

Capacity & Equipment download – February 2018

CNC Precision Engineering - A&M offers precision high speed 3, 4 and 5 axis machining and the latest generation of EDM wire cutting and spark erosion.

A&M's policy is to work with tried and tested equipment suppliers, enabling us to operate a full range of machines with similar control systems, providing operational flexibility.

Our HURCO CNC machines range from compact 3 axis machines to large capacity 5 axis machines, enabling us to programme multiple operations and run work as 'lock and load', with the unmanned and 'lights out' operation overnight and at weekends using optimised speeds. We have invested in shrink fit tooling, to reduce vibration and extend tool life.

<u>CNC Millers</u>	<u>X/Y/Z axis</u>	<u>Manufacturer details</u>
<u>3 Axis</u>		
HURCO DCX22 40T	2200 x 1700 x 750 mm	http://www.hurco.com/en-gb/machine-tools/machining-centres/vertical/pages/double-column.aspx
HURCO DCX32 50T (x2)	3200 x 2100 x 920 mm	
HURCO VM1	660 x 356 x 457 mm	
HURCO VM10i	660 x 406 x 508 mm	
HURCO VM3	1320 x 457 x 457 mm	
HURCO VMX 30S	762 x 508 x 610 mm	
HURCO VMX 42 (x3)	1066 x 610 x 610 mm	
HURCO VMX 84Ti	2134 x 864 x 762 mm	
Sodick HS430L	420 x 350 x 200 mm	
<u>4 Axis</u>		
HURCO VM3	1200 x 450 x 450 mm	
<u>5 Axis</u>		
HURCO VM10U	530 x 400 x 480 mm	http://www.hurco.com/en-gb/machine-tools/machining-centres/vertical/pages/performance.aspx
HURCO VMX 30U	762 x 508 x 610 mm	
HURCO VMX 60SR	2134 x 864 x 762 mm	

<u>CNC Lathes</u>	<u>X/Y/Z axis</u>	<u>Manufacturer details</u>
HURCO TM6 VDi	178 x 356 mm	http://www.hurco.com/en-gb/machine-tools/machining-centres/vertical/pages/performance.aspx
HURCO TM8	203 x 508 mm	
HURCO TM8H VDi	203 x 508 mm	
HURCO TMM10	250 x 750 mm	
HURCO TM10 VDi	250 x 750 mm	

<u>Conventional Turning</u>	<u>X/Y/Z axis</u>	<u>Manufacturer details</u>
XYZ Proturn SLX 555	500 x 200 mm	http://www.xyzmachinetools.com/
XYZ Proturn 1630	1000 x 420 mm	
XYZ Manual turner	500 x 200 mm	

<u>Manual Millers</u>	<u>X/Y/Z axis</u>	<u>Manufacturer details</u>
XYZ 1500	570 x 275 mm	http://www.xyzmachinetools.com/
XYZ 2000 manual	740 x 350 mm	
XYZ EMX 2000 Part CNC Pro trac manual miller	740 x 350 mm	
XYZ EMX 3000 Part CNC Pro trac manual miller	770 x 387 x 550 mm	

Wire and Spark Erosion

Our comprehensive range of Sodick wire erosion machines includes some of the largest machines in the UK, enabling us to schedule work flexibly to achieve rapid turnaround times.

Many of our machines incorporate the latest four axis linear motor technology to meet the most demanding requirements for surface finish and accuracy.

<u>Sodick Wire Erosion</u>	<u>X/Y/Z axis</u>	<u>Manufacturer details</u>
A325	350 x 250 x 220 mm	
AG600L (x4)	700 x 500 x 400 mm	http://www.sodick.org/products/precision-wire-edm/ag600l.html
ALC 600G (x2)	600x 400 x 350 mm	http://www.sodick.org/products/precision-wire-edm/alc600g.html
AQ325L (x2)	350 x 250 x 220 mm	
AQ537 (x2)	750 x 500 x 400 mm	
AQ750L	750 x 500 x 400 mm	https://www.sodick.com/products/wire-edm/aq750l
AQ750 Premium (x2)	600 x 400 x 300 mm	http://www.sodick.org/products/precision-wire-edm/aq750l-premium.html
AQ900L Premium	900 x 600 x 400 mm	https://www.sodick.com/products/wire-edm/aq900l
AQ1200L	1200 x 800 x 400 mm	https://www.sodick.com/products/wire-edm/aq1200l
EPOC 1100	1100 x 700 x 350 mm	

Spark Erosion

Our spark erosion capabilities enable us to machine intricate details to very tight tolerances on a wide range of metal and composite materials.

