

PL Series

Planetary Lapping Machines for PCD

Coborn's planetary lapping machines are designed to polish the top surface of PCD discs to a flat, mirror finish. They can also be used to polish CVD discs and PcBN.

The machine consists of a number of independent work heads which hold the discs against a large, horizontally mounted planetary motion grinding wheel.

It is impossible to use flood cooling when polishing large areas of PCD as the discs 'aqua-plane' on the wheel surface. Therefore, the lapping is a dry process and the wheel is internally cooled using water from an associated water chiller.



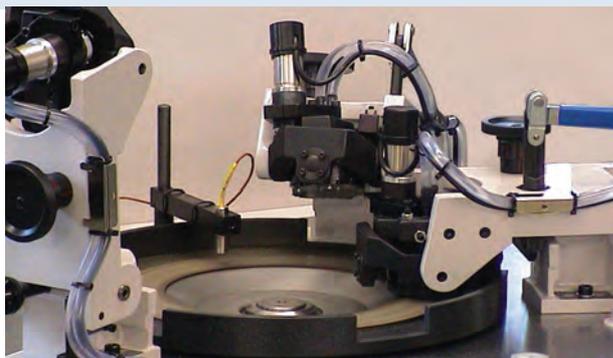
Chilled water is also fed to the back of each disc. This maintains the disc at a uniform temperature to minimise disc dishing.

The PL4 is equipped with 4 work heads and a fifth work head can be fitted as an optional extra.

The larger PL5 is equipped with 6 work heads as standard.

Each arm is fitted with a double gimbal fixture to allow the disc to self-level. The disc holders are motor driven.

The lapping pressure can be individually adjusted.



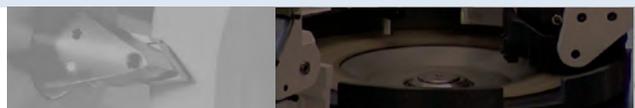
Specifications

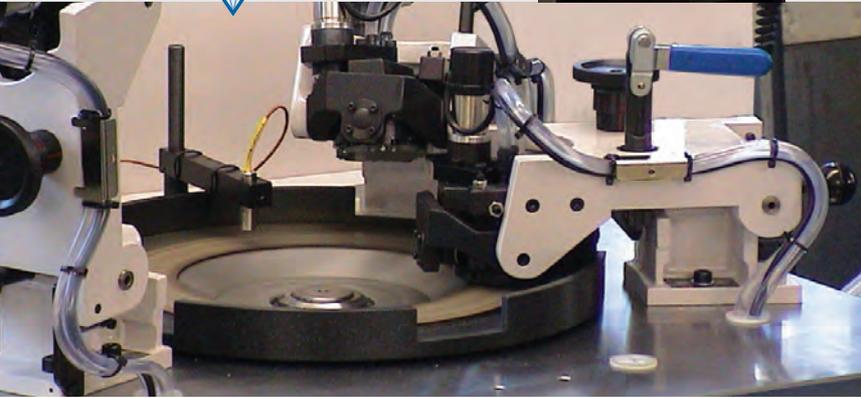
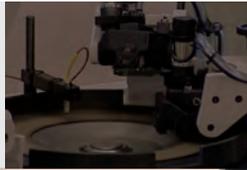
PL4

Machine dimensions (w x d x h):	690 x 1,020 x 1,625mm
Machine weight:	550kg
Main spindle:	12.0 kW
Chiller capacity:	5.5kW
Fixtures:	4 as standard
Wheel:	Diameter 300mm
	Face 45mm

PL5

Machine dimensions (w x d x h):	790 x 1,150 x 1,625mm
Machine weight:	590kg
Main spindle:	12.0 kW
Chiller capacity:	7.5kW
Fixtures:	6 as standard
Wheel:	Diameter 450mm
	Face 105mm





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Technical Details

CHARACTERISTIC	MODEL	MODEL
Machine - Machine type - Dimensions (w x d x h) - Total machine weight	PL4 Planetary lapping machine 690 x 1020 x 1625mm 550kg	PL5 Planetary lapping machine 790 x 1150 x 1625mm 590kg
Spindle - Spindle type - Main spindle power	Coborn precision spindle 12.0kW	Coborn precision spindle 12.0kW
Planetary wheel motion	Variable stroke between 9.5 mm and 22 mm in 24 - 0.5mm steps	Variable stroke between 9.5 mm and 22 mm in 24 - 0.5mm steps
Polishing station fixtures (arms) - Number of fixtures - Motorised drive to disc holders - Self levelling disc holders (gimbals) - Water cooling to disc holders - Independent timers - Polishing pressure - Maximum load per station - Maximum permissible total load (all stations) - Maximum disc size	4 as standard (5 possible) Yes Yes - double gimbal Yes Yes - one Individually adjustable 56kg as standard (128kg on request) 250kg 45mm PCD on 45mm wheel	6 as standard Yes Yes - double gimbal Yes Yes - one Individually adjustable 56kg as standard (128kg on request) 300kg 100mm PCD on 105mm wheel
Wheel - Wheel diameter - Wheel face width	300mm 45mm or as requested	400mm 105mm or as requested
Chiller - Capacity - Chiller dimensions (w x d x h) - Chiller weight	5.5kW 715 x 715 x 1375mm 180kg	7.5kW 715 x 715 x 1375mm 190kg
Electrical Requirements	3 phase, 415v or 220v	3 phase, 415v or 220v
Optional extras	Applicable	
1. Additional polishing fixture (arm)	Applicable (factory fitted)	Not applicable
2. Grinding wheels	Available - size & grade on request	Available - size & grade - on request

