

MACHINE LIST

QTY	CNC VERTICAL MACHINING CENTERS	CAPACITY
2	HAAS VF-6	(X)64" x (Y)32" x (Z)30"
1	HAAS VF-6 5TH AXIS CAPABLE	(X)64" x (Y)32" x (Z)30"
2	HAAS VF-3 4TH AXIS CAPABLE (1**)	(X)40"x (Y)20"x (Z)25"
6	HAAS VF-3SSYT WITH FULL 5TH AXIS	(X)40"x (Y)26"x (Z)25"
7	HAAS VF2 4TH AXIS CAPABLE (5 VF2SS MODELS (2**))	(X)30"x (Y)16"x (Z)20"
2	ROBO-DRILL T21iEL WITH PALLET CHANGER AND 4TH AXIS CAPABLE	(X)28"x (Y)16"x (Z)13"
2	ROBO-DRILL T21iFL WITH DDR 4TH AXIS TABLES	(X)20"x (Y)16"x (Z)13"
2	ROBO-DRILL T21iE	(X)20"x (Y)16"x (Z)13"
4	MORI SEIKI NV5000	(X)32"x (Y)20"x (Z)20"
1	DMG MORI NVX 5100 WITH DDRT ROTARY TABLE (5 TH AXIS)	(X)41"x (Y)20"x (Z)20"
1	DMG MORI NVX 5080	(X)31"x (Y)20"x (Z)20"
4	DMG MORI ECOMILL 1100V (1**)	(X)43"x (Y)22"x (Z)20"
1	MORI SEIKI MV 65 BT50*	(X)60" x (Y)25" x (Z)25"
1	MORI SEIKI 5100 4-AXIS*	(X)40" x (Y)20" x (Z)20"
1	HAAS VF-3SS 5 AXIS W/TWIN PLATTEN TRUNNION*	(X)20"x (Y)40"x (Z)25"
2	HAAS VF-2SS 5TH AXIS W/PROBING*	(X)30"x (Y)16"x (Z)20"
1	HAAS VF-6SS 4TH OR 5TH AXIS WITH 10" ROTARY OR 6" TRUNNION*	(X)64"x (Y)32"x (Z)30"
1	ROBO-DRILL T21iD WITH PALLET CHANGER (**)	(X)20"x (Y)16"x (Z)13"
1	ROBO-DRILL T10A WITH INDEXER (**)	(X)20"x (Y)15"x (Z)12"
1	ROBO-DRILL T14IA WITH INDEXER (**)	(X)20"x (Y)15"x (Z)12"
2	HAAS VF-4 4 TH AXIS CAPABLE (**)	(X)50"x (Y)20"x (Z)25"

QTY	CNC HORIZONTAL MACHINING CENTERS	CAPACITY
2	MATSUURA 450H	(X)18"x (Y)16"x (Z)16"
1	HAAS EC400	(X)22" x (Y)22" x (Z) 20"
2	MORI SEIKI NH 4000	(X)22"x (Y)22"x (Z)25"
10	DMG MORI NHX 4000 (2*) (2**)	(X)22"x (Y)22"x (Z)26"
4	KITAMURA MYCENTER HX250G	(X)12" x (Y)12" x (Z)13"
1	ENSHU GE90*	(X)39"x (Y)35"x (Z)41"
1	MORI SEIKI NH 4000*	(X)22" x (Y)22" x (Z) 25"
1	MORI SEIKI NHX 630*	(X)42" x (Y)36" x (Z)41"
1	ENSHU GE590H*	(X)39"x (Y)35"x (Z)41"

QTY	CNC MILL/TURN AND 5-AXIS CENTERS	CAPACITY
1	MORI SEIKI NT 3200	2.6" BAR (10" CHUCK) X 40" LENGTH
1	MORI SEIKI NT 4250	3.1" BAR (10" CHUCK) X 60.7 LENGTH
2	DMG MORI NTX 2000	2.5" BAR (10" CHUCK) X 60.6" LENGTH
2	DMG DMU 50 (5-Axis) *	(X)19.7"x (Y)17.7"x (Z)15.7"

QTY	SWISS TURNING CENTERS	CAPACITY
1	CITIZEN A20	20MM BAR
4	CITIZEN A32 (3**)	32MM BAR
2	CITIZEN K16 (1**)	16MM BAR
5	CITIZEN L20 (4**)	20MM BAR
3	CITIZEN M32 W/"B" AXIS (2**)	32MM BAR
1	CITIZEN L32	32MM BAR
1	TSUGAMI BS20-3*	20MM
1	TSUGAMI SS32*	32MM BAR * 8 AXIS

MACHINE LIST (Cont.)

