

MANUFACTURING SOLUTIONS. ABSOLUTE INTEGRITY. EMPLOYEE OWNED.



# PENN UNITED<sup>®</sup>

TECHNOLOGIES INC.



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## Internal Grinding

2	Dual Station CNC ID Grinders
1	Heald 372A ID Grinder
2	Overbeck IRC-400 CNC ID/OD Grinder
6	Sunnen Hones
2	USACH 75-S2 CNC ID Grinder
8	Heald Internal Grinders
4	Cubic CNC Grinders
12	Okamoto CNC Grinders
1	Overbeck CNC Grinder

## OD Grinding

1	Cincinnati Centerless Grinder
1	Cincinnati OD Grinder 60"
1	Landis OD Grinder
5	Myford Cylindrical Grinders
3	Parker Majestic Liberty II ID/OD Grinder
1	Reid Ded Tru
2	Rollomatic CNC 148P4
2	Rossi Monza Centerless Grinder
2	Royal Master Centerless Grinder
3	2 Axis Studer CNC Grinders
7	3 Axis Studer CNC Grinders
1	4 Axis Studer CNC Grinders
3	Centerless Grinders
1	Cincinnati CNC Centerless Grinder
4	Cubic CNC Grinders
8	Landis Cylindrical Grinders
1	Lizzini CNC Grinder
3	Okamoto CNC Grinders
13	Parker Majestic CNC Grinders
2	Toyoda Cylindrical Grinders

## Jig Grinding

1	Hauser S35-400 CNC Jig Grinder
1	Moore 1050 CNC Jig Grinder
2	Moore CP450 Jig Grinder
1	Moore CPZ450 Jig Grinder
1	Moore G18 CNC Jig Grinder
1	Moore G48 Jig Grinder
17	Moore Manual Jig Grinders
2	Moore CNC Jig Grinders
2	Moore Jig Grinders

## Contour Grinding

1	Cincinnati Contour Grinders
1	Form Grinding Chart Machine

## Surface Grinding

1	Blanchard #11 Grinder
1	Blanchard Rotary Grinder 36"
3	G&L Hydraulic Wet Grinders
1	Heald 161-8" Rotary Grinder
2	Mitsui Surface Grinders
1	Okamoto ACC-20x48 EXB
1	Parker Majestic #2 Surface Grinders
26	Parker Majestic #2Z Surface Grinders
5	Parker Majestic Automatics
7	Parker Majestic CNC Freedoms
10	Penn United CNC Surface Grinders
10	Reid Surface Grinders
1	Sansei Rotary Grinder 20"
8	Blanchard Grinders
1	Okamoto Rotary Grinder
3	Double Disc CNC Fine Grinders

## Machining

1	Amada Laser Cutting Machine - FLC 3015 AJ
8	Bridgeport Knee Mills
2	Cincinnati 4 Axis Machining Centers
1	Doosan DNM 650 VMC
1	Fosdick Radial Arm Drill Press
1	G & L HMC 4 Axis Machining Center
1	Herbert Devlieg Jig Mill
1	Makino V-55 3 Axis machining Center
1	Makino V55 VMC
1	Mazak 4 Axis Machining Center
1	Mitsubishi Horizontal Machining Center
1	Monarch V750 3 Axis Machining Center
2	Moore Jig Bores
1	Mori Seiki NV5000 5 Axis VMC
1	Sharp Vertical Machining Center
1	Sharpe CNC Mill
6	Sharpe CNC Mills
1	SIP Hydroptic 7A
4	Three Axis Machining Centers

## Turning

1	Doosan Lynx 220 LM CNC Lathe With C Axis
1	Doosan Puma 300C CNC Lathe
1	Doosan Puma SYL 2500 CNC Lathe With C Axis
7	Hardinge Conquest 10 Axis CNC Lathes
2	Hardinge Quest 5 Axis CNC Lathes
2	Leblond Lathes
3	Leblond Engine Lathes
4	Mori-Seiki CNC Lathes
1	Mori-Seiki Lathe
1	Puma 250L CNC Lathe
1	Puma 480L CNC Lathe

## EDM

2	Agie Drill 20 Hole Burner
1	Agiecut 250 SF CE WEDM Machine
1	Agiecut 250 SF HSS WEDM Machine
1	Agiecut 250 SF HSS CF WEDM Machine
2	Agiecut 250 SF+F HSS CF WEDM Machine
1	Agiecut 250 SF+F WEDM Machine
3	Agiecut Progress 2 WEDM Machine
2	Agiecut Progress 2VP WEDM Machine
1	Agiecut Vertex WEDM Machine
3	Makino Edge CNC Sink EDM Machine
1	Makine Edge 3 Sink EDM Machine
1	Makino EDAF3 Sink EDM Machine
1	Makino EDNC 43 CNC Sink EDM Machine
3	Agie Wire Cut Machines

## Heat Treat

1	Abar Ipsen Inc. Vacuum Furnace
1	Blue M Tempering Oven
1	Johnson Blue M Gas Furnace
1	L&L High Temp Furnace
1	So-Low Ultra Low (-80 F) Freezer
1	Vulcan Tempering Oven

## Miscellaneous

1	3D Printer
1	Automatic Cut Off Saw
1	Aqueous Parts Cleaning Machine
1	Bal-Tec Prototype Machine
1	Empire Glass Bearer
1	Ex-Cell-D Center Lap
1	Hem Saw
2	Induction Brazers
1	Lazer Marking System
2	Leco Cut-Off Machine
1	Medical Shrink Tube Oven
1	Rush Wheel Dresser
1	Solvent Parts Cleaning Machine
9	Lapping / Polishing Tables
1	Optical Diamond Wheel Dresser

