

## FORGING PRESSES

- (2) 8000 Ton Hydraulic
- (1) 6000 Ton Hydraulic
- (2) 5000 Ton Hydraulic
- (2) 4000 Ton Hydraulic
- (4) 3500 Ton Hydraulic
- (3) 3000 Ton Hydraulic
- (3) 2500 Ton Hydraulic
- (1) 2100 Ton Hydraulic
- (1) 2000 Ton Hydraulic
- (1) 1800 Ton Hydraulic
- (2) 1600 Ton Hydraulic
- (3) 1500 Ton Hydraulic
- (4) 1200 Ton Hydraulic
- (2) 1000 Ton Hydraulic
- (1) 930 Ton Hydraulic

- (1) 800 Ton Hydraulic
- (1) 740 Ton Hydraulic
- (1) 570 Ton Hydraulic
- (3) 500 Ton Hydraulic
- (2) 350 Ton Hydraulic
- (2) 300 Ton Hydraulic
- (1) 4000 Ton Mechanical
- (2) 3000 Ton Mechanical
- (1) 2500 Ton Mechanical
- (1) 2000 Ton Mechanical
- (1) 1300 Ton Mechanical
- (1) 1000 Ton Mechanical
- (1) 750 Ton Mechanical
- (1) 600 Ton Mechanical



APP's 8000-Ton Hydraulic Press

## TRIM EQUIPMENT

11 Mechanical trim presses (1-50 ton; 2-150 ton) 1 Water Jet Cutter 3 axis CNC 96" X 144" X 12"

# **DIE SHOP EQUIPMENT**

- (1) Makino 12/20 3-axis CNC High Speed ctr. 15,000 RPM 80x47x28
- (1) Kitamura Bridge 8 10,000 RPM 80x43x28
- (1) Cincinnati CNC Sabre 1000 40x20x22
- (2) Hurco VM1 Graphite Mill 20000RPM 26x14x18
- (1) Cincinnati CNC Hydrotel 28x120
- (1) ECOCA CNC Lathe 24x80
- (3) Cincinnati Hydrotel 28x96
- (1) Cincinnati Hydrotel 28x120
- (1) Cincinnati CNC Hydrotel 28x96
- (2) OKK VM76 CNC Vertical 60x29x26
- (1) Femco 100R2 Boring Mill 78x70x67
- (1) Femco 975 CNC Lathe 38x78
- (1) Femco 55S CNC Lathe 24x29

- (1) Flow Mach2 Waterjet CNC 120x72x8
- (1) Johnford DMC 3100 Vert. Mill 122x70x31
- (1) Bridgeport Vari-Drive Mill 12x24
- (1) Carlton 6' Radial Drill Press
- (1) Ponar Wrockau TUR-50 Eng. Lathe 34x48
- (1) Gemini Lathe 36x80
- (1) Monarch Lathe 28x80
- (1) Cadillac Lathe 10x26
- (1) Lodge & Shipley Lathe 34x48
- (1) Charmilles Robo 85 47x31x19
- (1) Charmilles Robo 55 23x15x18
- (1) Charmilles Robo 30 14x10x12 (1) Carlton 6' Radial Arm Drill Press
- (1) Cincinnati 6' Radial Arm Drill Press





## COMPUTER EQUIPMENT

Engineering, Tooling Design, Machine Programming, and Q.C.

Catia 4.3.2 (1 Seat) Catia V5-5R2014 (10 seats) Catia Enovia DMU V5-5R2014 (1 seat) AutoCAD 2015 (3 seats) Inventor (3 seats) SolidWorks 2015 (5 seats) MSC Simufact 12.0

Forge NxT Cluster (Process Simulation) Master-CAM 12.0 (12 seats) PC-DMIS 4.0 (4 seats) Vericut V6.0 w/optimization Calypso (3 seats) Calypso off line (2 seats)

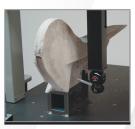
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## **HEAT TREATING**

Heat treat equipment includes 3 continuous furnaces; 6 drop bottom furnaces (3 w/ glycol & water quench tanks); 9 age ovens; two freezers.

## Q.C. & INSPECTION DEPARTMENT

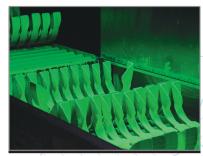
Three lines of fluorescent penetrant inspection; dimensional inspection, including eight 3-axis CMM, five of which are DCC (Direct Computer Control); an array of conventional measuring devices, mechanical, and physical testing equipment, as well as 3 ultrasonic inspection stations and complete laboratory services.



Plaster cast of forging die impression being inspected on CMM prior to forging actual aluminum first article



Ultrasonic Inspection tank for inspecting forge bar stock and forged parts.



Fluorescent Penetrant Inspection



4-axis Horizontal CNC Center with 9 pallet cell



# MACHINE SHOP EQUIPMENT

- (2) Kitamura 4X 500i Horiz. Mach. Ctr. 34x28x26
- (1) Kitamura HX 630i Horiz. Mach. Ctr. 39x32x32 (Kitamura integrated with Fastems 42 pallet system)
- (1) Cincinnati MAXIM 500 4 axis Horiz. ctr. 27x29x29" w/Automated 9 pallet cell.
- (1) Cincinnati Maxim 630 CNC 4 axis Horiz. ctr. 41x32x32
- (1) Cincinnati ARROW 1000 vert. mach. ctr. w/4th axis 40x20x20
- (1) Cincinnati Sabre 1250 vert. mach. ctr. 50x30x32
- (2) Cincinnati Hydrospin (spin forging centers)
- (2) Okuma MC6VAE machining center 60x25x24
- (1) Okuma MA-40HA 4-axis Horiz. ctr. 22x24x22
- (1) Okuma CNC Lathe 13x40
- (1) Enshu 650 VX mach. ctr. 51x26x26
- (1) MAZAK Nexus 5000 Horz ctr. 28.7x28.7x29.1
- (1) Fadal vert. center w/4th axis 60x30x25 w/ SMW setup switcher pallet system
- (1) OKK VMTII vert. mach. ctr. 60x29x26
- (1) OKK HM 100 horiz, mach, ctr. 55x43x39
- (2) OKK HM 500 horiz, mach. ctr. 25x24x28
- (2) OKK HMX-6000 5-axis simultaneous 41x35x32

- (1) OKK VM5III 40x20x20
- (1) OKK VM7III 60x30x26
- (1) Mori-Seiki SL-300 CNC Lathe 16" swing x 28" Z travel
- (1) Mori-Seiki SL-45 Wheel Lathe 24" swing x 30" travel
- (2) Mori-Seiki AZL-18 Lathe 20" swing x 30" travel
- (1) Mori-Seiki ASL 2400 2 Axis Wheel Lathe
- (4) Mori-Seiki AZL 2400 4 Axis Wheel Lathe w/ Motoman Robot Integration
- (1) Mori NH5000Full 4th axis 29x29x34
- (2) Haas CNC Toolroom Mill
- (1) Autospin (spin forging center)
- (1) Mazak HCN 4000 4 axis Horizontal Machining Center 22.05x24.8x25.2
- (1) Mazak HCN 6800 Horizontal Machining Center w/automated 12 pallet cell 41.34x35.43x38.58
- (2) Haas VF-3 Vertical Machining Center w/4th axis 40x20x25
- (1) Leadwell MCV 2000 80x40x36 Including Support Equipment