrasonic and X-ray certifications. The foundry offers engineering design assistance to maximize casting efficiency.

Fisher Cast Steel

12 E. Town Street
West Jefferson, OH 43162



Phone: 614-879-8325 • www.fishercaststeel.com

Max casting 7,000 lbs – high alloy stainless steel, heat resistant, Super Duplex and nickel based alloys

Fisher Cast Steel produces stainless steel castings ranging from ounces to 7,000 lbs. In addition to stainless, Fisher is also casting carbon and low alloy steels, nickel based and heat resistant alloys. Fisher Cast Steel maintains a system to substantiate casting conformance to all customer requirements. Non destructive testing, magnetic particle inspection and liquid penetrant inspection are performed in-house by trained ASNT-TC-IA personnel. Other testing such as volumetric testing (ultrasonic and radio-graphic inspection) are performed by an ISO 9002 / NADCAP certified lab.

Flowserve

635 N. Irwin Street
Dayton, OH 45403



Phone: 937-226-4018 • www.flowserve.com
Contact: Francis Porreca • fporreca@flowserve.com

Max casting 3,500 lbs – high alloy steels, high nickel alloys, titanium, zirconium

The Dayton facility specializes in high alloy stainless steels and nickel based alloys up to 3,500 lbs. They also specialize in vacuum pouring of reactive alloys such as titanium and zirconium. The Dayton facility currently produces valves, yokes and other parts for the powergen industry (both fossil fuel and nuclear). Their QA program has been designed to comply with 10CFR21.



CASTING COMPANIES

Midwest Manufacturing & Logistics

240 West 5th Street
Minster, OH 45865

Phone: 419-628-1959

www.midwestmanufacturingandlogistics.com



Max casting 45,000 lbs – gray & ductile

Midwest, a division of Minster, is an ISO-9001:2008 certified foundry specializing in custom gray and ductile iron castings up to 45,000 lbs and weldments up to 200,000 lbs! Midwest is also unique in being able to offer your casting or weldment fully machined in house. Large cast and welded components are machined in Midwest's "frame cell" consisting of four Ingersoll portal-type machining centers.

Quaker City Castings

310 Euclid Street
Salem, OH 44460

Phone: 330-332-1566 • www.qccast.com



Max casting 10,000 lbs – gray & ductile, heat resistant alloys, high nickel alloys

QCC pours a wide range of alloys including carbon, heat resistant and stainless steels plus various super alloys such as Monel, Inconel, Hastelloy and Ni based alloys. They also cast gray and ductile iron up to 10,000 lbs. In addition to no-bake sand, QCC pours centrifugal castings up to 12-3/4" diameter. QCC serves a wide spectrum of industries including powergen, aerospace, oil and gas and industrial valves.

Sandusky International

615 W. Market Street
Sandusky, OH 44870

Phone: 419-626-5340 • www.sanduskyintl.com



Max casting 125,000 lbs – stainless alloys

With twin plants in Ohio and Scotland, Sandusky is one of the premier foundries in the world for large centrifugal castings in a variety of stainless steel alloys, pouring castings up to 125,000 lbs. Primarily geared towards the paper making industry, Sandusky's castings have been utilized by their fabricators, making large headers for fossil fuel powergen plants. Owned by Metaltek International, Sandusky is actively seeking to expand their customer base into new arenas.

Sawbrook Steel Casting

425 Shepherd Avenue
Cincinnati, OH 45215

Phone: 513-554-1700 • www.sawbrooksteel.com



Max casting 12,000 lbs – carbon & low alloy, chromium & nickel based alloy

An ISO-9001:2000 certified facility, Sawbrook Steel Castings Co. specializes in carbon and low alloy steels, chromium and Ni-based alloys up to 12,000 lbs, utilizing both green sand and no-bake mold processes. Sawbrook serves a wide array of industries including power distribution, valves, oil and gas, and specialized mining equipment. Sawbrook has full in-house NDT capabilities including spectrographic, mag particle, ultrasound, full mechanical testing, and utilizes local radiographic facilities.

St. Marys Foundry

405 E. South Street
St. Marys, OH 45885

Phone: 419-394-3346 • www.stmfoundry.com



Max casting 60,000 lbs – gray & ductile

St. Marys Foundry features two, twenty-ton coreless induction furnaces, utilizing flask and pit molding with chemically bonded sand to produce castings ranging from 500 lbs to 60,000 lbs. The foundry pours gray and ductile iron, Ni-hard and Ni-resist, customer-specific irons, and provides all applicable heat treatments. St. Marys presently provides casting to the powergen, turbine, pump and valve, and aerospace industries. Full metallurgical and physical testing is done in house.

U.S. Casting Company

722 Mulberry Road SE
Canton, OH 44707

Phone: 330-452-9711 • www.uscastingco.com



Max casting 8,000 lbs – gray & ductile, carbon & low alloy

U.S. Casting pours a wide variety of carbon, low alloy steel along with gray and ductile iron in weights ranging from 10 to 8,000 lbs. Their ability to use polystyrene patterns for that "breakdown" one piece casting has many times put a customer back in operation in less than 2 weeks! They currently produce parts for the powergen, oil field, pump and valve, and military industries.

CAST-FAB

TECHNOLOGIES

Where Innovative Ideas Take Shape™



CONSULTING TO ENGINEERING... FOUNDRY TO FABRICATION... MACHINING TO FINISHING.

Cast-Fab combines cutting-edge technologies with an unparalleled commitment to continuous improvement. You will receive the highest quality products — and the industry's best value — in the shortest time frame possible.

FOUNDRY

- Three molding lines
- Gray Iron 25,000 - 60,000 psi
- Ductile Iron 60,000 - 120,000 psi
- -20°C; -40°C Charpy V-Notch Grades
- Full pattern shop capabilities
- Markets Served: Wind Energy; Mining; Machine Tool; Construction; Compressor; Valve; Elevator; Transportation; Plastic Injection Molding; Water & Wastewater

CASTINGS

- Gray Iron
- Ductile Iron
- 50 to 80,000 lbs.
- Machining



FABRICATIONS

Heavy Plate Fabrication

- Up to 80,000 lbs. and 20" LCS thick plate
- MIG, SMAW, GMAW, FCAW and SAW
- Semi-finish and finish machining
- Painting, assembly and kit packaging
- Certified Weld Inspector



Light Fabrication

- Low Carbon Steel (LCS), stainless and aluminum
- 20 gauge through 1/4" sheet
- Powder and wet painting available
- Cabinets & Enclosures



ISO 9001:2008 Certified

CAST-FAB Technologies, Inc., 3040 Forrer Street, Cincinnati, Ohio 45209
Ph: 513-758-1000 • Fax: 513-758-1002 • sales@cast-fab.com • www.cast-fab.com



■ Continuous Cast Bronze

- C86300 Manganese Bronze
- C90300 High Tin Bronze
- C90700 High Tin Bronze
- C93200 Leaded Tin Bronze
- C95400 Aluminum Bronze
- C95500 Nickel-Aluminum Bronze
- C95900 Aluminum Bronze

(All above alloys are standard stocked items)

■ Wrought Drawn Products

- C31400 Leaded Commercial Bronze
- C51000 Phosphor Bronze
- C54400 Phosphor Bronze
- C63000 Nickel Aluminum Bronze (AMS 4640)
- C64200 Aluminum Bronze (AMS 4634B)

(All above alloys are standard stocked items)

Special Alloys Available Upon Request



Concast offers a complete line of stocked and custom-made products. When Concast customers request special alloys and special sizes, we respond with products designed to meet their exacting specifications.

14315 State Route 113 | Birmingham, Ohio 44816
440.965.4455

www.concast.com | sales@concast.com

► All Concast plants are ISO 9001:2008 certified



Flowserve Dayton Foundry in Dayton Ohio

The Flowserve Dayton Foundry is a high alloy facility specializing in stainless steels, nickel-based alloys and reactive alloys such as titanium and zirconium. The foundry has the capacity to provide rapid prototyping through its investment and no-bake processes. Castings at Dayton can be from ½ to 3000 pounds.

The Flowserve Dayton Foundry quality assurance (QA) program has been designed to comply with 10CFR21 of the Code of Federal Regulations (CFR) governing the United States nuclear power industry.



The Flowserve Dayton Foundry has a full range of laboratory, mechanical and non-destructive testing services available as required by the customer and routine procedures include.

- X-ray fluorescence spectroscopy
- Leco carbon and gas (H, N, O) analysis
- Mechanical testing (tensile and impact)
- Magnetic particle
- Dye penetrant
- Radiography (Level III personnel certification)
- Ultrasonic

Associated Foundry Capabilities at the Flowserve Dayton Foundry Include

- Welding qualified to ASME Section IX Boiler and Pressure Vessel Code and ASTM A488
- Blasting with steel or stainless steel shot or aluminum oxide
- Heat treating and quenching in water or oil
- Full pattern shop for styrofoam, wood, plastic, or metal patterns & core boxes
- Machining available from out side vendors
- Castings in a weight range from 3000 to 20,000 pounds available from other Flowserve Foundries.

Flowserve Dayton Foundry
 635 North Irwin Street
 Dayton, OH 45403

Phone: 937-226-4018
 www.flowserve.com
 Contact: Francis Porreca • fporreca@flowserve.com



Quaker City Castings, or QCC, is a **no-bake/airset** sand foundry located in Salem, OH, about 30 minutes south of Youngstown.

QCC is extremely diverse in terms of the industrial markets it serves, producing castings for such markets as:

- Aerospace
- Oil and Gas
- Steel Mill
- Locomotive
- Tire Mold
- Compressor
- Industrial Valve
- Pumps
- Bridge and Crane
- Power Generation
- Drilling and Mining

QCC is a **HUBZone certified small business**.



QCC currently pours castings in Gray and Ductile iron as well as various steels, including carbon steel, heat-resistant steel, stainless steel, and various “superalloys” such as Monels, Inconels, Hastelloys, and Nickel-base alloys.



QCC’s steel and superalloy capacity is **5,000 lbs** finished casting weight. Our Gray and Ductile iron capacity is **10,000 lbs**.



In addition to its no-bake operations, QCC pours centrifugal castings up to 12.75” in outside diameter for various industrial and automotive applications.

One of QCC’s assets in its engineering and quality control department is newly-equipped FaroArm®, with a laser ScanArm. This tool allows us to guarantee dimensional accuracy in our castings and, if need be, reverse engineer existing castings to develop accurate specifications if they no longer exist.

QCC utilizes its on-site laboratory to certify that the material properties are correct on every order that leaves our facility. **QCC is ISO 9001:2008 certified**, and can produce castings to MIL and Nuclear standards.

310 E. Euclid Avenue • Salem, OH 44460 • Phone: 330-332-1566 • www.qccast.com

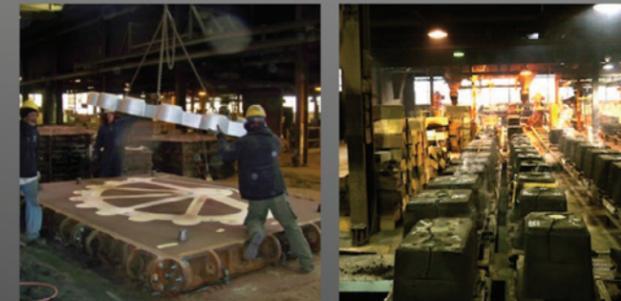


THE SAWBROOK STEEL CASTINGS CO.

WWW.SAWBROOKSTEEL.COM

FOR 90 YEARS, THE SAWBROOK STEEL CASTINGS CO. HAS BEEN A LEADER IN THE PRODUCTION OF HIGH-QUALITY CARBON AND LOW ALLOY STEEL CASTINGS FOR A BROAD SPECTRUM OF WORLDWIDE INDUSTRIES.

