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WORLD CLASS METAL FORMING SOLUTIONS

Ampex Metal Products – Facilities List

Stamping Presses

- 1 - Minster 600 Ton E2 High Speed straight Side punch press with 120” length bed. Link Die Protection system, tonnage monitor, signature analysis, Minster 50-inch-wide Servo Feed, Minster straightener, Minster 20,000 pound uncoiler.

- 1 - AIDA 330 Ton PMX High Speed straight Side punch press with “Link Motion”. Die Protection system, tonnage monitor, signature analysis, Vamco Quantum QS-30 Servo Feed, Dallas straightener, Dallas uncoiler, Dallas coil car, Dallas threading table and peeler.

- 1 - Minster 300 Ton E2 High Speed straight side punch press. Minster VMC Touch Screen Control, tonnage monitor, Cooper Weymouth Feed, Cooper Weymouth straightener, Cooper Weymouth uncoiler.

- 1 - Minster 300 Ton E2 High Speed straight Side punch press. Minster VMC Touch Screen Control, tonnage monitor, Vamco Quantum QS-30 Servo Feed, Cooper Weymouth straightener, Cooper Weymouth uncoiler.

- 1 - Minster 200 Ton E2 High Speed straight Side punch press. Link Die Protection system, tonnage monitor, signature analysis, Vamco CFS-20 Servo feed, Cooper Weymouth straightener, Cooper Weymouth uncoiler.

- 1 - Minster 150 Ton P2 High Speed straight Side punch press. Link Die Protection system, tonnage monitor, signature analysis, Vamco CFS-20 Servo feed, Cooper Weymouth straightener, Cooper Weymouth uncoiler.

- 3 - Minster 100 Ton P2 high speed straight side punch press. Minster VMC touch screen control, Vamco CFS 14 Servo Feed, Litel straightener or, Cooper Weymouth straightener, Cooper Weymouth pallet uncoiler.

- 2 - Minster 75 Ton High Speed punch press, Link Die Protection system, Vamco CFS 14 Servo feed, Cooper Weymouth pallet uncoiler.

- 1 - Minster 70 Ton P2-60 straight side press with Minster servo feed and die protection.

- 1 - Minster 65 Ton High Speed punch press, Link Die Protection system, Vamco CFS 14 Servo feed, Cooper Weymouth pallet uncoiler.

- 2 - Minster 45 Ton High Speed punch press, Link Die Protection system, Vamco CFS 6 Servo feed, Cooper Weymouth pallet uncoiler.

- 1 - 38 TON WALSH NO. 38 OBI PRESS; S/N W-79L-8, 29" X 15" BED

1 - Minster 32 Ton High Speed punch press, Link Die Protection system, Vamco CFS 6 Servo feed, Cooper Weymouth pallet uncoiler.

1 - Minster 32 Ton High Speed punch press, dedicated roll feed.

1 - Minster 22 Ton High Speed punch press, Link Die Protection system, Vamco CFS 6 servo feed, motorized uncoiler.

1 - Bliss 660 punch press, air clutch/brake, 60 tons, 2.5" stroke, 10 x 19 ram

Slide Forming Machines

These machines are capable of forming wire (square and round) and flat strip material. Wire forming capability up to 0.3125 diameter and flat strip up to 0.125 thick and up to 5.00 inches wide!

1 - Nilson S-00 Four Slide with Die Protection system and motorized uncoiler.

1 - Nilson S-0 Four Slide with Die Protection system

1 - Nilson S-0-F Four Slide with Die Protection system and motorized uncoiler.

4 - Nilson S-1 Four Slide with Die Protection system and motorized uncoiler.

2 - Nilson S-2 Four Slide with Force Monitor system, Die Protection system and motorized uncoiler.

2 - Nilson S-2-F Four Slide with Die Protection system and motorized uncoiler.

7 - Nilson S-3-F Four Slide with Die Protection system and motorized uncoiler.

