



## **VOTAW PRECISION TECHNOLOGIES, INC**

**13153 LAKELAND ROAD  
SANTA FE SPRINGS, CA 90670  
REGISTERED TO ISO 9001 + AS9100**

**[www.votaw.com](http://www.votaw.com)**

### **Summary Sheet**

- ❖ Quality, Precision Machining, and Fabrication Excellence Since 1963
- ❖ Secure 210,000 Square Feet Under Roof
- ❖ 35 Ton Crane Capacity with 32 Feet Under the Hook
- ❖ Precision Tooling – Machining, Fabrication, and Assembly
- ❖ Precision Flight Hardware – Machining, Fabrication, and Assembly
- ❖ Prototype (one of a kind) – Machining, Fabrication, and Assembly
- ❖ Full Production Capabilities – Machining, Fabrication, and Assembly
- ❖ Very Large to Very Small – Machining, Fabrication, and Assembly
- ❖ Quality System – AS9100, A.I.S.C, with ASQC Certified Inspector
- ❖ Horizontal, and Vertical Lathes with Capabilities up to 32 Feet in Diameter
- ❖ 3, 4, 5 & 6 Axis Mills with Capabilities up to 50 Feet in Length
- ❖ Full Service Design Department Specializing in Tooling, and Special Machinery for the Aerospace, Launch Systems, and Aircraft Industry
  - Stress Analysis (including FEA) – Hydraulic, and Pneumatic Systems
- ❖ CAD/CAM Systems including CATIA, Unigraphics II, and Pro/Engineering
- ❖ Inspection Performed In-House and Off-Site Utilizing Hard Gages, Portable CMM, CMM X=200”, Y=100”, Z=71”, Laser Trackers and Romer Arms.
- ❖ Complete Fabrication Facility with Certified Welders, NDT, ASME, ASIC and a Licensed State Certified Welding Inspector on Staff

**More information can be obtained by contacting:**

**Scott Wallace  
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***MISSION SUCCESS STARTS HERE***

## EQUIPMENT LIST

### 5 AXIS CNC VERTICAL BORING MILLS (9 units)

- (X-8) SNK 5-Axis Gantry  
X=50', Y = 15', Z = 60"  
B - +/- 105° C - +/- 190°



- (X-10) JOBS Ever5 - **NEW**  
X = 236", Y = 196", Z = 59"  
C : +/- 200° A : +/- 110°



**(X-1)** Nicolas Correa 5 Axis Vertical Gantry  
X = 197", Y = 128", Z = 40"  
A = +100/-90° C = +/- 200°  
Between Columns – 106", Under Rail = 66"  
Spindle Motor 50 HP, Spindle Speed 4000 RPM



**(X-7)** Viper 5 Axis Gantry Machining Center  
X = 160", Y = 102", Z = 37"  
Z – Axis – 30°, A – Axis – 35°, B-A  
32" Under Rail



- (X-9) Ingersoll 5 Axis Vertical Gantry - **NEW**  
X = 355" , Y = 184" , Z = 36" , W = 90"  
C axis : 360°  
A axis : 360°



- (X-3) Cincinnati 30V 5 Axis Vertical Gantry  
X = 490" , Y = 84" , Z = 22"  
A + -25° B = - 25°



**(X-4)** Cincinnati 5 Axis Vertical Gantry  
X = 776", Y = 168", Z = 22"  
A - Axis  $\pm 20^\circ$  B - Axis  $\pm 20^\circ$



**(X-5)** Omnimil X5  
X = 48", Y = 44", Z = 47.5"  
A =  $-26^\circ + 124.5^\circ$ , C =  $360^\circ$



- (X-2) Cincinnati Milacron 5 Axis Vertical Spindle  
X = 120", Y = 28", Z = 24"  
A & B = 54° included



**4 AXIS CNC HORIZONTAL BORING MILLS (13 units)**

- (H-1) DeVlieg 5" Spindle  
X = 144", Y = 72", W = 22"  
Fully Programmable Rotary Table



**(H-2) Lucas 6' Spindle**  
X = 72", Y = 43", Z = 20", W = 20"  
Fully Programmable 86"x72" Rotary Table  
Fully Programmable 2 Axis Knuckle Head  
Fully Programmable 48" Rotary Tilt



