

## Manufacturing

Engineering, Design, and 3D Printing				
Machine	X	Y	Z	Notes
Solidworks 3D Modeling				
Feature Cam CNC Programming				
Polyworks Metrology & Reverse Engineering				Software
Keyence VHX 7000 Stacking Microscope				2500X
Faro Edge CMM and Blue light laser scanner	40"	40"	40"	0.0012" Accuracy
Aberlink CMM with PH10 scan probe +Camera	39"	59"	31"	2.4µm Accuracy
Epilog 4 Axis Helix Laser	24"	18"	9 "	Cuts wood and various plastics.
Objet30 3D Printer	11.57"	7.58"	5.85"	0.1mm resolution
Desktop Metal Studio System+	9.4"	6"	6.1"	0.04mm resolution

Fabrication Equipment			
Machine	X	Y	Z
Grob Vertical Band Saw	18"	13"	—
Grob Vertical Band Saw	24"	13"	—
Hyd-Mech Horizontal Band Saw S-20	18"	15"	—
Lincoln Mig Welder Invertec V-350PRO	—	—	—
Lincoln Tig Welder Precision TIG275	—	—	—
Thermal Dynamcis Cutmaster 75 Plasma Torch	—	—	3/4
Comming Soon Vytek 6kw Fiber Laser 5axis	5'	10'	18"

Turning Equipment				
Machine	X-Over Ways	X-Over Carriage	Z Travel	Spindle RPM
Victor Conversational 1860DCL	13"	7"	40"	2,000
MSC Manual Lathes (2X)	18"	9"	60"	2,500
Okuma LB-3000 EX2 MY	18.5"	22.8"	39"	3,000
Harding Super Precision Manual Lathe	11"	6"	18"	3,000

Milling Equipment				
Machine	X	Y	Z	Spindle RPM
Fryer MC40 CNC Mill with 4th Axis	40"	20"	29"	10,000
Fryer SX100 5 Axis	100"	35"	31"	18,000
Bridgeport EZ Trak Conversational CNC Mill	30"	12"	17"	4,000
MSC Manual Mills (2X)	24"	11"	16"	4,800
Sharp Manual Mill	31"	15"	20"	4,500
Tormach PCNC 1100 CNC Mill	18"	9.5"	16"	5,000
Sharp SV 2412 CNC Mill	24"	12"	18"	8,000

Grinding Equipment			
Machine	X	Y	Z
Okamoto 6-18DX Wet Grinder	18"	6"	9"
K.O. LEE CO. B923A Drv Grinder	15"	4.5"	7"

EDM Equipment				
Machine	X	Y	Z	Angle
AGIE Mondo Star 50 EDM	33.8"	25.9"	12.4"	Full Rotation
Makino U6- Wire EDM	25.6"	17.7"	16.5"	W, V +/- 15°

## Testing

Vibration Testing Systems	
LDS V875LS Shaker Table	8,000lb Capacity, 1 to 3,000 Hz in 3 axes, 76.2 mm stroke
MB Electronics Exciter Table	250lb Capacity
MB Electronics Exciter Table	25lb Capacity
Modal Test Equipment	Spectral Dynamics Jaguar 100 channel SigLab 2 Channel with MATLAB Integration DSpace digital signal processor

MTS 810 Material Testing System	
Axial Actuator	+/- 110,000 lb Capacity and a 6 in. Stroke
Work Envelope	LWH = 30" X 30" X 83"
Hydraulic Capacity	2,000 PSI
Frame Capacity	110,000 lb
Data Acquisition	16 Bit, 5 kHz
Waveform Generation	32 bit digital

MTS 458 Universal Reaction Frame System	
Axial Actuators	+/- 22,000 lb Capacity and a 6 in. Stroke +/- 55,000 lb Capacity and a 6 in. Stroke +/- 55,000 lb Capacity and a 20 in. Stroke +/- 165,000 lb Capacity and a 6 in. Stroke +/- 300,000 lb Capacity and a 20 in. Stroke
Work Envelope	LWH = 11'X13'X20'
Hydraulic Capacity	3,000PSI
Data Acquisition	16 bit, 5kHz
Waveform Generation	Analog

Singleton SCCH Salt Fog Chamber 26SL	
Chamber Size (L x W x H)	120" x 48" x 36"
Temperature Range C (F)	Ambient to +50 (Ambient to +120)
Humidity Range	Ambient to 100% RH
Air Exchange Rate	90 to 100 SCFH
Construction	Steel

CSZ Tundra Walk-In Climate Chamber	
Chamber Size (L x W x H)	84-1/2" x 130" x 96"
Door Opening (W x H)	35-1/2" x 77-1/2"
Temperature Range C (F)	-45 to +93 (-50 to +200)
Humidity Range	10% to 95 % RH
Data Acquisition	Configurable, Custom
Construction	Stainless Steel