1 – Nilson S-3-F, 3116 in. Wire Cap. (Rebuilt); with Electric Brake Clutch, Shell Cams, Wire Straightener, 3-HP

2 - Nilson S-4-F Four Slide with Die Protection system and motorized uncoiler.

1 – Nilson S-4-F, 1/4 in. Wire Cap. SIN: 90700 (Re-Built in 2016, with New Controls); with 30-Ton Press Attachment, Electric Brake Clutch, Wire Straightener, Cams & Returns, Reeves 7-1/2 HP Variable Speed Drive

2 - Nilson S-4-T Four Slide with Die Protection system and motorized uncoiler.

- (75 Ton forming capability and extra wide material capacity)

1 – Nilson S-4-T, 1/4 in. Wire Cap. SIN: 70950171250; with Brandes System 2500 Full Controls with PLC Sensor Package, Pneumatic Brake Clutch, Wire Straightener, Reeves 10-HP Vari-Speed Drive

1 - Nilson S-432, 1/4 in wire cap, SIN: 70310169411; with Gordon Proxagard Machine Guard, Manual Clutch, Standard Cams, Reeves 5-HP Vari-Speed Drive (Nilson 432 Cams and Returns)

1 - Nilson #5, Airclutch, Die Protection system, motorized un-coiler.

2 - US Baird # 33 Multislide with Die Protection system and motorized uncoiler.

- 3 - US Baird # 28 Multislide with Die Protection system, motorized uncoiler and hopper feeders.
- 1 - Baird #1, manual clutch, solid cams, single overhead motion
- 1 - Baird #2, manual clutch, split cams, "H" head, double overhead 2-split cams, 1 press attachment
- 3 - Baird 3-24s, 2 manual clutch, 1 air brake, 1- solid cams, 2- split cams, 1 press attachment
- 2 - Baird #5s, 1 manual clutch, 1 electric clutch/brake, 1 solid and fixed (keyed) cams, 1 split cams, 1 press attachment
- 3 - Nilson No. 2 Rotary Wire Straightener

Spring & Wireform Machines

- 1 -8MM AIM MODEL AFM-3D8T TURRET WIRE BENDER; S/N D6A09292014, MACHINE NO. 9, STRAIGHTENER, DRO, AIM MODEL P270-5 POWER WIRE TURNTABLE (2014)
- 1 - U.S. Baird Model C-150 CNC Spring Coiler -Wire diameter .032 – 0.125, maximum tensile of 350,000 PSI.
- 1 - J.M. Systems In-line Convection stress relieve oven.
- 1 - Model U.S.B Motorized coil payoff.
- 1 - Minyu Model SF-1220 12 Axis CNC Wire forming machine – U.S. Baird control and De-coiler.
- 1 - Minyu Model SF-1240 12 Axis CNC Wire forming machine- U.S. Baird control and De-Coiler.
- 1 – Simco CNC Versatile Spring Former, model #SFX-20, Beckhoff Controller, Simco De-coiler.
- 1 - 4MM HTC MODEL HTC40 CNC WIRE SPRING FORMER W/ HOOK STATION; S/N 20014002-8, 4-AXIS, CAM, R-QUILL, SPINNER, TOOLING (2001)
- 1 - 3MM HTC MODEL HTC30 CNC WIRE SPRING FORMER; S/N 20003002-8, MACHINE NO. 11, 4-AXIS, CAM, R-QUILL, SPINNER, TOOLING (2000)
- 1 - 3MM HTC MODEL HTC30 CNC WIRE SPRING FORMER; S/N 963004-4, MACHINE NO. 3, 4-AXIS, CAM, R-QUILL, SPINNER, TOOLING (1996)
- 1 - 2MM HTC MODEL HTC20 CNC WIRE SPRING FORMER W/ HOOK STATION; S/N 972008-4, MACHINE NO. 4, 4-AXIS, CAM, R-QUILL, SPINNER, TOOLING (1997)
- 1 - 2MM HTC MODEL HTC20 CNC WIRE SPRING FORMER; S/N 962003, MACHINE NO. 1, 2-AXIS, GIBB SLIDES, TOOLING (1996)
- 1 - 1MM HTC MODEL HTC10 CNC WIRE SPRING FORMER; S/N 991010-8, 5-AXIS, CAM, R-QUILL, (2) SPINNERS, TOOLING (1999)
- 1 - HTC MODEL HTC 8CS SPRING COILING MACHINE; S/N 980819CS, 2-AXIS, HBE MODEL SLG-10 SPRING LENGTH GAGE

