



**A *PRECISION***  
**MANUFACTURING LLC**

SUPPLIER PRESENTATION



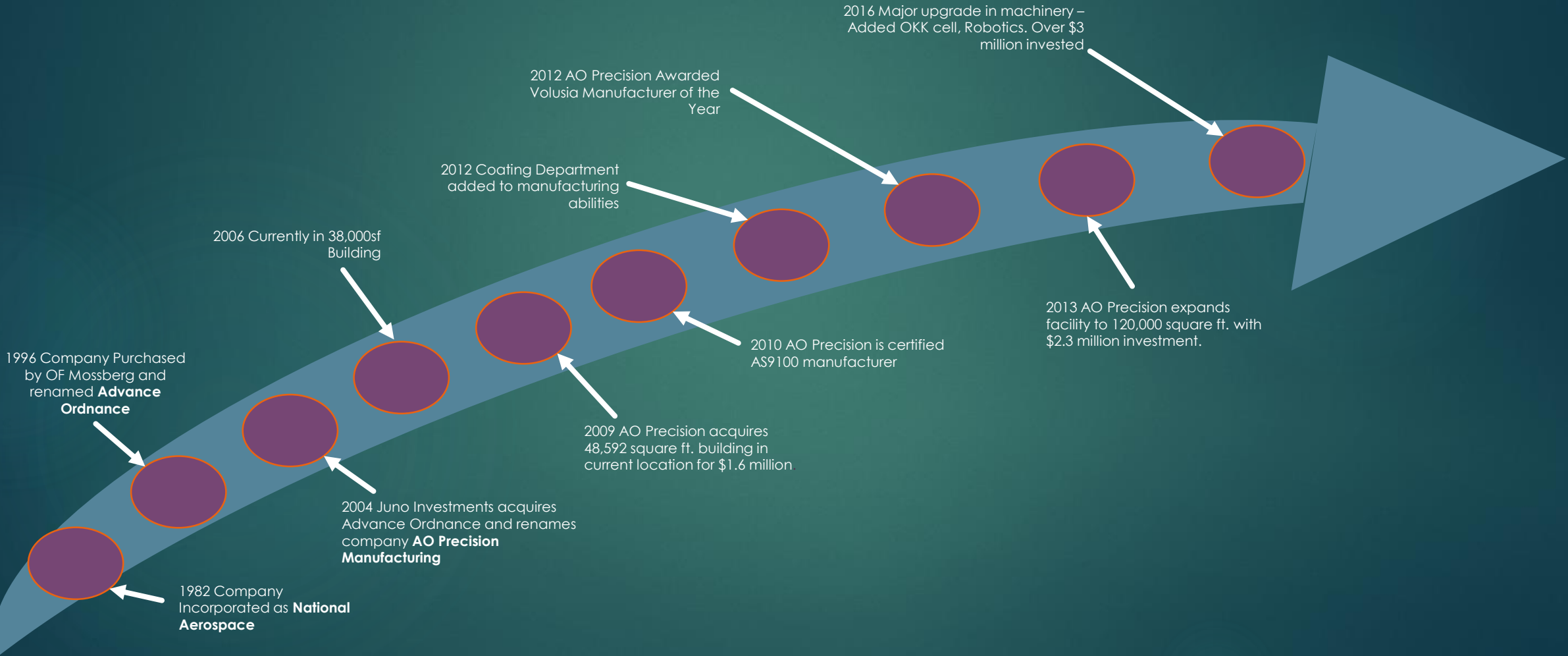
Precision parts made right and on time.



120,000 Square Foot  
Climate Controlled  
Manufacturing  
Facility in Daytona  
Beach, Florida