- ✓ ISO certified
- ✓ Castings from 1-12,000 pounds
- ✓ 440+ ton monthly capacity



- ✓ 100,000 square foot foundry
- ✓ Employees average 14 years experience at Sawbrook alone

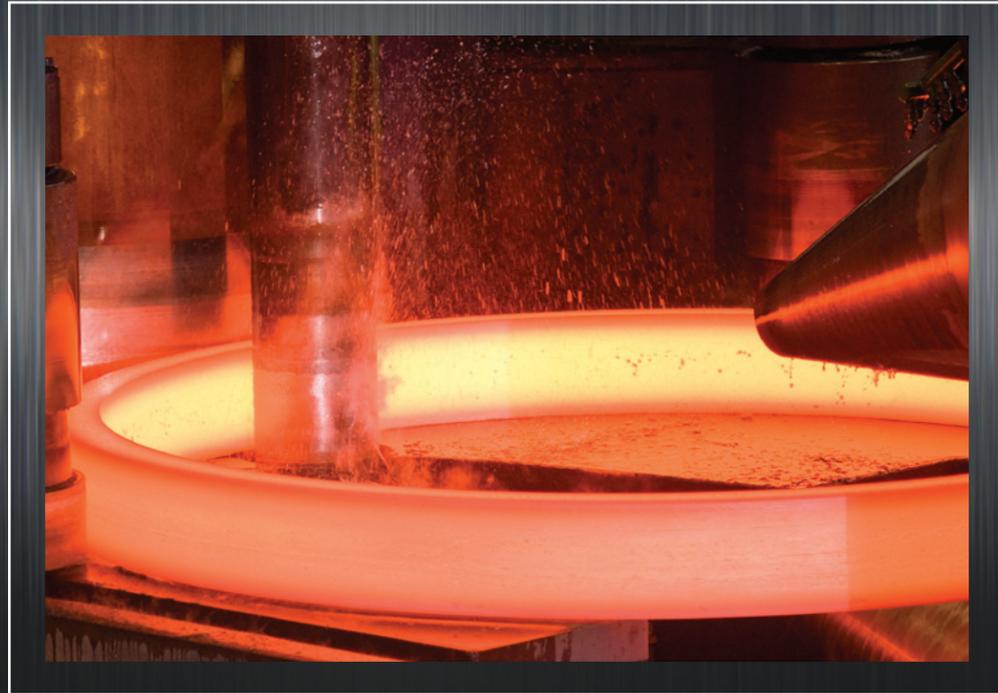
- Industries We Serve
- Hoists & Industrial Cranes
 - Off-Road Vehicles
 - Mechanical Power Transmission
 - Specialized Mining Machine Equipment
 - Specialized Mining Repair Parts
 - Specialized Freight Parts
 - Machine Tools
 - Oil Field Machinery & Equipment
 - Crushing & Pulverizing Equipment
 - Valves
 - Presses
 - Gear Industry
 - Off-Road Axles
 - Freight Car Trucks
 - Rail Coupler Systems
 - Marine & Shipbuilding
 - Bridge & Dam
 - Mining Industry (Surface/Underground)



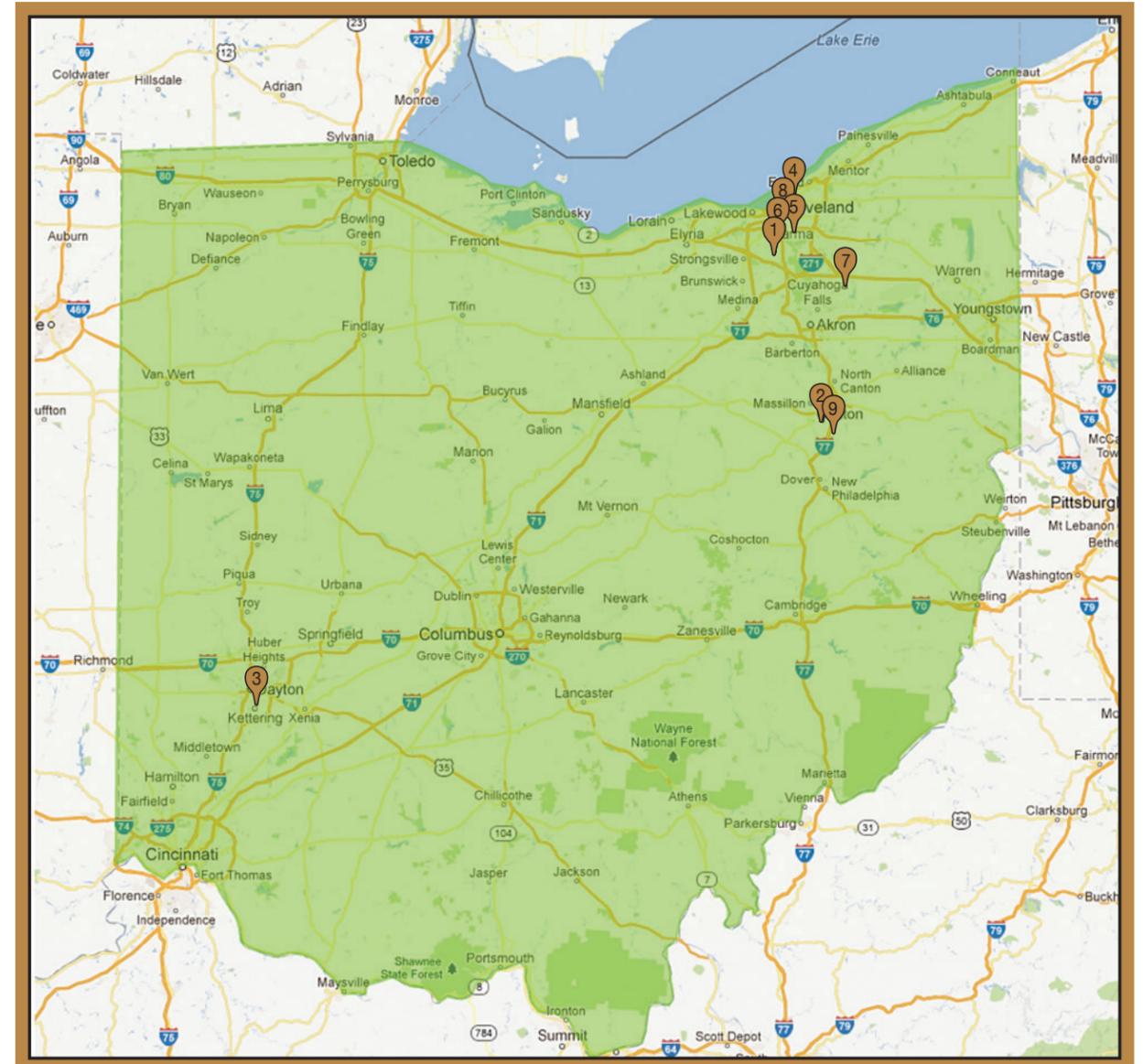
Contact us or visit us online to learn more about our rich history, capabilities, inspection, materials, and to obtain a quote.

WWW.SAWBROOKSTEEL.COM
 PHONE: 513.554.1700 | SALES@SAWBROOKSTEEL.COM

SECTION 2



FORGINGS



FORGING COMPANIES

- | | |
|---|--|
| 1. Alcoa Forging & Extrusions , Cleveland | 6. Presrite Forge , Cleveland |
| 2. Canton Drop Forge , Canton | 7. Rotek Incorporated , Aurora |
| 3. Dayton Forging & Heat Treating , Dayton | 8. SIFCO Forge , Cleveland |
| 4. Ellwood National Crankshaft , Cleveland | 9. Solmet Technologies , Canton |
| 5. Forge Products , Cleveland | |



FORGING COMPANIES

Alcoa Forging & Extrusions

1616 Harvard Avenue
Cleveland, OH 44105

Phone: 216.641.4310 • www.alcoa.com
Contact: Kendra Whyte • kendra.whyte@alcoa.com



Max forging 30,000 lbs

Alcoa Forgings & Extrusions has been producing forgings since 1917. They forge parts in aluminum, titanium, nickel alloys, specialty steels and other materials serving diverse industries such as aerospace, powergen, defense and other industrial markets. Alcoa's design and manufacturing engineers utilize a wide range of equipment. This includes hydraulic presses from 3,000 tons to the completely rebuilt 50,000 ton press, which was upgraded with the newest in forging technology. They also operate mechanical presses from 1,300 to 4,000 tons and steam hammers up to 35,000 lbs.

Canton Drop Forge

4575 Southway Street, S.W.
Canton, OH 44706

Phone: 330-477-4511 • www.cantondropforge.com
Contact:
Bill Maykowski • bmaykowski@cantondropforge.com



CANTON DROP FORGE

Max forging 3,000 lbs

With presses up to 6,000 tons and steam hammers up to 35,000 lbs, Canton is well suited to handle your small to mid-sized (2,000 lb max) forging. Canton has ISO 9001:2001, AS-9100:2004 and NADCAP QA qualifications, and strong in-house testing capabilities. Canton is already heavily involved in the powergen industry as well as aerospace, transportation and oil field.



Dayton Forging & Heat Treating

215 N. Findlay
Dayton, OH 45403

Phone: 937-253-4126 • www.daytonforging.com



Max forging 36,000 lbs

Dayton Forging and Heat Treating manufactures a wide range large open die forgings in both carbon and alloy steels. They are also a source for bar stock and rough machining, as well as commercial heat treating. Configurations include but are not limited to: shafts and spindles, rings, bars, discs, cylinders, sleeves, and hubs. With open die presses and hammers, the forge is able to produce forgings up to 36,000 lbs, lengths up to 25 ft., and diameters up to 50". An ISO registered company, Dayton Forge serves multiple industries including powergen and heavy equipment manufacturers.

Ellwood National Crankshaft Cleveland

777 East 79th Street
Cleveland, OH 44103

Phone: 724-347-0250
www.ellwoodcrankshaftgroup.com



Max forging 40,000 lbs

ENCC is one of five operations of the Ellwood Crankshaft Group, which is one of nine operating divisions of Ellwood Group, Inc. Each of the ECG's facilities has unique and sophisticated equipment for the forging, heat treating (including case hardening), and finish machining of crankshafts from 3 to 33 ft. and weights to 40,000 lbs. Two of the facilities are dedicated to the repair and refurbishing of all types of large crankshafts including those for engine, compressors, pumps and mechanical presses.

ENCC has one of the world's two multi-directional horizontal hydraulic forging presses (the other is at the Ellwood National Crankshaft facility in Irvine, PA), which enables the continuous grain-flow forging of engine and other crankshafts up to 10,000 lbs in weight and 10 ft. in length.

Forge Products

9503 Woodland Avenue
Cleveland, OH 44104

Phone: 216-231-2600 • www.forgeproducts.com



Max forging 3,000 lbs

Forge Products maintains a variety of hammers and a press enabling them to do a wide variety of shapes and sizes. Materials that are forged include carbon, alloy, stainless, copper base and aluminum with some high temp alloys. Forge Products specializes in blanks, bars, hubs, sleeves and rolled rings, and various other configurations. The customer base for these forgings are powergen, mining, aerospace, heavy transportation equipment and the oil field. They can provide product rough machined as well as heat treated and tested to various specifications.

Presrite Forge

3665 East 78th Street
Cleveland, OH 44105

Phone: 216-441-5990 • www.presrite.com
Contact: info@presrite.com



Max forging 300 lbs

With 3 plants in Ohio, Presrite is one of the Nation's leaders in net and near net-shape forgings. One of their specialties is gears, which are hot forged, often eliminating hobbing while increasing properties and longevity. With more than 500,000 sq. ft. of manufacturing space, Presrite produces precision forged parts for a broad range of industries, including fossil fuel powergen, aircraft, railroad and automotive/truck. Presrite features a full metallurgical lab. In addition, all 3 of their plants are ISO certified. Presrite has multiple forging presses ranging from 1,300 – 6,000 tons, producing parts to 300 lbs.