Wire stands:

- 1 - 32" HUEI SHANG MODEL HR-100 WIRE STAND
- 1 - 32" HUEI SHANG MODEL HR-200 WIRE STAND
- 1 - 42" HUEI SHANG MODEL HR-205 WIRE STAND
- 1 - 42" HSI MODEL HR-1005 WIRE STAND
- 2 - 42" HSI MODEL HR-1005 WIRE STAND
- 1 - 42" HSI MODEL HR-500 WIRE STAND
- 2 - 44" POWERED WIRE TURN TABLE

CNC Machining Equipment

- 1 - Tornos Deco 10A, 9 axis with automatic bar feeder
- 1 - Mazak Vertical Machining center with pallet changer

Welding Equipment

3 - Taylor Winfield Resistance welders

1 - ABB IRC5 high speed robotic mig welder, multiple fixture turntable, Miller welder, Robotware 5 and Robot Studio online software.

1 - Weld Systems Integrators resistance welder – 75 KVA with Miyachi control (AC control)

1 - WELD SYSTEMS INTEGRATORS RESISTANCE SPOT WELDER WITH ENTRON EM1000

WELD CONTROL AND DYNAFLUX CHILLER

1 - Lora 20 KVA butt welder for wire formed parts

1 - Federal Resistance Welder

1 - Hobart manual mig welder

1 - Miller manual mig welder

1 - Lincoln manual mig welder

1 - Tig Welder

Part Finishing Equipment

2 - Sweeco vibratory de-burring machines

2 - Benchtop vibratory de-burring machines

3 - Part on part tumbler/drum style de-burring machines

1 - Bead blast cabinet

1 - Shot blast machine

2 - Part washers/cleaning tanks with spin dryers

Engineering / Design

All tooling (slide Forming, Progressive Die, Assembly Dies and gauges are designed using State-of-the-

Art Computer Aided methods. This provides faster and more accurate designs. This data is converted to machining code for our Wire EDM, VMC/CNC machining use with less chance for error. CAD workstations: Running Autocad and SolidWorks Pro.

Tool Room

We maintain our own Toolroom to provide Dies that are precision built to insure maximum production efficiency at the lowest possible cost.

Dies for various operations are engineered and built so they will have the necessary accuracy to meet our customers' production and quality requirements. By maintaining our own toolroom we are assured to have QUALITY built into our process starting from the design stages.

Our Toolroom and Wire EDM room are both climate controlled to assure accuracy during tool build by minimizing temperature variation.

When Ampex builds you a tool, we will both guarantee and maintain it for the life of your part. You WILL NOT be asked for additional tooling dollars!

1 - Mitsubishi FA-20 Wire EDM

1 - Mitsubishi FA-20V Wire EDM

1 - Mitsubishi MV-2400R Wire EDM

2 - System 3R wire EDM quick-change fixtures

1 - Vertical machining center (VMC) Hurco VMX 64 30" x 34" x 64" travel. 32-tool changer, dual screen control

2 - ACER 40 taper milling machines with Digital Read Out (DRO)

