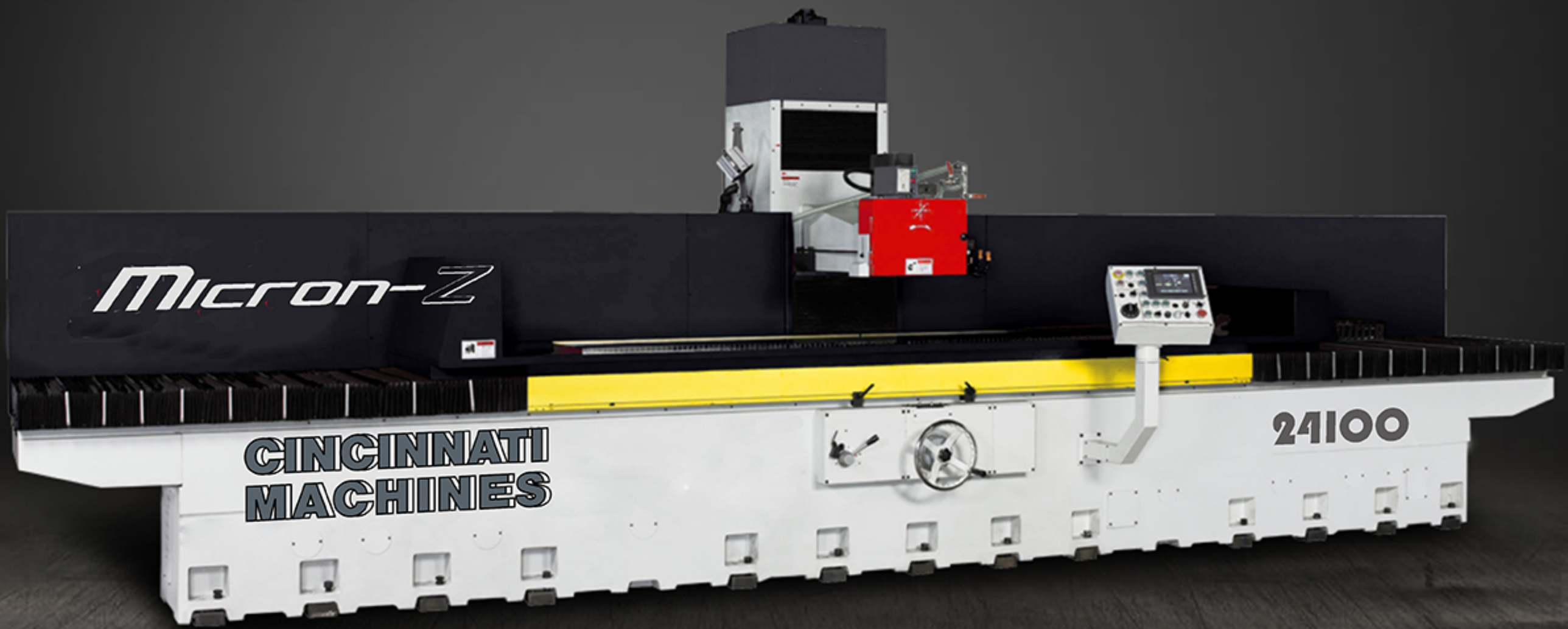
CINCINNATI MACHINES

Micron-Z

ULTRA PRECISION SURFACE GRINDING CENTER



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ULTRA-PRECISION SURFACE GRINDING CENTER

Micron-Z provides ultra-accurate cutting-edge solutions to your surface grinding needs by combining time tested and proven design criteria with modern CAD manufacturing methods and technology. As an example, Micron-Z features a minimum downfeed increment of 0.000040", or a micron. From there we insure machine stabilty with rock solid meehanite casting and machine temperature management, including machine oils etc.

Saddle Type Structure

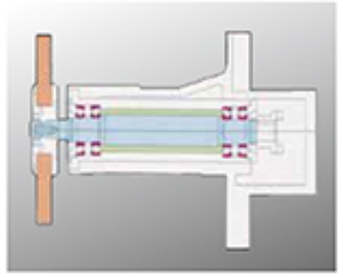
The 1224 and 1632 size machines feature the traveling saddle design, and the saddle travels on double V-ways for maximum stability and precision. The base base is a rock solid box style heavily ribbed meehanite casting.

Column Type Integral "T" Shape Base

The balance of machine sizes feature the traveling column design, and the column travels on extra wide and deep doubleV-ways for maximum stability and precision. The tempered and stress relieved T-base is a rock solid heavily ribbed meehanite casting. The base is 2.5 times as wide as the machine table is long, so the table and parts are always fully supprted for maximum stability and precision.

Grinding Wheel Spindl

Micron-Z saddle type machines feature a grease packed spindle cartridge that insures high accuracy, and a long life with low maintenance requirements. These spindle cartridges are fitted with multiple P4 grade precision angular contact ball bearings for continuous precision operation, and fully tested and proven to meet a runout specification of 0.00080". These spindles are designed specifically for medium part size and high accuracy grinding.