Rotek Incorporated

1400 South Chillicothe Road
Aurora, OH 44202

Phone: 330-562-4000 • www.rotek-inc.com
Contact: Kevin Quinn • sales@rotek-inc.com



Max forging 35,000 lbs

Rotek's manufacturing capabilities include ring diameters (from 20" to 240") and unit weights (from 180 to 35,000 lbs), in ferrous and non-ferrous metals, in various design types and qualities. Rotek will deliver as-rolled rings and machined rings according to customer requirements. Rotek is ISO 9001:2000 certified and all rings are proudly manufactured in the USA. Rotek rings are used in a variety of applications and industries including construction machinery, mining and drilling equipment, kiln tires, and powergen.

SIFCO Forge

970 East 64th Street
Cleveland, OH 44103

Phone: 216-881 8600 • www.SIFCO.com



Max forging 1,200 lbs

With presses up to 5000 tons and hammers ranging to 35,000 lbs, SIFCO can design, develop, and manufacture your smaller to mid-sized forgings up to 1,200 lbs. Already involved in powergen, SIFCO also works heavily in the aerospace and defense industries. SIFCO is certified to ISO 9001:2000, AS 9100:2001, NADCAP, AS 7102 and EN-9000. They have many approvals from GE, Boeing, Rolls Royce, UTC, Bell Helicopter, amongst many others.

Solmet Technologies

2716 Shepler Church Avenue SW
Canton, OH 44706

Phone: 330-455-4328 • www.solmet.net

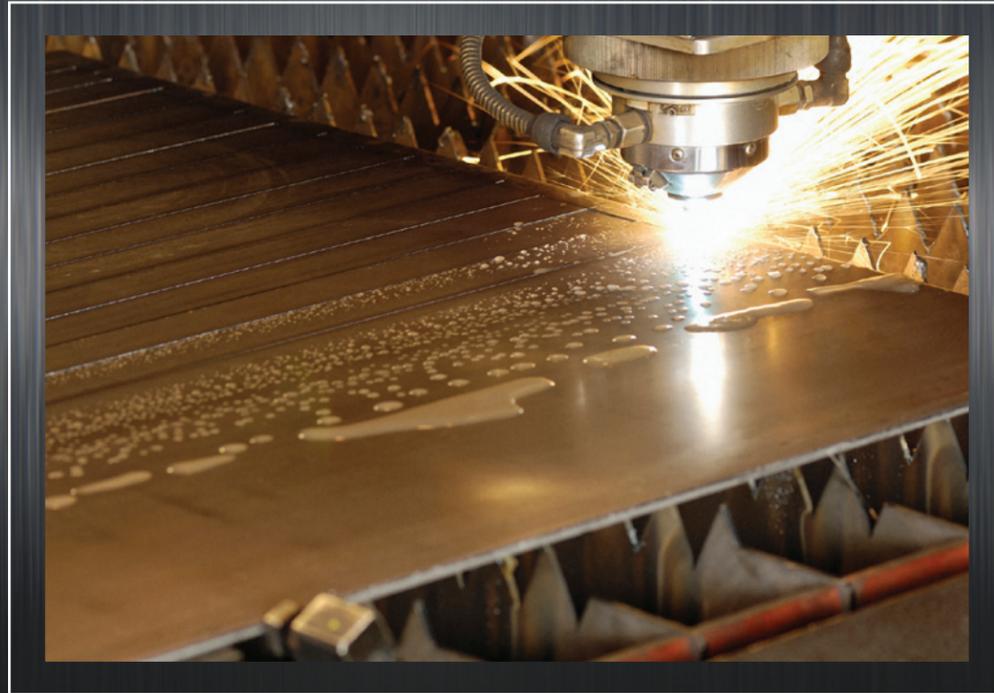


Max forging 3,000 lbs

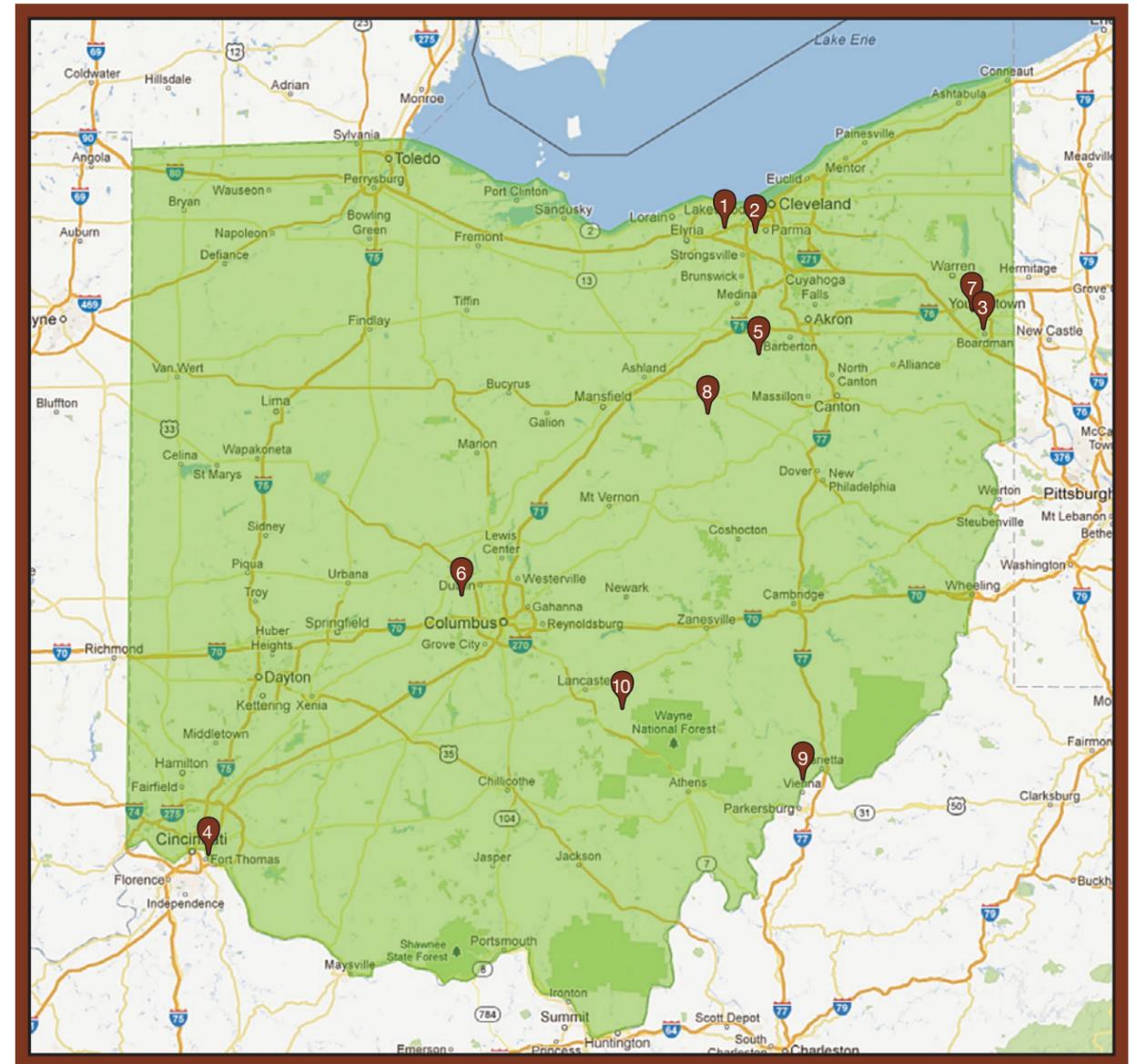
Solmet is a manufacturer of custom open die and hammer forgings, producing squares, rounds and custom shapes in weights up to 3,000 lbs and lengths up to 180". The shop works in a wide variety of metal, routinely forging carbon, stainless, high temperature and nickel based alloys as well as titanium. An ISO certified company, Solmet also certifies to AMS, ASNT, ASTM and MILS standards. Their current customer base includes power transmission, oil and gas, and mining industries.



SECTION 3



FABRICATIONS



FABRICATION COMPANIES

- | | |
|--|---|
| 1. Ameco USA , Cleveland | 6. Eden Cryogenics , Plain City |
| 2. American Tank & Fabricators (AT&F) , Cleveland | 7. Steel & Alloy , McDonald |
| 3. Brilex , Youngstown | 8. Tricor Metals , Wooster |
| 4. Cast-Fab Technologies , Cincinnati | 9. Viking Fabricators , Marietta |
| 5. EBNERFAB , Wadsworth | 10. Westerman Companies , Bremen |



FABRICATION COMPANIES

Ameco USA

4600 West 160th Street
Cleveland, OH 44135

Phone: 440-899-9400 • www.ameco-usa.com



ASME Section IX welding

Ameco is a full-service, custom metal fabricator specializing in pressure vessels, heat exchangers and custom fabrications. Services include light to heavy plate forming, rolling and ASME certified welding. Ameco also offers engineering services including metallurgical consulting and 3D modeling.

American Tank & Fabricators

12314 Elmwood Avenue
Cleveland, OH 44111

Phone: 216-252-1500 • www.atfco.com
(see additional info in Tube and Pipe section)



ASME "N", "NS", "NPT", "U", "U2", & "S" stamps – NQA-1, ISO 9001:2008

AT&F, specializing in custom steel manufacturing, has been providing a wide range of heavy, industrial manufacturers' materials, fabrications, component manufacturing and assemblies since 1940. Through their extensive long press brake forming, laser and plasma cutting, robotic contour beveling, heavy rolling and welding capabilities, AT&F provides high quality, tight tolerance fabrications.

Brilex

1201 Crescent Street
Youngstown, OH 44501

Phone: 330-744-1114 • www.brilex.com
Contact: Alex Benyo • abenyo@brilex.com



ASME "U" stamp and AISC (Amrod)

With over 380,000 sq. ft. of manufacturing space and 130 ton overhead crane capacity, Brilex is able to supply medium-to-large fabrication, machining, and assembly to heavy industry, worldwide. They are currently involved in making components for the powergen industry including piping systems for coal gasification, large T&D circuit breakers, radioactive cask lids, and large bearing rings for wind power.

Cast-Fab Technologies

3040 Forrer Street
Cincinnati, OH 45209

Phone: 513-758-1081 • www.cast-fab.com
Contact: Gary Powers • gpowers@cast-fab.com



ISO 9001:2008 certified

Cast-Fab's fabrication division has served the OEM Market for more than 50 years, producing both custom and general precision Sheet Metal and Heavy Plate Fabrications. Both Sheet Metal and Heavy Plate departments are designed for low-to-medium volume lot sizes. The Heavy Plate department spans 36,000 sq. ft. With NC oxy-fuel and plasma cutting, 1,500-ton forming capacity and MIG, GMAW, TIG, SMAW, FCAW, and SAW welding processes, it is well-equipped for medium-to-heavy plate and structural fabricating. Weights up to 80,000 lbs and plate thicknesses through 8" are standard. Typical fabrications include machine beds and bases, tables, rails, gear housings, platforms, frames and supports. The Sheet Metal department is a state-of-the-art, sheet metal fabricating facility, utilizing CNC punching, laser cutting, MIG and TIG welding, and prime and finish painting. In a 90,000 square foot area, electronic control and power panel-type cabinets, hydraulic tanks, pans, machine shielding and enclosures, and general sheets through 0.25" thick material are fabricated.

