

CUPPLES' J&J COMPANY EQUIPMENT LIST - 9/18/2014

DESIGN

7 ea --- Microstation Software with PC base with dual monitors for machine design (Capabilities include: Auto-cad Dwg, Dxf, Iges, Cgm, Image & Tex)

10 ea --- Solid Works Professional 2014 Stations

15 ea --- AutoCad LT 2014 CAD Stations

5 ea --- AutoCad Inventor LT 2014 CAD Stations

PROGRAMMING

21 ea -- CNC Programming Stations using EZ-Cam Milling, Turning and EDM Programming Software, GIBBS Multi-Axis Milling and Turning and Surfacing; PEP Laser and Plasma Programming Software, and Tops Trumpf Laser and Punch Programming Software and BySoft ByStronics Laser and Waterjet Programming Software Komatsu Twister Fine Plasma Programming Software.

CNC - COMPUTER NUMERICAL CONTROLLED EQUIPMENT

CNC - VERTICAL MACHINING CENTERS

4 ea --- TRAK K3SX3 - 2 axis CNC Knee Mill with up to x=32"; y=16"

3 ea --- TRAK K3SX3-3 - 3 axis CNC Knee Mill with up to x=32"; y=16"

2 ea --- TRAK DPM SX2 3 axis CNC Bedmills with up to x=32"; y=16"

2 ea --- TRAK DPM SX3 3 axis CNC Bedmills with up to x=40"; y=20"

3 ea --- Fadal CNC Milling Machines 40 taper with up to ; x=60"; y=30"; z=30"; with Right Angle Heads, and positioning and 2 ea with 4th axis contouring

3 ea --- Doosan DNM 500 VMC's with x=40.2"; Y=21.3"; Z=20.1" with 8,000 rpm spindle and alpha High Torque and Big Plus Spindle Options

1 ea --- KIWA V21i-R 2 APC CNC Milling Machines with Big Plus BT 40 Spindle; 12,000 RPM; x=24.00"; y=16.1"; z=20.1" travels pallets; with Right Angle Heads. Rapids of 2362 ipm; 5 Sec Chip to Chip; 5 sec Pallet Change; 12,000 RPM Spindle; 270 psi thru spindle coolant.

1 ea --- Matsura RAIIF CNC Milling Machines with 23.16" x 16.9" pallets; with Right Angle Heads; 5 Degree Pump Style Horizontal Positional Indexers

1 ea --- Matura RAIII CNC Milling Machines with 31.70" x 16.9" pallets; with Right Angle Heads; 5 Degree Pump Style Horizontal Positional Indexers

1 ea --- Ares Seiki R Series 450 CNC Drilling and Tapping machine with travels x=17"; y=12"; z=12"

1 ea --- Ares Seiki A Series 560 CNC Drilling and Tapping machine with travels x=22"; y=16"; z=14"; SMW 1 Degree Horizontal Rotary Indexer

1 ea --- KIRA VTC40A CNC Drilling and Tapping machine with travels x=47.2"; y=13.8"; z=15.8"; SMW 1 Degree Horizontal Rotary Indexer

1 ea --- OKK CNC Milling Machine MCV 860 ; CAT 50 taper with x=81"; y=34"; z=29"

1 ea --- Okuma MVA 60 CNC ; 50 taper machining center with x=60"; y=24"; z=26"; SMW 1 Degree Horizontal Rotary Indexer

2 ea --- Okuma MB-56V VMC with CAT 40 taper, 216 PSI thru the spindle coolant and x=41.34"; y=22.05"; z=18.11"

1 ea --- AWEA / YAMA SEIKI VP-2012 Bridge type vertical machining center; CAT 50 taper with ; x=78.7"; y=47.2"; z=30"; with 30 taper Right Angle Heads and Rotary 4th axis with 12" chuck and tail stock

1 ea --- Mitsubishi MVS-17A Bridge type vertical machining center; CAT 50 taper with ; x=122"; y=67.9"; z=54.7"; with 30 taper Right Angle Heads

CNC HORIZONTAL MACHINING CENTERS AND CNC BORING MILLS

1 ea --- Toyoda FH45 ; CAT 40; 450 mm pallets (17.7") X=23.2"; Y=22.1"; Z=19.7" with 6,000 RPM, 270 PSI Thru the Tool Coolant ; 12 second pallet change; 10 second chip to chip; 4 second full rotation of 360 degree positional 4th axis , 2 APC.

