

## Machine Shop Equipment

ALL MEASUREMENTS SHOWN IN INCHES

\*Automatic rotary table 4th axis

†Rotary table

‡Swing over bed

CNC Gantry Machine Centers	X	Y	Z	W
UMB 6	314	78	23	
Toyoda SB316YM	120.5	90.5	31.5	
Toyoda MG530	196.9	118.1	55.12	
Toyoda MG830	314.96	118.1	55.12	
Seramill*	314	98	37	
SNK RB6	246	150	23	62

CNC Horizontal Machine Centers	X	Y	Z	W
Kitamura HX300iG <i>with 8-APC and full rotational B axis</i>	18.1	20.1	22.0	
Okuma MA 500 <i>with Fastems FPC 10 Pallet Changer and full rotational B axis</i>	27	35	30	
Okuma MA400 <i>Fastems FPC 12 Pallet Changer and full rotational B axis</i>	22	24	24	
Okuma MA800 <i>with 2-APC and full rotational B axis</i>	55	49	49	
Okuma MB500 H <i>with 2 APC and full rotational B-axis</i>	29.92	29.92	29.92	
Mazak HCN5000 IID <i>with 2 APC and .001 Degree positioning table</i>	28.74	28.74	29.13	

CNC Vertical Machine Centers	X	Y	Z
Toyoda FV2090*	78.7	35.4	35.4
Haas VF4SS	50	20	25
Haas VF6/50 (4th axis 310mm rotary)*	64	32	30
Haas VF6/50TR (4/5th axis 310mm Trunnion Table)*	64	32	30
Monarch 200Bx240*	240	36	44
Monarch 200BX160*	160	36	44
DMG DMF360 (210° tilt on head)	141	43	35
Takumi 11VA	43	21	25
Monarch PMC V 750*	29	17	21
Okuma 3VA	22	14	17
(4) Haas VF-2	30	16	20

CNC 5 Axis Machine Center	X	Y	Z
HAAS VF6/50TR	64	32	30
DMG DMU 210P	70.9	82.6	49.2

Waterjet Profile Machine Center	X	Y	Z
(2) Flow MACH500 4020 94I-S 50HP 94,000 PSI Dynamic Head (2)	157	78	12

Long Hole/Gun Drill	Dia.	Length
Dadson DS 2120 CM	.25 to 2	120

Gear Hob	Dia.	Face
Mitsubishi GA-50/CNC	19.68	9
Fellows Shaper 6A-Type-252	22	3

Cylindrical Grinding	Dia.	Length
Sigma Tos BUC63A-3000	25	120

Balancing	
Schneek H50B-CAB 690	Normalizing Balancer
Stewart Warner A2005	Normalizing Balancer

CNC Turning Centers	Swing	Lg
Tacchi HD3-105L	40 (53)‡	315
Haas TL-2	16	48
Mazak QT200	26	20
Mazak QT250My	26.5	69.9
Haas DS30Y w/Robot Loader	21	32.5

CNC Vertical Turning Center	Chuck	Swing	Lg
Okuma V60R	18	27.5	25.5

Turning Lathes w/Live Mill Tooling	Swing	Lg
Mori NL3000Y/2000 (MAPPS conversational turn/mill with Y and C axis)	39	83.5
Mori SL603/4000 (MAPPS conversational turn/mill with C axis)	38	157
Tacchi 90L (Fanuc 3iB turn/mill with Y and C axis)	25.5 (41)‡	196

Manual Lathes	Swing	Lg
LION 30-CU	30	157
Clausing 21	21	84
Clausing 15	8.25	48
DoAll 13	8	57

Manual Mills	X	Y	Z
Bridgeport Series 1 -2J Head (3)	42	9	
Wells Index #837	42	9	
Chevalier FM-3VK <i>(features vertical and horizontal heads)</i>	36	15	

Surface Grinding	
Okamoto ACC-32-120	32" x 120" (20" wheel)
Okamoto ACC-12-240X	12" x 24"
Okamoto ACC012-24X <i>(features vertical and horizontal heads)</i>	12" x 24"

Key Seater		
Hansford Davis DA15B	Stroke: 4.5"	Throat: 19"
	Table: 20" x 31"	Key: .0625" to 1.5"

Contact a Bretting Contract Manufacturing Services representative today to discuss additional CMS services to best meet your company's needs.

## Machine Shop Equipment (cont.)

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### Inspection Equipment

Zeiss Accura CMM	63" x 94" x 39"
Faro Quantum Arm Portable CMM	8 ft. volume
Outside Micrometers	1" - 30"
Inside Micrometers	0" - 40"
Digital Height Gage	0" - 24"
Depth Micrometers	0" - 12"
Vernier Calipers	0" - 60"
Dial Calipers	0" - 12"
Dial Bore Gages	
Test Indicators	
Plug Gages	0" - 1.5"
Thread Gages	
Gage Blocks	
Granite Plates	48" x 96" Grade AA
Rockwell Hardness Tester	
Surface Finish Profilometers	
B&K Vibration Analyzer	

### Tool Presetting

Parlec TMM P20-2024 Digital Readout Presetter
Parlec TMM 1850A-600 Digital Readout Presetter

### Arbor Presses

(2) One - Five Ton
(5) 50 - 300 Ton Hydraulic

### Drill Presses

Drill Capacity	Spindle	
Cincinnati 21 Inch	2.5"	1
Clausing 15 Inch	1"	1
Clausing 15 Inch	1"	2
Clausing 20 Inch	1"	2
Craftsman 150	1"	1
Walton 5816	1"	1

### Sawing

Capacity	
Horizontal Band Saws (6)	0" - 16"
Vertical Band Saws (3)	0" - 24"
Radial Arm Saw	0" - 12"

### Part Finishing Equipment

Capacity	
Alliance Aquamaster CS-4800XE Parts Washer	48" Wide
Empire PF-3696 Sand Blaster Enclosed	20" x 20" x 90"
JB I 9857 Down Draft Paint Booth	12' x 24'
JB I 001M-030333 Paint Cure Oven	10' x 24'
GOFF Shotblast Cabinet	72"Ø x 64"
Ultra-Dex Beamer FB103 Fiber Marking Laser	4.3" x 4.3"

## Fabrication Equipment

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### Welders

(6) FRONIUS TPS 400I
Miller Dynasty 350 Tig Welder AC/DC
Miller Invision 456P Mig Alum Push/Pull Gun
Thermal Dynamics PAK Master 100 XL Hand Plasma
Lincoln R3R-400 DC Stick Electrode
Miller Axxess 450 MIG 450 AMP Wire (.052)

### CNC Punch

Trumpf TruPunch 2020 .25" thick, 20 ton, 100" x 50" sheet
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### Sheet Metal Forming

ERMAKSAN Press Brake 110 Ton 8'
Schroder SPB EVO 3200/4,0 UD

### Metal Workers

Metal Muncher MM70 Ironworker 12" Throat, 70 Ton
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### Metal Shear

All Steel Shear Up to .25" Material x 10' Length
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### CNC Laser

Trumpf TruLaser 1030 - 1" Capacity, 60"x120" Sheet
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