EBNERFAB

224 Quadral Drive
Wadsworth, OH 44281

Phone: 330-335-1600 • www.ebnerfab.com
Contact: Jim Pugh • jrp@ebnerfab.com



ASME "S", "U" stamps; NB "R" stamp

EBNERFAB is a full service ASME code job shop specializing in medium-to-heavy steel fabrications, pressure vessels, piping systems and complete system assemblies. In addition to standardized designs and OEM equipment, EBNERFAB is also well suited to provide custom, one-off equipment for prototyping and pilot facilities. The factory operates a modern and efficient manufacturing facility, employing lean manufacturing techniques, advanced technologies and welding systems.

EBNERFAB manufacturing and project staff have extensive experience working with custom piping systems, heat exchangers (including plate), and fabrications made of carbon and stainless steel from a few hundred lbs to over 60 tons.

Eden Cryogenics

8500 Rausch Drive
Plain City, OH 43064

Phone: 614-873-3949 • www.edencryogenics.com
Contact: Keith Brooks • kbrooks@edencryogenics.com



ASME VIII, Div 1 - NB "U" & "R" – code stamps

Eden Cryogenics LLC. specializes in cryogenic pressure and vacuum vessels, helium refrigerators and liquefiers, helium purifiers and recovery systems, dewars, heat exchangers, compressor skids, cryostats, vacuum insulated piping and one-of-a-kind engineered process systems. Eden offers turnkey solutions, an established line of stock cryogenic globe valves (including angle and "Y" pattern), couplings, filters, and ambient and electric vaporizers. Eden maintains an ASME Section VIII, Division I Boiler and Pressure Vessel "U" and "R" code stamps. Eden is dedicated to leading the development and advancement of technology for cryogenic requirements in the energy, laboratory and aerospace industries. Proud to Engineer, Design and Manufacture in the USA.

Steel & Alloy

110 Ohio Avenue
McDonald, OH 44437

Phone: 330-530-2220 • www.steelalloy.com



ASME "U" & NB "R" code stamps

Steel & Alloy has been making fabrications, weldments and pressure vessels since 1946. Steel & Alloy specializes in welding with 25 welding machines and positioners ranging up to 22,000 lbs. The shop produces a lot of custom, specialized equipment for the mining industry and also supplies a diverse customer base from powergen through exploratory robots.

Tricor Metals

3225 West Old Lincoln Way
Wooster, OH 44691

Phone: 800-421-5141
www.tricormetals.com
Contact: Ron Krajcik • ron@tricormetals.com



ASME VIII Div. 1 & 2

Tricor, a women owned business, specializes in shell and tube heat exchangers, plate heat exchangers, pressure vessels, tanks, and columns in a wide variety of alloys, including titanium. All of their locations are fully staffed with design engineers, project managers and certified welders.

Viking Fabricators, Inc.

2021 Hanna Rd.
Marietta, OH 45750

Phone: 740-376-2400 • www.pioneerpipeinc.com



ISO 9001:2008 & AISC certified

Viking Fabricators, an ISO registered company, is the fabrication arm of Pioneer Pipe (listed in the Tubing and Pipes section of this catalog). Both facilities are heavily involved in nuclear and fossil fuel powergen, fabricating pressure vessels, piping systems tanks and core support structures to all nuclear and AISC specifications.

Westerman Companies

A wholly-owned subsidiary of Worthington Industries, Inc.

245 N. Broad St.
P.O. Box 125
Bremen, Ohio 43107-9903

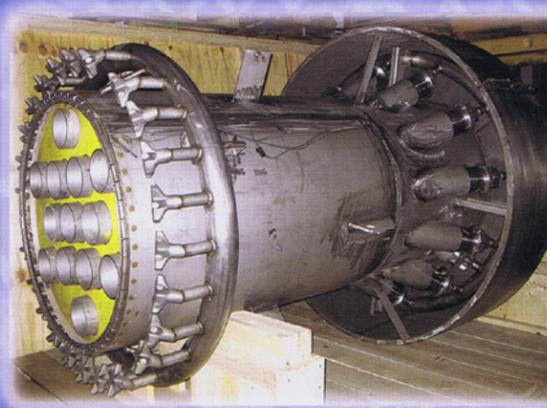
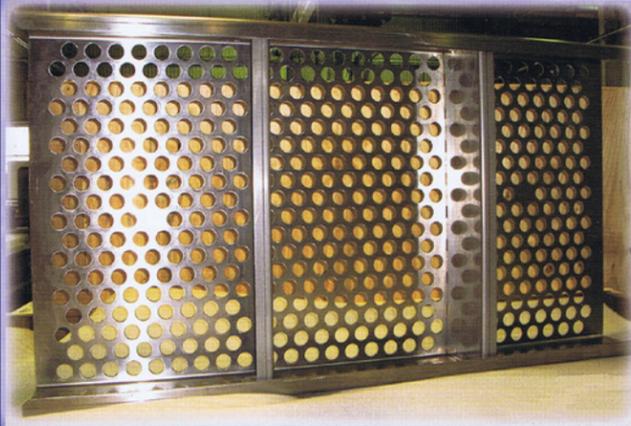
Phone: 800-338-8265 • www.westermancompanies.com



ASME "N", "NS", "NPT", "N3", "AU", "UM", & "NA" stamps – NQA-1; NB "R" stamp

Westerman is a custom fabricator, heavily involved in both the nuclear and oil and gas industries. They are experienced in building many components for nuclear power plants including heat exchangers, pressure vessels and tanks. Westerman also makes a full line of storage and transportation casks for radioactive material. Westerman's QA program is certified both to ISO9001:2008 and NQA-1 certified by ASME nuclear program accreditation.





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- Repair Service



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 Email: Sales@AMECO-USA.com WWW.AMECO-USA.COM
 4600 W. 160th. St., Cleveland, Oh, 44135



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- 3D Modeling Solidworks & Autocad
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 Email: Sales@AMECO-USA.com WWW.AMECO-USA.COM
 4600 W. 160th. St., Cleveland, Oh, 44135



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WWW.ATFCO.COM



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ISO 9001:2008



A Trusted Partner in Demanding Fabrication

AT&F is the first-choice quality material provider to industry's most demanding metal forming applications. In fact, AT&F has long been viewed as the trusted partner for nuclear installations and for any metal forming application that requires advanced design and fabrication of a wide variety of metals, even including reactive metals and exotic alloys for corrosive environments. Our metalworking specialists speak to a "who's-who" in materials, from titanium to zirconium, as we apply our advanced expertise to designing and building pressure vessels, piping systems, shell and tube heat exchangers and general fabrications.

With experience around the world and a track record of customer service stretching back seven decades, AT&F is the preferred provider that brings shape to industry.

Call for a quote: 216-252-1500

WWW.ATFCO.COM



WE INVEST IN CUSTOMER SUCCESS™

ISO 9001:2008

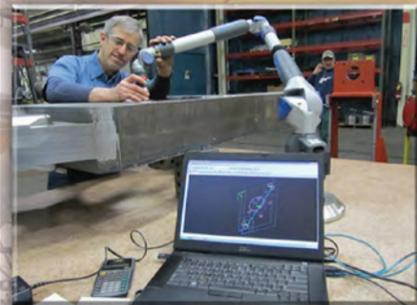


1201 Crescent Street
P.O. Box 749
Youngstown, OH 44501



Fabrication- carbon, alloy & stainless steel:

- ASME "U" Stamp and AISC (Amrod)
- Hi def Plasma and Oxy Fuel Plate processing
- Machined Steel Fitting Tables
- Welding Positioners up to 70 tons
- Stress Relieve Furnace
- Vibratory Stress Relief
- Shot Blast Facility
- Paint Booth



CNC Machining- Med.-Lg.

- Milling
- Drilling
- Boring
- Turning



Assembly & Testing

- Mechanical
- Hydraulic
- Air & Water
- Vacuum
- Electrical

Rebuilding:

- Visual, NDT, dimensional and functional inspections
- Complete Documented inspection reports including photos
- A review of our findings accompanied by suggested rebuild plan
- Engineering input to improve equipment life-cycles where possible

The Brilex Group has over 380,000 sq. ft. of heavy manufacturing space with lifting capacity up to 130 tons.

Contact: Alex Benyo
abenyo@brilex.com Phone: 330-744-1114
www.brilex.com Fax: 330-744-1125



Brilex Industries, Inc., Youngstown, OH, is a premier supplier of medium to large, high quality fabrications, machining and assembly to the Heavy Industry world wide.

Where needed, Brilex Industries is supported by its sister companies Quality Machine, LLC (Newton Falls), Amrod Bridge & Iron, LLC (McDonald) and Taylor Winfield Technologies, Inc (Youngstown). These companies make up The Brilex Group of companies.



EBNERFAB

Your PARTNER for QUALITY fabrication

Valuable experience for your most demanding projects

EBNERFAB's ASME certification and over 20 years of experience in renewable energy, pharmaceutical, chemical, oil & gas and metal producing industries ensures the highest standards for quality. From our 52,000 ft² manufacturing space with a 60 metric ton capacity crane, we serve some of the world's largest metal producers.

From vessel fabrication and piping to equipment fabrication, we provide complete plug-and-play assemblies. You can trust EBNERFAB with your most complex and detailed projects, confident in our strict adherence to established and documented quality standards.

EBNERFAB was established in 1987 in Wadsworth, Ohio, operating as a business group of Ebner Furnaces, a wholly owned subsidiary of EBNER Industrieofenbau of Linz, Austria; Ebner Furnace has been family owned and operated since 1948.



When QUALITY matters call...

330.335.1777
ebnerfab.com
224 Quadral Drive, Wadsworth, OH 44281

Jim Pugh, Vice President
jrp@ebnerfab.com / 330.335.1890

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Tricor Metals

TRICOR METALS specializes in shell and tube heat exchangers, plate heat exchangers, pressure vessels, tanks and columns in a wide variety of alloys, including titanium.

OUR COMMITMENT

HIGHEST QUALITY IN THE INDUSTRY
COMPETITIVE PRICE • DELIVERED ON TIME

Thank you in advance for considering TRICOR METALS for your projects. Please let us show you how committed we are to you, our CUSTOMER.



3225 West Old Lincoln Way • Wooster, OH 44691
Phone: 800-421-5141 • www.tricormetals.com



Westerman Companies

"Dedicated to quality products and service since 1909."

