

Sand Cast Aluminum Foundry
CASTING CAPABILITIES

ADALET

a Scott Fetzer company



Development and Manufacture of Customized
Cast Aluminum Parts and Accessories



www.adalet.com

SAND CAST ALUMINUM FOUNDRY

DISA 24/28 AUTOMATIC MOLDING MACHINE



Adalet's Sand Cast Aluminum Foundry is fully prepared to meet the most demanding manufacturing requirements with controlled processes and work flows to allow for quality results our customers expect. We use industry leading resources of machinery and equipment for making patterns, melting, casting, finishing, and testing your custom castings. Adalet's major services and equipment are summarized as follows:

CAPABILITIES

- Quality Aluminum Castings from Green Sand / Part Weight from ounces to 400 lb.
- Mature Quality System / Certified ISO-9001:2015
- Casting Design Assistance and Prototyping
 - SolidWorks 3D Modeling
 - Finite Element Analysis
 - 3D Printing Capabilities
 - Grinding, Blasting, Machining & Assembly Capabilities
- Tooling Design & Repair (In-House Pattern Shop)
- Spectrographic Analysis & Tensile Testing
- Hydrostatic Strength Verification Testing
- Heat-Treating
- Various Core Options

MELTING EQUIPMENT

- Striko Stack Melting Furnace: 3,300 lbs. per Hour Melting Capabilities
- Temperature-Controlled Launder System
- Rotary Degasser
- Ability to pour from Tap-Out Valve, Bull Ladle or Hand Ladle
- Simpson 85-B Speedmullor & Sand Distribution System
- Hartley Sand Controls

MOLDING

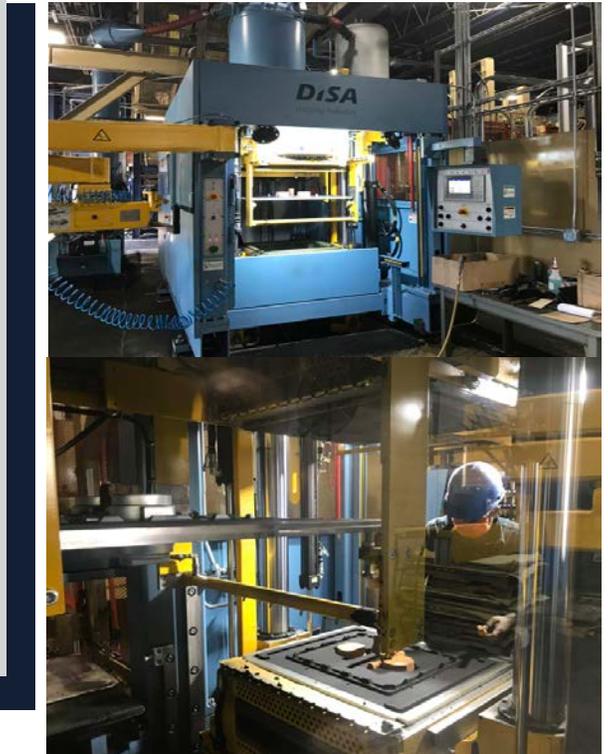
- Multi-Million Dollar Investment - The Largest Capital Improvement Initiative in Company History
- New DISA 24/28 Automatic Horizontal Molding Machine
 - First DISA of This Size and Capability in USA
 - Superior Efficiency with Capability of up to 120 Molds per Hour
 - Flask Size = 24" x 28" x 20"
- New 72-Car Automated Mold Handling System
- New and Upgraded Sand Handling / Shake-Out System
- Multiple Cope and Drag Floor-Molding Stations with Wide Range of Flask Sizes up to 44" x 56"

FOUNDRY CAPABILITIES

IN-HOUSE PATTERN SHOP

Our in-house pattern shop offers our customers the capability to make and/or modify patterns made of wood, composite, urethane and metal. Along with having all tooling necessary to complete these tasks, the pattern shop also has access to a state of the art machine shop with many multi-axis vertical and horizontal CNC machines.

- Quick turn around on pattern modifications
- Able to test modifications immediately
- Direct contact with the foundry allowing for better communication
- Ability to modify patterns on the floor, minimizing project down time



PRODUCTION MACHINING EQUIPMENT

- High-Speed CNC Horizontal Milling: Multiple NIIGATA Mills with Tombstones & Large Capacity Tool Magazines
- High-Speed CNC Vertical Milling: Multiple Okuma and Milltronics V-Mills
- High-Speed CNC Lathe Work: Multiple Okuma and Mori-Seiki (Bar-Feed & Chucker)
- Radial Drilling



FINISHING

- "Tumblast" Wheelabrator
- Powder Coating
- Wet Epoxy Paint
- Anodizing
- Impregnation
- Silkscreening



INDUSTRIAL SERVICES



Adalet's Sand Cast Aluminum Foundry is staffed with a team of committed engineers, designers, and foremen striving to produce customized machined parts to meet our customers' specifications. Regardless of shape or size, our on-site resources allow us to produce custom aluminum castings for almost any application. When you choose to work with Adalet for your casting needs, we can guarantee quality, customized castings and dedicated customer service.