1 ea --- Kitamura MyCenter HX500i ; Big Plus CAT 50; 500 mm pallets (19.7") X=34.30"; Y=28.00"; Z=26" with 12,000 RPM, 1,000 PSI Thru the Spindle Coolant ; 6 second pallet change; 6 second chip to chip; 2 second full rotation of full contouring 4th axis with 360,000 positions .

1 ea --- Kitamura MyCenter HX500 ; CAT 50; 500 mm pallets (19.7") X=34.30"; Y=28.00"; Z=26" with 12,000 RPM, 1,000 PSI Thru the Spindle Coolant ; 6 second pallet change; 6 second chip to chip; 2 second full rotation of full contouring 4th axis with 360,000 positions .

1 ea --- Mori Seiki NH5000R ; Big Plus CAT 50; 500 mm pallets (19.7") X=25.6"; Y=23.60"; Z=28.70" with 8,000 RPM, 1,000 PSI Thru the Spindle Coolant ; 6 second

pallet change; 6 second chip to chip; 2 second full rotation of full contouring 4th axis with 360,000 positions . Also equipped with Reinshaw Probe System .

1 ea --- Kitamura MyCenter HX630i ; Big Plus CAT 50; 630 mm pallets (24.8")
X=39.40"; Y=32.60"; Z=28" with 12,000 RPM, 1,000 PSI Thru the Spindle Coolant ; 5.5 second pallet change; 5.5 second chip to chip; 2 second full rotation of full contouring 4th axis with 360,000 positions .

CNC HORIZONTAL BORING MILL

2 ea --- FEMCO BMC 110R2 ; CAT 50; X=78.74"; Y=70.87"; Z=66.93"; w=21.65" with 2,500 RPM, 270 PSI Thru the Spindle Coolant ; rotation of full contouring 4th axis with 360,000 positions. Blume Probe System; 60 tool automatic tool changer; full guarding; FANUC 21iC Control; 13,889 LB Table Load

1 ea --- SNK/Nissin BP130 - ; CAT 50; X=137.80"; Y=98.43"; Z=62.99"; w=27.56" with 2,500 RPM, 300 PSI Thru the Spindle Coolant ; rotation of full contouring 4th axis with 360,000 positions. Blume Probe System; 90 tool automatic tool changer; full guarding; FANUC 16iMB Control; 22,000 LB Table Load

CNC TURNING EQUIPMENT

1 ea --- TRAK TRL 1840SX LATHE 18.5" swing X 40" centers x 9" over the cross slide

2 ea --- TRAK TRL 2460SX LATHE 24.0" swing X 60" centers x 14.5" over the cross slide

1 ea --- Methods Slant Jr. CNC with 14" swing x 11" turning, 1 5/8" bar capacity

1 ea --- Daewoo Lynx 200B CNC with 11" swing x 11.8" turning, 2" bar capacity

1 ea --- KIA SKT250MS with 24.4" swing x 28.3" turning length and 16.1" turning dia over the cross slide, 3" Magazine Barfeed thru the front spindle and 2.00 thru the rear spindle. Machine has a main and a sub-spindle with a single turret that can work either spindle. C axis and Y axis up to 4" is also included. Axial and radial tools enable turning and machining in one setup. Machine is equipped with 1,000 PSI thru the tool coolant. This machine also has a FANUC 21i-TB.

1 ea --- KIA SKT460 with 34.4" swing x 62.0" turning length and 24.8" turning dia over the cross slide. Spindle Bore is 5.1". Machine is equipped with a 21" Hydraulic chuck on an A2-11 Spindle. Tail Stock can travel 50.4" and has a MT#5 taper with 5.9" Quill Travel. This machine also has a FANUC 21i-TB.

