

PRECISION MANUFACTURING SERVICES SINCE 1983.



1000 Bacon Road
Painesville Township, Ohio 44077
(440) 358-9888
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www.atfabcompany.com



PRECISION MANUFACTURING SERVICES



1000 Bacon Road
Painesville Township, Ohio 44077
Toll free in U.S. **(800) 256-3388**
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Fax: (440) 358-9998

ATFAB is a precision manufacturing services company established in 1983. We have earned our reputation for quality and on-time delivery by servicing the high-purity, fluid control, aerospace, medical, automotive and power transmission industries.

We are located near the shores of Lake Erie in Painesville Township, Ohio. We moved to our new 55,000 square foot facility in February 1998. The facility was designed to our specifications, to provide for the special requirements of precision manufacturing.

ATFAB has supplied precision manufacturing services to: NASA, Lincoln Electric, General Electric, The Cleveland Clinic and other clients that require close attention to the details of precision manufacturing.

Services we provide include the following:

| | |
|----------------------------|----------------------|
| Contract Machining | Inspection |
| Abrasive Bead Blasting | Lapping |
| Abrasive Flow Machining | Milling |
| Assembly | Mass Finishing |
| Cleaning | Packaging |
| Deburring | Polishing |
| Electro Chemical Deburring | Secondary Operations |
| Grinding | Tumbling |
| Honing | |

e-mail: info@atfabcompany.com

www.atfabcompany.com



MISSION STATEMENT

ATFAB is a precision manufacturing job shop, providing critical tolerance production capacity, through attention to the details of unusual manufacturing problems.

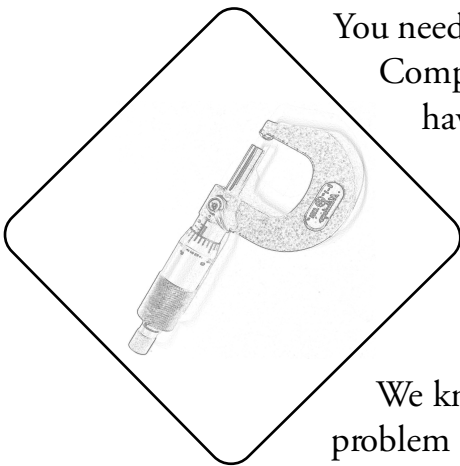
WE BELIEVE IN:

- ◆ providing customer service through high quality and prompt delivery at competitive prices.
- ◆ creating profitable growth through a strong "results" approach.
- ◆ treating all people with respect.
- ◆ maintaining a strong "people" orientation and showing care for every employee.
- ◆ The synergy of teamwork.



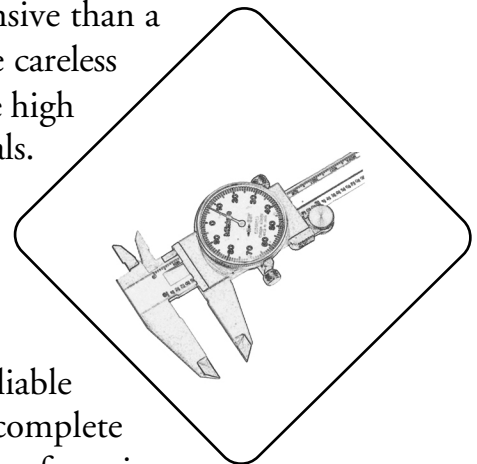
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EXPERTS IN PRECISION HANDLING



You need a vendor that knows the meaning of “right the first time”. ATFAB Company knows how to provide precision manufacturing services. We have been servicing the high purity, fluid control, aerospace, medical, automotive and power transmission industries since 1983. Our customers trust us to deliver lapping, abrasive flow machining, honing, deburring, polishing and other services.

We know that a problem prevented is less expensive than a problem solved. If you have had vendors who were careless with your parts, you know how costly that can be. The high price of mishandling is paid in dollars, lost time, and materials. We pay attention to the details of precision manufacturing and communicate with our customers to prevent these losses.



We would like the opportunity to become one of your most reliable suppliers of manufacturing services. We are willing to take complete responsibility for your parts, as well as provide a great many manufacturing services.



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ABRASIVE FLOW MACHINING

- ◆ Uses hydraulic force and abrasive putty to achieve desired surface finish. Process used for both polishing and deburring the desired edges and/or surfaces.
- ◆ A process well suited for intersecting holes, through bores and complex shapes.
- ◆ Wide range of part sizes and geometries
- ◆ Edge deburring
- ◆ Angles
- ◆ Exterior surfaces
- ◆ Interior bore finishing
- ◆ Radius to predetermined dimensions
- ◆ Capable of improving machined surfaces as well as cast surfaces
- ◆ Balances flow paths and attacks areas of greatest restriction
- ◆ Designed for high production volumes



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Electro Chemical Deburring (ECD)

- ◆ ECD is a process that dissolves material when a controlled electrical current is delivered to a metallic workpiece. A non-contacting tool completes the circuit when an electrolyte solution is flushed between them.
- ◆ Process for parts requiring a burr-free, smooth transition at intersecting holes.
- ◆ ECD selectively removes metal and burrs to improve flow and velocity.
- ◆ With special fixtures, we can selectively address certain areas and radius individual holes.
- ◆ Designed for high production volumes.

