

MICROACE SERIES 3

The Micro-Dicing Solution

The Microace Series 3 provides a complete micro-dicing solution for the precision dicing, scribing and grinding needs of the Electronic/ Semi-conductor industry.



It is capable of processing a wide range of materials including Silicon, Ferrite, Glass, Germanium, PZT and Sapphire up to 6inch/ 152mm in diameter.



Cutting Wheel, height sense, and 6"/152mm wafer with high flow coolant jet.

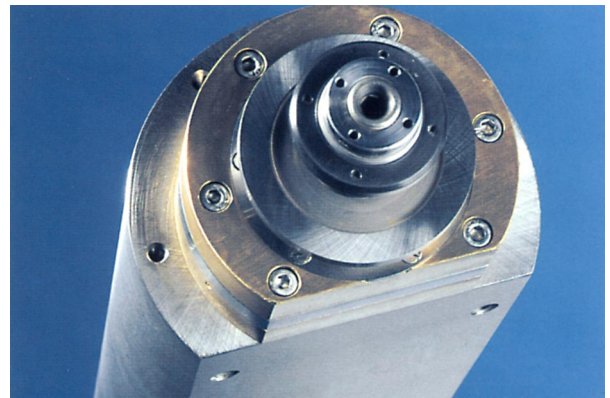
Adaptable design and rigid structure ensure high accuracy and consistent performance for volume production and research and development environments at a very competitive price.

Loadpoint offers a range of accessories and consumables for individual process demands which can be quickly installed into production. Customer process techniques can be improved utilising over 30 years experience of Loadpoint's Research and Development department.

Superior Air-Bearing performance

Loadpoint's advanced Air Bearings assure maximum machine performance. Using our LDS4 high powered Air Bearing spindle and Theta axis Air Bearing unit to guarantee high accuracy and reliable performance over a widespread range. This combined with low spindle vibration achieves reduced chipping for thin and thick materials.

The Thermal Linkage between the spindle and the alignment system improves cutting quality through increased stability and process control.



LDS4 Air-bearing spindle

Alignment Systems

The compact videoscope 4 CCD mono or split field camera, or monocular microscope system ensures accurate inspection and precision alignment using a graticule generator/monitor.

Systems are adaptable to suit individual magnifications and light source requirements (see relevant data sheet).

An optional Pattern Recognition system is available to improve process throughputs for Silicon, ceramic and low detail applications.

Precision Axis Technology

Rapid and accurate axis movement is achieved through a proven design using DC servo motors and a stabilised cast iron base with X and Y slideways accurate to within 2 microns for flatness and straightness.

X-AXIS: Driven by a stepless DC servo system with super smooth travel for improved accuracy and accelerated movement.

Y-AXIS: Driven by a DC servo motor controlled by a linear moiré fringe encoder closed loop system for accurate, fast indexing with a digital readout of the Y position displayed on the data panel.

Z-AXIS: Acoustic Z datum sensor for depth of cut operates independently of wheel type, coolant flow and work position with a high speed height sense - less than 2 seconds - a **Blade wear monitoring system** ensures blade height remains within operating parameters. Now available with optional PC link

Control System

The Microace controller can store 252 cutting programmes, 125 link programmes, 80 variable pitch programmes including 2 dressing programmes, and contains 40 operating modes providing enhanced cutting flexibility and process capacity.



A fully automatic cutting process combined with an operating programme to calculate the most efficient method of cutting from data entered ensures optimum throughput for either square, rectangular or round work shapes. Variable pitch per axis and Multi-pass facility provides an option to suit complicated component designs. All programmes are protected by a security user access code.

Easy to operate/maintain

The Microace is one of the most easy to operate and maintain dicing machines on the market, features include a simple to follow data entry panel with clear operating instructions and easily identified error codes. An open machine structure allows rapid and easy maintenance assuring minimum process disruption, all major elements of the machine are interchangeable including circuit boards for improved serviceability.

Options

- 2 to 3 inch/50 to 76.2mm diameter blade capacity in hub and hubless form.
- Multi-blade facility.
- Integral vacuum pump.
- Customised chucks and work holding stations
- Ball bearing spindle
- RS232 link for data entry
- Customised programmes.
- Mist extraction unit.
- Re-circulating chiller.
- Air dryer system.