# Business History & Milestones





**Machine Technology**



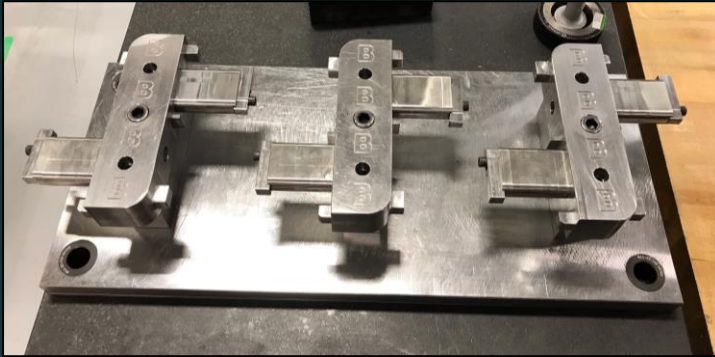
**Floor Space**



**Advanced Tooling**



**Certified Materials**



**Quick Change Fixturing**



**Quick Change Fixturing**

- **Customer Focus** demonstrated by 3 shifts covering 24/5 days, 8 hour shifts AGILE/ NIMBLE – Established Lean lines of part families
  - Flexible manufacturing – quick change fixturing, Pre-set tooling, SMED Carts
  - Optimized Cell Manufacturing resulting in short cycle times
  - Lean 1 Unit Flow
- **SKILLED LABOR** – Training program to accelerate a robust training/ Onboarding, OJT, internal classes in conjunction with Daytona State College.– 4 dedicated NPI Engineers
- **AS9100D CERTIFIED** / ISO9001-15 / ITAR REGISTERED, NADCAP Certified Chemical Processing (Mag. Phos) & NDT (Mag Particle Inspection)
- **Capability** – High tech machines - hard materials, complex castings, and forgings. Mechanical assembly, Laser Engraving, Painting

# Machinery List



## TURNING MACHINES

12

1 Tsugami Machine  
5 Star Swiss Machines  
6 Miyano Lathe Machines

## VERTICAL CNC MILLING

40

7 OKK Vertical Milling Centers  
33 HAAS Vertical Milling Centers

## HORIZONTAL CNC MILLING

36

9 OKK Horizontal Milling Centers  
25 Mori Seiki Horizontal Milling Centers  
2 Kitamura Horizontal Milling Centers

## 7 AXIS WITH LIVE TOOLING

2 Doosan turning centers with two turrets and two spindles, live tooling

## ADDITIONAL MACHINES

- 2 - Multi-Position Accucut Honing Machines
- 4 - Okamoto Surface Grinders
- 3 - Myford Cylindrical Grinders
- 4 - Inside Diameter Manual Honing Machines
- 3 - Bridgeport Vertical Manual Milling Machines
- 2 - Hardinge Manual Turning Machines
- 1 - Moore Manual Jig Borer
- 3 - Mil-Spec STC 130 Compliant UID Etching & Engraving Lasers



# Machine / Engineering Capacity



Available Floor Space



Entire Cells Purchased for Customer Specific Jobs



AO PRECISION MANUFACTURING, LLC.  
Shop Load Report

User: doubledeec Page: Date: Time:

