

# MACROACE II VS

MULTIPURPOSE DICING  
AND GRINDING SYSTEM  
WITH 55MM CUT DEPTH

HEAVY DUTY CUTTING  
FROM A SMALL FOOTPRINT

DIVERSE WORKLOADS ARE  
EASILY HANDLED WITH EASY  
WORK-LOADING, QUICK TOOL  
CHANGES AND FAST PROGRAM ENTRY

HIGH POSITIONAL STABILITY, ACCURACY,  
CONTROL AND REPEATABILITY

TOTAL FLEXIBILITY,  
TOTAL CONTROL

**UNRIVALLED  
IN HEAVY DUTY  
CUTTING**

**LOADPOINT**  
MICRO-MACHINING SOLUTIONS



- MULTI-PURPOSE DICING AND SURFACE GRINDING SYSTEM WITH UP TO 55MM CUT DEPTH
- ULTRA HIGH PRECISION CUTTING OF HARD MATERIALS
- HIGH POWER SPINDLE ENABLING HIGH CUTTING SPEEDS
- HIGHLY FLEXIBLE VISION ALIGNMENT AND USER INTERFACE (INCLUDING AUTOMATIC MODE)

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## OPERATIONAL SPECIFICATION

Control System	Loadpoint NanoControl 2.0 & CNC G-Code programming
Work Holding	Ceramic or Metal Vacuum Chuck, mechanical vice, magnetic chuck
Work Capacity (XYZ)	305 x 305 x 55mm or with auto tool change 250 x 250 x 55mm
Blade Capacity (Diameter)	0.1 - 50mm
Spindle Power	3.0 KW @ 10,000 rpm
Spindle Speed	1,000 - 10,000 rpm
X Axis Cutting Range	305mm or 250mm (with auto tool change)
X Axis Resolution	0.1 µm
X Axis Feed Rate	0.1 - 300 mm/s
Y Axis Index Range	0.001 - 360 mm
Y Axis Resolution	0.1 µm
Y Axis Index Accuracy	± 3 µm / 300mm < ± 1µm / 10mm
Z Axis Index Range	0.001 - 200 mm
Z Axis Resolution	0.1µm
Z Axis Index Accuracy	< ± 2 µm / 10mm
Theta Axis Drive	Direct Drive Torque motor
Theta Axis Range	360°(continuous)
Theta Axis Resolution	4 arc sec
Camera Type	Monochromatic or full Colour
Camera Alignment	Manual or fully automatic
Camera Resolution	2 MegaPixels
Camera Magnification	x150 - x200 - x300
Camera Illumination	Coaxial and ring with dark field
Footprint (WDH) (height includes status light)	1400 x 1440 x 2350 mm

### Micromachining solutions for:

SEMICONDUCTORS	OPTICAL
ELECTRONICS	MEDICAL
FERRO-ELECTRONICS	SOLAR
OPTO-ELECTRONICS	SONAR

## SERVICE REQUIREMENTS

Electricity	415/440v AC three phase 16A, 50/60Hz
Air supply	5.5 Bar (80 PSI)
	0.17m <sup>3</sup> /min (6 CFM)
	Dewpoint 5°C, Oil 0.005 PPM
Water supply	
Blade coolant	3 - 5 Bar (43 - 73 PSI)
	5 - 8 Litres/min (1.3-2.1 US gal/min)
Workpiece wash	3 - 5 Bar (43 - 73 PSI)
	5 - 8 Litres/min (01.3-2.1 US gal/min)
Spindle coolant	3 - 5 Bar (43 - 73 PSI)
	18 - 20°C Recirculating Coolant Temp
	1 Litres/min (0.26 US gal/min)
Vacuum supply	Not required, internally generate
Mist extraction	Mandatory 4m <sup>3</sup> /min
Drain	42 mm ID drain, free flow to waste
	Drain height < 600 mm (24") from base of m/c
Recommended Environment	Ambient temp of 20°C, humidity level < 40%
Weight	3,000KG on 6 adjustable feet (up to 10mm)
Floor Level	< 6mm across m/c footprint

## PIPE SIZES

Port	Pipe Diameter
Cutting Wheel Blade Coolant In	10mm
Wafer Wash Water In	10mm
Spindle Coolant Water In	10mm
Spindle Coolant Water Out	10mm
Air In	10mm
Vacuum Venturi Exhaust	10mm
Mist Extraction Port	100mm
Drain Port	40mm

## STANDARD PACKAGE

### Loadpoint Nanocontrol

- Pattern Recognition System
- 2 point automatic workpiece alignment
- Simple to use interface for easy creation of even the most complex programs

### Vision and alignment system

- Monocular video alignment system
- Full 17" / 430mm monitor for alignment, data entry and machine monitoring

### Tooling

- Collet with 10mm shank capacity
- Accelerometer based sealed Z datum set off-chuck height sensing system

### Features

- 500 - 40,000 rev per min with 1kW DC
- Theta (θ) axis bearing rotary table with high resolution direct drive
- Service pack covering minor tools for routine weekly service and maintenance
- Air filter set, Manual, CE mark
- Integral venturi vacuum system

## OPTIONS

### Control System

CNC style programming, configured to handle the vertical spindle, gives flexibility and capacity for complex machining operations, with full 3D capacity.

### Options for Heavy Duty Applications

- Increased Z capacity to 40mm
- Increased spindle power, optimised for thick substrates. 2kW, 100 - 8000 rev per min