<u>Sodick Spark Erosion</u>	X/Y/Z axis travel	Manufacturer details
AG60L (x2)	600 x 420 x 370 mm	http://www.sodick.org/products/die-sinking-edm/ag60l.html
AG80L	850x 520 x 420 mm	http://www.sodick.org/products/die-sinking-edm/ag80l.html
AG100L	1200 x 650 x 500 mm	http://www.sodick.org/products/die-sinking-edm/ag100l.html
AQ35	350 x 250 x 270 mm	http://www.sodick.org/products/die-sinking-edm/ad35l.html
AM35 Linear	350 x 250 x 270 mm	
<u>EDM Hole Drilling</u>		
K1C hybrid	200 x 300 x 300 mm	http://www.sodick.org/products/hole-drilling-edm/k1c.html
K1C CNC	200 x 300 x 300 mm	
K1C (x2)	200 x 300 x 300 mm	

Metrology and Quality inspection

Quality assurance and quality control are critical to our manufacturing process.

We have invested £500,000 in a climate-controlled metrology room and testing equipment to ensure we consistently manufacture to the tight tolerances our OEM customers require.

<u>Metrology measurement</u> <u>Coordinate Measuring Machines (CMM)</u>	Capacity
Hexagon Global Performance 12.30.10 with Leitz scanning head Technology	1200 x 3000 x 1000 mm
IMS Merlin	1000 x 2500 x 750 mm
Aberlink Axiom Too	600 x 1000 x 400 mm

<u>Quality Inspection & Testing equipment</u>
3D Laser scanner - HandySCAN 700 3D
Digital Bore Micrometres - Mahr, Mititoyo
Digital Imagery Measurement for small and delicate parts - Project X, Aberlink
Dynamic Balancing Machine to less than 1g.mm
Dynamometer – Land and Sea DYNO-mite C 50 hp, eddy-current brake
Dynascopes - Vision Engineering, Digimax DX1 Micro Height
Hardness testing equipment - Zwick Roell ZMU
Injector Tester and ultra-sonic cleaner – ASNU
Micro height gauge - Sylvac Hi-Cal 300
Microscopes - Mantis Elite, Photonic PL2000
Shadowgraphs - Mititoyo PH3500, Starrett 400
Surface Testers - Mititoyo S-400, Mititoyo SJ400
Non-Destructive Testing (NDT) undertaken by registered approved supplie

<u>Welding</u>	
<u>Laser</u> Rofin Integral Rofin Select Rofin Star Laser Weld Tool Open	Spot welds using a galvo head to deflect the beam, and seam welds using overlapping spots or with a continuous beam.
<u>Manual</u> Mig, Tig and Arc welders	Standalone portable system, enabling us to deliver laser welding at a customer's site.

<u>Other equipment</u>
Cranes – 4 cranes up to 10 tonnes Cylindrical Grinders x9 Drills – Pedestal drills x3, Radial drills x2 Part Marking – Dot matrix, Laser, Chemical Power Saws – 3x horizontal, 1 band saw Shot Blasters – dry and wet Surface Grinders – 8 grinders, up to 1000 x 500 x 400 Try out Press – up to 150 tonnes Ultrasonic cleaners – EMX 2000 & 3000, manual MCS

<u>CAD software</u>
Autodesk PowerMill Ultimate 2018 - Blisk Machine - Five Axis - Machining Autodesk PowerShape Premium 2018 EZ EDM GearTrax - gear, spline, sprocket and pulley modelling mathematical software Solidworks Premium with Finite Element Analysis Vero PEPS Wire EDM CAM