



Precision Surfacing Solutions

LAPMASTER INTERNATIONAL LLC

Lapmaster Equipment and Accessories

***Model 20G (500) Single-Side
Fine-Grinding System***



20" Single-Side Fine-Grinding System

LAPMASTER MODEL 20G System

- **An Ideal Materials Fine-Grind Processing Platform:
Designed for Durability, Accuracy & Repeatability
Designed to support 18"-20" Plate Diameters
Equipment engineered to allow up to 3 processing stations
Machine base, back-structure and electrical enclosure with ample space for expansion
Modular design allows for optional equipment and accessories retrofits**



MODEL 20G System Features

- **20” Plate, 2-3 Work Stations**
- **One Station can be Dedicated for Plate Conditioning**
- **Non-Corrosive Construction**
- **Programmable Power Kinematics**
- **Intuitive Touch-Screen Menu-Driven Operator Interface**
- **Fully Programmable Ramp-Up & Ramp-Down Speeds**
- **Fully Programmable Ramp-Up & Ramp-Down Pressure**
- **Minimized Axial-Radial Platen Run-Out for Greater Accuracy**



System Benefits: Model 20G

- A dedicated Processing System for 18” to 20” diameter plates that features fully programmable operation
- Very attractive ergonomics well-suited to various mfg. sites
- Spare Parts: Equipment design normally uses standard components for fast access & reduced costs concerning spare/replacement parts
- Durable, non-corrosive construction for long service-life
- Affordable: System is competitively priced and due to its’ modular design focused on retrofit capability, both the up-front costs and future up-dating costs are streamlined
- Value: Long service life, combined with modular expansion design, translates to a viable production floor tool for several generations
- Your Process: Modular design allows for optimized configuration
- Modular design, combined with physical & technical expandability, allows for easy implementation of optional accessory retrofits
- A compact foot-print allows for multiple units in limited spaces
- Modern updated features facilitate upgrades & reduce utility costs

Model 20G Machine Detail

- **High H.P., High Torque Main Drive**
- **Large, Over-Sized, Main Drive Roller Bearing provides very tight axial and radial run-out levels**
- **All pneumatic systems independently programmable**
- **All motorized and pneumatic functions feature ramp-up/ramp-down & start-stop independent programming**
- **Pneumatic Calibration is Standard**
- **Down-Force Range: 10-150 lbs.**
- **Work Station Speeds: 5-120 RPM (Using Optional Direct Drive)**
- **Platen Drive: 5-250 RPM**

20G Equipment Requirements

- **5 HP Main Drive Motor**
- **0.5 HP Direct Drive Head Drive Motors**
- **All Drive Motors 230V, 3P**
- **Required Operating Voltage: 200-260V, 3P, 50-60 Hz**
- **Air Pressure Requirement: 60 Psi, very clean and dry air is recommended**
- **Easy Access Side Panels for Fast, Effective Maintenance & Repair Operations. Smaller open machine perimeter required.**

Model 20G Processing

Controls & Programming


Programmable PLC Touch-Screen



Operator's Control Panel

- Features:
 - Intuitive & Easy to Use
 - Adjustable Angle for Ergonomic Viewing
 - Touch-Screen Interface
 - Manual/Automatic Processing Selection
 - Process Interrupt Feature
 - Administrative Lock-Out Option
 - Menu-Driven Programmability
 - Can Interface with Optional Ethernet Networking
 - Access to Optional Data Acquisition Software (DAS) & Down-Loaded Report Files

Model 20G Touch-Screen Detail

AUTO MODE	FORCE	SPEED	TIME		ZERO
	LBS	RPM	MIN	SEC	AUX
STEP 1	0	0	0	0	OFF
STEP 2	0	0	0	0	OFF
STEP 3	0	0	0	0	OFF
STEP 4	0	0	0	0	OFF
STATION 1	OFF	SAVE RECIPE	0	0	TOTAL CYCLE TIME
STATION 2	OFF		0	0	TOTAL TIME REMAINING
AUTO DRESSING	OFF		GAP LOAD	OFF	
	SET		TABLE	AUTO	
09:40:20 17-FEB-06			PUMP	OFF	
MANUAL MODE	MENU		AUX	PUMP	

Programmable System Control Features

- **Independent Programming of Platen Drive Parameters including Ramp-Up & Ramp-Down, Speed Intervals, Direction and Seamless Platen Drive Entry/Exit into Process Cycle**
- **Independent Programming of Each Work Station Pressure Parameter including Ramp-Up & Ramp-Down, Delay, Pressure Intervals and Seamless Entry/Exit into Process Cycle**
- **Independent Programming of Plate Conditioning Station Pressure Parameter including Ramp-Up & Ramp-Down, Delay, Pressure Intervals and Seamless Entry/Exit into Process Cycle**
- **Pneumatically-Controlled Safety Enclosure Interface with System Operations**
- **Pneumatically-Controlled Powered Table Interface with System Operations**
- **Multi-Coolant Pump Integration into System Operations**
- **Optional Rinsing System Integration into System Operations**
- **Auxiliary Component Integration into System Operations**

