



CATALOG

Equipment List and Capabilities,
East Coast Facility

Table of Contents

SECTION A MACHINING EQUIPMENT	A-1
MACHINING CENTER AND MILL EQUIPMENT.....	A-2
LATHE EQUIPMENT.....	A-6
ROUTER EQUIPMENT	A-10
SECTION B BENDING AND FORMING	B-1
PUNCH PRESS EQUIPMENT	B-2
PRESS BRAKE EQUIPMENT	B-6
SECTION C SAWING, DRILLING, AND CUTTING	C-1
SAW EQUIPMENT	C-2
DRILL PRESS EQUIPMENT	C-5
SHEAR EQUIPMENT.....	C-7
SECTION D SECONDARY OPERATIONS.....	D-1
HARDWARE INSERTION EQUIPMENT	D-2
SURFACE PREPARATION EQUIPMENT.....	D-4
SECTION E INSPECTION	E-1
TENSION TEST EQUIPMENT	E-2
SECTION F WELDING.....	F-1
WELD EQUIPMENT	F-2
SECTION G FINISHING, MARKING, AND ADDITIVE MFG	G-1
MARKING EQUIPMENT.....	G-2
ADDITIVE MANUFACTURING EQUIPMENT	G-6
SURFACE COATING	G-8
SECTION H SOFTWARE AND DESIGN SERVICES	H-1
SOFTWARE CAPABILITIES	H-2



INTRODUCTION

This document details the fabrication and machining equipment inventory, specifications, and capabilities that support all operations at Motion Laboratories, Inc. on the East Coast.

Motion Laboratories maintains both a fully integrated fabrication department and a machine shop that provides its services to our assembly floor. The staff is comprised of skilled machinists, tool and die makers, welders, CNC operators, programmers, and designers.

Motion Laboratories maintains a finishing department capable of sand blasting and powder coating. We can supply a variety of color and texture finishes. Our technicians are certified by PCI (Powder Coating Institute).

Motion Laboratories maintains an assembly floor staffed with technicians specializing in general electrical assembly. This includes circuit board design prototyping and assembly, electrical panel assembly, cable assembly, wire processing and harness assembly with the ability to do custom overmolded cable parts. In addition, the shop is an ETL listed UL1640 and 508A panel builder.



SECTION A

Automated and manual machining equipment



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



MACHINING CENTER AND MILL EQUIPMENT

Machining centers are multi-functional machines that allow the operator great flexibility to carry out a number of mechanical operations, such as milling, boring, threading, drilling, etc., thanks to the ability to have a large number tools in the changer.

Milling is the process of machining using rotary cutters to remove material by advancing a cutter into a workpiece. This may be done varying cutter head speed, pressure, and direction on one or several axes. Milling covers a wide variety of different operations and machines, on scales from small individual parts to large, heavy-duty gang milling operations. It is one of the most commonly used processes for machining custom parts to precise tolerances.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Hitachi Seiki VA-40

Number of machines: 1 machining center

Control type: CNC

FANUC 6M controllers

4,000 rpm spindle

Feed rate rapid: 470 in/min

Feed rate cutting: 80 in/min

Table travel: X 28" Y 16" Z 24"

Tool changer: 20-station turret

Fitted with 40,000 rpm high-speed spindle



Haas DM-2, 4-Axis

Number of machines: 2 machining centers

Control type: CNC

15,000 rpm spindle

Feed rate rapid: 2,400 in/min

Feed rate cutting: 1,200 in/min

Table travel: X 28" Y 16" Z 15.5"

Tool changer: 19-station turret

Pallet changer



Bridgeport Milling Machine

Number of machines: 2 mills

Control type: manual

2,720 rpm spindle

Working range: X 32" Y 9"

One machine fitted with NC readout



LATHE EQUIPMENT

A metal lathe or metalworking lathe is a large class of lathes designed for precisely machining relatively hard materials. However, with the advent of plastics and other materials, and with their inherent versatility, these lathes are now used in a wide range of applications and a broad range of materials. They are usually simply called lathes, but may be referred to by more specific subtype names such as toolroom lathe, turret lathe, etc. These rigid machine tools remove material from a rotating workpiece via the (typically linear) movements of various cutting tools, such as tool bits and drill bits.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Haas DS 30Y

Number of machines: 1 turning center

Control type: CNC

4,500 rpm main spindle, 10" chuck, 3" bore

4,800 rpm secondary spindle

C-Axis 4,000 rpm live tooling

Feed rate rapid X: 472 in/min

Feed rate rapid Y: 472 in/min

Feed rate rapid Z: 945 in/min

Travel: X 12.5" Z 23.0"

