



A & M ENGINEERING, INC.

AIRCRAFT, MISSILE COMPONENTS & ASSEMBLIES

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Equipment List

5 Axis Machining Centers

- Cincinnati - 192" x 720" Bed type 5 axis, 3 spindle, vertical profiling, contouring gantry with Siemens 840D control. ID# 87
- Cincinnati - 192" x 360" Bed type 5 axis, 3 spindle, vertical profiling, contouring gantry with Siemens 840D control. ID# 88
- Cincinnati - 192" x 1200" Bed type 5 axis, 3 spindle, vertical profiling, contouring gantry with Fanuc 31 I-B5M control. ID# 85
- Cincinnati - 192" x 720" Bed type 5 axis, 3 spindle, vertical profiling, contouring gantry with Fanuc 31 I-B5M control. ID# 86
- Cincinnati - 192" x 720" Bed type 5 axis, 3 spindle, vertical profiling, contouring gantry with Fanuc 31 I-B5M control. ID# 66
- Cincinnati - 68" x 168" 30V series bridge type 5 axis vertical profiling, contouring machine with Acramatic 950 control. ID# 21
- Cincinnati - 68" x 168" 30V series bridge type 5 axis vertical profiling, contouring machine with Acramatic 950 control. ID# 39
- Cincinnati - 30" x 120" 20V 5 axis vertical profiling, contouring machine with Acramatic 950 control. ID# 18
- Cincinnati - 30" x 80" 20V 5 axis vertical profiling, contouring machine with Acramatic BB control. ID# 68
- Mazak - e - 1060 V8 73" x 52" 5 axis horizontal machining center 10,000 RPM spindle, 80 position tool changer with multi pallet. ID# 71
- Mazak - e - 1060 V8 73" x 52" 5 axis horizontal machining center 10,000 RPM spindle, 80 position tool changer with multi pallet. ID# 72
- OKK - KCV-1000-30L 40" x 138" 5 axis vertical machining center 12,000 RPM spindle, 30 position tool changer with a Fanuc 310iS control. ID# 73
- OKK - KCV-1000-30L 40" x 138" 5 axis vertical machining center 12,000 RPM spindle, 30 position tool changer with a Fanuc 310iS control. ID# 89

Equipment List

5 Axis Vertical Type Machining Centers “Continued”

- OKK - KCV-1000-30L 40” x 138” 5 axis vertical machining center 12,000 RPM spindle, 30 position tool changer with a Fanuc 310iS control. ID# 90
- OKK - KCV-800-30L 33” x 130” 5 axis vertical machining center, 12,000 RPM spindle, 40 position tool changer with a Fanuc 160iSB control. ID# 81
- SNK - FSP-80V 30” x 80” 5 axis vertical machining center, 4,000 RPM spindle With a Fanuc 31i control. ID# 81
- SNK - FSP-80V 30” x 80” 5 axis vertical machining center, 4,000 RPM spindle With a Fanuc 31i control. ID# 82
- SNK - FSP-80V 30” x 80” 5 axis vertical machining center, 4,000 RPM spindle With a Fanuc 31i control. ID# 84

4 Axis Machining Centers

- Cincinnati - Maxim 630 horizontal machining center with 25” multi pallet tables, 10,000 RPM spindle, 80 position tool changer with Fanuc 16i CNC control. ID# 63
- Cincinnati - 10HC-1000 horizontal precision machining center with 30” rotary table, 30 position tool changer with Cincinnati CNC control. ID# 10
- Cincinnati - T20 horizontal machining center 32” x 32” 2 pallet automatic work changer, 45 position tool changer with Acramatic 900 CNC control. ID# 26
- HAAS - EC-1600 horizontal machining center 60” x 30” with rotary table, 30 position tool changer with HAAS CNC control. ID# 13
- Niigata - HN63D horizontal machining center 36” x 36” 2 pallet automatic work Changer, 60 position tool changer with Fanuc 16iM control. ID# 79

