



Equipment List

10/25/2016

Machine Type	Qty	Axis	RPM	Capacity (x,y,z)"	Tools	Notes
--------------	-----	------	-----	-------------------	-------	-------

5-AXIS MILLING

Kitamura MyTrunnion-5	1	5	20,000	32 x 29 x 20	100	Thru spindle coolant, probing, BigPlus spindle
Mazak Variaxis 500-5X	1	5	12,000	20 x 16 x 16	40	1000 PSI coolant through spindle, tool & spindle probes
Haas UMC750SS	1	5	15,000	30 x 20 x 20	40+1	Hi speed machining, tool & spindle probe
Hurco VMX30U	1	5	12,000	30 x 20 x 20	40	1000 PSI coolant through spindle, tool & spindle probes

4-AXIS HORIZONTAL MILLING

Kitamura HX500G	1	5	12,000	34 x 31 x 37	50	2 pallets, 1000 PSI thru spindle coolant, tool & spindle probes
Matsuura H-Plus 300-PC15	1	4	15,000	21 x 20 x 20	120	15 pallet, Big Plus, 1000 PSI coolant through spindle, In-machine probing
Mori Seiki NH4000DCG	3	4	14,000	22 x 22 x 25	80	2 pallets, 1000 PSI thru spindle coolant, tool & spindle probes

3-AXIS VERTICAL MILLING

Mori Seiki Duracenter 5	5	3/4	12,000	30 x 20 x 18	20	HPCC-Nano MAPPS II high speed control
Haas GR-510	1	3	10,000	121 x 61 x 11	10	Large capacity gantry mill
Haas VF-7	1	3/4	15,000	84 x 32 x 30	40	Thru spindle coolant, probing
Fanuc Robodrill T21iE	1	3/4	24,000	20 x 16 x 13	21	Ultra high speed machining and precision
Shizuoka SX-4024	1	3/4	12,000	40 x 24 x 18	20	HPCC high precision, box ways, tool probe
Mitsubishi M-V5Cn	2	3/4	12,000	40 x 20 x 18	20	spindle oil chiller, 1200IPM rapid
Haas VF-3B SS	1	3/4	12,000	40 x 20 x 25	20	4 axis indexer
Haas VF-3B	1	3/4	10,000	40 x 20 x 25	20	4 axis indexer
Haas VF-2	1	3/4	10,000	30 x 16 x 20	20	4 axis indexer
A-Trump B5-FC	1	3/4	5,100	34 x 16 x 12	1	PC Based control. Used for secondary operations

TURNING CENTERS

Capacity (D x L)

Mori Seiki NZX2000/800SY	1	8	5,000	12.5 x 31.8	32	8 axis, Twin spindle/Twin turret, live tooling, LNS Bar feeder
Mori Seiki NL2000SY/500	1	6	5,000	14.4 x 20.0	12	6 axis, full sub spindle, live tooling, SWM Bar feeder
Mori Seiki SL-200SMC	1	4	4,000	15.8 x 12.7	12	Sub spindle, X&Z axis live tooling, Lemca Bar feeder
Eurotech Elite B545 SL-Y	1	7	5,000	12.6 x 22.0	12	7 axis, full sub spindle, live tooling, LNS Bar feeder
Nakamura Tome TMC-15M	1	4	4,500	8.0 x 9.8	12	Sub spindle, X&Z axis live tooling
Daewoo Lynx 210a	1	2	6,000	11.0 x 13.0	12	1000 PSI coolant through spindle, tailstock
Haas TL-1	1	2	3,000	8.0 x 30.0	4	conversational control

SUPPORT EQUIPMENT

Objet 24 3D Printer is an extremely high resolution with 28 micron (.0011") layer thickness and an envelope of 9.25" x 7.5" x 6". It prints using VeroWhite Plus Opaque material which is a white ABS-like material.