1 ea --- Methods Slant 50 CNC with 35 3/16" center 19 5/8" swing 2 1/2" thru bar capacity

2 ea --- Milltronics ML 26/160 with 27" Swing x 163" Centers - 3.22" Spindle Bore. Also with 35" swing in a 12.75" gap. Machine is equipped with an 18: Buck Chuck, Steady Rest and Follow Rest.

2 ea --- Okuma Cadet CNC Lathes with 2 ½ " thru bar capacity; 28" centers; 18" swing

3 ea --- Okuma LU 15 - 4 Axis Twin Turret CNC lathe with 2 ½ " bar capacity; up to 32" turning; 36" centers; 14" swing

1 ea --- Okuma LCC 15 - 4 Axis Twin Turret CNC lathe with 1 5/8" bar capacity; 14 " turning ; 11 " swing

1 ea --- Okuma LT200 Super Big Bore / Big Bore CNC Lathe with 2.76" Magazine Barfeed thru the front spindle and 2.00 thru the rear spindle. Machine has a main and a sub-spindle with upper and lower turrets that can work either spindle. C axis and Y axis up to 3.76" is also included on each spindle/turret. Axial and radial tools enable turning and machining in one setup. Machine is equipped with 1,000 PSI thru the tool coolant.

1 ea --- Okuma LH 35 2000 - flat bed CNC lathe 24" Swing; up to 78.7 Centers

1 ea --- Okuma LH 35 3000 - flat bed CNC lathe 24" Swing; up to 118.31" Centers

1 ea --- Okuma LB35 CNC 24" Swing x 39.37" Centers

2 ea --- Miyano TMD42 - 3 axis turning centers with LIVE TOOLING on the X and Z AXIS. 42 MM bar capacity with 11" turning

1 ea --- Miyano LZ-01R - 2 axis turning centers with ROBOT LOADER - 2.75" turning dia x 3.15" turning length

1 ea --- Hardinage Conquest Precision 3 axis turning center with Live Tooling on the X and Z axis . 1 3/8" dia bar capacity. with 6" dia x 7" turning capacity.

1 ea --- Ganesh Cyclone 32CS - 32 mm Sliding Headstock Hybrid 7 Axis CNC Lathe with Sub-spindle and Magazine Bar Feeder. LIVE TOOLING on Front and Rear Spindles

1 EA --- Honor Seiki VL100A up to 51.2" Swing diameter, 43.3" turning diameter, 36.4" turning height, 12 station turret 60/50HP with 40" diameter chuck

LASER CUTTING EQUIPMENT

2 ea --- MEGAFAB - Whitney Eagle - 6,000 Watt Fiber Laser with 60" x 120" Pallets capable of cutting 1.00" thick mild steel and 3/4" clean cut for stainless steel equipped with Gorbel / Anver Manual Loading System. System has 13,900 IPM Rapid Traverse with 6.1 G Acceleration.

1 ea --- Amada FO 4020NT - 6,000 Watt Laser with 80" x 160" Pallets capable of cutting 1.25" thick mild steel and 3/4" clean cut for stainless steel equipped with Gorbel / Anver Manual Loading System. Machine has Controlled Pulse Piercing and Water assisted Cutting for thicker plate. System has 4500 IPM Rapid Traverse with 1 G Acceleration.

1 ea --- Bystronic BySpeed Pro 3015 - 6,000 Watt Laser with 5' x 10' Pallets capable of cutting 1.25" thick mild steel and 5/8" clean cut for stainless steel equipped with auto-material loaders. Equipped with Rapid Pulse Piercing System , 7,000 ipm Rapid Traverse and 3 G Acceleration. This machine also has automatic Nozzle Changing and Nozzle Alignment Features.

1 ea --- Bystronic BySpeed 3015 - 6,000 Watt Laser with 5' x 10' Pallets capable of cutting 1.25" thick mild steel and 5/8" clean cut for stainless steel equipped with auto-material loaders. Equipped with Rapid Pulse Piercing System , 7,000 ipm Rapid Traverse and 3 G Acceleration.

2 ea --- Bystronic BySpeed 3015 - 5,200 Watt ARC Laser with 5' x 10' Pallets capable of cutting 1" thick mild steel and 5/8" clean cut for stainless steel equipped with auto-material loaders. Equipped with Rapid Piercing System , 7,000 ipm Rapid Traverse and 3 G Acceleration.