System Program Kinematics/Variables

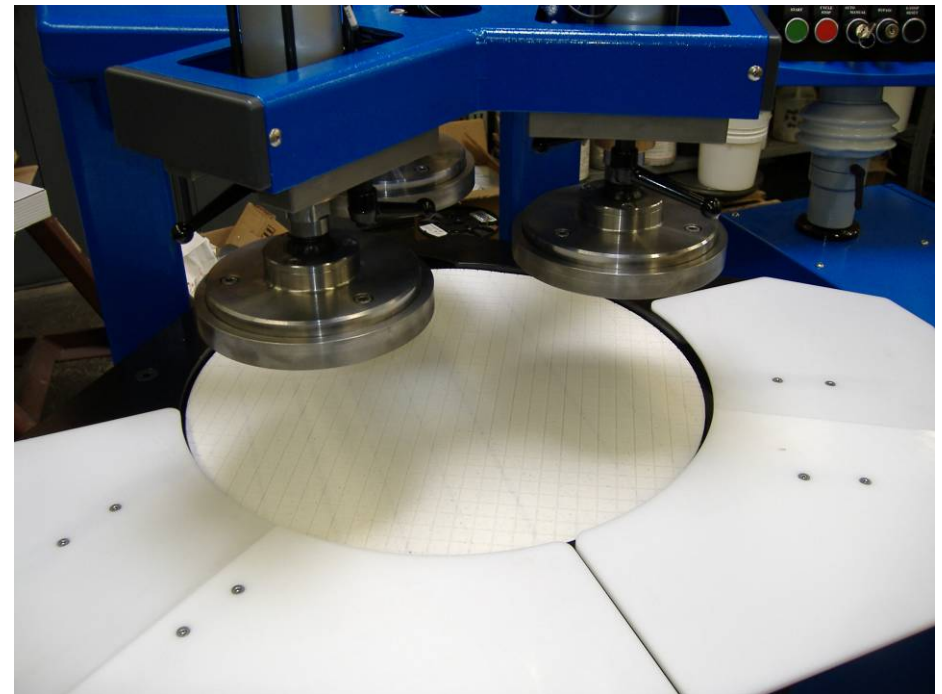
	Work Stations	Platen Drive	Powered Table
Variable Speed Drive		X	
Slow Start		X	
Slow Stop		X	
Multi-Stage Speed Ramping		X	
Change Direction, CW/CCW		X	
Variable Pressure Settings	X		X
Pressure Ramp-Up/Ramp-Down	X		
Multi-Stage Pressure Ramping	X		
Pressure Delay	X		
Seamless Cycle Entry/Exit Feature	X	X	
Programmable Vertical Table Motion			X
Programmable Horizontal Table Motion			X
Safety Enclosure/Table Motion Integration			X

Model 20G Fine-Grinder

Operational Accessories & Options

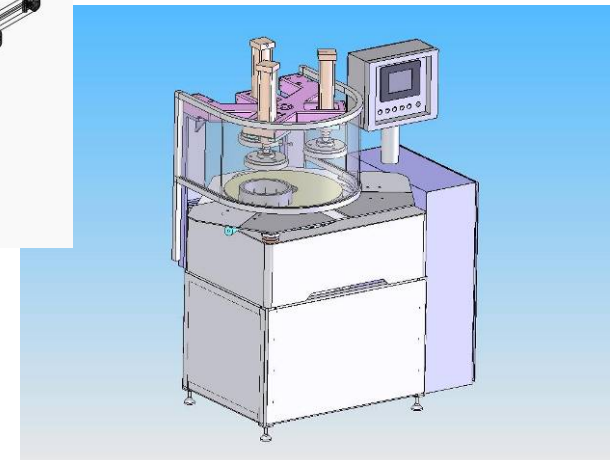
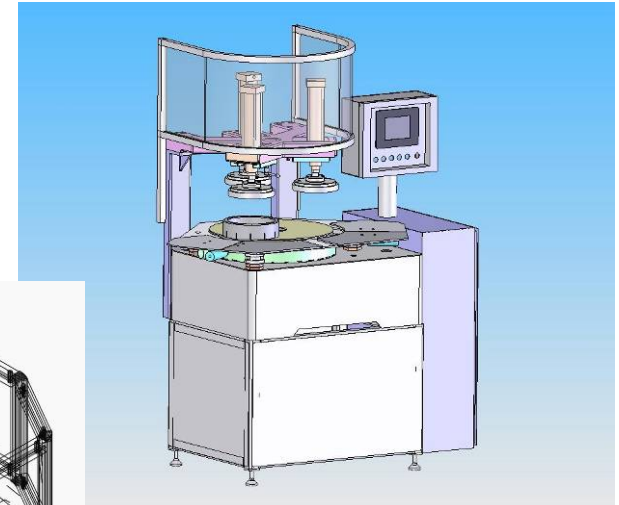
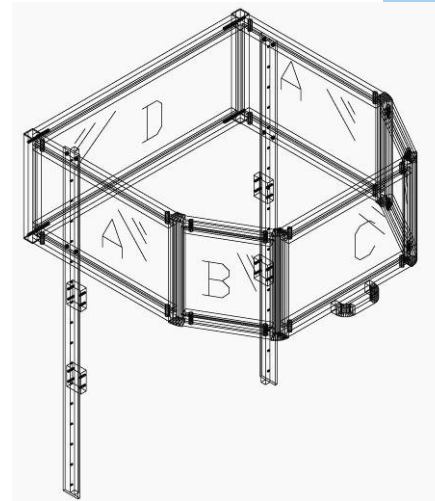
Powered Table: Model 20G