1 - Bridgeport milling machines / with DRO

1 - Chevalier 618 Wet Grinder with Walker chuck and Sony DRO

1 - Chevalier hydraulic wet grinder – 1640 16”x 40” travel, Sony DRO
 4 - Chevalier 618 Surface grinders with Walker chucks and Sony DRO’s
 75 50 taper collet chucks with various metal cutting tooling (Sanvik, Kennmetal, Fette, etc.)
 Misc. grinding fixtures (Harig, magnetic sine plates, etc.)
 1 - CNC Mill South Western Industries 40 Taper
 1 - 10 Ton Crane traveling complete toolroom area
 1 - Boyer Shultz Surface Grinder
 1 - Flex-Arm Air taping machine
 1 - Hecket 5 Foot Power Radial Drill Press
 1 - W.F. Wells & Sons 9” Horizontal Saw
 1 - Powermatic Band Saw
 1 - Lincoln Electric MIG Welder
 1 - Allen Drill Press
 1 - 5 Ton Arbor Press
 1 - 20-Ton Arbor Press
 1 - ACER lathe 1440G with Sony DRO
 1 - Jet Drill Press
 1 - Wall Grinder
 1 - Belt Sander
 1 - Covel 14 inch Optical Comparator
 1 - Mitutoyo 12” Digital Height Stand
 1 - U.S. Baird Tryout table (Tool Development)
 17 - Granite Surface plates
 1 - Cleveland milling machine, 9 x 48, Prototrak CNC control
 2 - Surface grinders, 6 x 18, manual- Lee, automatic- Reid
 1 - Pneumatic Angle Drill
 2 - Pen Type Pneumatic Die Grinder in Boxes
 1 - misc., Drill press, Lathe, Shaper, Bridgeport 9 x 42, Bandsaws, J & L comparator, inspection and sundry, kick presses (2), 10 HP Air compressor, light curtains-untested
 1 - 8" HSI MODEL HCF-190 ELECTRIC BELT FURNACE; S/N 98122, CONTROL, 1,200 DEGREE MAX TEMP
 1 - Milwaukee 9 in. Cat No. 6052 Electric Angle Grinder, 5,000-RPM; with DeWalt 1-112 in. Model DW887 Electric Die Grinder in (1) Box
 1 - 8" HSI MODEL HCF-190 ELECTRIC BELT FURNACE; S/N 99144, CONTROL, 1,200 DEGREE MAX TEMP
 1 - 10" FURNACE FIXERS MODEL MKP01054X1 ELECTRIC BELT FURNACE; S/N 1901, CONTROL
 1 - 18-Drawer Steel Bin Organizer Cabinet and (1) 54-Drawer Steel Bin Organizer Cabinet with Hex Head Bolts, Allen Head Cap Screws, Dowel Pins and Washers
 1 - 15" FURNACE FIXERS MODEL MKP-15-X1 ELECTRIC 2-ZONE BELT FURNACE; S/N 2073, CONTROL, 998 DEGREE MAX TEMP
 1 - 120" X 62" HD STEEL WELDING TABLE
 1 - 24 in. Long x 36 in. Wide x 1 in. Thick Cast Iron Surface Plate with Steel Stand
 1 - 99" X 51" HD STEEL WELDING TABLE
 1 - 36" X 18" X 6' ULINE HEAVY DUTY SHELVING
 2 - Starrett No. 199 12 in. Master Precision Level with Case
 62 - 15 in. Wide x 24 in. Deep x 12 in. High Steel Bins and (19) 12 in. Wide x 23 in. Deep x 10 in. High Steel Bins with (1) 108-Drawer Steel Bin Organizer Shelving Unit

Assembly Equipment

AMPEX has a separate plant dedicated to assembling parts manufactured by us. This saves our customers time and money by allowing sub-assemblies to go straight to their production lines.

