

Machine Shop Hardware Support Facility



Who We Are

The NNSS Hardware Support Facility (HSF) is a one-stop shop for custom precision machine fabrication, dimensional inspection, precision welding, assembly, and acceptance performance testing for classified and unclassified components.

Our mission-critical services support the broad spectrum of National Nuclear Security Administration (NNSA) missions. The NNSS has been recognized by the NNSA and the Department of War for fabricating and inspecting numerous classified and unclassified parts to support the U.S. nuclear stockpile and training components. The HSF also supports multiple NNSA laboratories, plants and sites.

What Sets Us Apart

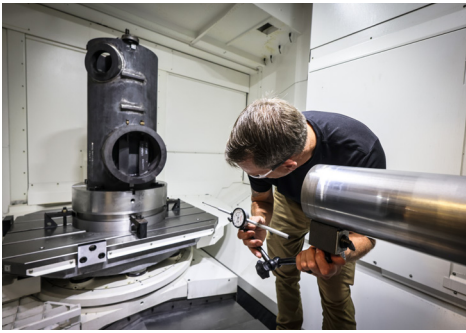
Size: HSF has a 27-person staff and two primary shops – a 20,000-square-foot unclassified workspace and a 6,000-square-foot classified workspace.

Capabilities: Custom machine fabrication is the practice of bending, punching, cutting, and creating objects and parts from raw materials. NNSS machinists can fabricate custom parts and structures on site, ranging from simple brackets to complex primary target chambers. Parts can be fabricated to extremely tight tolerances or to meet the requirements of custom

precision instruments.

Recent investments provide capabilities that most other machine shops do not possess. For example, the HSF Mazak horizontal mill eliminates single-point failure risks for important national security programs, supporting critical NNSS projects such as the Joint Actinide Shock Physics Experimental Research facility. The advanced multi-tasking Mazak system brings automated tool-changing, high-precision probing, and pallet-changing capabilities, drastically reducing human error and improving turnaround times for the nation's stockpile stewardship and experimental programs.

Quality: NNSS engineering and management teams are stationed on site, adjacent to the HSF machine shop. The intentional co-location ensures zero-delay communication, allowing technical specialists to provide real-time troubleshooting, catch unforeseen issues early, and deliver immediate support to shop floor employees. This proximity enables continuous quality oversight. By being physically present, our teams can perform frequent process checks and real-time testing to ensure every product meets rigorous specifications and maintains consistency. This arrangement is critical to our quality assurance framework, facilitating rapid verification of production milestones.



Core Focus Areas

The facility aligns its operations with several critical strategic priorities:

Stockpile Responsiveness: Fabricating and inspecting both classified and unclassified components, test assemblies, and training units directly tied to maintaining the safety, security, and reliability of the nation's nuclear deterrent.

Weapons Experiment Infrastructure: Producing complex containment vessels, primary target chambers, and diagnostic housings used in various NNSA and NNSS experimental facilities.

Classified Manufacturing: Managing secure, isolated digital workflows that allow engineers to translate sensitive blueprints and data directly into high-precision tool paths without compromising security protocols.

Rapid-Response Experimental Prototyping: Providing quick-turnaround, custom modifications and hardware fabrication to assist NNSA national laboratories during active experimental setups.



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