- **Pneumatically assisted worktable available in ESD rated plastic**
- **Worktable traverses both vertically and horizontally**
- **Table can function as a splash-shield, guard or plate handling device (or all 3)**
- **Table motions are completely programmable**



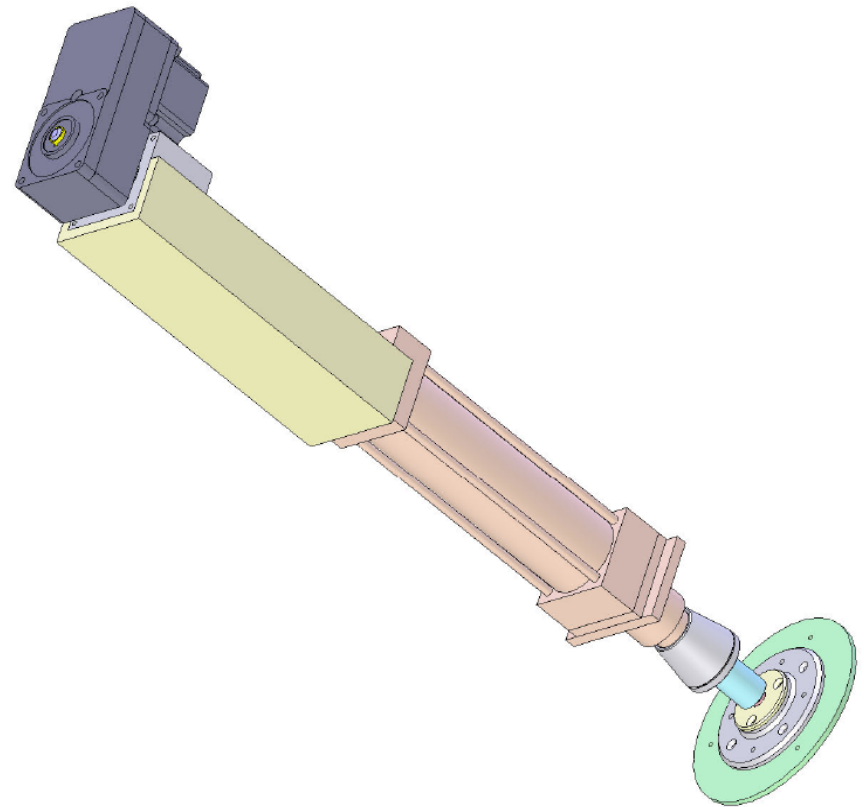
Model 20G Safety Enclosure

- **See-Thru Enclosure lifts as a complete assembly and allows access to the entire working area for ease of plate removal and thorough cleaning**
- **Enclosure lift is assisted pneumatically for ease of operation**
- **Enclosure can be fitted with ventilation and lighting**
- **Panels can be easily removed for cleaning or replacement**



Optional Motorized Pressure Plate

- Direct drive system
- Motorized drive integrated directly into the pneumatic system
- Variable speed, direction
- Integrated into PLC or CNC system for true programmability
- Takes-up no additional space in work area
- Ensures true rotational speed and direction is directly applied to work
- Ramp-up/Ramp-down of both Pressure and Speed for Optimized Kinematics



Optional Data Acquisition System

- **The Data Acquisition System (DAS) Allows the Manufacturing Staff to Monitor the Separate Spindle Motor Speeds, Independent Current Draw (Load) and the Independent Pressure Applied to Each Work Station, Along with a Date Stamp**
- **The Above Information is Also Saved to a File Which can be Retrieved via a USB Portable Memory Device or Forwarded to Network via Optional Ethernet**
- **Information Configured & Stored in a Graphical Interface for each Plate or Continuous Operations**
- **This Information can Aid in Determining Process Optimization Parameters as well as Process and Operator Repeatability**