Tool changer: 12-station BMT65 turret

Swing diameter: open front apron 31.8", over cross slide 20.8", over second spindle 21.8"

Max cutting diameter: 18"

Max cutting length: 23"

Equipped with automated robot cell for part removal



Daewoo Lynx 210L

Number of machines: 1 lathe

Control type: CNC

FANUC 0iT controller

5,000 rpm spindle, 8.27" chuck

Feed rate rapid X: 16,000 mm/min

Feed rate rapid Z: 24,000 mm/min

Feed rate cutting X: 0.001 - 500.0 mm/rev

Travel: X 6.3" Z 13.0"

Tool changer: 12-station turret



Hardinge Lathe

Number of machines: 1 lathe

Control type: manual

3,000 rpm spindle

Working range: X 34" Y 7"

Swing diameter: 9"

Complete set of Hardinge collets (round & square)



ROUTER EQUIPMENT

A computer numerical control (CNC) router is a computer-controlled machine used for cutting various sheet materials such as wood, composite, aluminum, steel, plastic, and foam. CNC routers can aid in expediting and automating many carpentry tasks.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Thermwood Model 53

Number of machines: 1 router

Control type: CNC

91000 super controller

15,000 rpm spindle, 10 hp

4700 rpm pneumatic drill, 3/8" Jacobs chuck, independent 6" Z-axis travel

Fixed table, moving gantry

Table size: X 10' Y 5'



SECTION B

Bending and forming



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



PUNCH PRESS EQUIPMENT

A punch press is a type of machine press used to cut holes in material. It can be small and manually operated and hold one simple die set, or it can be very large, CNC operated, with a multi-station turret and hold a much larger and complex die set.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Trumpf Trumatic 2020R

Number of machines: 1 punch press

Control type: CNC

Max sheet thickness: 0.25"

Punching capacity: 20 tons

Max workpiece weight: 330 lbs

Max passage height: 1.5"

Programmable stripper force: 4 - 17 kN

Feed rate rapid X: 2400 in/min

Feed rate rapid Y: 3600 in/min

Feed rate rapid X & Y simultaneously: 4300 in/min

C-Axis rotation: 3 rev/sec

Punching stroke rate 0.0394" increment: 900 1/min

Punching stroke rate 0.9848" increment: 420 1/min

Working range: X 10.5' Y 5.0'

Tool changer: linear magazine, 15 tools + 2 multi-tools with 10 ten tools each + 2 multi-tools with 5 tools each (45 total tools)

Capable of adding secondary operations, including deburring, threading, bending, countersinking, and embossing.



Wiedemann C1000

Number of machines: 1 punch press

Control type: CNC

FANUC 6MB controller

Max sheet thickness: steel 0.134", aluminum 0.250"

Punching capacity: 16.5 tons

Max workpiece weight: 110 lbs

Feed rate rapid X: 1968 in/min

Feed rate rapid Y: 1968 in/min

Punching stroke rate 1.000" increment: 200 strokes/min

Punching stroke rate 4.900" increment: 120 strokes/min

Working range: X 40.83" Y 40.83"

Tool changer: 20-station turret

Mechanical (Flywheel Drive) Punch Press

Number of machines: 2 punch presses

Punching capacity first machine: 1 ton

Punching capacity second machine: 10 tons



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



PRESS BRAKE EQUIPMENT

A press brake is a machine pressing tool for bending sheet and plate material, most commonly sheet metal. It forms predetermined bends by clamping the workpiece between a matching punch and die. Typically, two C-frames form the sides of the press brake, connected to a table at the bottom and on a movable beam at the top. The bottom tool is mounted on the table, with the top tool mounted on the upper beam.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Guifil PE 25-100

Number of machines: 1 press brake

Control type: CNC

Machine bed: 8'

Stroke: 3.937"

Press capacity: 110 tons

3-axis back gauge: dimension; depth/angle; back gauge bar height

Equipped with Automec Autogauge CNC 1000



Guifil PE 20-63

Number of machines: 1 press brake

Control type: CNC

Machine bed: 6'

Stroke: 3.937"

Press capacity: 69.3 tons

2-axis back gauge: dimension; depth/angle

Equipped with Automec Autogauge CNC 150



Edwards HAT6020

Number of machines: 1 horizontal press

Control type: CNC

Table size: 24" x 42"

Stroke: 10"

Press capacity: 20 tons

Horizontal press with portable power unit



SECTION C

Sawing, drilling, and cutting



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com

SAW EQUIPMENT

A sawing machine is a device for cutting up bars of material or for cutting out shapes in plates of raw material. The cutting tools of sawing machines may be thin metallic disks with teeth on their edges, thin metal blades or flexible bands with teeth on one edge, or thin grinding wheels. The tools may use any of three actions in sawing: true cutting, grinding, or friction-created melting.