1 ea --- Bystronic ByStar 3015 - 5,200 Watt ARC Laser with 5' x 10' Pallets capable of cutting 1" thick mild steel and 5/8" clean cut for stainless steel equipped with auto-material loaders. Equipped with Rapid Piercing System , 7,000 ipm Rapid Traverse and .6 G Acceleration.

2 ea --- Bystronic BySprint Pro 3015 - 4,400 Watt ARC Laser with 5' x 10' Pallets capable of cutting 3/4" thick mild steel and 3/8" clean cut for stainless steel equipped with auto-material loaders. Equipped with Rapid Pulse Piercing System , 5,500 ipm Rapid Traverse and 1.5 G Acceleration.

1 ea --- Trumpf L3050 - 5,000 Watt Laser with 5' x 10' Pallets capable of cutting 3/4" thick mild steel and 3/4" clean cut for stainless steel equipped with auto-material loaders. Equipped with Rapid Piercing System , 11,800 ipm Rapid Traverse and 2 G Acceleration.

1 ea --- Trumpf L3030 - 4,000 Watt Laser with 5' x 10' Pallets capable of cutting 3/4" thick mild steel and 5/8" clean cut for stainless steel equipped with auto-material loaders.

1 ea -- Amada LCG3015 - 3,500 Watt Laser with 5' x 10' Pallets capable of cutting 3/4" thick mild steel and 5/8" clean cut for stainless steel equipped with auto-material loaders.

1 ea --- Trumpf L3030 - 3,000 Watt Laser with 5' x 10' Pallets capable of cutting 3/4" thick mild steel and 5/8" clean cut for stainless steel equipped with auto-material loaders.

WATERJET CUTTING EQUIPMENT

1 ea --- ByStronics BYJET SMART Dual Head Waterjet Cutting System with CNC Controlled Spacing on Dual Heads with capabilities of cutting up to 8" carbon steel as well as cutting plastics, rubber and other materials. Cutting area is 60" x 120".

CNC PUNCHING EQUIPMENT

2 ea --- Trumpf TC2000R CNC Hydraulic Punching Machine with 50" x 50" (50" x 100" plus with repositioning) travel, capable of cutting up to 1/4" mild steel. Maximum hit rate is 420 hits/minute on 1" centers. Also with tapping capability from #10-24 up to 5/16"-18 .

1 ea --- Trumpf TC2020R CNC Hydraulic Punching Machine with 50" x 100" (50" x 120" plus with repositioning) travel, capable of cutting up to 1/4" mild steel. Maximum hit rate is 420 hits/minute on 1" centers. Also with tapping capability from #6-32 up to 5/16"-18 .

PLASMA CUTTING

1 ea --- Komatsu Twister TFP3051 Fine Plasma Cutting Machine with a 60" x 120" table capable of cutting 1.00" mild steel AND 3/4" stainless steel

WIRE EDM

1 ea --- Charmilles ROBOFIL 440 Submerged Wire EDM with maximum taper up to +/- 30 degrees cutting angle. Machine has travels of x=21.62 ; y=13.77 ; z=15.75

1 ea --- Charmilles ROBOFIL 300 Submerged Wire EDM with maximum taper up to +/- 30 degrees cutting angle. Machine has travels of x=15.75 ; y=9.7 ; z=15.75

CNC FORMING

1 ea --- Accurpress 400 Ton CNC Open Side Gap Frame Hydraulic Brake Press with 24" wide x 96" long ram and 30" wide x 96" long bottom die plate. This machine also has a 3 axis ETS 3000 Accurpress CNC Control System with 4 ea extra long fingers.

21 ea --- Accurpress CNC Press Brakes up to 8 axis and up to - 250 Ton x 12'-0" .
Machines include Willa Crowning Systems and Wilson Hydraulic Clamping Systems.

1 ea --- Bystronic XACT 100 - CNC Press Brake with 110 ton and 122" Bend Length /
100" Bend Length Between the frames. This machine has a Cyblec 880 Control and has
a two axis ram with a four axis back stop. It is also equipped with an Automatic
Hydraulic Crowning System.