| Job Number                      | Asm | Opr | Oper | Start Dt   | 3/28/2019 | 4/4/2019  | 4/11/2019 | 4/18/2019 | 4/25/2019 | 5/2/2019 | 5/9/2019  |
|---------------------------------|-----|-----|------|------------|-----------|-----------|-----------|-----------|-----------|----------|-----------|
|                                 |     |     |      |            | 4/3/2019  | 4/10/2019 | 4/17/2019 | 4/24/2019 | 5/1/2019  | 5/8/2019 | 5/15/2019 |
| Dept: 003 GAS KEY CELL          |     |     |      | Load:      |           | 93.37     | 142.78    | 141.68    | 106.36    | 132.96   | 150.00    |
| Totals                          |     |     |      | Capacity:  | 75.00     | 375.00    | 375.00    | 375.00    | 375.00    | 375.00   | 375.00    |
|                                 |     |     |      | Remaining: | 75.00     | 281.63    | 232.22    | 233.32    | 268.64    | 242.04   | 225.00    |
| Dept: 005 CHARGING HANDLE CELL  |     |     |      | Load:      |           |           |           |           |           | 70.00    | 70.00     |
| Totals                          |     |     |      | Capacity:  | 14.00     | 70.00     | 70.00     | 70.00     | 70.00     | 70.00    | 70.00     |
|                                 |     |     |      | Remaining: | 14.00     | 70.00     | 70.00     | 70.00     | 70.00     | 70.00    | 70.00     |
| Dept: 007 BOLT CARRIER CELL     |     |     |      | Load:      |           |           | 35.29     | 27.11     |           |          |           |
| Totals                          |     |     |      | Capacity:  | 172.00    | 860.00    | 860.00    | 860.00    | 860.00    | 860.00   | 860.00    |
|                                 |     |     |      | Remaining: | 172.00    | 860.00    | 824.71    | 832.89    | 860.00    | 860.00   | 860.00    |
| Dept: 008 20MM BREECH BOLT CELL |     |     |      | Load:      | 30.67     | 52.72     | 90.95     | 57.27     |           |          |           |
| Totals                          |     |     |      | Capacity:  | 75.00     | 375.00    | 375.00    | 375.00    | 375.00    | 375.00   | 375.00    |
|                                 |     |     |      | Remaining: | 44.33     | 322.28    | 284.05    | 317.73    | 375.00    | 375.00   | 375.00    |
| Dept: 009 BOLT CARRIER CELL     |     |     |      | Load:      | 37.81     | 375.87    | 319.16    | 1.93      |           |          |           |
| Totals                          |     |     |      | Capacity:  | 118.00    | 590.00    | 590.00    | 590.00    | 590.00    | 590.00   | 590.00    |
|                                 |     |     |      | Remaining: | 80.19     | 214.13    | 270.84    | 588.07    | 590.00    | 590.00   | 590.00    |
| Dept: 010 BARREL EXTENSION CELL |     |     |      | Load:      | 11.75     | 88.81     | 147.74    | 63.03     |           | 45.08    |           |
| Totals                          |     |     |      | Capacity:  | 112.00    | 560.00    | 560.00    | 560.00    | 560.00    | 560.00   | 560.00    |
|                                 |     |     |      | Remaining: | 100.25    | 471.19    | 412.26    | 496.97    | 560.00    | 514.92   | 560.00    |
| Dept: 011 BOLTS CELL            |     |     |      | Load:      | 221.67    | 116.40    |           |           |           |          | 147.15    |
| Totals                          |     |     |      | Capacity:  | 145.00    | 725.00    | 725.00    | 725.00    | 725.00    | 725.00   | 725.00    |
|                                 |     |     |      | Remaining: | -76.67    | 608.60    | 725.00    | 725.00    | 725.00    | 725.00   | 577.85    |
| Dept: 012 EXTRACTOR CELL        |     |     |      | Load:      | 146.27    | 35.05     |           |           |           |          |           |
| Totals                          |     |     |      | Capacity:  | 60.00     | 300.00    | 300.00    | 300.00    | 300.00    | 300.00   | 300.00    |
|                                 |     |     |      | Remaining: | -86.27    | 264.95    | 300.00    | 300.00    | 300.00    | 300.00   | 300.00    |
| Dept: 013 UPPER RECEIVER CELL   |     |     |      | Load:      | 112.53    | 660.68    | 383.70    | 568.54    | 108.36    | 120.16   | 75.00     |
| Totals                          |     |     |      | Capacity:  | 275.00    | 1375.00   | 1375.00   | 1375.00   | 1375.00   | 1375.00  | 1375.00   |
|                                 |     |     |      | Remaining: | 162.47    | 714.32    | 991.30    | 806.46    | 1266.64   | 1254.84  | 1300.00   |
| Dept: 025 LOWER RECEIVER CELL   |     |     |      | Load:      | 387.20    | 648.59    | 653.28    | 687.01    | 655.28    | 740.83   | 664.29    |
| Totals                          |     |     |      | Capacity:  | 138.00    | 690.00    | 690.00    | 690.00    | 690.00    | 690.00   | 690.00    |
|                                 |     |     |      | Remaining: | -249.20   | 41.41     | 36.72     | 2.99      | 34.72     | -50.83   | 25.71     |
| Dept: 026 FINISHING DEPARTMENT  |     |     |      | Load:      | 168.55    | 297.64    | 255.43    | 495.98    | 101.38    | 17.20    | 23.52     |
| Totals                          |     |     |      | Capacity:  | 939.00    | 4695.00   | 4695.00   | 4695.00   | 4695.00   | 4695.00  | 4695.00   |
|                                 |     |     |      | Remaining: | 770.45    | 4397.36   | 4439.57   | 4199.02   | 4593.62   | 4677.80  | 4671.48   |
| Dept: 027 ASSEMBLY DEPARTMENT   |     |     |      | Load:      | 116.88    | 120.06    | 223.97    | 284.83    | 239.33    | 109.85   | 52.93     |
| Totals                          |     |     |      | Capacity:  |           |           |           |           |           |          |           |
|                                 |     |     |      | Remaining: |           |           |           |           |           |          |           |