## WaterJet

1	Omax 55100 Waterjet Machine
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## Precision Assembly Equipment

1	Baron-Blakeslee Coating Equipment P.T.P.
1	Heat Staking Machine
2	Transtech Pad Printers

## Presses

1	30 Ton Bruderer BSTA 30 (Proto)
13	30 Ton Bruderer BSTA 30 II
3	30 Ton Minster Pulsar
1	45 Ton Bruderer BSTA 40
1	50 Ton Bruderer BSTA 50 UL
1	50 Ton Bruderer BSTA 50 VL
1	60 Ton Minster Pulsar
3	60 Ton Minster Str. Side
2	90 Ton Minster Hummingbird
2	100 Ton Minster P2H
6	100 Ton Minster Piece Maker
1	150 Ton AIDA Servo Press
1	250 Ton Bliss
2	250 Ton Minster
1	300 Ton Minster (One Press)

## Plating Equipment

3	Dual Strand Duplex Plating Line
1	Gold Spot Plating Unit
4	Single Strand Duplex Plating Line

## Plating Processes / Finishes

Copper  
Electro Cleaning  
Electro Polishing  
Electro-less Nickel  
Gold  
Lead Free Tin (ROHS Compliant)  
Nickel (Matte / Semi-Bright)  
Palladium  
Palladium / Nickel  
Passivation (Nitric and Citric)  
Silver  
Tin 100%  
Tin-Lead - Various Alloys

## Plating Techniques

Brush Plating  
Overall Plating  
Reflow  
Selective (Controlled Depth) Plating  
Selective Spot Plating  
Selective Stripe (Single or Dual Sided)  
Spray Plating

## Quality/Inspection

1	Agilent Laser Interferometer System
1	Brown & Sharpe CMM
1	Brown & Sharpe Gagemaster
3	Brown & Sharp Gage 2000 CMM
2	Brown & Sharp MicroVul CMM
2	Brown & Sharpe CMM
1	CCP Optical Comparator
1	Corning Tropel Flatmaster
1	Federal Gage Block Comparator
1	Federal Master Ring Comparator
4	Fisher X-Ray Thickness Analyzer
10	Force Gage
1	Gage 2000 CMM
1	Gagemaker
7	J & L Comparitors
46	J&L Optical Comparators
1	Kodak Model 14-5Optical Comparator
7	Kodak Model 2A Optical Comparators
2	Mititoyo Surface Analyzers
1	Mitutoyo SJ301 Profilometer
1	Mitutoyo SJ400 Profilometer
2	Mitutoyo SJ401 Profilometer
1	Nikon 6C Comparator
2	Nikon Horizontal Comparators
2	Nikon Toolscope
5	Nikon V-12 Comparators
3	OGP Comparitors
10	OGP Optical Comparators
1	OGP Quest 250
3	OGP Quest 300
1	OGP Quest 450
8	OGP Smartscopes
9	Rockwell Hardness Testers
1	Rond Com 60
170	Starrett 81 Piece Carbide Gage Block Sets
20	Starrett Fonda Block Sets
5	Vision Systems
2	Zeiss Prismo Vast CMM
2	Zeiss Profilometers
2	Zeiss Spectrum CMM
2	Zeiss Surface Analyzers
1	Zeiss UMC 850 CNC CMM

## Carbide Powder Processing

8	20 cu ft. Conical Vacuum Dryers
11	Attritors (Mixers)
4	Granulators
1	Niro Spray Dryer
6	Vibratory Screens

## Carbide Preform Machining

11	Reid Surface Grinders
4	Vertical CNC Lathes
16	Vertical CNC Milling Machines

## Carbide Pressing

1	125 Ton Alpha Hydraulic Press
1	15 Ton Mohr Hydraulic Press
1	250 Ton Alpha Hydraulic Press
1	30 Ton Mohr Hydraulic Press
1	5 Ton Mohr Hydraulic Press
2	60 Ton Alpha Hydraulic Press
1	Autoclave 12" Ø Isostatic Press
1	Autoclave 20" Ø Isostatic Press
1	EPSI 28" Ø Isostatic Press
1	National Forge 12" Ø Isostatic Press

## Carbide Furnaces

1	Blue-M Furnaces
2	Heat Treating Furnaces
2	Induction Heating Units
1	Sinterhip Pressure Furnace
7	Vacuum Sintering Furnaces (1600°C)
2	Vacuum Sintering Furnaces (2300°C)

## Dedicated Training Equipment

3	Bench Grinders
6	Bridgeport Manual Mills
	CMM
1	Cut-off Machine
1	Disk Grinder
1	Drill Press
1	Drill Sharpener
1	Haas CNC Lathe
5	Haas CNC Simulator
1	Heat Treat Ovens
2	Jet Manual Lathes
1	Leco Hardness Tester
1	Mantis Inspection Scope
	Microscopes
1	Myford Cylindrical Grinder
4	Optical Comparators
1	Parker Majestic Automatic Surface Grinder
5	Parker Majestic Surface Grinders
1	Part Cleaning Tank
1	Smart Scope
1	Starlight Inspection Scope
2	Vertical Band Saws
1	Wet Grinder