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- Nuclear Subassemblies
- Radwaste Containers
- Material Certifications
- Reactor Components
- Pressure Vessels
- Heat Exchangers

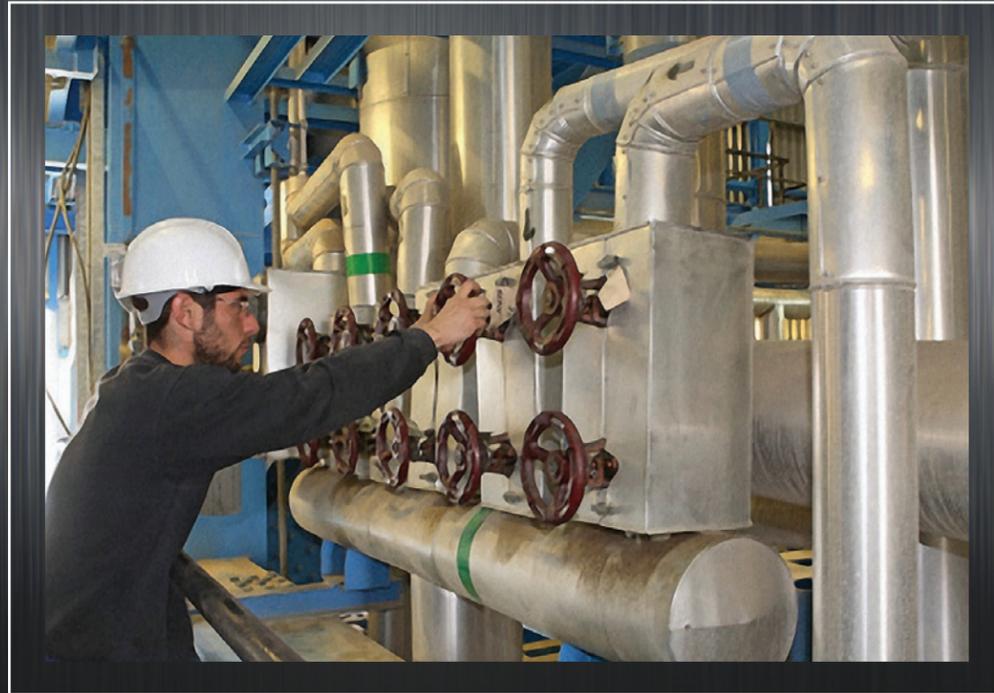


NA, N, N3, NPT,
NS, PP, U, UM, R

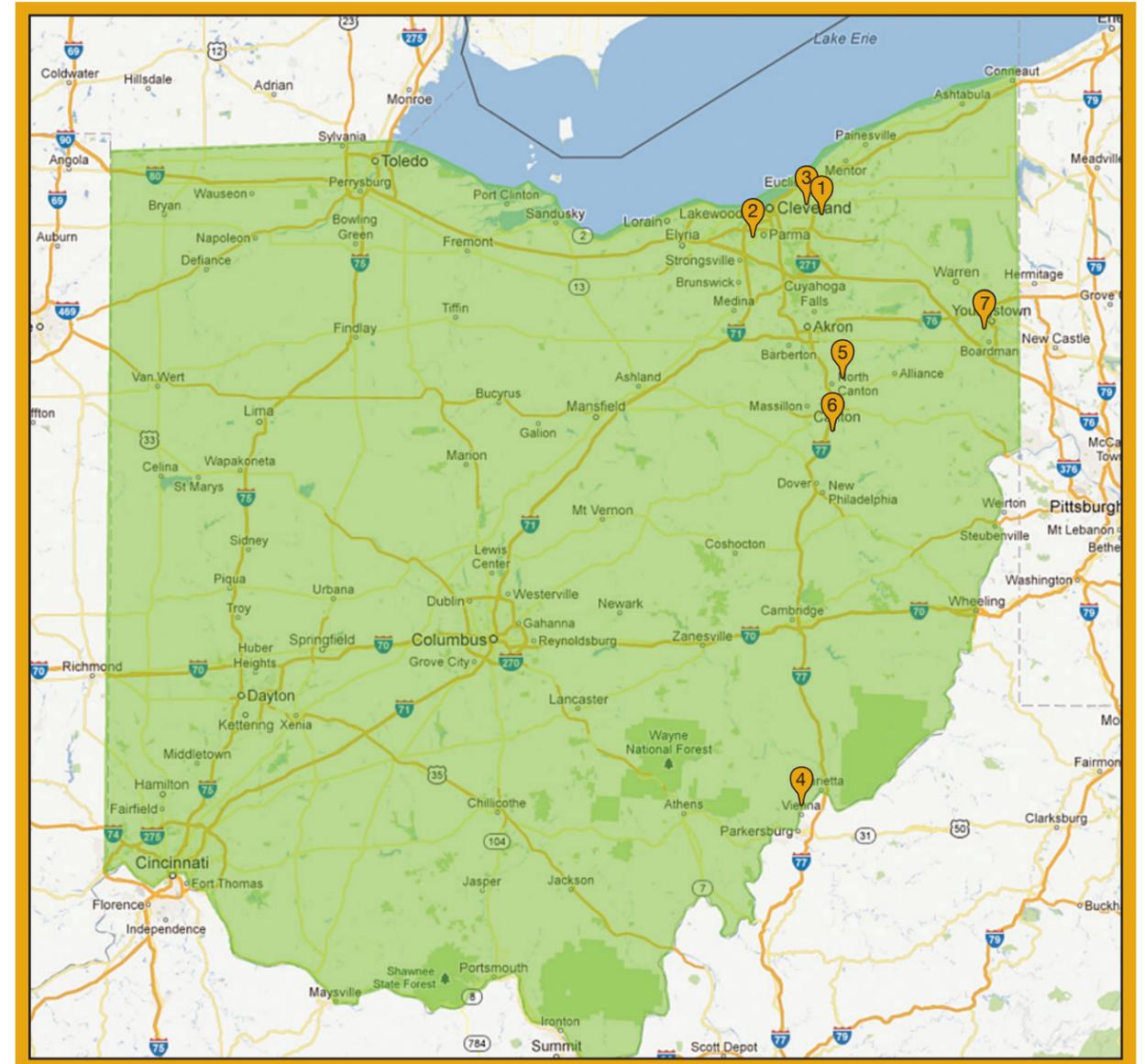
NQA-1 and ISO 9001/2000
10 CFR 50 APPENDIX B
ASME SECTION III & VIII

Westerman Companies is a wholly-owned subsidiary of Worthington Industries, Inc.

SECTION 4



TUBING AND PIPES



TUBING AND PIPE COMPANIES

- | | |
|--|-------------------------------------|
| 1. Alloy Bellows & Precision Welding , Cleveland | 4. Pioneer Pipe , Marietta |
| 2. American Tank & Fabricators (AT&F) , Cleveland | 5. SPSI , Hartsville |
| 3. Hose Master , Cleveland | 6. Timken , Canton |
| | 7. V&M Star , Youngstown |



TUBING AND PIPE COMPANIES

Alloy Bellows & Precision Welding



653 Miner Road
Cleveland, OH 44143
Phone: 440-684-3000 ext. 105 • www.alloybellows.com
Contact: Don Scanlon • d.scanlon@alloybellows.com.

AS-9100 & ISO-10012; ASME IX; TUV: PED 97/23/EC

Since 1935 Alloy Bellows has provided the industry with custom bellows, bellow assemblies, precision welding, thin wall seam welded tubing and nondestructive testing. They are both an AS9100 and ISO 10012 certified company. Other certifications include: ASME Section IX weld certified, qualified to TUV European requirements – PED Pressure Equipment Directive 97/23/EC, as well as various MIL standard approvals. Markets served include, but are not limited to, powergen, nuclear, aerospace, petrochemical, cryogenic, vacuum, medical, semiconductor and solar.

American Tank & Fabricators



12314 Elmwood Avenue
Cleveland, OH 44111
Phone: 216-252-1500 • www.atfco.com
(see additional info in Fabrications section)

ASME "N", "NS", "NPT", "U", "U2", & "S" stamps – NQA-1, ISO 9001:2008

AT&F is a manufacturer of large scale, precision fabrications for a wide swath of industries for over 73 years. They specialize in nuclear power plant component fabrication, material, and services including: fabricated containers for storage and transporting of radioactive material, pressure vessels and shells, and piping systems.

Hose Master



1233 East 222nd Street
Cleveland, OH 44117
Phone: 216-481-2020 • www.hosemaster.com

ASME IX; TUV: PED 97/23/EC; PEI; NAHAD; ABS; UL; CSA

Hose Master designs and manufactures custom, and standard, braided metal hose and expansion joint. Their product is used extensively in both fossil fuel and nuclear power plants. Metal hoses can outperform traditional products in harsh environments (temperature, chemical, vacuum etc.) with less potential for catastrophic failure.

Pioneer Pipe



2021 Hanna Rd.
Marietta, OH 45750
Phone: 740-376-2400 • www.pioneerpipeinc.com

ASME "N", "NS", "NPT", "N3", "U", & "S" stamps; NB "R" stamp; ISO 9001:2008; AISC

Pioneer Pipe and Viking Fabricators are one of the largest full-service construction, maintenance, and fabrication companies in the Ohio Valley. They specialize in general, mechanical, and electrical construction, pipe fabrication and installation, steel fabrication and erection, plant maintenance, plumbing and heating.

Pioneer is currently fabricating pipes up to 120" in diameter in a wide variety of alloys including most carbon and stainless steels, Hastelloy®, titanium, inconel, monel, nickel, etc. The company is well established in all aspects of baseload powergen, including nuclear (fully certified).

SPSI



1160 Sunnyside Street SW
Hartsville, OH 44632
Phone: 330-877-2350 • www.scottprocess.com

ASME "N", "NS", "NA", "NPT", "PP", "U", & "S" stamps; NBIC "R" & "NB" stamp

SPSI (Scott Process Systems, Inc.) is a privately held fabricator of process, power and nuclear piping systems used primarily in the domestic and international powergen and petrochemical industries. SPSI is one of the most recognized global leaders in pipe fabrication, providing solutions in the shop fabrication of piping systems. While SPSI has seen robust growth and a demonstrated expertise in the demanding powergen and petrochemical industry, the Company also has significant expertise in pipe fabrication for various other industries, including industrial, chemical and petroleum processing applications. SPSI's professional technical certifications include American Society of Mechanical Engineers (ASME) code stamps, including: PP, S and U Certificates of Authorization. SPSI also has nuclear certification with N, NS, NA and NPT ASME stamps. SPSI also maintains the NBIC "R" Pressure Vessel Repair and Alteration Certificate. SPSI strives to provide their customers with Superior Products, Superior Service, Unsurpassed Quality and On-Time Delivery.

Timken



1835 Dueber Avenue SW
Canton, OH 44706
Phone: 330-438-3000 • www.timken.com/steel

AS9100, ISO 9001, ISO/TS 16949, M-1003, OSHAS18001

The Timken Company, a global industrial technology leader, applies its deep knowledge of metallurgy, friction management and power transmission, all around the world. The company engineers, manufactures and markets mechanical components and high-performance steel. Its bearings, engineered steel bars and tubes – as well as transmissions, gearboxes, chain and related products and services – support diversified markets worldwide. With sales of \$5.0 billion in 2012 and approximately 20,000 people operating from 30 countries, Timken makes the world more productive and keeps industry in motion.

The Canton facilities custom-design some of the cleanest steel in the world, strengthening performance in the diverse applications where its steel serves metal makers. Timken® specialty steel reflects leading metallurgical and application knowledge, as well as the desire to continuously improve product durability while reducing ownership costs. Beyond their own steelmaking, Timken also supports the metals industry with bearings and systems that enhance production output. Timken steel and bearings work hard in metal caster operations, table rollers, flat and long product rolling mills, gear drives, casters, extruders and slitters.

Timken produces custom, seamless alloy tubing in hot-rolled and rough tuned conditions. Sizes range from OD: 1.9" to 13" with wall thicknesses of .25" to 3".



V&M Star - Vallourec & Mannesmann Tubes



2669 Martin Luther King Boulevard
Youngstown, OH 44510
Phone: 330-742-6300 • www.vmstar.com

V&M Star is North America's leading producer of seamless, Oil Country Tubular Goods (OCTG), Line and Standard Pipe, Coupling Stock and Mechanical Tube. Vallourec has just opened a new, \$1.1 billion, state-of-the-art, seamless pipe mill in Youngstown, Ohio to meet the growing demand for small diameter OCTG tubes, resulting from the boom in horizontal drilling. Production began in October 2012 on seamless pipe.

The new plant will be capable of producing up to 500,000 metric tons of seamless pipe from 2-3/8" to 7". The mill is strategically located in the heart of the Marcellus and Utica shale plays. Besides piping, it will also offer multiple threading options, storage and field support.





Inconel® Alloy 740/740H Code Case Approval is Major Step for Advanced Ultrasupercritical Power Plants

A consortium funded by the U.S. Department of Energy (DOE) Office of Fossil Energy and the Ohio Coal Development Office (OCDO) has successfully gained American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (B&PVC) approval for use of Inconel® Alloy 740/740H in power boilers. This is a major step by the U.S. Department of Energy in the development of high-temperature materials needed for Advanced Ultrasupercritical (A-USC) steam cycles. These materials enable steam temperatures up to 760° C (1400° F), which can dramatically improve efficiency and reduce emission of all effluents (including carbon dioxide [CO₂]) by about 30% over the current U.S. coal-fired power generating fleet.