# Coating Department

TECHNIC INC

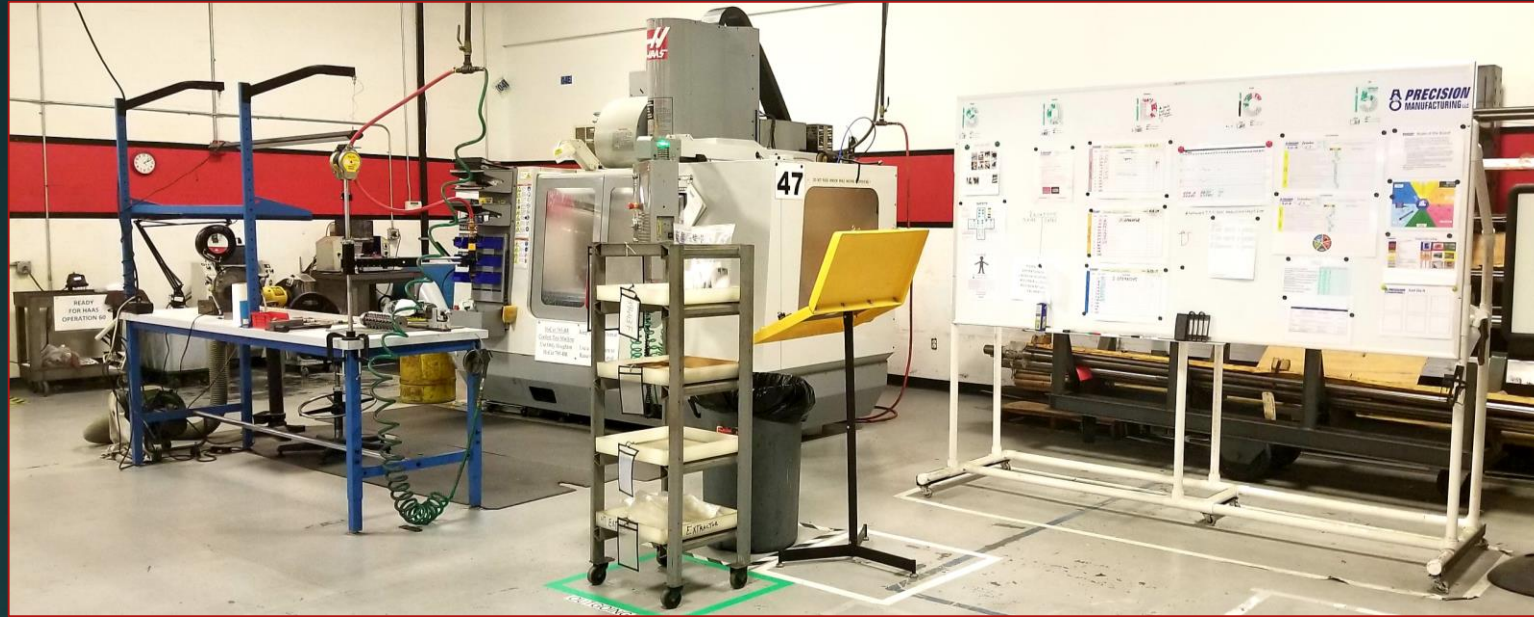
MAX LOAD CAPACITY





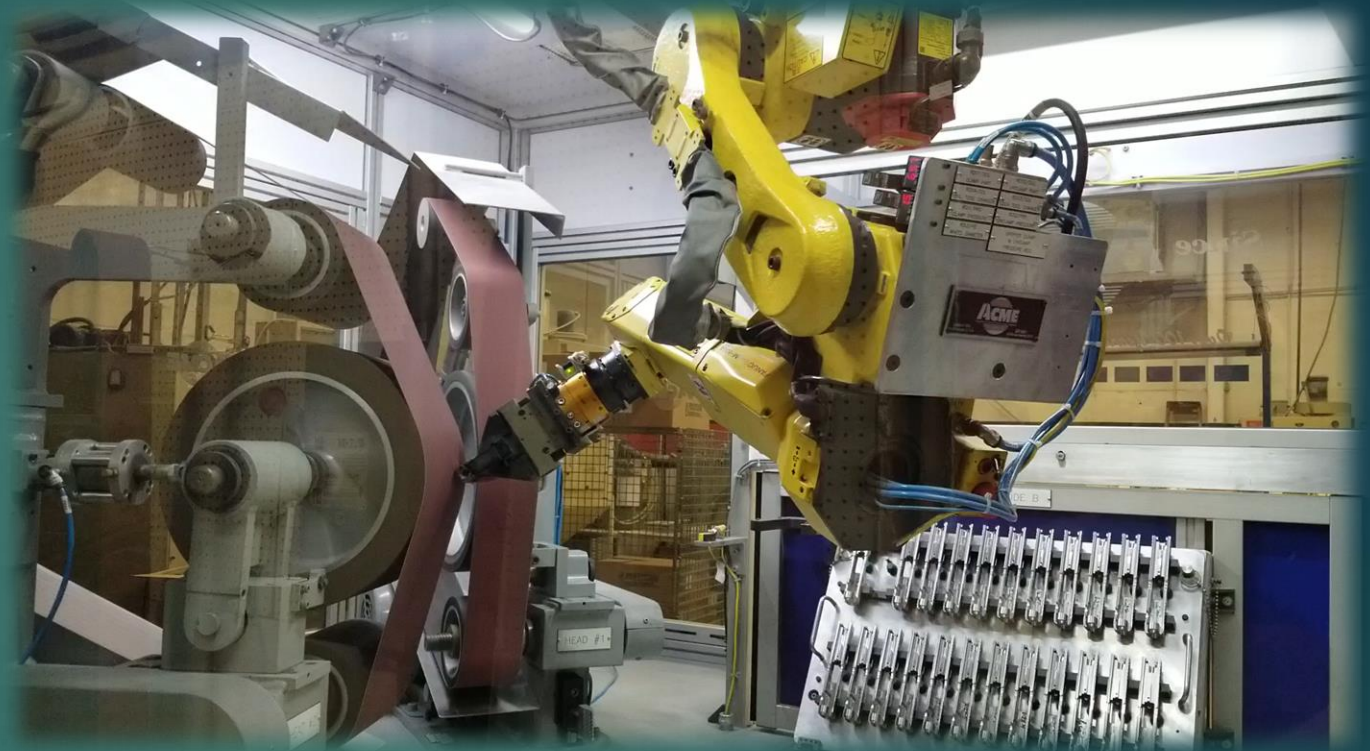
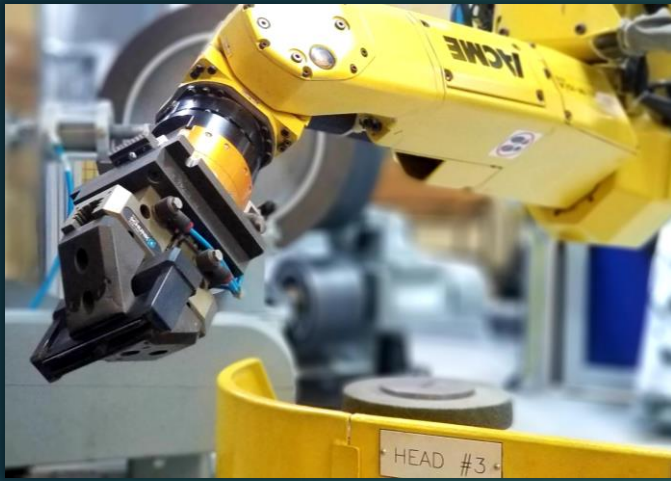
Large to small  
assemblies





- Shadow Boards





The latest in robotic metal finishing technology

## 7 AXIS WITH LIVE TOOLING

2 Doosan turning centers with two turrets and two spindles, live tooling



### PUMA TT1800 series



| Specification                                      | UNIT      | PUMATT1800S / MS / SY  |
|--|-----------|--|
| Max. turning diameter                              | mm (inch) | 230 (9.1)  |
| Max. turning length                                | mm (inch) | 230 (9.1)  |
| Chuck size   | inch      | 8  |
| Bar working diameter                               | mm (inch) | 65 (2.6)   |
| Spindle speed (Left spindle / Right spindle)       | r/min     | 5000   |
| Spindle motor power (Left spindle / Right spindle) | kW (Hp)   | 22 / 15 (30 min / cont.) (29.5 / 20.1) (FANUC)<br>22/19.6 (S6 40% / cont.) (29.5 / 26.3) (SIEMENS) |
| NC system  | -         | FANUC 31i / SIEMENS 840D   |