**(H-3) Lucas 6"**  
X = 120", Y = 96", Z = 46", W = 72" with a  
Fully Programmable 86"x72" Rotary Table



**(H-4)** Lucas 5"  
X = 106", Y = 72", Z = 38", W = 48"  
Fully Programmable Rotary Table



**(H-5)** Lucas 5' Spindle  
X = 106", Y = 72", Z = 38", W = 48"  
Fully Programmable Rotary Table





**(H-6)** DeVlieg 4" Spindle  
X = 120", Y = 72", Z = 20", W = 20"



**(H-8)** Mitsubishi 4" Spindle, Floor Type  
X = 348", Y = 117", Z = 45", W = 103"  
Rotary Table 168" x 168"



**(H-9)** Toshiba 4" Spindle  
X = 78", Y = 52", Z = 51", W = 24"  
Fully Programmable 55"X63" Rotary Table



**(H-10)** Mitsubishi 8" Spindle Floor- Type  
X = 472", Y = 136", Z = 43", W = 36"  
Fully Programmable 86"X86" Rotary Table  
with an IN and OUT travel of 86"



**(H-11)** Toshiba  
X = 78", Y = 84", W = 43"  
24" x 70" x 62" Rotary Index Table



**(H-12)** Haas Model # VF5 30 HP  
X = 50", Y = 26", Z = 28" 10,000 RPM



**(VF-11) Haas - NEW**  
X = 120" , Y = 40" , Z = 25"



**HORIZONTAL MACHINING CENTER**  
**(CNC-1) Okuma MC - 80H CNC Pallet Type**  
X = 43" , Y = 39" , Z = 32"  
Rotary Table 32"X32"  
70 Position Automatic Tool Changer  
with an Electric Probe Gaging System