QTY	CNC TURNING CENTERS	CAPACITY
3	NAKAMURA 15S	1.7" BAR (6" CHUCK) X 10.63" LENGTH
3	HYUNDAI 400G W/ FANUC ROBOTS	1.5" BAR (6" CHUCK) X 9.84" LENGTH
2	HYUNDAI E160A	1.7" BAR (6" CHUCK) X 11.8" LENGTH
1	HYUNDAI L150A	1.8" BAR (6" CHUCK) X 16.1" LENGTH
1	HYUNDAI L250 SY	3" BAR (10" CHUCK ON MAIN 6" ON SUB) X 24.4" LENGTH
1	HAAS 30ST*	10"CHUCK 24" SWING X 26.0"
1	MORI SIEKI SL-25B*	10" CHUCK X 39.37"
1	MORI SEIKI DURATURN 2550*	10" CHUCK x 20.47"
1	EUROTECH 710-SSLY TWIN SPINDLE, 2 TURRETS, LIVE MILLING*	2.56" BAR * TWIN SPINDLE, 2 TURRETS, LIVE MILLING 27.56
1	EUROTECH B545-SLY TWIN SPINDLE, LIVE MILLING*	1.77" BAR * TWIN SPINDLE, LIVE MILLING X 19.68"
3	EUROTECH 735-SLY TWIN SPINDLE, LIVE MILLING*	2.56" BAR * TWIN SPINDLE, LIVE MILLING X 27.56"
1	EUROTECH B436Y2 TWIN SPINDLE, LIVE MILLING*	1.62" BAR * TWIN SPINDLE, 2 TURRET, LIVE MILLING X 15.74"
1	MORI SEIKI ZL-203 TWIN SPINDLE, 2 TURRETS, LIVE MILLING*	3.0" BAR * TWIN SPINDLE, 2 TURRETS, LIVE MILLING X 20.47"
1	MORI SEIKI NL 2000 LIVE MILLING*	8" CHUCK X 29.52"
1	MORI SEIKI NL 1500 LIVE MILLING*	6" CHUCK X 19.68"
3	NAKAMURA 15S*	1.7" BAR (6" CHUCK) X 10.63"
1	NAKAMURA SC-250**	2.0" BAR (8" CHUCK) X 19.68"
1	NAKAMURA SC-300**	3.0" BAR TWIN SPINDLE, LIVE MILLING X 24"
1	HAAS SL-10**	1.75" BAR (6" CHUCK) X 14"
1	HYUNDAI HIT-8S**	1.57" BAR (6" CHUCK) X 12"
2	HAAS DS-30SSY**	2.0" BAR (10" CHUCK) X 23"

ADDITIONAL EQUIPMENT

MANUAL / MISCELLANEOUS MACHINE AREA	
CLAUSING ENGINE LATHE	WAFFIOS TUBING BENDER
LAGUN MANUAL MILL	SCOTCHMAN TUBING SAW
OKAMOTO GRINDER	DRILL PRESS
HYDRAULIC PRESS	VERTICAL/HORIZONTAL BAND SAW
LATHE CAPABILITIES TO 24"DIA.*	AUTOMATIC BAND SAW
BROACHING*	VERTICAL MILLS*
WESEL-MILL STAR 3 KNEE MILL*	AUTOMATIC BAND SAW*

CLEAN ROOM WELDING	
2	DYNASTY 200 DX TIG POWER SOURCE
1	DYNASTY 280 DX TIG POWER SOURCE W/ TIG RUNNER PACKAGE
2	AMI 207 ORBITAL WELDING POWER SOURCE
4	AMI 205 ORBITAL WELDING POWER SOURCE

MISCELLANEOUS WELDING	
1	MILLERMATIC 252 MIG WELDER
1	MILLERMATIC 252 MIG WELDER
1	MIG & TIG WELDING*
1	ALMEGA EX-V6 ROBOTIC WELDER*

CLEAN ROOMS	
1	CLASS 100 CLEAN ROOM
1	CLASS 100 WELDROOM

ADDITIONAL EQUIPMENT (Cont.)

INSPECTION	
2	CMM-ZEISS CONTURA
1	CMM-BROWN & SHARP MICROVALPFx
1	CMM – HEXAGAON TIGO SHOP FLOOR
1	QVI SPRINTMVP 300 (VISION SYSTEM)
1	QVI SNAP (VISION SYSTEM)
1	CMM-LK ASCENT*
1	CMM-MITUTOYO FJ1006*
1	CMM-MITUTOYO BH506*
1	CMM-MITUTOYO CRYSTA APEX – S 7106*
1	MICRO VU (VECTOR VIDEO MEASURING SYSTEM) *
1	BROWN & SHARP TESSCAN 50-PLUS OD NON-CONTACT SCANNER*
1	CMM-BROWN & SHARP MICROXCEL PFX **
1	MICRO-VU SOL 311 (VISION SYSTEM) **

CLEANING	
ULTRASONIC CLEANING	PASSIVATION (NITRIC & CITRIC)
ELECTROPOLISHING	ALKALINE CLEANING

(*) Denotes Ichor Tampa

(**) Denotes Ichor Osakis