

Machine Services



If you or your students depend on specialized, machined parts or equipment to perform research, you know that knowledgeable machinists, good quality production and fast turnaround are vital to your work. You can get all three from the Georgia Tech Research Institute's (GTRI) Machine Services Department (MSD).

GTRI is the applied research arm of the Georgia Institute of Technology. MSD not only produces parts for our own contract research -- it also can serve faculty and students at Georgia Tech and other universities around metro Atlanta.

What services does MSD provide?

MSD designs, fabricates, assembles, repairs and modifies individual parts or entire mechanical devices used for research projects or other needs. We have a certified welder on staff and are accustomed to welding most all types of metals. We also offer painting of almost any type, from that required to withstand space travel to types of epoxy polymers for underwater use. We bring to our work a commitment to quality, devotion to quick turnaround times and more than 135 total years of experience in diverse areas of machining. More than 90 tools and three types of PC programming/design software are at our disposal to complete each job. When we see a way to save time or money without compromising quality, we say so. We are here to help you get the most out of your research dollar.

What has MSD machined?

We work on pieces ranging from massive, multi-part pieces of equipment to tiny parts requiring us to work using magnification. We've contributed to a special antenna for an airlock that is part of the International Space Station and a large test facility that conducts wide bandwidth, ballistic imaging and radar cross-section measurements of full-sized aircraft. We worked with a research laboratory to design and fabricate the Focus Beam Arch test bed used for microwave testing of materials.

MSD fabricated parts for the first ten 1996 Olympic Torches and also parts for the 2002 Olympic Torches. We assist with maintenance of Georgia Tech's infrastructure by repairing and retrofitting mechanical parts for Georgia Tech buildings and by rebuilding valves and large cooling pumps for Facilities.

How quickly does MSD work?

Small jobs, such as modification of flanges, can often be completed within a day. Larger jobs, such as design and fabrication of airfoils or other multi-part structures, may require two days to several weeks, depending on the complexity of the assignment.

How precise is MSD's machining equipment?

Computer numerical milling equipment in the department is capable of holding tolerances of .0008 inches and repeatability to .0004 inches. We have recently added some of the latest technology to the Georgia Tech campus with two new pieces of equipment: Charmilles 290P Wire EDM and a Charmilles Hole Driller EDM. The accuracy of this equipment can be down in the .0002 inch range. The quality control system we use for inspecting parts and equipment that we create meets the requirements of MIL-I-45208A and MIL-STD-45662.



***New Technology for the Georgia Tech Campus
4 axis Charmilles 290P Wire EDM &
Charmilles HD20 EDM Hole Driller***

What PC programming and design software does MSD use?

Our staff routinely uses SurfCam 2001, AutoCAD 2000 and Solid Works 2001.

What about obtaining the materials needed to build the part or device I need?

MSD keeps a large selection of metals/plastics in stock; we also have accounts with many vendors, who often can give us good rates because of our buying volume.

Who handles transportation and assembly of parts?

On campus you may pick up your parts in the Hinman Building or our staff will be happy to deliver and assemble the finished product on site at your location. We also can pick up and deliver parts or pieces of equipment for repair or modification.



FADAL 4020 Vertical Machining Center

For intricate 3D surface machining and close tolerance millwork. The FADAL is a very efficient machine for milling one of a kind or short run production parts.

I need a large piece of equipment created that towers far above most one-story ceiling heights. Can you do the job?

Yes. A large portion of the MSD shop is housed in a high-bay area with a large, roll-up metal entrance door. This area is conducive to assembling and moving large pieces of equipment and parts. The high-bay area is equipped with a 10-ton bridge crane with a hook lifting height of 28 ft.

I am not working on a GTRI contract. How do I arrange and pay for MSD services?

To discuss potential machining work and payment arrangements, contact the MSD manager or foreman.

Locations and Hours

MSD is located in the Hinman Building and open 6 a.m. to 4:30 p.m. weekdays. We also have a satellite location at GTRI's Cobb County Research Facility, which is open 7 a.m. to 4 p.m. weekdays.

For further information on Machine Services contact:

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For a complete list of equipment, directions to our locations or detailed information on previous work, visit us online at <http://www.gtri.gatech.edu/machine/>.