Typical applications:

- ◆ Remove Burrs
- ◆ Radius Edges
- ◆ Prepare parts for further processing



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Deburring

ATFAB offers various solutions to your burr removal problems. We will help you find the best process to achieve the results you need.

Types of Burrs:

Thread Burrs
Loose Hanging Burrs
Rigid Burrs
Edge Burrs
Stamping Burrs

Burrs on Keyways
Burrs in Slots
Tube End Burrs
Cutoff Burrs
Corner Burrs

Processes offered:

- ◆ Electro Chemical Deburring
Best for internal intersecting holes, slots, threads, keyways.
- ◆ Centrifugal Barrel Finishing
High volume application, high energy burr removal. Used for edge burrs and overall surface enhancement.
- ◆ Abrasive Flow Machining
May be used for internal and external burrs, smoothing flowpaths and surface enhancement.
- ◆ Micro Abrasive Blasting
Focused pneumatic pressure allows for deburring as well as surface cleaning for some conditions.



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Honing

- ◆ Improves bore geometry and finish after operations such as machining, heat treating or chucking
- ◆ Abrasive bore finishing process
- ◆ Large area receives abrasion at low cutting speeds
- ◆ Less stock removal than grinding or boring
- ◆ Corrects the following bore conditions:

| | |
|--------------|--------------------------|
| Out-of-Round | Undersize |
| Taper | Boring Marks and Chatter |
| Bell Mouth | Barrel Shapes |
- ◆ Our equipment and processes are the most modern available.
 - Rough and finish in one process
 - Eliminates the need for primary reaming, boring and grinding on many jobs.
- ◆ Automation of our processes allows for high production volumes
- ◆ Cuts all materials, ferrous and nonferrous
- ◆ Parts with bores from .06" to 4" and in lengths from .25" to 12"

Polishing

- Finer operation than honing
- Takes over where honing leaves off
- As fine as .5 μ inch finish
- Enhances surface to produce extremely fine finish
- Semi-Bright or Mirror Bright



Flat Lapping and Polishing

- Provides adherence to tight size, flatness and parallelism specifications

Flatness to 1/2 Light Band
Parallelism to .0001"
Finishes from 0.5 to 32 RA

- Process is economically efficient and is ideally suited for high volume applications.
- Low surface speed and low temperature means fragile parts can be lapped without distortion or damage.
- Ultra-Fine finish on virtually any material.

Typical Applications

Thin Parts

Washers, stampings, gaskets, spacers, wafers, clutch disks, rings, seals, thrust washers

Screw Machine Products

Bushings, collars, spacers, jam nuts, bearings, valve and fitting components, air motor components

Mechanical Seals

Metallic, ceramic, carbon, plastic, sintered materials, chrome pump and compressor seals, rotating unions, valve seats, reconditioning of worn seals.



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Fine Grinding - Flat Honing

- ◆ Multidirectional grinding surface
 - Precise geometric tolerances for parallelism, size and flatness
- ◆ Flat surfaces of any kind are well suited for this process
- ◆ We are able to grind parts up to 4" thick and 7 1/2" diameter
- ◆ Ferrous and Nonferrous materials
- ◆ Similar physical principles as flat lapping, however, this process utilizes a double wheel design
 - Parts are positioned stress-free on the cutting surface.
 - Larger cutting area at lower cutting speeds provides greater control of stock removal.
 - Stock removal is three to five times faster than lapping.
 - Faster stock removal rates allow higher productivity

Typical Applications

Thin Parts

Washers, stampings, gaskets, spacers, wafers, clutch disks, rings, seals, thrust washers

Screw Machine Products

Bushings, collars, spacers, jam nuts, bearings, valve and fitting components, air motor components

CNC Milling Services

- ◆ Haas VF-2B Vertical Machining Center
- ◆ 3 axis configuration
- ◆ Prototypes or Production
- ◆ A vast array of materials
- ◆ AutoCAD and MasterCam import capability





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Aqueous Cleaning System



Pre-cleaning, cleaning, hot rinse, blow-off and drying stations.

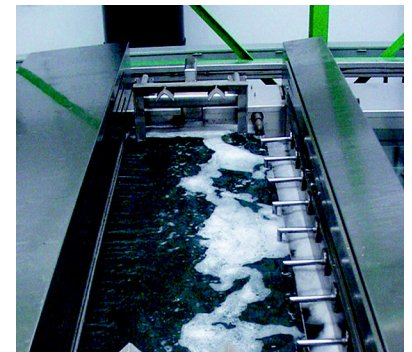
Highly programmable automation.

Stainless Steel Tanks (20" X 52" X 12" each)

Recirculating hot air dryer with HEPA filters

De-ionized water (heated to 180 degrees Fahrenheit) and cleaning solution combine with agitation and ultrasonics to clean without solvents.

Ultrasonics: 4200 W, 27 kHz



Our process will clean parts made of any material that does not react poorly to hot water.

Utilizes a mildly alkaline water based cleaner.

Our equipment is designed to clean parts typically produced on screw machines, lathes or small mills. It is most efficient for larger batch operations, but can also be used for short run and prototype parts.



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