The long-term research necessary to gain approval was conducted by the U.S. DOE/OCDO A-USC Steam Boiler Consortium made up of the U.S. Boiler Manufacturers (ALSTOM Power, Babcock & Wilcox Power Generation Group, Inc., Babcock Power, and Foster Wheeler) led by the Energy Industries of Ohio (EIO), the Electric Power Research Institute (EPRI), and the National Energy Technology Laboratory (NETL), with support from Oak Ridge National Laboratory (ORNL). The program has recorded a number of major accomplishments, and ASME B&PV Code approval of Inconel® Alloy 740/740H is one of the most critical steps needed before an A-USC demonstration power plant can be constructed.

Hot extrusion of an Inconel® Alloy 740H (ASME Code Case 2702) Pipe at PPC's Wyman-Gordon Pipe and Fittings. The alloy is the prime candidate for advanced ultrasupercritical steam boilers.

(Photo courtesy of Wyman-Gordon Pipe and Fittings)



Project Team



PRECISION isn't just our product. It's our PHILOSOPHY.

For more than 75 years, Alloy Bellows & Precision Welding has been supplying the world with metal bellows, bellows assemblies, thin-wall seam-welded tubing, and welding, soldering, brazing and nondestructive testing services. Our dedication to providing high quality products and services on-time and on-budget has allowed us to become a leading supplier to companies, both large and small. Our unique capabilities, flexible manufacturing environment and, most importantly, our staff have allowed us to meet our customers' most critical demands. So, whether your market includes aerospace and defense, power generation, gas turbine engines, semiconductor, government, ultra-high purity/electronic gas, heavy equipment, medical, nuclear, or petrochemical, we can provide precisely what you need.

Bellows

Welding

Tubing

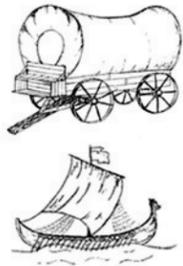
Testing



653 Miner Road
Cleveland, Ohio 44143

Phone: 440-684-3000
Fax: 440-684-3001

Web: www.alloybellows.com
Certifications: AS9100 NADCAP



Pioneer Pipe, Inc. Viking Fabricators, Inc.

www.pioneerpipeinc.com

Nuclear Fabrication

- ASME Section III Division 1:
 - **(N)** Certificate of Authorization for Fabrication of: Pressure Vessels, Pumps, Valves, Piping Systems, Storage Tanks, Core Support Structures, Concrete Containments, and Transport Packaging
 - **(NA)** Certificate of Authorization for: Shop Assembly
 - **(NP)** Certificate of Authorization for: Fabrication of Nuclear Appurtenances and Supports
 - **(NS)** Certificate of Accreditation for: Fabrication of Nuclear Supports
 - Material Organization
- 10 CFR 50 Appendix B Compliant Program
- NQA-1 1994 Compliant Program



SPSI

Fabricators of Process, Power and Nuclear Piping Systems

SPSI (Scott Process Systems, Inc.) is one of the most recognized global leaders in pipe fabrication, providing solutions in the shop fabrication of piping systems. While SPSI has seen robust growth and a demonstrated expertise in the demanding power generation and petrochemical industry, the Company also has significant expertise in pipe fabrication for various other industries including industrial, chemical and petroleum processing applications.



Value Proposition
To Provide Customers:
Superior Products - Superior Service
Unsurpassed Quality - On Time Delivery



1160 Sunnyside Street
Hartville, Ohio 44632
330.877.2350

SPSI Certificates of Authorization
ASME Accredited Quality System

sales@scottprocess.com
www.scottprocess.com





TIMKEN

Corporate Overview

As a global industrial technology leader, we apply our deep knowledge of metallurgy, friction management and power transmission to improve the reliability and efficiency of machinery all around the world.

We engineer, manufacture and market mechanical components and high-performance steel. Our bearings, engineered-steel bars and tubes -- as well as transmissions, gearboxes, chain and related products and services -- support diversified markets worldwide.

Market Segments Served

The Timken Company serves many diverse market segments, including aerospace, automotive, construction, consumer, defense, energy, industrial equipment, health, heavy industry, machine tool, positioning control, power generation and rail.

Timken In Numbers

- 2012 Sales: \$5.0 billion.
- Total number of people worldwide: approx. 20,000.
- Total number of facilities: 63 plants; 95 sales offices; 10 technology and engineering centers; 25 shipping centers; and six joint ventures located in 30 countries on six continents.
- Paid 362nd consecutive quarterly dividend in 2012.
- Listed in the New York Stock Exchange since 1922.

Technology

Ten technology and engineering centers located in North Canton, OH; OH; Bangalore, India; Colmar, France; Lebanon and Keene, NH; Manchester, CT; Mesa, AZ; King of Prussia, PA; Ploiesti, Romania; and Shanghai, China.



Products

Bar Shapes and Sizes Ranges

Available as bars and billets in either hot-rolled condition or rough-turned condition.

Rounds

1" (25.4mm) through 16" (406 mm).

Squares - Round Cornered

3.1" (79 mm) through 12.5" (318 mm).

Tubing Size Range

Available either in hot-rolled or rough-turned conditions.

Complete size ranges of seamless alloy mechanical steel tubing & blooms:

Tubes - OD: 1.875 inches (48 mm) to 13.00 inches (330 mm).

Blooms (semi-finished): 13" (330mm) – 24" (610mm).

Quality

As of 2009, Timken's plants and distribution centers received 120 quality certifications under ISO 9001, ISO/TS 16949, AS9100, M-1003, OHSAS18001 and other quality certifications.

Environmental

As of 2009, 27 plants were ISO certified.

Services

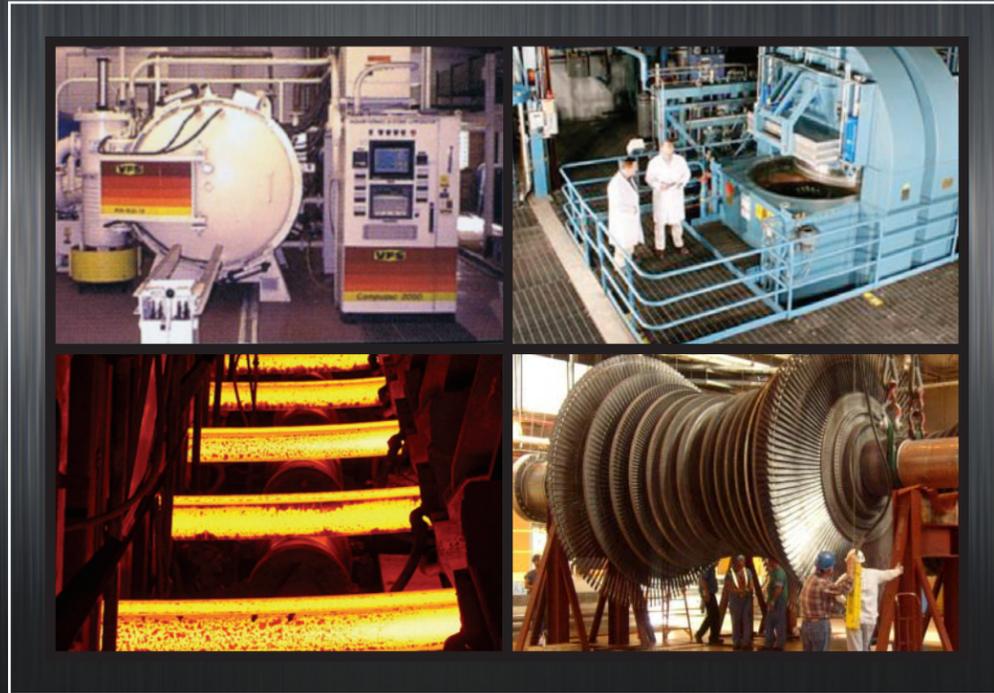
Timken offers a wide range of technical services to help customers select and evaluate the right steel for their applications. In addition, complete Timken supply chain strategies offer efficient warehousing and delivery of steel and steel components to customer facilities.

The Timken Company
1835 Dueber Avenue SW
Canton, OH 44706

Contact Information:
Telephone: **330-438-3000**
Website: **www.timken.com**

TIMKEN

SECTION 5



SPECIALTY PROCESSING



SPECIALTY PROCESSING COMPANIES

- | | |
|--|---|
| 1. Administrative Controls Management , Westerville | 7. McDonald Steel Corp. , McDonald |
| 2. Bodycote , London | 8. NEWGreen Legacy Services , Perry |
| 3. ExOne , St. Clairsville | 9. Projetech , Cincinnati |
| 4. FOPAT Productions , Miamisburg | 10. PROMECON USA , Orrville |
| 5. Kowalski Heat Treating , Cleveland | 11. saeTech , Canfield |
| 6. LSP Technologies , Dublin | 12. SIFCO Applied Surface Concepts , Cleveland |



SPECIALTY PROCESSING COMPANIES

Administrative Controls Management

647-K Park Meadow
Westerville, OH 43081

Phone: 614-898-9940 • www.acmpm.com
Contact: Anthony Woodrich, CCE, PMP
oh@acmpm.com



Since 1985, ACM has provided full-service, program and project management to utility, heavy industry, manufacturing, engineering/design, construction, and petro-chemical industries in Ohio and the United States. ACM provides timely and cost-effective, engineering management solutions to their client's needs during all phases of projects, starting with cost estimates, planning, scheduling, execution, closeout, and training. ACM is a certified woman business enterprise (WBE), and is certified by the Project Management Institute and the Association for the Advancement of Cost Engineering.

Bodycote

443 East High Street
London, OH 43140

Phone: 740-852-5000 • www.bodycote.com



Using atomized powdered metal (PM) technology, fused through hot isostatic pressing (HIP), could be the next evolution in producing critical components for the powergen industry. Bodycote, with over 170 facilities in 27 countries (3 in OH), is one of the pioneers of this process. Several key components, as well as specialized plate stock used in both nuclear and fossil power generation, are currently being developed.

ExOne

66850 Executive Drive
St. Clairsville, OH 43950

Phone: 724-610-4778 • www.exone.com
Contact: Jesse Blacker • jesse.blacker@exone.com



ExOne supplies services, systems and solutions for additive manufacturing and laser micromachining. The recently opened Ohio facility houses a material characterization and testing center dedicated to qualifying new materials for three-dimensional printing.

FOPAT Productions, Inc.

2411 Crosspointe Drive
Miamisburg, OH 45342

Phone: 888-993-6728 • www.fopat.com



FOPAT produces a proprietary material which is a replacement for the wax patterns used in investment castings. This green technology offers multiple benefits over traditional wax patterns currently in use. Most notable are the enhanced durability and temperature stability that allows patterns produced at FOPAT's facility to be shipped and stored until needed at foundries worldwide. FOPAT also offers superior dimensional accuracy and an ability to make much thinner walls and more detailed features than wax patterns.

Kowalski Heat Treating

3611 Detroit Avenue
Cleveland, OH 44113

Phone: 216-631-4411 • www.khtheat.com



Kowalski is a full-featured heat treater specializing in both vacuum and salt bath heat treatment along with more traditional techniques. Some of their more atypical services include austempering, cryogenic processing and plasma ion nitriding. Kowalski also has the capability to perform metallurgical testing in house including micro-structural and digital image analysis.

LSP Technologies, Inc.

6145 Scherers Place
Dublin, OH 43016

Phone: 614-718-3000 • www.lsp technologies.com



LSP Technologies, Inc.