# Cell Layout for 1 Unit Flow



# Overview Machine Capability

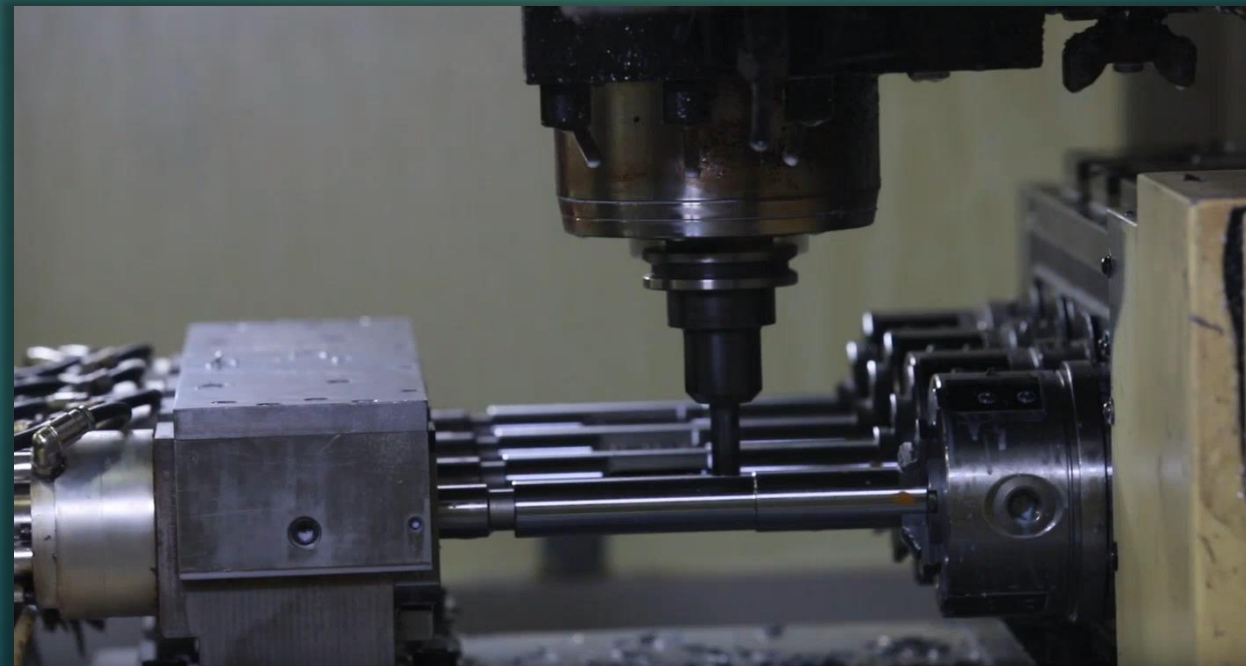


## OKK Vertical Mill Cell



# Overview Machine Capability

## HAAS Vertical Mills





# Overview Machine Capability

## Star Swiss Screw Machining



**CERTIFIED**  
**ISO9001**  
**QUALITY SYSTEM**

**Accredited**  
**Nadcap**<sup>TM</sup>  
Aerospace Quality Systems

**ITAR-Registered**

*We invest in the latest in Quality Measuring Equipment*

*"Because quality and trust are the foundations AO Precision Manufacturing is built on"*

**Exceptional reliability and integrity since 1982**

**Juno Investments LLC**

**bsi.**



# Certificate of Registration

QUALITY MANAGEMENT SYSTEM - AS9100D AND ISO 9001:2015

This is to certify that: **AO Precision Manufacturing, LLC**  
1870 Mason Avenue  
Daytona Beach  
Florida  
32117  
USA

Holds Certificate No: **FM 548406**

and operates a Quality Management System which complies with the requirements of AS9100D (technically equivalent to prEN9100:2016 and JISQ 9100:2016) and ISO 9001:2015 and is assessed in accordance with AS9104/1 for the following scope:

Precision machining and assembly of small arms, armaments, Metal finishing which includes Anodize, Phosphate, Chrome and Solid Film Lubrication and system components for the aerospace, defense, and commercial industries.