- 2 - Minster 22-ton single hit punch press
- 1 - Minster 65-ton single hit punch press
- 1 - Bliss 50-ton single hit punch press
- 1 - Johnson 60-ton single hit punch press
- 1 - Bliss 45-ton single hit punch press
- 1 - Minster 45-ton single hit punch press
- 2 - High output automatic tapping machines with vibratory bowl feeders
- 1 - Riveting machine
- 1 - Orbital Riveting Machine
- 1 - Niagara #2, single stroke, manual clutch, 18 tons, 4.5" shut hot
- 1 - NIKO, air blender, 5/8th's round

Miscellaneous air and hydraulic machines for assembly

- 1 - Universal Automatic Model ANS Inclined Tapping Machine, SIN: 1529; with Beijer H150 Display, 575 to 5,000 RPM Spindle Speeds, Proconier Series 12051 Tapping Attachment SIN: 0509

3D Printing Equipment

- 1 - Markforged Hardware-FX10 Industrial Series 3D Printing Platform. Includes Hardware, Basic Eiger Cloud Software, and Accessory Tool Kit/Parts Kit). Materials currently available on FX10: (Onyx, OnyxFR, OnyxFR-A, OnyxESD V2, Nylon White, Nylon White Food Safe, Continuous Carbon Fiber, Continuous Carbon Fiber-A).

- 1 - Markforged Hardware-Mark 2 Desktop Series 3D Printing Platform. Includes Hardware, Basic Eiger Cloud Software, Accessory Tool Kit/Parts Kit, and Material Drybox). Materials available on Mark 2: (Onyx, Nylon White, PLA (8 colors), TPU (2 colors), Continuous Carbon Fiber, Continuous Fiberglass, Continuous Kevlar, Continuous HSHT Fiberglass

In house materials: Onyx Filament (Nylon6 + Chopped CF, 800cm³ Spool), Continuous Carbon Fiber (150cm³ Spool), Nylon White 6/6 Filament (800cm³ Spool), Smooth TPU (Black, 800cm³ spool), Kevlar® CFF™ (Continuous Filament Fabrication) (150cm³ Spool).

Quality Assurance

Ampex adheres to the ISO 9001:2001 Certified Quality Management System. We also practice statistical process control (SPC) using Datalyzer Spectrum software operating on a network of 1 hub and 3 satellites deployed throughout our facility.

- 1 – Keyence Instant Measurement System
- 1 - Quantum X.M 2.0m 7 axis Quantum X.M, 2.0m 7-Axis includes: 6th generation FaroArm, calibration kit, mounting plate, 3mm and 6mm iProbes, USB cable, power supply, heavy-duty case
- 1 - Probe-Laser Line, FAROBlu xR FARO's maximum resolution 3D laser scanner for 6th generation FaroArms. Includes: FAROBlu xR Laser Line Probe, calibration kit, case
- 1 - Wenzel LH87 CNC CMM 800 x 1000 x 700 Travel, OPENDIMIS software, TP200 Renishaw probe
- 1 - Starrett HB-400 CNC Optical Comparator with Quadra Check 4000 software
- 1 - Starrett HB-400 Optical Comparator with Quadra Check 2000 software
- 3 - 14" Microview Optical Comparators with Q16 Control
- 1 - Wilson and Fowler Hardness tester
- 1 - Brown & Sharp Digit-Hite Plus 0-25 Digital Height Stand
- 3 - Brown & Sharp 0-6 inch Digital Height Stand
- 1 - Dial Torque wrench tester 0-250 lbs.
- 1 - Fowler surface finish tester
- 12 - Mitutoyo 0-6 inch digital calipers
- 1 - Mitutoyo 0-12 inch digital caliper

1 - Mitutoyo 0-24 inch digital caliper

1 - Kodak Comparator, 14", Accurite geometric DRO

Miscellaneous pin gages, gage blocks, micrometers, custom gages etc.

1 - PolyWorks|Inspector™ Standard Package, the universal 3D metrology software platform for dimensional inspection, node-locked license.

1 - Geomagic Design X Plus

Other Capabilities

- EDI (Electronic Data Interchange) capable

- ANSI compliant bar code labeling

- Kanban Production/inventory/shipping system

- Prototyping capabilities

- Product engineering and design assistance

- Outside Services: Heat treating, Plating, Coating, Salt Spray Testing etc.

- PPAP Quality Documentation

- In-house maintenance Department