Micron-Z column type machines feature a combination hydrostatic and hydro-dynamic. The spindle rides on a high pressure oil film system and precision heavier duty large part grinding, and is fully tested and proven to meet a runout specification of 0.00090" . The high pressure oil system has safeguards to shut the spindle down in case oil pressure is lost.

Hydraulic System

The hydraulic system is temperature controlled to insure oils do not distort or change any machine components as they flow through the machine.

Auto Lubrication System

Micron-Z includes an automatic temperature controlled, and filtered lubrication system to insure long life and maximum stability and accuracy.

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LCD Touch Screen Menu Driven PLC Control

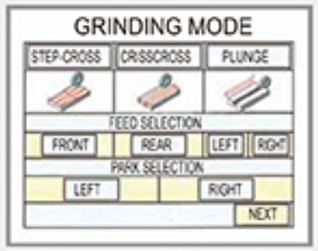
Control Panel

The machine is equipped with a PLC control along with a color touch screen and a user-friendly interface.
The operator can simply set up the grinding amount and start a new grinding cycle.
The last grinding cycle setting will be saved automatically and can be easily repeated by simply pressing the "Cycle Start" button.

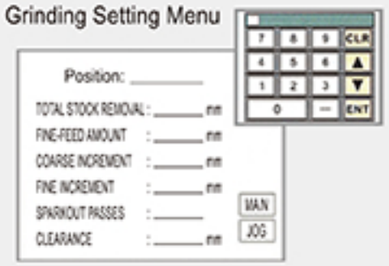
MPG Setting :

The operator can use the MPG to manually set up the Y axis feedrate.

Main Menu



Grinding Setting Menu

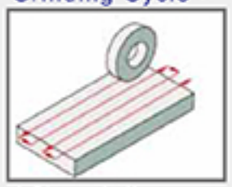


Data Input Keyboard

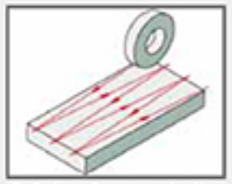
2-Axis Cross-feed set up

Crossfeed can be pre-set by choosing
(1)Front/rear axis to feed from both sides or one side of the work table.
(2)The grinding wheel spindle to grind from both sides or either sides of the worktable.
(3)The worktable to feed from left to right side
Optional auto-dressing attachment is available for automatic grinding function.

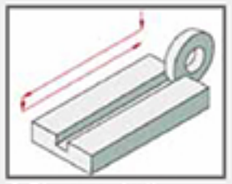
Grinding Cycle :



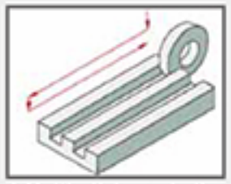
1.Step grinding



2.Criss-Cross grinding



3.Plunge grinding



4.Multi-slicing grinding (opt.)

CNC Controls with i-GRIND Conversational

Now available with

i-GRIND

Conversational

Programming

CNC Control System

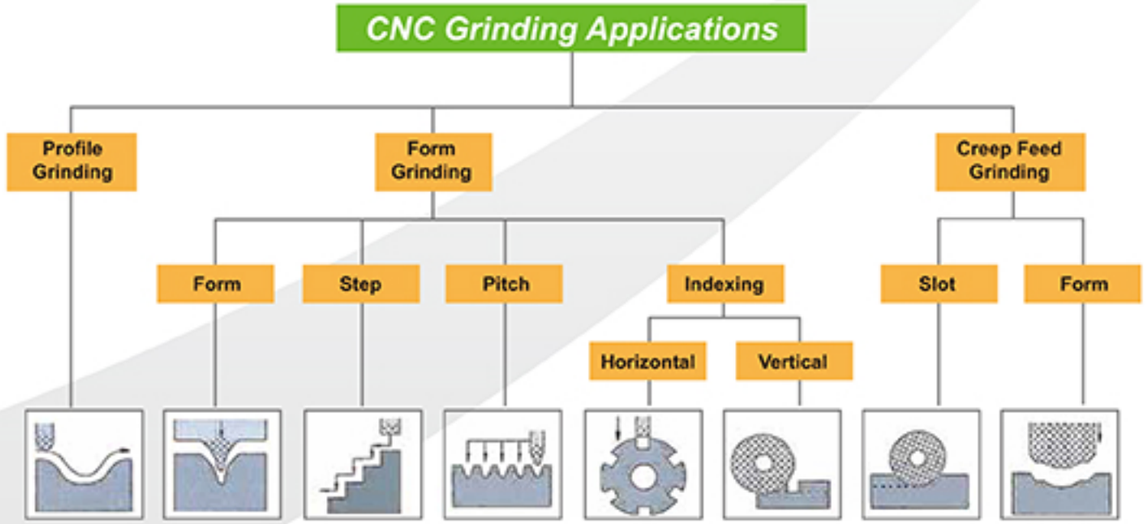
Auto compensation dressing attachment (opt.)