For and on behalf of BSI:

*Carlos Pitanga*  
Carlos Pitanga, Chief Operating Officer Assurance – Americas

Original Registration Date: 2010-02-24  
Reissue Date: 2019-01-31

Issue Date: 2019-01-31  
Expiry Date: 2022-01-30

Page: 1 of 1



...making excellence a habit.™

This certificate remains the property of BSI and shall be returned immediately upon request. An electronic certificate can be authenticated [online](http://www.bsigroup.com/ClientDirectory). Printed copies can be validated at [www.bsigroup.com/ClientDirectory](http://www.bsigroup.com/ClientDirectory) To be read in conjunction with the scope above or the attached appendix.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PR.  
BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK.  
Managed by: BSI Group America Inc., 12950 Worldgate Drive, Suite 800, Herndon, VA 20170-6007 USA +1 703 437 9000  
A Member of the BSI Group of Companies.

**Nadcap**

This certificate is granted and awarded by the authority of the Nadcap Management Council to:

**A O Precision Manufacturing LLC**  
1870 Mason Avenue  
Daytona Beach, FL 32117  
United States

This certificate demonstrates conformance and recognition of accreditation for specific services, as listed in [www.eAuditNet.com](http://www.eAuditNet.com) on the Qualified Manufacturers List (QML), to the revision in effect at the time of the audit for:

**Chemical Processing**

Michael J. Hayward  
Vice President and Chief Operating Officer

Certificate Number: 980618026  
Expiration Date: 30 April 2022

Performance Review Institute (PRI) | 161 Thorn Hill Road | Warrendale, PA 15086-7527

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**A O Precision Manufacturing LLC**  
1870 Mason Avenue  
Daytona Beach, FL 32117  
United States

This certificate demonstrates conformance and recognition of accreditation for specific services, as listed in [www.eAuditNet.com](http://www.eAuditNet.com) on the Qualified Manufacturers List (QML), to the revision in effect at the time of the audit for:

**NonDestructive Testing**

Joseph C. Pato  
Executive Vice President and Chief Operating Officer

Certificate Number: 980617724  
Expiration Date: 31 October 2020

Performance Review Institute (PRI) | 161 Thorn Hill Road | Warrendale, PA 15086-7527

# Safety & Security



Metal detectors at employee entrances and exits



| <b>PRECISION MANUFACTURING LLC</b>   | Analysis completed by: _____ |                 |
|--------------------------------------|------------------------------|-----------------|
| <b>Job Hazard Assessment</b>         | Date: _____                  | Page 1 of 3     |
| JOB HAZARD ASSESSMENT                |                              |                 |
| Hazard Type (HT)                     | Job task:                    | Equipment #:    |
| 1. Chemicals                         | Job location:                | Operator:       |
| 2. Mechanical/ Guards                | PPE required:                | PPE used:       |
| 3. Electrical (Shock, Short Circuit) |                              |                 |
| 4. Fall (Slips/Trips)                |                              |                 |
| 5. Fall (To a Different Level)       | Tools used:                  | Chemicals used: |
| 6. Fire, Heat, Thermal, Cold         |                              |                 |
| 7. Noise                             |                              |                 |
| 8. Visibility                        |                              |                 |
| 9. Caught (In, On, Between)          |                              |                 |
| 10. Struck (by, against)             |                              |                 |

| Month     | Training                                      | Date      |
|-----------|---|-----------|
| January   | First Aid                                     | 2-Jan-19  |
| February  | Personal Protective Equipment                 | 7-Feb-19  |
| March     | Emergency Action Plan                         | 14-Mar-19 |
| April     | HAZWOPR Refresher                             | 4-Apr-19  |
| May       | Bloodborne Pathogens                          | 2-May-19  |
| June      | Emergency Action Plan: Hurricane Preparedness | 6-Jun-19  |
| July      | Hazard Communication (HAZCOM)                 | 11-Jul-19 |
| August    | Lockout/Tagout                                | 1-Aug-19  |
| September | Hearing Conservation & Safety                 | 5-Sep-19  |
| October   | Emergency Evacuation/Fire Drill               | 3-Oct-19  |
| November  | Back Safety and Ergonomics                    | 7-Nov-19  |
| December  | Fire Extinguisher Use and Locations           | 5-Dec-19  |

Monthly required factory safety trainings



24/7 first aid dispensing & tracking/alert units stationed around plant

Area: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Name: \_\_\_\_\_ (Detail discrepancies on last page)

**General Work Environment**

1. Worksites clean and orderly? YES NO N/A
2. Are hand tools, extension cords, materials, etc. properly put away?
3. All spilled materials or liquids cleaned up immediately?
4. Work areas adequately illuminated?