The band saw employs an endless flexible steel band with teeth on one edge; the band is carried on two large-diameter rotating wheels mounted on parallel axes some distance apart. Band saws that cut vertically are particularly suitable for cutting out shapes in thin, flat plates from workpieces that lie on horizontal tables.

Cold-sawing machines with toothed disk cutters are used extensively in steel-rolling mills and in places where large quantities of bars are cut. A V-shaped clamping vise enables bundles of bars to be clamped and cut at one time.





DoAll Continental Series DC-330NC

Number of machines: 1 fully automatic band saw

Control type: CNC

Dimensions: H 55.0" W 88.5" D 86.5"

Band saw blade: 1.25" x 167.0"

Blade speed: 52 - 430 fpm

Automatic index length single: 19.68"

Automatic index length multiple: 177.16"

Cutting capacity round: 0.380" - 13.0"

Cutting capacity rectangle: up to 15.75" x 13.0"

Bundle capacity minimum: 6.5" x 2.0"

Bundle capacity maximum: 14.5" x 6.63"



Dake MEP Cobra 350 ax

Number of machines: 1 fully automatic cold saw

Dimensions: H 60" W 85" D 55"

Band saw blade: 14"

Motor: 1700/3400 rpm

Automatic indexing & clamping (+/- 0.002" accuracy)

Cutting capacity round stock: 3.0"

Cutting capacity square stock: 3.0"

Cutting capacity round tube: 4.5"

Cutting capacity square tube: 4.0"

Cutting capacity rectangular tube: 6.25" x 2.75"



DRILL PRESS EQUIPMENT

A drill press, also called drilling machine, is a device for producing holes in hard substances. The drill is held in a rotating spindle and is fed into the workpiece, which is usually clamped in a vise resting on a table. The drill may be gripped in a chuck with three jaws that move radially in unison, or it may have a tapered shank that fits into a tapered hole in the spindle. Means are always provided for varying the spindle speed and on some machines for automatically feeding the drill into the workpiece.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com

Drill Presses

Walker Turner radial drill press

Number of machines: 1 drill press

Central Machinery desk mount drill press

Number of machines: 1 drill press

Wen 12 variable speed drill press

Number of machines: 3 drill presses



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



SHEAR EQUIPMENT

Shearing, also known as die cutting, is a process which cuts stock without the formation of chips or the use of burning or melting. Strictly speaking, if the cutting blades are straight the process is called shearing; if the cutting blades are curved then they are shearing-type operations.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Pexto Model 10U4

Number of machines: 1 precision shear

Motor: 1800 rpm, 5 hp

Capacity mild steel: 10 gauge

Capacity stainless steel: 12 gauge

Nominal cutting length: 48"

Back gauge range: 24"

Front gauge range: 42"

Shearing stroke rate: 62 1/min



SECTION D

Secondary operations



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



HARDWARE INSERTION EQUIPMENT

Some fasteners are designed to be inserted into material. Although many can be inserted using manual tools, there are machines to make the insertion operation easier, more efficient, and more accurate.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Haeger Pem Fastener Insertion Machine

Number of machines: 1 insertion machine



Touch-O-Matic Pem Fastener Insertion Machine

Number of machines: 1 insertion machine



SURFACE PREPARATION EQUIPMENT

Surface preparation is the process of cleaning and readying surfaces for new coatings. As coatings degrade, assets corrode requiring repair or replacement. Premature coating failure is often avoidable if proper surface preparation is performed. Generally speaking, the longer a coating lasts, the longer and more consistently the asset can be used without replacement or repair. To help ensure that coatings last, surface prep is key.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Timesaver Model 1211-12-0

Number of machines: 1 wide belt sander

Working range: 25" wide

Belt length: 60"

Bed opening: 0 - 5"

Feed speed: 15 - 40 fpm

Contact drum diameter: 4.5"



Skat Blast Model 970

Number of machines: 1 abrasive blast cabinet

Overall size: W 60.0" D 30.0" H 64.5"

Work area: W 58.0" D 28.0" H 28"

Nozzles: 1 steel, 2 ceramic, 1 air jet

Air requirements: 10 - 15 cfm at 80 psi

Dust collection: VAC - 50 HEPA vacuum (medium nozzle)



Skat Blast Model SC33V

Number of machines: 2 abrasive blast cabinets

Overall size: W 36.0" D 23.0" H 54.5"

Work area: W 34.0" D 22.0" H 20.5"

Nozzles: 1 steel

Dust collection: VAC - 50 HEPA vacuum (medium nozzle)



Boyar Schultz Model 612

Number of machines: 1 surface grinder

Table size: 10.5"

