

Support Facilities & Hardware

There are four test stand support buildings: VETS Support, PITS Support, HATS Support, and HEPTS Support. The support buildings are used as general workshops and contain tube bending and flaring equipment together with various test stand support equipment.



High Bay Assembly Area

The High Bay Assembly Area of building 41A is 56 ft long, by 56 1/2 ft. wide by 36 ft. high and is utilized primarily for the assembly and integration of rocket engine and laser assemblies. The area is also used for crating and uncrating of components as required and as a receiving and staging area for flight hardware. The High Bay is equipped with a 10-ton capacity bridge crane, which completely spans the room and has a maximum hook height of 25'. The high bay has a 18 ft. by 21 ft. roll up door to provide drive in access for large hardware.

The High Bay also has a Class 100,000 laminar flow tunnel that is 30 ft by 17 ft by 10 ft tall. This clean room tented area is used for assembly of components that require a high level of cleanliness.

Weld Shop

The Weld Shop has the following array of welding equipment available: a 300-amp Airco Heliwelder, a 300-amp Miller Heliwelder, a 200-amp Gasoline Engine Driven Arc Welder, an Airco Radiograph Portable Flame-Cutting Machine, and oxyacetylene and Plasma welding and cutting equipment. Capabilities allow for welding aluminum, stainless steel, carbon steel, Monel, Inconel, and other exotic materials.

Machine Shop

This shop is equipped with three lathes:

- 24-in Regal LeBlond Lathe, 96-in bed length, with taper attachment, a faceplate, and two chucks (1ea 3 jaw, 1ea 4 jaw)
- 16-in Regal LeBlond Lathe, a 54-in bed length, a faceplate, and two chucks;
- 14-in Logan Lathe with 48-in bed length, with chucks and accessories.

Milling equipment includes two Tree Vertical Milling Machines and a Cincinnati Horizontal Milling Machine. Other equipment includes various metal saws, drill presses, grinding and sanding equipment, a pan brake and hydraulic shear for sheet metal work and miscellaneous inspection and measuring tools; including a 36 in x 48 in surface plate.

Valve Shop

This shop is equipped with a high pressure water system (500 psi pump - 6000 gallon water reservoir); ultrasonic valve cleaning apparatus; gaseous nitrogen purging equipment, injector pattern test equipment; flow meter and pressure equipment; and suitable pressure transducers and recording instrumentation.

Parts Cleaning Area

The parts cleaning area contains a degreaser, ultrasonic cleaners, rinsers, solvent spray and drying ovens. This equipment is used for cleaning tubing, assemblies and components of hardware at the site.

Clean Room

The clean room is used for assembly of engines and bagging of clean parts. The clean room contains a Class 100 laminar flow tunnel ultra-clean assembly area and a vacuum drying oven.

Engine Decontamination & Engine Cleaning Carts

There are portable decontamination carts for engine pre-cleaning operations at the various test stands. Also, a portable cart is utilized for final engine cleaning after hot firings and decontamination prior to shipment.

Metrology Laboratory

This shop is a branch function of the Standards Laboratory of NGST. The shop is used to calibrate and repair a wide variety of measurement devices with calibrations traceable to national standards.

Maintenance Shop & Instrumentation Shop

While the maintenance shop is equipped with power metal saws, a drill press, grinders, and sanders, the Instrumentation shop area is used for fabrication, modification and maintenance of facility instrumentation systems. This facility includes a "Virtual Test Bench" software setup for predicting electronic hardware outputs.

Reactant Storage Facilities

CTS is a controlled storage depot for the Defense Energy Support Center (DESC).

Fuel Storage Depot

Fuel storage located in this area consists of two tanks. A 6000-gallon tank fabricated of 347 stainless steel is used for JP-8 storage. Fuel transfer to the test areas is accomplished by means of a transfer cart.

The second fuel storage vessel is a 15,000-gallon tank fabricated of carbon steel, which is used for alcohol storage for the HATS two-stage steam generator system. Alcohol is transferred from this main storage tank to the HATS run-tank with a Peerless Centrifugal Pump (Model PB-S 1 x 2 x 8). The pump is rated at 60 gpm with a 40-ft head.

Propellant Drum Storage Depot

This depot consists of two open shed type storage areas separated by a dyke. The fuel area has a storage area for fifty 55-gallon drums with crane handling, a screened-in sample storage area, and fire protection. The oxidizer area has a storage area for twenty 2-ton cylinders with crane handling and a screened-in sample storage area.

Cryogenics Storage Depot

This facility consists of two each 13,000 gallon liquid oxygen storage vessels, a 13,000 gallon liquid nitrogen storage vessel, two each 25,000 scfh LN2/GN2 converters, and 56 storage vessels with a GN2 capacity of approximately 480,000 standard cu ft. The facility is utilized for LO2 and GN2 storage for HATS and for recharging GN2 storage vessels at the various stands via cross-country lines.