



Contract Manufacturing Services

Machine Shop Equipment

ALL MEASUREMENTS SHOWN IN INCHES

CNC Mills	X	Y	Z
Toyoda FV1680 VMC	63	32	31
Haas VF1	20	16	15
Haas VF3 <i>with full 4th axis</i>	40	20	24
Haas VF4SS/40 (2)	50	20	25
Haas VF5/50	50	26	25
Hurco VMX84 <i>with full 4th axis</i>	84	34	30
Okuma CadetMate VMC	19.5	40	16

CNC Lathes	Dia	Long
Okuma Cadet C.N.C. Lathe	10	10
Okuma Crown C.N.C. Lathe (2)	12.5	16
ProtoTrak TRL 1840 SX Lathe	18	40
Mazak QT250	9.3	16

CNC Horizontal Mills	X	Y	Z
G&L 6 axis machine <i>5" spindle, 60 x 60 rotary table</i>	36	64	105
Mazak FH-580/40 (2) <i>20 x 20 pallets and full 4th axis</i>	28	24	26

CNC Knee Mills	X	Y	Z
Proto Trak DPM2 (2)	32	16	27
Bridgeport Prototrak (1)	32	16	12
Lagun (1)	32	16	12

MasterCam Programming System Software
 DNC capabilities
 All CNC's are networked to a single system for offline program control

Manual Mills	X	Y	Z
Ceruti Boring Mill with turn table	48	40	48

Manual Lathes	Swing	Lg
Sharp Engine Lathe	10	60
Leblond Engine Lathe	24	120
American Engine Lathe	24	180
Warner Swasey #5 Turret Lathe	4.5 collet	120

Ginders	
Sharp Surface Grinder	20 x 47
Programmable Kent Hydraulic Surface Grinder	12 x 24
Cincinnati O.D. Grinder	Ø 12 x 36
K.O. Lee Surface Grinder SB818	6 x 18

Metal Forming and Cutting Equipment	Size	Tons
Mitsubishi HD-2512 Laser <i>Capable of cutting 3/4" mild steel</i>	4' x 8'	
Edwards Ironworker		100
Bliss OBI Coil Feed Press		22
Press-right OBI Coil Feed Press		85
Minster OBI strip, coil, or blank Feed Press		45

Saws	Max Cut
Marvel Automatic Bandsaw	10
Roll In Bandsaw	6
W F Wells - CNC Saw	16
Ellis - Manual	8

Miscellaneous	Tons
Radial Arm Drill Press - Donau	
Morrison Key Seater: Size: 1 1/4" w/6" Stroke	
Richards Multiform Hydraulic Bender <i>With programmable rotation</i>	
Ramco Manual Press	50
Bridge Crane	10
Bridge Crane	2
Speedy Cut ST-O Auto-Tapper	
Many miscellaneous second op tools for deburring, chamfering, tapping, etc.	

Welders
Hobart Tig Welder
Miller Spot Welder, MSW-41T
Lincoln Square Way Tig 175
(3) Lincoln Power Mig 255
Thermal Arc - Tig Wave 250 AC-DC
Lincoln Mig Welder LF-74 Water Cooler
Lincoln Push-Pull for Alum. with Invector V350 P.R.O.& Water Cooler
Lincoln Power Mig 350
Plasma Cutter - ESAB Power Cut 1250 - 1" capability

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

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Inspection Equipment

Absolute Arm 535 Portable 6-Axis high accuracy measuring machine arm with 11.5' measurement volume	11.5'
Cordax Discovery II D-12 CMM, by Scheffield <ul style="list-style-type: none">Automated (DCC) coordinate measuring machinePC-DMIS Pro Software	20" x 36" x 16"
Mitutoyo Optical Comparator with DRO	
B & S Coordinate Measuring Machine	
Rockwell Hardness Tester	
Federal Surface Roughness Gage	
Mitutoyo Height Master	
Fowler Bowers Hometric Bore Gages	1.370" to 6.000"
Sunnen Bore Gages	.740" to 6.000"
Mitutoyo Bore Gages	.700" to 10.000"
Micrometers	0" to 18"
Calipers	0" to 40"
Numerous Gage Pins, Gage Blocks, Indicators Thread Gages, and more	

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