**Exiting or Egress**

5. All exits marked with an exit sign and illuminated by a reliable light source?
6. Doors, passageways or stairways, that are neither exits nor access to exits and which could be mistaken for exits, appropriately marked "NOT AN EXIT"?
7. Are exits kept free of obstructions?

**Walkways**

8. Aisles and passageways kept clear?
9. Are there any holes in the floor or bolts protruding out from old machines that may cause a trip hazard?
10. Is there safe clearance for walking in aisles where motorized or mechanical handling equipment is operating?
11. Materials or equipment stored in such a way that they will not interfere with the walkway?

**Fire Protection**

12. Are fire extinguishers blocked from easy access?
13. Are fire extinguishers recharged annually and noted on the inspection tag?
14. Are fire extinguishers visually inspected monthly? (May be documented electronically)
15. Are fire extinguisher locations identified by signage?

**Personal Protective Equipment**

16. Are protective goggles or face shields provided and worn where there is any danger of flying particles or corrosive materials? (Saws)
17. Are safety glasses or side shields being utilized?
18. Are cut resistant gloves and other protective gloves worn to protect against irritation from chemicals or cuts?
19. Is hearing protection worn in the required areas? (Blast and Uppers)

**Portable (Power-Operated) Tools and Equipment**

20. Are grinders, saws and similar equipment provided with appropriate safety guards?
21. Are power tools used with the correct shield, guard, or attachment, recommended by the manufacturer.

## CNC Advancement Training

- **40 hour course:** 5 weeks/3 days per week/2 hours per session.
- Instructor Lead

### Course Outline

- ❖ Blueprint Reading
- ❖ Dimensions and Tolerances
- ❖ Inspection: calibers, micrometers & gauges
- ❖ GT&D: Geometric Dimensioning & Tolerancing
- ❖ CNC Programming – G&M Code

### New Hire Orientation Checklist



### PRECISION MANUFACTURING LLC TRAINING CHECKLIST

Employee: \_\_\_\_\_ Department/Cell: \_\_\_\_\_  
 Job Assigned to: \_\_\_\_\_ Date Assigned: \_\_\_\_\_ Estimated completion time: \_\_\_\_\_  
 Supervisor: \_\_\_\_\_ Trainer: \_\_\_\_\_

**NOTE TO SUPERVISOR:** This checklist is to be used during the training of the new employee named above. Your responsibility is to make sure all critical topics shown below are covered by the trainer and understood by the trainee. You or your training designate must initial in the appropriate box after each training component is completed. The employee will also initial in this form indicating that the employee has received all necessary training and that he or she is now competent to carry out all normal job duties.

#### Safety Instruction Section (Job Specific)

| Check                    | Item Reviewed with Employee             |
|--------------------------|---|
| <input type="checkbox"/> | Hazard Communication Program            |
| <input type="checkbox"/> | SDS Review of Chemicals used on the job |
| <input type="checkbox"/> | Chemical locations and labeling         |
| <input type="checkbox"/> | Spill Response Program (as applicable)  |

### Operator Training Checklist

| Quality | Check | Trainer's Initials | Date Completed |
|---------|-------|--------------------|----------------|
| 1       | Un    |                    |                |
|         | Ab    |                    |                |
|         | De    |                    |                |
|         | Dem   |                    |                |
| 2       | Un    |                    |                |
|         | Ab    |                    |                |
|         | De    |                    |                |
|         | Dem   |                    |                |

The trainee has demonstrated the ability to operate: **This section to contain stop down Options to choose from i.e. Lower Receiver Horizontal Lower Receiver Vertical Lower Receiver Laser Lower Receiver Broach**

Demstrates ability to understand and populate SPC Chart (as applicable) (WI-4.9.057, MOP-07-01)  
 Demstrates ability to understand handling, identification and back sorting of nonconforming material (WI-4.9.05A, QCP-08-03)  
 Page 2 of 3

# **PRECISION** **MANUFACTURING LLC**



*Precision Aviation Machined Parts - Made Right & On Time*





NAICS Code 332710 – Machine Shop

Cage Code: 077H9

Duns: 938783362