



# Unison Corporation

## MODEL 1200

# PunchMaster



## CNC Profile Grinder

**Designers and Builders of DedTru, TruFlute and  
Other Precision Grinding Equipment.**

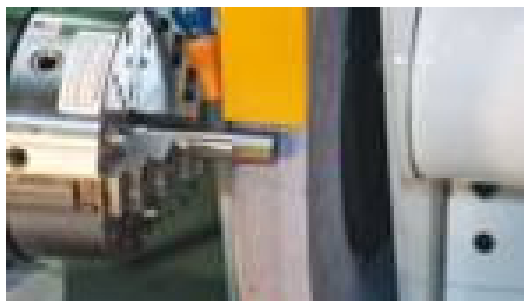
## Model 1200

### PunchMaster CNC Profile Grinder

The Model 1200 is an extremely rigid grinding system for round, non-round, standard and non-standard O.D. shapes and contours without the use of master cams. The PunchMaster utilizes the same technology already employed in our Model 1100 Profile Grinder but with many significant enhancements, such as:

- ▶ A new look which integrates the operator's control station into the machine's upper enclosure. The design of the new Model 1200 is more compact and requires less operating floor space.
- ▶ All axes now have AC Digital Servomotors and Drive Amplifiers. A new stronger A-Axis workhead servomotor provides for almost 50% increase in power so you can grind significantly larger parts than the previous Model 1100
- ▶ The PunchMaster does not have a Q-Axis Rocker Assembly resulting in less moving parts, which overtime, means less machine downtime.
- ▶ Both the X and Y axes are outfitted with frictionless linear slides which provides for more stable grind harmonics resulting in increased part quality and wheel life. Linear rails provide added rigidity, which improves the part finish and reduces the dwell time required to complete a part.
- ▶ The PunchMaster is equipped with our proprietary software package which is user friendly and allows for the capability of storing up to 10,000 part programmes as well as an additional 10,000 wheel packs. The new software allows you to grind up to 100 different steps in each part cycle with 100 different shapes per grind cycle with unlimited shape deflection.

These improvements result in remarkably faster cycle times from part-to-part and greater machine reliability.



# New Unison Control

Equipped with the New Unison Parametric Control (UPC) running the Intel Pentium™ Processor, the Model 1200 is capable of meeting the most demanding grinding applications, the parametric (fill-in-the-blank) system requires no previous programming languages. All data can be input, saved and recalled via console keypad. The keypad and video display is conveniently located on a swivel base at the operator's work level. The 4-axis microcomputer is capable of storing and recalling up to 10,000 different part programs.

The machine control has been designed to offer set-up of various shapes and sizes. Work piece geometry can be defined using over 40 predefined geometric families built into the control. In addition, to the standard shapes available through the control, the Model 1100 is capable of input from standard CAD systems which support the DXF, format for file information exchange. Geometry information defined via CAD systems is downloaded to 3.5" microfloppy disk and uploaded to the control of the Model 1200. The control unit has the capability to process shape information via a data table registering every tenth of a degree or a rise or falls taken from the part base circle.

## **DRESS CYCLES**

The Model 1200 also provides the user with various dress cycles:

- **Skip Dress**
- **Dress Before Finish Grind**
- **Multiple Dresses**
- **Profile Dress**
- **Continuous Dress**

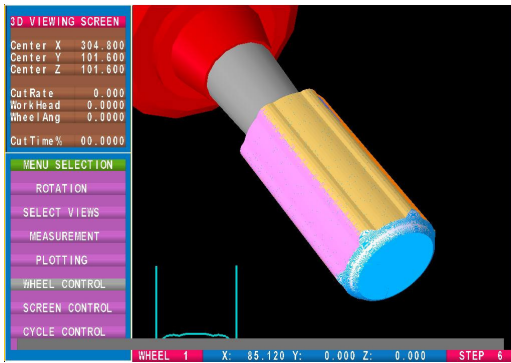
## **SELF DIAGNOSTIC SOFTWARE**

Provided, as standard with the Model 1200 is self-diagnostic software. The control continuously monitors critical areas of the machine and prompts operator's attention to faults when detected. Machine cycling is prohibited until faults have been corrected and reset.

## **AC DRIVE PACKAGE**

The New Unison Model 1200 is equipped with reliable AC servo drives and amplifiers. AC servo drives provide high reliability, coupled with accelerated speed to reduce overall "part-to-part" cycle time.

## “GEOMETRAL” SOFTWARE



The latest version of our software provides the highest level of flexibility and offers a new definition in parametric programming. The evolution of our software development has reached a new level of sophistication permitting the operator, through CAD/CAM capabilities to actually see the end view of the part shape on the machine control monitor before any grinding begins. The operator knows exactly what the machine will be doing before it does it. We call this feature “Geometral”.

Cam shapes and sizes can be produced on the control’s monitor with minimum effort. Workhead and backslide movements are optimized to achieve the fastest cycle times possible when grinding from standard bar stock materials for prefabricated blanks. Depending on the shape to be ground, this feature will reduce cycle time as much as 40% and significantly improve surface finish.

## MACHINE SPECIFICATIONS

### Workhead

Maximum Travel, Unlimited Rotational, A-Axis  
Maximum RPM, 500 RPM  
Center Height, 5” (127mm)

### Grinding Spindle Slide

Maximum Travel  
13” (330mm) Y-Axis

### Front Table Slide

Maximum Travel  
Unlimited Rotational X-Axis

### Drives

AC Digital Servomotors & Drive Amplifiers

### Maximum Part Diameter

10” (254mm)

### Maximum Part Length

20” (508mm) Between Centers

### Grinding Spindle

Maximum Wheel Diameter:  
18” (457mm) Optional 20” (508mm)

### Minimum Wheel Diameter

15” (381mm)

### Spindle RPM

1250 RPM (6000 SFM@18” dia)  
(Optional Variable Speed available)

### Spindle Motor

10 HP

### Tooling Options

5C Collet  
V-Block Faceplate  
Precision 3-Jaw Chuck (Mechanical)  
Hydra-Lock Chuck (Hydraulic)  
Pneumatic Chucking Systems



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