LSP Technologies, Inc., an AS-9100 certified company, utilizes the laser peening process to significantly extend the fatigue life and improve the fatigue strength of metal parts, such as power generator, turbine engine, fan blades and other components. The process increases generator up time, reducing maintenance costs, and increasing safety. Laser peening is a surface enhancement process that increases the fatigue resistance of manufactured parts (gas turbine engine components, for example) to foreign object damage, corrosion, and fretting fatigue, as well as improves their high-cycle fatigue life. Laser peening creates deep, beneficial, residual compressive stresses into the part, to strengthen it and inhibit the initiation and propagation of fatigue or stress corrosion cracking.

McDonald Steel Corporation

100 Ohio Avenue
McDonald, OH 44437

Phone: 330-530-9118 • www.mcdonaldsteel.com



McDonald Steel is a producer of engineered, hot rolled steel special shapes. These highly engineered and customer proprietary shapes are designed for a particular customer need and developed in coordination with the customer. Near net shapes are an alternative to machining shapes from flat bar stock, which saves the customer in time, material costs, labor costs, equipment costs, and more. A hot rolled shape is often a lower cost alternative to casting, forgings, and cold drawn parts. Although new to the powergen industry, McDonald Steel's process is fairly unique and has been used in a wide range of markets.

NEWGreen Legacy Services, Inc.

3715 Parmly Road
Perry, OH 44081

Phone: 877-900-1763 • www.newgreenlsi.com



NEWGreen Legacy Services, Inc., is the only facility in Ohio providing specialized radiation services to the Great Lakes Region's nuclear power plants. Strategically positioned in Northeastern Ohio, adjacent to FirstEnergy's Perry Power Plant, NEWGreen is in position to capture business currently being shipped to southern states (such as Tennessee and Mississippi), thereby saving expensive and unnecessary transportation costs of radioactive contaminated materials. In addition, NEWGreen can provide a northern location for motor, pump and valve rebuild companies to perform their services; currently they have no option but to ship materials south. Therefore, NEWGreen offers a local solution for them and in return provides a continuous source of equipment service business for itself.



Projotech Inc.

3815 Harrison Avenue
Cincinnati, OH 45211

Phone: 800-611-2884 • www.Projotech.com



Projotech, an IBM Premier Business Partner, provides solutions to maintenance and reliability professionals. IBM Maximo® provides insight for all of your enterprise assets, their conditions and work processes, for better planning and control. Projotech's Maximo® Cloud Solutions provide an economical and secure alternative to running Maximo in-house.

PROMECON USA, Inc.

314 Collins Boulevard
Orrville OH 44667

Phone: 330-683-9074 • www.promecon.us



PROMECON designs and provides high-technology measurement systems for the monitoring and optimization of coal fired power stations. As a system solution provider, PROMECON USA is not only selling innovative measurement technologies, but also consults with the user in terms of the best possible application and optimization. They support their clients with analysis of the measurement results and detailed reports, and try to find ways to optimize the complete combustion process.



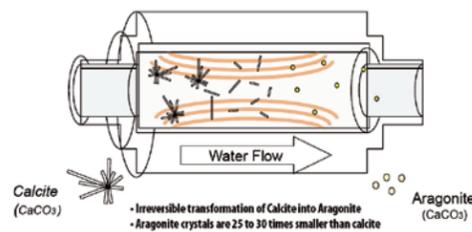
saeTech

170 Garwood Drive
Canfield, OH 44406

Phone: 330-885-0902 • www.saetechllc.com
Contact: Tim Batton • Tim.Batton@saetechllc.com

Salem Advanced Energies Technologies (saeTech) is pioneering the use of precise magnetic fields (MFC) for the inline treatment of water in power and processing plants. The magnetic fields generated, break up even high concentrations of calcium carbonate crystals in water, into a much finer aragonite powder. Among other benefits, this increases the heat transfer rate of the water. Once installed, the system requires no maintenance or electrical connections.

saeTech's Maxsys Fuel System also applies magnetic fields to fuel (oil or gas) in a combustion system to reduce emissions and enhance combustion by creating a hotter flame.



SIFCO Applied Surface Concepts

5708 East Schaaf Road
Cleveland, OH 44131

Phone: 216-524-0099 • www.sifcoasc.com
Contact: Derek Vanek • info@sifcoasc.com



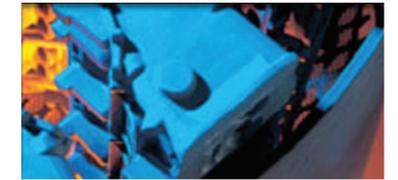
SIFCO Applied Surface Concepts is the international leader in selective plating, providing cost-effective solutions to improve part performance with surface enhancements. The solutions reduce manufacturing costs through increased wear resistance, corrosion protection, increased hardness, and improved conductivity. SIFCO ASC's surface enhancement technologies and services have been utilized for over 50 years on both OEM components and on parts requiring refurbishment.

SIFCO ASC has a diverse customer base including powergen, oil and gas, aerospace, and military. The company works by all military and commercial plating specifications. SIFCO ASC is an ISO 9001:2008, AS9100C and Nadcap accredited facility. SIFCO ASC offers selective plating products and job-shop plating services on-site and at all worldwide locations.



**Bodycote Hot Isostatic Pressing
London, Ohio call 740.852.5000**

Hot Isostatic Pressing (HIP)



HIP uses very high pressure inert gas at elevated temperatures in order to improve the properties of metals and other materials. HIP is used to eliminate porosity in castings and consolidate encapsulated powders to give fully dense 'wrought' materials. Incompatible materials can be bonded together to manufacture unique, cost effective components.

Every week a typical Bodycote HIP plant will process many tons of titanium, aluminum, steel and superalloy castings, removing porosity and uprating the performance of parts such as turbine blades, medical implants and turbochargers.

When a project requires advanced materials technology, working with Bodycote HIP could provide the ideal development and production route, allowing the engineer to optimize conventionally formed parts and also to design components unobtainable by other means. Bodycote HIP research specialists are experienced in working with customers to develop novel materials and applications.

With the largest operational capacity in the Western world, and a wide variety of sizes of equipment, Bodycote HIP is able to accommodate large volumes of small product as economically as large individual components.

- Bodycote HIP provides a technical service that transforms both product performance and manufacturing economics.
- High value adding treatments for unconventional materials, enabling customers to achieve unique combinations of design and manufacture to open up new applications and markets.
- When combined with powder metallurgy or investment casting, hot isostatic pressing can provide faster routes to market, with both material and manufacturing savings.

Bodycote's HIP services include:

Densification:

- Alloy castings
- Ceramics
- Densal®/Densal® II
- Glass
- Infra-red windows
- Medical implants
- Superalloy castings
- Titanium castings
- Tungsten carbide

Powder Metallurgy:

- Bi-metallic materials
- Complex PM assemblies
- High speed steel / Cold work steel/ PM steels
- Near-net shape (NNS) components
- Sputtering

The leading provider of thermal processing services worldwide



Hot Isostatic Pressing
443 East High Street
London, OH 43140

www.bodycote.com
740.852.5000

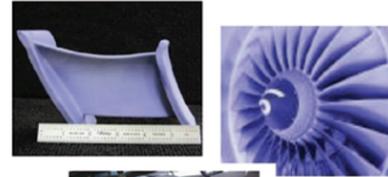


Patterns for Investment Castings

Pushing the Design Envelope of Castings

FOPAT ADVANTAGES

- Superior Dimensional Accuracy
- Superb Temperature Stability
- Energy Efficient & Cost Effective
- Durable Patterns for Thin Sections
- Reduced Tooling Costs
- Elimination of Chills
- Improved Manufacturing
- Reduced Labor Costs
- Shippable Patterns
- Easy to Handle
- Easy to Assemble
- Longer Shelf Life
- Eliminate Air Conditioned Wax Room



Aerospace
Defense
Medical
Commercial



Alternative and lower cost tooling methods are now being used in production of patterns with FOPAT. Since FOPAT is injected at a very low pressure and utilizes an exothermic process, little to no heat is required to be added or removed from the tooling material. This requires less energy and less expensive tools than those traditionally used in wax molding. FOPAT can be produced from tooling made of stereolithography (SLA), liquid silicone rubber (LSR), and low cost aluminum tooling. Quick turnaround gives the ability to expedite and reduce lead time on tooling.

FOPAT Production Inc., is a certified ISO 9001:2008 Quality Management System company. FPI is dedicated to delivering advanced innovation and technology in the manufacturing of foam patterns and engineered foam products.

FOPAT is a *Patented* formulation of an innovative material designed to make accurate patterns. This green technology reduces energy costs for Aerospace, Industrial Gas Turbine, Medical, and other part manufacturers. FOPAT makes it possible to manufacture metal parts that are often difficult, costly, and impossible to cast.

Product Lines – Rapid Prototyping & Manufacturing, Production Patterns, & Engineering Services.

FOPAT's unique formulation material slowly expands into the cavity of the die allowing the pattern creation process to require **lower pressure** than the wax injection process. Therefore, reducing core movement and breakage in the die.

FOPAT's **light weight & tough structure** helps reduce weight and potentially increases the number of patterns per tree assembly. In most parts, buoyancy is no issue since FOPAT is stronger than wax and is about 10 times more dense than polystyrene.



ISO 9001
FM 566955

FP01-9-11

FOPAT Production Inc.
2411 Crosspointe Dr.
Miamisburg, OH 45342
1-888-99FOPAT (36728)
SALES@FOPAT.com
www.FOPAT.com

KO^{ALSKI} HEAT TREATING COMPANY



K-GLOW

Kowalski Heat Treating's K-GLOW Division includes state of the art pulsed plasma ion-nitriding and ferritic nitrocarburizing systems. These processes result in increased surface hardness of up to 70 plus RC, as well as, enhanced wear resistance with little or no distortion. This environmentally friendly process can be used with materials that have been traditionally gas or salt bath nitrided. The K-GLOW process provides shorter cycle times at lower operating temperatures, allowing for the product to retain dimensional stability.

K-SALT

Kowalski Heat Treating's K-SALT Division processes distortion sensitive materials through rack hardening. With our custom design team we can fabricate tooling and fixtures to process your unique products. The K-SALT division, through rack mar-quenching and rack austempering virtually eliminates distortion while optimizing the heat treat cycle. We can process any grade that is oil quenched from prototype development to high volume production.



K-VAC

Kowalski Heat Treating's K-VAC Division has the capacity to process over 30,000 pounds of material daily. The K-VAC Division processes distortion sensitive materials up to 42 inches in diameter and 90 inches long, with high pressure quenching capabilities up to 20-bar. In addition to standard vacuum processing grades, our K-VAC division can process oil hardening grades with superior surface quality.

K-LIFE

Kowalski Heat Treating's K-LIFE Division was established in 1985 to offer the benefits of deep cryogenic technology. This process improves the wear resistance, toughness, edge retention, and overall tool life. We have the ability to process down to temperatures of -320°F in either liquid or dry environments, as well as, internal post process tempering; resulting in maximizing the physical properties of your material.



K-FLAT

Kowalski Heat Treating's K-FLAT Division is the answer for your close tolerance specialty flatwork. We have developed systems that are designed to accommodate various shapes, sizes, and configurations of flat products. Our K-FLAT Division designs and fabricates tooling quickly to meet the specific needs of our customers.

K-LABS

Kowalski Heat Treating's K-LABS has invested heavily in its fully integrated metallurgical lab. With cutting edge image analysis software our metallurgist performs independent failure analysis, microstructure examinations, and production testing. Metallurgical and engineering consultations are also available through the K-LABS division to optimize your thermal processing needs.