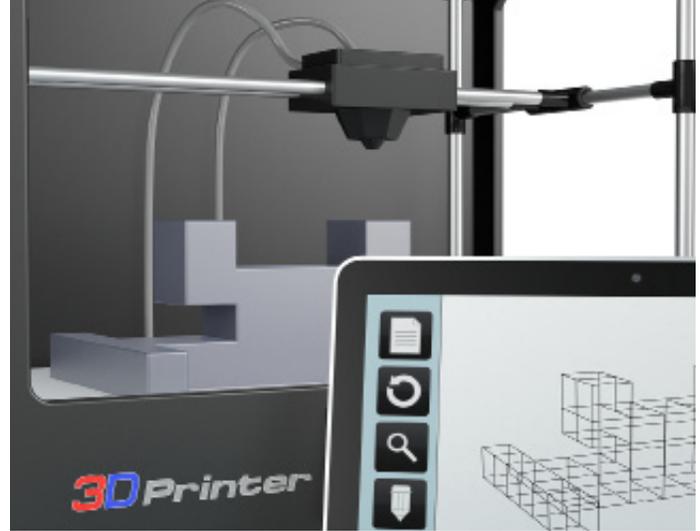
Adalet's well-equipped foundry and pattern shop is located in our 120,000 sq. ft. manufacturing facility. This enables us to provide high quality castings for our state-of-the art CNC milling and turning centers. Our in-house pattern shop allows us to create custom patterns or modify existing patterns quickly. Adalet's on-site rapid prototype machine facilitates the production of ABS plastic, custom prototypes derived from 3-D solid models.

Industries Served

- Petrochem / Oil & Gas / Mining
- Pumps & Pumping Equipment
- Industrial Machinery and Tool Components
- Farming/ Agricultural Equipment
- Food Processing & Preparation Equipment
- Construction Equipment
- Aviation / Highway / Railroad

Custom Castings

- Customer Specific Cast-in Logos
- Special Mounting Provisions
- Protective Cast-on Pads
- Enhanced Designs
- Cored Modifications
- Custom Sizes & Designs



Engineering Capabilities

- Initial Custom Design
- Improvement of Existing Designs
- Reverse Engineering
- Prototyping
- Design to Consolidate or Modularize Casting Families
- Failure Analysis
- Wiring Analysis & Installation

Engineering Software & Equipment

- SIMTEC WinCAST Molding Simulation Software
- SolidWorks 3D Modeling Software
- SolidEdge 3D Modeling Software
- AutoCAD 2D CAD Software
- Finite Element Analysis Software:
 - Simulation of Load & Deformation
- 3D Printing Capabilities

Adalet's full service engineering department strives to streamline your project specifications and give you the best solutions for your customized project needs. Our engineering expertise provides our customers with excellent project management from draft to finished product.

Adalet offers you a team of degreed engineers and designers continuously working with our foundry, quality assurance department, and in-house pattern shop to ensure we are meeting customer needs and controlling costs.

File types accepted include: .dwg, .dxf, .sldprt, .drw, .slddrw, .step, .stp, .iges, .par, .pdf, .jpg, .gif, .tif, .tiff, .bmp, .psd,

QUALITY CONTROL



Adalet Foundry's dedication to quality guarantees our clients that the products they receive meet their technical specifications and are delivered with efficient lead times at competitive prices. The positive commitment and participation of each employee in quality assurance is essential to achieving the best service for our customers. Adalet is fully prepared to meet the most demanding manufacturing requirements with controlled processes and work flows to allow for quality results our customers expect.

QUALITY

- ISO 9001:2015 Certified
- Production Part Approval Process (PPAP)
- Material Certifications and Traceability
- Hartley Sand Control Checks (every batch)

TESTING PROCEDURES

- Hydrostatic Pressure Testing
- Tensile Testing
- Non-destructive Testing
- Temperature Uniformity Testing
- Electrical Testing
- Salt Spray Corrosion Testing
- Hardness Testing
- Spectrographic Alloy Composition Testing

MATERIAL SPECIFICATIONS

Adalet has enjoyed unsurpassed success with its own, proprietary, Modified 359 aluminum alloy. This proven alloy was researched and developed to retain and improve upon the key benefits of the most popular 300-series alloys. The result is higher tensile strength, excellent corrosion resistance, and extreme versatility. Since development, Adalet has delivered over 50-million pounds of human safety products made from this exclusive high-performance alloy. These products include custom Hazardous Location electrical enclosures for countless OEM manufacturers and end-customers. Most of these customers require 3rd-Party certifications verifying the casting's ability to withstand internal explosions fueled by high-energy gases such as hydrogen, ethylene and propane. As a result of these stringent customer demands, products made from Adalet's Modified-359 have been tested and internationally certified for human safety use in more than 30 countries. Government applications include use in US military ammunition storage facilities, NASA's Cape Canaveral launch pad, and both internal external use aboard US Navy ships.

Adalet's foundry is also experienced in pouring a variety of other common aluminum alloys. Our team of technical sales and engineering personnel will assist you in selecting the right material to fit your application.

	TENSILE STRENGTH, MINIMUM	HARDNESS (BHN)
<i>ADALET 359.0-F SAND CAST</i>	<i>≥ 24,000 PSI</i>	<i>40 - 70</i>
<i>ADALET 359.0-T6 SAND CAST</i>	<i>≥ 37,000 PSI</i>	<i>90 - 115</i>
356.0-F SAND CAST	≥ 19,000 PSI	40 - 70
356.0-T6 SAND CAST	≥ 30,000 PSI	55 - 90
A356.0-F SAND CAST	N/A	N/A
A356.0-T6 SAND CAST	≥ 34,000 PSI	70 - 105
319.0-F SAND CAST	≥ 23,000 PSI	55 - 85
319.0-T6 SAND CAST	≥ 31,000 PSI	65 - 95



REQUEST FOR QUOTATION

Talk to an engineer about your casting needs and receive a free project consultation and evaluation.

216-267-9000 or castings@adalet.com