Safety Standards

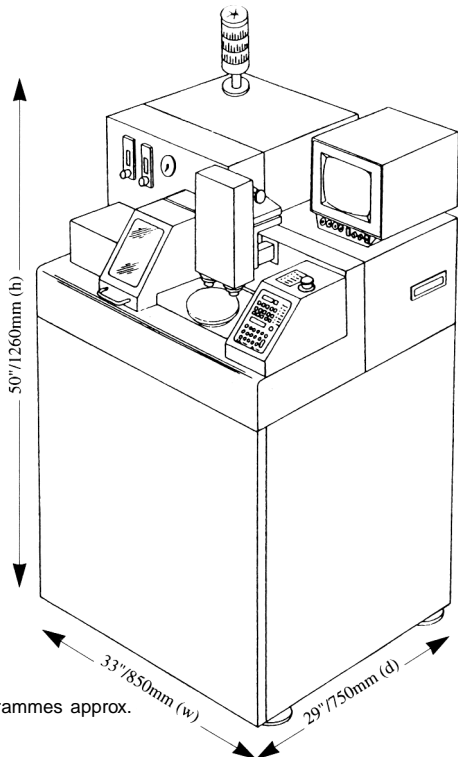
The Microace Series 3 carries the following safety features to protect operator and machine:

- CE mark showing compliance with the relevant European safety standards.
- Enclosed cutting area.
- Machine status lamp
- Emergency machine shut down with loss of supply.
- Emergency spindle shut down if temperature exceeds limits
- Electrical isolator switch
- All 'wet' areas enclosed to contain vapour and coolant mist.

SPECIFICATION

Operation Specification

Construction		
Standard	Painted Stainless Steel Cabinet.	
Option	Non-Painted Stainless Steel Cabinet	
	Metric (mm)	Inch
Work Capacity	156 x 156 x 5	6.14 x 6.14 x 2
Blade Capacity		
Standard	60-50	2.36 - 1.97
Option	76.2 - 50	3 - 1.97
Y Index Range		
Standard	155	6.2
Option	180	7.09
Y Index Feed Rates	50mm/sec max	2"/sec max
Y Index Step		
Standard	0.002	0.0001
Option	0.0001	
Y Position Accuracy		
Standard	± 0.003	±0.00012
X Axis Range	250	10
X Axis Feed Rate	0.1 - 250mm/sec	0.004 - 9.84"/sec
Z Axis Range	8	0.31
Z Axis Increment	0.001	0.0001
Z Axis Speed	7mm/sec	0.28"/sec
Theta Axis Range	0-225°	
Theta Axis increment	1°	
Theta Axis resolution	0.0005°	
Theta Axis speed	90° in 2.2 seconds	
Spindle Speed Range	3,000 - 40,000 rev/min	
Spindle Increment	1000rev/min	
Spindle Power	1.5kW MK 9 Invertor	
	2.2kW MK 7 Invertor	



Weight:
250 kilogrammes approx.

Cutting Data Entry

Programme	Up to 252			
Scaling	Selectable Metric/Inch			
Mode	40 variations			
	See identification tables			
	mm		inch	
Dimension A	001	156	0.01	6.14
Dimension B	001	156	0.01	6.14
Component	0.001	6.000	0.0003	0.2362
Depth of Cut	0.001	6.000	0.0003	0.2362
Pitch in pass A	00.002	79.900	0.0001	3.1000
Pitch in pass B	00.002	79.900	0.0001	3.1000
Number of Cuts A	000	999	000	999
Number of Cuts B	000	999	000	999
Feed Rate Left	000.1	250mm/sec	0.004	9.842"/sec
Feed Rate Right	000.1	250mm/sec	0.004	9.842"/sec
Spindle Speed	3k	40k	3k	40k

(rev/min)

Services/Supplies

Air 5.5 Bar/80 PSI at 0.07m³/min
2.5 CFM flow
Dewpoint -5°C, Oil 0.005 PPM
Air Dryer recommended for maximum spindle performance.

Power 220V ±10%; 50/60 Hz
Conditioned for spikes

Water 2.5 Bar/40 PSI; 3 litre/min/0.75 gall/min
Conditioned for hardness.
Recirculating chiller recommended for spindle coolant.

Vacuum 60 cm, 24 in Hg (if internal system not used)

Extraction 76.2 mm diameter flange, extraction fan motor 20 watts minimum.

Other Loadpoint products

Heavy duty single/multiple Blade saws up to 5 Kw. Motor power. Computer "alternative substrate" hard disk production equipment for blank drilling and edge (I/O) grinding. Air bearings for dicing, drilling, electrostatic paint spraying, metrology, turning. High frequency inverter drives. Electro-chemical Machining service.

Note: Any warranty is void if any supply is not sufficiently high standard. Customer is responsible for any equipment, tools and consumables supplied or needed independently of Loadpoint.

Specifications subject to change without notice.

"Dicer, Scriber, Grinder"

- some terms or expressions used have specific meanings within the electronics industry. Outside the industry their meaning may be totally different.