## **CNC – LATHES (2 units)**

**(L-1)** Okuma LH50 CNC Controlled  
36” Swing, 168” Between Centers



**(L-3)** American Lathe CNC Controlled  
120” Swing, 480” Between Centers  
(450” Travel)



## CNC – VERTICAL TURNING LATHES (8 units)

**(V-1)** Shibauro CNC Controlled  
216" Swing, 111" Under Rail  
268" Max. Swing



**(V-2)** Shibauro CNC Controlled  
216" Swing, 92" Under Rail



**(V-3)** Shibauro CNC Controlled  
163" swing, 94" Under Rail



**(V-4)** RD & D CNC Controlled  
116" Swing, 90" Under Rail



**(V-5)** King CNC Controlled  
120" Swing, 96" Under Rail



**(V-8)** Shibaura CNC Controlled  
180" Swing, 130" Under Rail

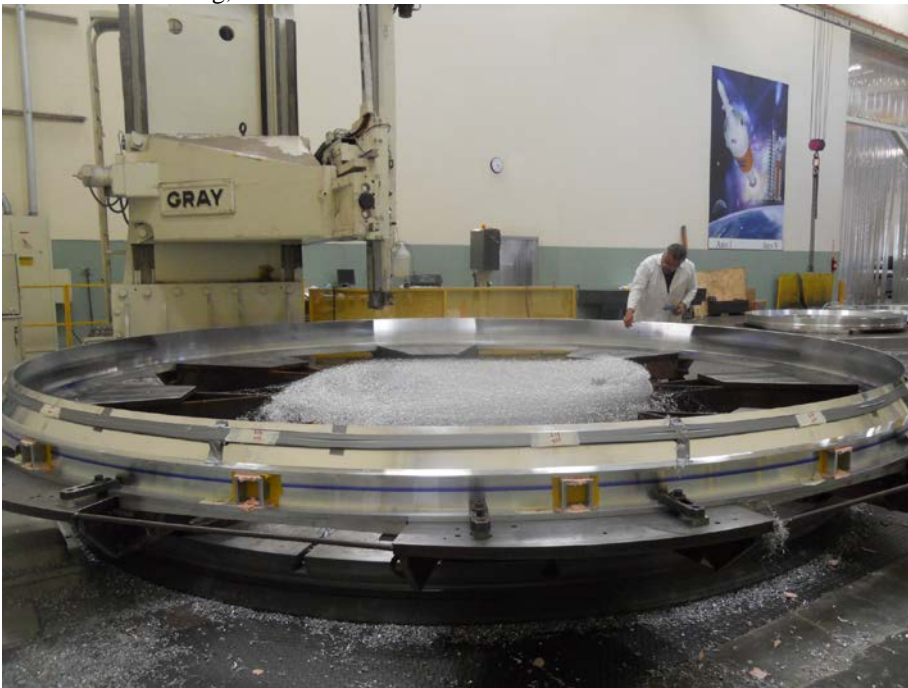




- (V-7) You Ji Cyclone VTL -1600  
Maximum Swing: 78.7"  
Maximum Turning Diameter: 71"  
Maximum Cross Travel (X Axis): -31.5"; + 40"  
Maximum Longitudinal travel (Z Axis): 47.2"  
Ram distance to table (max/min):83.4" / 0"



- (V-9) Gray CNC Controlled  
384" Swing, 100" Under Rail



**(V-11)** Betts CNC Controlled  
163" Swing, 94" Under Rail  
190" Swing, 50" Under Rail



**(V-12)** Bullard  
84" Swing, 60" Under Rail



## CONVENTIONAL LATHES (3)

Mori Seiki  
216" Swing, 92" Under Rail

Le Blond  
19" Swing, 96" Between Centers

Le Blond  
18" Swing, 42" Between Centers

Blanchard 22K  
46" Diameter X 24" Under Wheel

Tool & Cutter Grinder  
14" X 48"

## GRINDERS (4)

Surface Grinder  
14" X 48"

Surface Grinder  
14" X 48"

## BRIDGEPORT MILLS (2)

(24) Bridgeport  
48", Y = 12", Z = 6"

(1) Bridgeport 3 – Axis NC  
X = 48", Y = 12", Z = 6"

X =

## WELDING MACHINES (31)

Mig Welders  
(12) 250 To 650 Amp  
with Variety of Attachments

Miller Invision  
(2) 450 Amp

Manual Heliarc  
(6) Airco and Miller

ARC Welders  
(6) Airco and Lincoln Electric

Sub Arc Welders  
(5) Lincoln and Linde with Wire Feed

## DRY OVENS (15)

- (1) Phoenix DryRod (bake)
- (1) Henkel Enterprises KT-99
- (1) Rod baking oven
- (5) Portable ovens

## WELD MANIPULATOR (2)

(1) Aronson Sub Arc  
168" X 168"

(1) Aronson Sub Arc  
120" X 120"

## ROLL FORMING (3)

(1) 700 Ton Single Stroke Press  
45" Stroke, Y=96" (120" Between Columns)

(1) Pullmax SMT Kumla  
Plate Rolls 1" X 120"

(1) Pullmax SMT Kumla  
Angle Rolls 1" X 6" X 6"

## CUT-OFF SAWS (3)

(1) Event Abrasive 22" Saw

(6) Rod Storage and (1) Flux dry oven

## **BURNING MACHINES (12)**

- (1) Health Electric Eye Cutting Machine
- (2) Airco Radiograph Cutting Machines
- (7) Portable Burning Units
- (2) Hyperterm Max 200 Plasma Cutting Machine  
Cuts up to 3" thick material

- (1) Mercury Radial 16" Saw
- (1) WFU Ellis & Son Cut-Off Saw
- (1) Trenn Jaeger Saw  
Model LPC 110/400
- (1) Amada Cut-Off Machine
- (2) Do All Band Saws
- (1) Marvel Saw  
Series 8 Mark III  
16'4"

## **WELD POSITIONERS (3)**

- (1) Piranha Iron Worker

- (1) 50,000 Lbs. Aronson

## **WATERJET (2)**

- (W-1) (1) 50hp Pump  
(1) Bulk Feed Hopper 96"X48"X36"  
X Axis – 212", Y Axis – 160"

- (1) 24,000 Lbs. Aronson

- (W-2) (1) 50hp Pump  
X Axis – 120", Y Axis – 72"