1 ea --- CMU CNC Press Brake up to 4 axis and up to - 35 Ton x 48" between frames.

CNC ROLLING

1 ea --- DAVI MCA 2019 CNC 4 ROLL CNC ROLL - 1/4" Prebend X 6'-6" capacity (5/16"
with no prebend).

1 ea --- DAVI MCA 1518 CNC 4 ROLL CNC ROLL - 1/4" Prebend X 5'-2" capacity (5/16"
with no prebend).

SAWS

2 ea --- DoAll CNC Production Feed thru cut off saw - 18"

ROBOTIC WELDING

17 ea -- Panasonic Robotic Welding Cells with 350 amp cv mig and up to 500 amp
pulse / cv mig welding power supplies and up to 7 axis with fixed tables , main rotary
and independent rotary tables. Max capacity up to 92" Diameter Rotary Tables.

CONVENTIONAL EQUIPMENT

CONVENTIONAL MILLING EQUIPMENT

8 ea --- Conventional Knee Mills -With (2) Axis readouts - Up to 48" Capacity

1 ea --- #4 Cincinnati with Tool Makers OverArm

CONVENTIONAL TURNING EQUIPMENT

12 ea --- Conventional Lathes up to 42" swing with 60" gap swing x 17' - 6" B.C.

2 ea --- Warner Swazey #3 Turret Lathes 1 1/2" Dia

1 ea --- Brown & Sharp 2G Screw Machines 1 1/2" Dia

2 ea --- Brown & Sharp Ultramatics 1 5/8" Dia

1 ea --- Wickman Multispindle 1" Dia Max - 6 Spindle

1 ea --- Wickman Multispindle 1-3/4" Dia Max - 6 Spindle

DRILL PRESSES

3 ea --- Radial Arm up to 4'

2 ea --- Stand Drill Press

2 ea --- Twin Spindle Drill Stations

1 ea --- Station Automatic Drill Center 1/2" Dia

1 ea --- Horizontal Milling Machine 12" X 20"

1 ea --- 6-Spindle Drill Presses 3/4" Dia

1 ea --- 4-Spindle Drill Presses 3/4" Dia

SURFACE GRINDERS

1 ea --- 42" Dia Blanchard Grinder

1 ea --- 36" Dia Blanchard Grinder

1 ea --- 18" x 36" Chevalier Surface Grinder

2 ea --- 12" x 24" Chevalier Surface Grinder

1 ea --- 12" x 6" Surface Grinder

BROACHING EQUIPMENT

1 ea --- LaPoint Type 25 - 8 Ton Horizontal Broach

2 ea --- Dake Vertical Keyway Broach - 1 1/4" capacity keyway

SAWS

2 ea --- Cut off Saw - 12" Capacity

3 ea --- DoAll Production Feed thru cut off saw - 12"

1 ea --- HYD MECH S-20DSP - Double Miter Capable - up 60 degree miter in two directions; 13" x 18" straight; 8" x 10" at 60 degrees

4 ea --- Vertical Band Saws

WELDERS

2 ea --- Automatic Mig Welders with Reiner Rotary Welding Stations

18 ea --- TIG Welders

18 ea -- Mig Welders - CV and Pulse also with Aluminum Pulse Mig welding attachments

2 ea --- Stud Welders up to 3/8" dia

1 ea --- 30 KVA Rocker Arm Spot Welder

1 ea --- 120 KVA GE Schmidt press type Spot Welder and Projection Welder

3 ea --- Conventional Plasma Cutters up to 1" Thick Capacity

8 ea --- Acetylene Welding/Torch Rigs

STRESS RELIEF EQUIPMENT

2 ea --- Formula 62 Stress Relief Machine

CONVENTIONAL FABRICATION EQUIPMENT

1 ea --- Accurpress Shears up to 1/4" ss and 3/8" mild steel x 10'-0"

1 ea --- Rouselle Shear up to 1/4" mild steel x 60"

2 ea --- Conventional Hydraulic Press Brakes up to 320 Ton x 12'-0"

2 ea --- Piranha iron workers

6 ea --- Single and Double Pinch Rolls up to 5/8" A36 x 100" or 3/4" A36 x 48"; Two of the rolls have extensions to work as smaller angle or channel rolls.

