



# 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 VF2                             | 30   | 16 | 20 |
| Haas VF3                             | 40   | 20 | 24 |
| Haas VF4SS/40 (2) with full 4th axis | 50   | 20 | 25 |
| Haas VF5/50                          | 50   | 26 | 25 |
| Hurco VMX84 with full 4th axis       | 84   | 34 | 30 |
| Okuma CadetMate VMC                  | 19.5 | 40 | 16 |

| CNC Lathes                  | Dia | Long |
|-----------------------------|-----|------|
| ProtoTrak TRL 1840 SX Lathe | 18  | 40   |
| Mazak QT250                 | 9.3 | 16   |

| CNC Horizontal Mills            | X  | Y  | Z  |
|---------------------------------|----|----|----|
| Haas EC-1600 with full 4th axis | 64 | 50 | 32 |

| 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 |

| Grinders                                    |           |
|---------------------------------------------|-----------|
| 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 |
|----------------------------------------------|------|------|
| Edwards Ironworker                           |      | 100  |
| Bliss OBI Coil Feed Press                    |      | 22   |
| 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<br><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. |      |
| Haas HL50 Laser Engraver                                                    |      |

| 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                  |

| Inspection Equipment                                                                                                         |                  |
|------------------------------------------------------------------------------------------------------------------------------|------------------|
| Romer Arm 535 Portable 6-Axis high accuracy measuring machine arm with 11.5' measurement diameter                            | 9'               |
| Cordax Discovery II D-12 CMM, by Scheffeld                                                                                   | 20" x 36" x 16"  |
| <ul style="list-style-type: none"> <li>Automated (DCC) coordinate measuring machine</li> <li>PC-DMIS Pro Software</li> </ul> |                  |
| 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 8.000" |
| 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                                                           |                  |

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

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