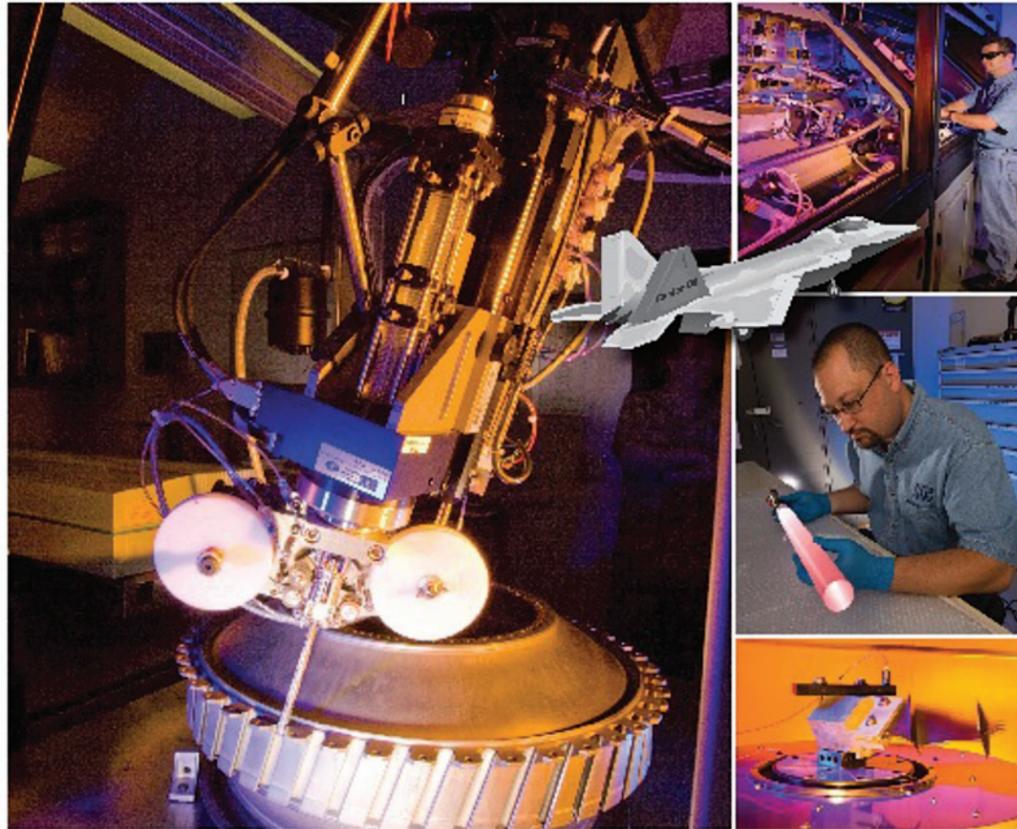


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LSP Technologies offers premium, commercial laser peening services that can fortify the mettle of your products. Please contact us and let's talk about how we might be able to help you meet your needs.

AS9100-Certified



LSP Technologies, Inc.

LSP Technologies, Inc. • 6145 Scherers Place • Dublin, Ohio 43016-1284 • (614) 718-3000 • www.lsp.com

McDonald Steel Corporation

Producer of Hot Rolled Steel Special Shapes
100 Ohio Ave McDonald Ohio 44437

ISO 9001:2008 Certified

Phone: (330) 530-9118

Fax: (330) 530-8181

www.mcdonaldsteel.com



McDonald Steel is a leading global manufacturer of precision-engineered hot-rolled steel shapes providing the highest-quality steel to the world's most recognized manufacturers for over 30 years. McDonald Steel maintains one of the world's largest inventories of tooling for nearly 500 different symmetrical and asymmetrical hot rolled shapes. McDonald Steel shapes are "near net" co-engineered so that our customers save costly manufacturing steps and labor in converting them to their end products. McDonald Steel's near net shapes add quality, strength and precision to the end products for which they are designed.

The development of a hot rolled near net steel shapes is a highly technical process supported by CAD programs and direct numerically-controlled lathes. Each step in the design procedure is a precise calculation based on the customer's final specifications, plus rolling temperatures and metallurgical characteristics depending on grade and chemistry. Therefore, McDonald Steel shapes are a far cry from standard commodity hot rolled bar products. Each shape or profile is designed for a specific customer application and is carefully engineered through eleven sequential stages as the steel billet is formed into its final and often asymmetrical configuration.



The McDonald Steel mill is a cross-country design consisting of 11 roll stands which are made up of 22 precision contoured rolls and guides. At the finishing stages of rolling the steel bar is in only one mill stand at a time which allows for the bar to elongate at different rates. This design allows McDonald Steel to produce asymmetrical shapes. Additionally, McDonald Steel utilizes state of the art roller bearing finishing stands in the rolling process. These stands have roller bearings with hydraulic roll balancing which allows for optimum gauge control and tighter gauge tolerances. All products are hot sheared to the desired length and straightened prior to shipping. The product can be saw cut if needed.

McDonald Steel has dedicated resources to continually improve the product that the mill produces. Recently, McDonald Steel commissioned a new reheat furnace with a walking hearth. This state of the art furnace replaces two older style pusher furnaces. The new furnace allows for more efficient and uniform heating of billets which provide a more uniform end product with consistent mechanical properties and improved shape. Natural gas usage within this furnace is also greatly decreased. McDonald Steel has a comprehensive Lean Manufacturing program and is ISO 9001-2008 certified.



NEWGreen Legacy Services, Inc.

www.newgreenlsi.com 3715 Parmly Road, Perry, Ohio 44081



1-877-900-1763 Toll Free
1-440-259-1763
1-440-259-1917
1-440-259-1765 FAX



GREAT LAKES NUCLEAR SERVICE CENTER Major Equipment Repair and Decontamination Services

Services

NEWGreen Legacy Services Radioactive Material Program is designed to reduce or eliminate the legacy storage of large components which are, presently, cost prohibitive to dispose of and create unnecessary radiological challenges to operating power plants. Our services will offer immediate relief from radiological control conditions associated with large contaminated components along with eliminating excessive material storage areas in a nuclear plant's operating power block.

PROGRAM TARGET AREAS:

Turbine Rotor Storage, Reconditioning and/or Disposal Program - Our facility will team with industry service providers to make available reconditioning services for large Turbine Rotor Sets. These services are currently not available to nuclear plants anywhere in the mid-west. Reconditioning service work will be completed to maximize material re-use. If not, disposal service is on option.



PRIMARY REPAIR SERVICES:

- Radiologically Contaminated Electric Motor, Motor Operated Valve and Pump Repair.
- Rebuild Radioactive Material Tools, Equipment and Scaffold Management Program.
- High Efficiency Particulate Apparatus (HEPA) Ventilation/Vacuum Testing and Storage.
- Mechanical repair and testing of rigging equipment (Chain-falls and Hoists)

MOTOR, PUMP AND VALVE REBUILD CENTER:

We are offering a **major motor, pump and valve repair facility** to nuclear plants located in North America and Canada. Our teaming capability will result in high quality dynamic testing and repair that will limit return to service down time. Rebuild service work requiring extended logistical transport periods across the country will no longer be an issue. A feature of our facility includes a 4160 VAC service. Our extensive indoor storage area permits long term schedule flexibility and rework options for motors, pumps and valves that need to be prepared for future use. Our facility will target special nuclear valve work focusing on the large steam cycle and safety relief valves (SRV's). Safety relief valves are specialized valves used for relieving excess steam in nuclear power plants. A population of these valves needs to be reconditioned, tested and recertified during each nuclear power plants' operating cycle. Our **NEWGreen** facility will pair with industry certified specialists to service these valves. Additional services will target the rebuilding of large valves containing Stellite (internal materials) that contribute to Cobalt 60, a source term issue in the Boiling Water Reactor (BWR) Plants. **NEWGreen** will provide the optimum one-stop shop for life extension needs.

HEPA AND NUCLEAR VACUUM SERVICES:

Our facility will provide an operating showcase for our "state of the art" building service and processing areas. **NEWGreen** will provide nuclear grade vacuum and ventilators D.O.P. (dioctyl phthalate) testing of HEPA equipment and a repair service station. Also a unit (radioactive material) storage program will be provided during peak operating season's to minimize radioactive material storage burdens at the plant locations. Our Fleet Program Management Service will deliver the industries finest systems to the utilities demanding planned outage and operating needs.

Services also offered for - **Equipment and Scaffold Management Program:**

Hoist and Chain Fall Tool Services:



NEWGreen Legacy Services, Inc.



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- Mobile solutions
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PROMECON
USA

PROMECON provides high technology measurement systems for monitoring and optimization of thermal processes such as

- Coal fired boilers
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With our technology emissions are reduced, efficiency and availability of plants are enhanced. Our goal is to deliver complete solutions that guarantee technical success as well as rapid return on investment.

Technology

Our innovative microwave technology surpasses common limitations of measurement technology especially by

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- Durability
- Low maintenance requirements

Products

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- Air or gas flow measurement for hot dusty applications
- Mass flow of pulverized coal pneumatically conveyed
- Particle size analysis

PROMECON USA, Inc.

314 Collins Boulevard
Orrville OH 44667

330-683-9074

Fax: 330-683-9082

info@promecon.us

www.promecon.us

Salem Advanced Energy Technologies (sáeTech)

170 Garwood Drive, Canfield, OH 44406
Phone: 330-885-0902 • www.saetechllc.com

Sáetech's mission is to provide proven new energy enhancement and conservation technologies for the manufacturing, industrial and power generation markets.

Maxsys Fuel System

performs by applying a finely calibrated magnetic field to the fuel (oil or gas) in a combustion system (industrial boilers, ovens, dryers, kilns and furnaces). The magnetic field aggregates nanoparticles in the fuel, which has two beneficial effects: preventing fouling of the burner exchange surface (emissions reduction) and enhancing combustion (energy conservation) by creating a hotter flame.



Superior Water System

performs as water passes through the chamber, it is subjected to a series of reversing-polarity, permanent magnetic fields, which interrupts the natural scale forming by temporarily altering their ionic charge identity. The molecules are caused to act like ions of similar charges and repel one another. This leaves the molecules in a physical state of suspension known as aragonite (an amorphous mud-like or powdery form), which will flow through the system or drop to a low area within equipment so that it can easily be blown down or bled off. As a result, chemical treatment costs are reduced and heat transfer requirements optimized.



s á e t e c h

Salem Advanced Energy Technologies

Superior Water Conditioner | Magnetic Treatment of Water

Magnetic treatment of water prevents mineral build-up



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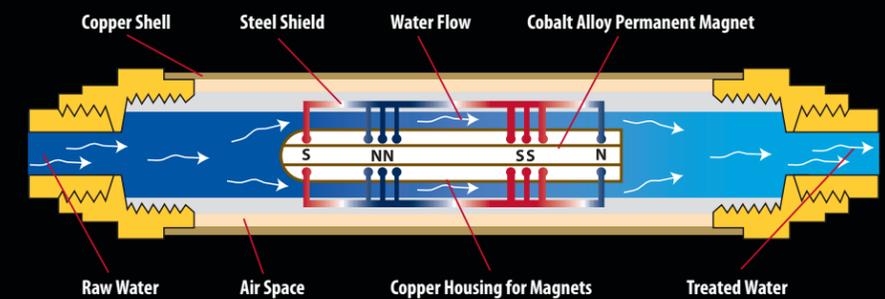
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Canfield, OH 44406

p: 330-885-0902

FOR MORE INFORMATION GO TO
www.saetechllc.com

Superior Water Conditioner



SIFCO® APPLIED SURFACE CONCEPTS



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SIFCO is the leader in Selective Plating, Period. For over 50 years SIFCO has delivered metal plating services worldwide, as well as answers for your in-house selective plating needs.

- Major Prime Approved Source
- ISO * AS * FAA * Nadcap
- AMS 2451 * Mil-Std 865 * Mil-Std 2197(SH)

Contact Bob Burfield at 330-581-9713 or rburfield@sifcoasc.com to learn more.

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5708 E. Schaaf Road
Independence, OH 44131, USA
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Email: info@sifcoasc.com
Website: www.sifcoasc.com



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industrial-strength sand cores, mold packages and functional metal parts

directly from CAD files.



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exone.com





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