1 ea --- Apkayak APK 100 Angle and Channel Roll - up to 6" x 2-1/2" channel leg in and 4" x 4" x 1/2" angle legs in.

STAMPING PRESSES

1 ea --- Komatsu OBW250 - 275 Ton Open Side Gap Frame Double Crank Variable Speed Press with 20 to 40 strokes per minute.

1 ea --- Rouselle Punch Press 95 Ton with Rapid Air Coil Feed - 12" feed x 12" wide coil x up to 7 ga thickness

1 ea --- Rouselle Punch Press 70 Ton

HYDRAULIC PRESSES

3 ea --- Up to 75 Ton Dake Press

ROD AND TUBE BENDING EQUIPMENT

2 ea --- Dennison Multi-press 10 Ton

2 ea --- Dennison Multi-press 6 Ton

1 ea --- Pines #3 Pines Bender 1 - 1/8" Dia x .062 wall Tubing

DEBURRING EQUIPMENT

1 ea --- Ultramatic Vibratory Deburring Machine - Wet system with automatic chemical mix, automatic discharge chute, (15" wide channel , 14 inches deep)

1 ea --- Timesaver Wet Belt Sanding system with a 9" wide part capacity.

QUALITY ASSURANCE

1 ea --- Brown & Sharp MICRO-VAL CMM 24" x 24" Reflex 454

1 ea --- Brown & Sharp CMM 24" X 30" EXCEL; PC-DMIS SOFTWARE

1 ea --- Brown & Sharp CMM 30" X 42" EXCEL; PC-DMIS SOFTWARE

1 ea --- Brown & Sharp Global 5-5-5 CMM 19.7" X 19.7" Global with full articulating probe system; PC-DMIS 4.3 SOFTWARE WITH CAD++ AND DATAPAGE

2 ea --- Brown & Sharp Global 7-10-7 CMM 30" X 42" Global with full articulating probe system; PC-DMIS 4.3 SOFTWARE WITH CAD++ AND DATAPAGE

1 ea --- Brown & Sheffield DISCOVERY-28 CMM 30" X 42" I with full articulating probe system; PC-DMIS 2009 SOFTWARE WITH CAD++ AND DATAPAGE

1 ea --- FARO ARM - FARO Gauge - 48" volume with 12" extensions for up to 72" volume for deep or long part accuracy +/- .0004"

1 ea --- FARO ARM - FARO Gauge PLUS - 48" volume with 12" extensions for up to 72" volume for deep or long part accuracy +/- .0002"

1 ea --- Weld Penetration Scope

3 ea --- Digital Protractor Sets

2 ea --- Optical Comparators

TRUCKS/LIFTS/RIGGING EQUIPMENT

1 ea--- 9 Ton Grove Portable Crane (Can Drive in any 8' x 8' Wide door . Crane has a 30 foot reach, 19 TON CAPACITY)

13 ea --- Forklifts (From 4,000 to 80,000 lb. capacity - 5 each with booms for rigging)

4 ea --- Scissors Lifts

1 ea --- JLG Manlift

1 ea --- Van - 7 Person Capacity

2 ea --- Flatbed - 1 Ton

1 ea --- Flatbed - 2 Ton

1 ea --- Flatbed - 5 Ton

3 ea --- Flatbed - 20 Ton Trailers

2 ea --- Pickups - 3/4 Ton

16 ea --- Pickups - 1/2 Ton

1 ea --- International 10 Wheel Tandem Truck

1 ea --- 104,000 lb. 47' Lowboy Trailer

1 ea --- 24' Covered box truck

1 ea --- 40' Covered box truck

Miscellaneous Equipped Gang Boxes to Support Small & Large Field Installations.

JACKSON TOTAL FACILITIES 125,000 Sq. Ft. Building Capacity.

DYERSBURG TOTAL FACILITIES 50,000 Sq. Ft. Building Capacity.

Complete Tool Crib Facilities.

Plastic, Aluminum , Carbon Steel and Stainless Steel plate and bar in stock for most emergency repairs.

All equipment is owned by Cupples' J&J Company.