Alco Model V-1

Number of machines: 1 tumbler

Dimensions: W 22" D 34" H 35"

1" thick molded neoprene tub

Frequency: 875 - 1750 cpm

Drive: 1 hp

Heavy duty end discharge vibratory finishing machine



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



SECTION E

Inspection



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



TENSION TEST EQUIPMENT

A tensile test, also known as a tension test, applies tensile (pulling) force to a material and measures the specimen's response to the stress, determining how strong the material is and how much it can elongate.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Tinius Olsen H50KT

Number of machines: 1 tension tester

Capacity: 10,000 lbs

Clearance between beams: 16"

Maximum crosshead travel: 43"



Tinius Olsen 60K Super L

Number of machines: 1 tension tester

Capacity: 60,000 lbs





SECTION F

Welding



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



WELD EQUIPMENT

Motion Labs has equipment for MIG, TIG, stick, and spot welding.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Bluco welding fixture table

Dimensions: 1000 mm x 2000 mm (with 575 mm standard legs)

Hardened 3-D table

Hardened steel locating angles

Hardened stops and locators

Hardened PC bolts, pins, and adapters

Clamps and clamp accessories

Spacers and post accessories



Hobart Model RC-300

Number of machines: 1 MIG welder

Input voltage: 230/400 volts, three-phase

Input current: 35/17.5 amps

Input frequency: 60 Hz

Output voltage: 30 volts

Output current: 300 amps

Output maximum NLV: 46

Output duty cycle: 100%



Miller Syncrowave 210 (TIG/MIG)

Number of machines: 1 TIG/MIG welder

Input voltage: 120 - 240 volts, single-phase

Input frequency: 50/60 Hz

Current type: AC/DC

Current minimum: 5 amps

Current maximum: 210 amps

Output: CC/CV (constant current/constant voltage)

Material thickness (steel or aluminum):

0.020" (0.5 mm) - 0.250" (6.4 mm)



Miller Syncrowave 210 (TIG/stick)

Number of machines: 1 TIG/stick welder

Input voltage: 120 - 240 volts, single-phase

Input frequency: 50/60 Hz

Current type: AC/DC

Current minimum: 5 amps

Current maximum: 210 amps

Output: CC (constant current)

Material thickness (steel or aluminum):

0.020" (0.5 mm) - 0.250" (6.4 mm)



SECTION G

Finishing, marking, and additive manufacturing



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



MARKING EQUIPMENT

Applying graphics or text to a surface.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Epilog Laser Fusion M2 40

Number of machines: 1 laser engraver

Epilog Model 13000 Laser System

Engraving area: 40" x 28"

Maximum material thickness: 14.25"

Power rating: 60 watts



Gravograph LS900

Number of machines: 1 laser engraver

Bed size: 27.2" x 25.8"

Engraving area: 24" x 24"

Z-axis depth: 9.8"

Maximum item size: W 25.6" D 24.8" H 9.8"

Power rating: 80 watts



Gravograph IS8000

Number of machines: 1 etch engraver

Bed size: 610 mm x 1220 mm

13,000 - 20,000 rpm spindle

Spindle travel: 80 mm



ADDITIVE MANUFACTURING EQUIPMENT

3D printing, or additive manufacturing, is the construction of a three-dimensional object from a CAD model or a digital 3D model. The term “3D printing” can refer to a variety of processes in which material is deposited, joined, or solidified under computer control to create the object, typically layer by layer.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



Stratasys F170

Number of machines: 1 3D printer

Build envelope: 10" x 10" x 10"

1 model bay

1 support bay

90 in/cu unattended builds



SURFACE COATING

Any mixture of film-forming materials plus pigments, solvents, and other additives, which, when applied to a surface and cured or dried, yields a thin film that is functional and often decorative. Surface coatings include paints, drying oils and varnishes, synthetic clear coatings, and other products whose primary function is to protect the surface of an object from the environment. These products can also enhance the aesthetic appeal of an object by accentuating its surface features or even by concealing them from view.



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com

Surface Coating Capabilities

Motion Laboratories has the ability to provide full powder coating services and anodizing to all metal-work.

Oven size: W 8' D 4' H 6'

Booth size: W 14' D 26' H 9'

Nordson Encore LT spray system



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com



SECTION H

Software and design services



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com

Software Capabilities

Motion Laboratories has a complete CAD/CAM design, engineering, and programming team that incorporate the following.

Autodesk Inventor (HSM, Fusion 360)

Autodesk AutoCAD

Mastercam

Striker

TruTops



1.800.227.6784

520 Furnace Dock Road, Cortlandt Manor, New York 10567 Phone: (914) 788-8877 Fax: (914) 788-8866

FOR MORE INFORMATION
www.motionlabs.com