RL-80-1290 Laser Engraving/Cutting Machine is a CO2 laser with a large 47.2" x 35.4" working envelope. It features a rotary indexer and is capable of high-speed cutting of nearly any organic materials such as plastic, rubber, ceramic and glass at speeds of 1400 IPM. It can also permanently mark metals at speeds over 2300 IPM and high accuracy of 1000 DPI.

Soco MC-360 NFA-DR is a NC controlled auto feeding high speed saw for non-ferrous metals. It is capable of auto feeding to an accuracy of +/- .002.

Cosen C-260NC Programable, Auto-Feed Horizontal Band Saw. 10.2" x 10.2" capacity.

Gibson Automated Shot Peen 12" x 44"

Manual Equipment including 7 knee mills, 5 lathes, 1 horizontal mill, multiple drilling and tapping machines, forming machine, multiple surface grinders, sanders, drill presses, non-ferrous metal cutting chop saws, hydraulic presses, vibratory tumblers

Welding Equipment - 2 TIG welders, 2 MIG welders, 1 Spot welder

Assembly Equipment including pneumatic Helicoil drivers, arbor presses, pneumatic stamping machines, arm style tapping heads, assembly benches, and a full array of assembly hand tools and equipment.

2 Paint Booths - up to 10' x 10'. Warming oven for paint curing

Saws - Multiple horizontal band saws up to 18", multiple vertical band saws up to 12"

QUALITY EQUIPMENT

Zeiss Contura G2 1000 CMM - with 47" x 39" x 24" (x, y, z) travel and a full 5 axis RDS and VAST scanning head for part probing. Calypso software

Zeiss Spectrum 700 CMM - with 39" x 27" x 24" (x, y, z) travel and a full 5 axis Vast scanning head for part probing.

FARO Vantage Laser Tracker - We can provide high accuracy, large volume measurement with the FARO Vantage laser tracking system. With 160m (525 ft.) spherical working volume and accuracy up to 0.015mm (0.0006 in.) this high-end laser tracking system is essential for our larger aerospace tooling projects.

Mitutoyo PH-3500 Profile Projector with fiber-optic OptiEye auto edge sensing and Micropak 2 control.

SC Industries Optical Comparator w/ Quadra Chek 2000**14" Deltronic Optical Comparator Model DH14**

4 – Brown & Sharp TESA-Hite Height Gages - up to 28" tall

Bausch & Lomb Binocular Microscope 7x - 40x with circular lighting

Granite Plates – up to 72" x 48"

2 - Surface Profilometers**TESTING**

Rockwell Hardness Tester 1

Eddy Current Tester 1

COMPOSITES - POULSBO FACILITY

ASC Autoclave 1 48" x 72" 165 psi @ 450°F

Automated Pre-preg shear 1 53" capacity Century Design M-5124

Heated Platen Presses 4 24" x 24" up to 50 tons

Infrared Oven 1 48" x 36" x 36"

Ovens 10 up to 37" x 86" x 63" Many kinds, including direct heat and convection, vacuum forming

COMPUTER HARDWARE/SOFTWARE

CATIA™ - latest version (2 seats)

PTC CREO (Pro/ENGINEER)™ - latest version (4 seats)

Solid Works™ - latest version (6 seats)

Mastercam™ - latest version (6 seats)

Pro/MANUFACTURING™ - latest version (3 seats)

AutoCAD - latest version

Proprietary web based MES (Manufacturing Execution System) software for tracking all aspects of the shop environment, including QA information, job tracking, tooling, real time scheduling and work order history.

10 Engineering Workstations for programming with dual LCD monitors and up to 6 GB RAM provide fast and powerful CAD/CAM computing.

8 Servers for Data, Network, and photo serving. We back up to the cloud as well as external HDs and take data off site.

Digital Video/Photo Equipment for on-screen digital part set-up and tie-in information to ensure proper conformance of customer requirements.

100 + PCs at each CNC machine and workstation linked at 100 MBS and/or 54 MBS wireless for QA and job information.