Equipment List

3 Axis Vertical Type Machining Centers

- OKK - KCV-800-30L 33" x 130" vertical machining center, 13,000 RPM Spindle, 30 position tool changer with a Fanuc 160iS Control. ID# 74
- OKK - KCV-1000-35L 40" x 138" vertical machining center, 12,000 RPM Spindle, 30 position tool changer with a Fanuc 310iS Control. ID# 75
- OKK - VM7III 30" x 60" vertical machining center, 13,000 RPM Spindle, 30 position tool changer with a Fanuc 180iS Control. ID# 76
- OKK - KCV-800-30L 33" x 130" vertical machining center, 13,000 RPM Spindle, 30 position tool changer with a Fanuc 160iS Control. ID# 77
- Takumi - V32a 42" x 126" vertical machining center with 32 position tool changer, 10,000 RPM spindle with Fanuc 18M control. ID# 67
- Takumi - V32a 42" x 126" vertical machining center with 32 position tool changer, 10,000 RPM spindle with Fanuc oiMC control. ID# 68
- SNK - FSP-120V 50" x 120" 3 spindle vertical profiler with Fanuc 11M CNC contouring control with 4000 rpm spindles. ID# 83
- Cincinnati - 30" x 120" 3 spindle vertical hydrotel with Acromatic 960 CNC 3 axis contouring control. ID# 64
- Mazak - V-655 / 80 24 x 80 vertical machining center with 30 position tool changer, 6000 RPM spindle with Mazatrol M plus control. ID# 16
- Mazak - V-655 / 60 24 x 60 vertical machining center with 30 position tool changer, 6000 RPM spindle with Mazatrol M plus control. ID# 19

Equipment List

Conventional Milling Machines

K&T - KM horizontal mill #3. ID# 48
K&T - 320TF-17 mill with universal head. . ID# 49
K&T - 415 TF dual head mill. ID# 37
Cincinnati - Horizontal mill #4 with universal head. ID# 50
Kondia - Vertical mill. ID# 46
Millport - Vertical mill. ID# 47

Drilling Machines

Allen - 6 spindle drill press. ID# 35
Rockwell - 4 spindle drill press. ID# 36

Lathes

Le Blond - 14" dual drive. ID# 42
Takisawa Webb - 14". ID# 43

Cutter Grinding Equipment

Walter - Helitronic Power CNC Tool Grinder. ID# 610
Sterling - Cutter grinder. ID# 601
Cincinnati - Cutter grinder. ID# 602
Pratt Whitney - Cutter grinder. ID# 604
Covel - Surface grinder. ID# 605
Cincinnati - Double edge grinder. ID# 606
Cincinnati - Tool & cutter grinder. ID# 607
Delta - Carbide grinder. ID# 609

Equipment List

Saws

Tennewitz - 36" vertical band saw. ID# 701
Emerson - Horizontal band saw. ID# 702
Delta - 12" abrasive cut off saw. ID# 703

Hone

Sunnem - MBB 1650. ID# 70

Material Equipment

Yates - Fork lift - 6000 lb. capacity. ID# 901
Clark - Fork lift - 6000 lb. capacity. ID# 903
Komatsu - Fork lift - 5000 lb. capacity. ID# 904
Hercules - Digital Scale – 5000 lb. capacity. ID# 1001
Hercules - Digital Scale – 5000 lb. capacity. ID# 1002

Numerical Control Programming Equipment

NCL - Full 5 axis contouring software system with graphics plotter
(Multi seat) Latest versions maintained through maintenance contract.
Catia - V5R13. Latest versions maintained through maintenance contract.
Catia - V4R2.4 Latest versions maintained through maintenance contract.
Vericut - Part verification software.
Autocad - 2009 with mechanical designer & Iges, Catia, STEP translators
NT - Workstations
W2000 - Workstations
Mastercam - Workstations

Equipment List

Network Equipment

Windows 2008 - Server based network.

Job Boss - MRPII (MIS / DSS) Latest versions maintained through maintenance contract.

Job Boss - Quality tool kit. T.P.M.

DNC

Quality Control Inspection Equipment

Environmentally controlled inspection area.

Brown & Sharp - Global image 153010 coordinate measuring machine. 60"(X), 120"(Y), 40"(Z) PCDMIS software version 3.5. ID# 808

Brown & Sharp - Global image 091508 coordinate measuring machine. 35"(X) 60"(Y), 30"(Z) PCDMIS software version 3.5. ID# 809

Wilson - UR model Rockwell hardness tester. ID# 804

Sheffield - Air gages. ID# 805

Micrometrical - Profilometer. ID# 806

Black granite surface plate , metal stand TX 12'. ID# 802

Black granite surface plate , metal stand TX 12'. ID# 803

Black granite surface plate , metal stand TX 12'. ID# 810

Black granite surface plate , metal stand TX 12'. ID# 811

Black granite surface plate , metal stand TX 12'. ID# 812