- (1) 5,000 Lbs. Sciaky

- (1) Hydrapower

Press Brake  
30 Ton

## **DESIGN ENGINEERING / NC PROGRAMMING**

### **WORK STATIONS**

#### **DELL PRECISIONS**

#### **3 IBM INTELLISTATION POWER 265**

1 Way 450MHZ Power II Processor  
1GB Ram  
Giga Bit Network Card  
Dell 20" Ultra Sharp Flat Panel Monitor  
Power GXT 4500P Graphics Card  
AIX 5.1 OS

### **DESIGN & PROGRAMMING SOFTWARE\***

CATIA V5 – R8 - R23  
CATIA V4 – 4.2.2 and 4.2.4  
UNIGRAPHICS – NX5 - NX9  
PRO/ENGINEER – 2001 and Creo 2.0  
MASTERCAM – 9.1 – X6  
AUTODESK INVENTOR SERIES – 7 and 8  
AUTODESK MECHANICAL DESKTOP – 5.0 and 6.0

### **VERIFICATION SOFTWARE**

VERICUT – 7.3  
VERISURF – 9.1 - X6

### **VIEWING SOFTWARE**

**6 SEATS - ENOVIA**

**PLOTTER & PRINTING EQUIPMENT**

- OCE TDS400 WIDE FORMAT NETWORK PRINTER – (UP TO 36”)**
- HP DESIGN JET 750C WIDE FORMAT NETWORK PLOTTER – (UP TO 36”)**
- HP LASERJET 5SI MX NETWORK PRINTER**
- HP 6P LASER NETWORK PRINTER**

\*VPT MAINTAINS ACTIVE SOFTWARE MAINTENANCE ON ALL DESIGN AND PROGRAMMING SOFTWARE. THIS POLICY ALLOWS VPT TO APPLY THE LATEST TECHNOLOGY TO THE CHALLENGING PROJECTS OF OUR CUSTOMERS

**QUALITY MEASURING AND TEST**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li><b>2) Coordinate Measuring Machines</b><br/>DEA Delta SP X = 205”, Y = 100”, Z = 71”<br/>Federal CMM 350 X=52”, Y=25, Z=22”</li> <li><b>(3) Leica Laser Tracker System LTD 800</b><br/>Capable of single point measurement or surface digitizing accurately in a measurement volume up to 70m diameter</li> </ul> | <ul style="list-style-type: none"> <li><b>(2) Portable Coordinate Measuring Machines</b><br/>Romer Arm 7535SI 7 Axis (11.5’ Volume) with integrated laser scanner.</li> <li><b>(1) Cadillac 48” Height Gage</b><br/>Accuracy +-0.00005</li> </ul> |
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**QUALITY MEASURING AND TEST( continued)**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li><b>(1) Deltronic DH 214</b></li> <li><b>(1) Brunson Theodolite – Model TH-20</b></li> <li><b>(5) Starrett Gage Block Sets</b><br/>2 lb. increments<br/>Accuracy +/- .00050</li> <li><b>(1) Mitutoyo Electronic Indicator</b><br/>Accuracy .000010</li> <li><b>(1) Hewlett Packard Laser – Model 5526A</b><br/>Accuracy’s to +/- .000050<br/>Automatic Temperature and Atmospheric</li> <li><b>(1) Krautkamen Branson U S L – 42</b><br/>Ultrasonic Contact Suspension System</li> <li><b>(5) Starrett Gage Block Sets</b><br/>Accuracy +/- .00050</li> <li><b>(1) 5 Ton Hydra Set</b></li> </ul> | <ul style="list-style-type: none"> <li><b>(1) Ultradex Model A</b><br/>Accuracy .250 Sec. of Arc<br/><br/><b>Optical Comparator</b></li> <li><b>(2) Profilometer</b></li> <li><b>(1) 10 Ton Crane Tension Load Cell</b><br/>2 lb. increments</li> <li><b>(12) Dial Bore Gage’s</b><br/>Up to 12.000”</li> <li><b>(1) Mitutoyo Profile Optical Comparator</b></li> <li><b>(4) Ultrasonic Thickness Gage’s</b></li> </ul> |
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