The CNC series uses Fanuc control system that is capable of performing continuous grinding wheel dressing, auto compensation and other fully-automatic processes. Highly precise grinding procedure can be achieved by using an optional digital readout feedback system.

The system can be set up with special accessories like auto grinding wheel balancing device, auto dressing device and auto protection device when hit or incorrect operation. Diamond dresser for grinding wheel form dressing is also available for this machine.

Fully automatic grinding wheel set up program offers fast and continuous dressing and these functions provide precise accuracy and dressing efficiency.

CNC Grinding Applications



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Multiple Grinding Functions

Choose different special accessories with Micron-Z surface grinders for multiple grinding functions. For instance, choose to equip a diamond dressing attachment and a rotary worktable to enable auto-surface & rotary grinding with auto dressing function (For CNC models).

Standard Accessories

- Standard grinding wheel with flange
- Work light
- Leveling screws with blocks
- Balancing stand with arbor
- Wheel extractor
- Operation manual with part list
- Tools and tool box
- Diamond dresser with holder
- Splash guard
- Standard coolant tank

Optional Accessories

- Permanent magnetic chuck
- Tilting permanent magnetic chuck
- Coolant and dust collector
- Dust collector
- Hydraulic parallel dressing attachment
- Automatic dressing attachment with compensation system
- Inverter for wheelhead spindle
- Auto demagnetizer
- Manual demagnetizer
- Digital scale
- Full-encloser
- Oil and mist separator
- Spare wheel flange (5")
- Coolant system with magnetic separator and paper filter
- Coolant system with magnetic separator
- Air Conditioner for electrical cabinet
- Various Operating Voltages
- Rotary table
- Roller type dressing attachment
- Diamond wheel dressing attachment
- Demagnetizer (Standard)
- Demagnetizer (Hi-Power)
- Electromagnetic chuck (fine pole)
- Angle dressing attachment
- Radius dressing attachment
- Parallel dressing attachment (manual)
- Scope type dressing attachment
- Dual sides dressing attachment
- Roller type balancing stand

SPECIFICATIONS

UNIT:mm

Description /Unit/Mode			1224	1632	2040	2060	2448	2460	2480
General Capacity	Table size	mm	300 x 600	400 x 800	500 x 1000	500 x 1500	600 x 1200	600 x 1500	600 x 2000
	Max. grinding length	mm	600	850	1050	1550	1250	1550	2050
	Max. grinding width	mm	300	400	500	510	610	610	610
	Distance from table surface to spindle centerline	mm	550	550	700	700	700	700	700
	Standard magnetic chuck size	mm	300 x 600	400 x 800	500 x 1000	500 x 1500	600 x 1200	600 x 1500	600 x 2000
	Saddle/Column moving	per	Saddle -Type	Saddle-Type	Column-Type	Column-Type	Column-Type	Column-Type	Column-Type
Longitudinal Movement X-Axis	Table speed (infinitely Variable)	mm	3 - 25	3 - 25	3 - 25	3 - 25	3 - 25	3 - 25	3 - 25
Cross Movement Z-Axis	Manual travel	m/min	370	470	560	560	660	660	660
	Rapid travel, approx.	mm	0.5 - 1	0.5 - 1	0.5 - 1	0.5 - 1	0.5 - 1	0.5 - 1	0.5 - 1
	Automatic increment feeds	mm	0.5 - 8	0.5 - 8	2 - 10	2 - 10	2 - 10	2 - 10	2 - 10
	Handwheel per graduation	mm	0.02	0.02	0.02	0.02	0.001/0.01/0.1(MPG)	0.001/0.01/0.1(MPG)	0.001/0.01/0.1(MPG)
	Handwheel per revolution	mm	5	5	5	5	0.1/1/10(MPG)	0.1/1/10(MPG)	0.1/1/10(MPG)
Vertical Downfeed Y-Axis	Rapid travel	m/min	190	190	285	285	280	280	280
	Automatic downfeed	mm	0.001 - 0.03	0.001 - 0.03	0.001 - 0.03	0.001 - 0.03	0.001 - 0.03	0.001 - 0.03	0.001 - 0.03
	Handwheel per graduation	mm	0.01/0.1/1(MPG)	0.01/0.1/1(MPG)	0.01/0.1/1(MPG)	0.01/0.1/1(MPG)	0.01/0.1/1(MPG)	0.01/0.1/1(MPG)	0.01/0.1/1(MPG)
	Handwheel per revolution	mm	0.1/1/10(MPG)	0.1/1/10(MPG)	0.1/1/10(MPG)	0.1/1/10(MPG)	0.1/1/10(MPG)	0.1/1/10(MPG)	0.1/1/10(MPG)
Grinding Wheel	Wheel size (OD x W x ID)	mm	Ø355x50xØ127	Ø355x50xØ127	Ø405x50xØ127	Ø405x50xØ127	Ø405x50xØ127	Ø405x50xØ127	Ø405x50xØ127
	Spindle speed (60HZ)	rpm	1800	1800	1800	1800	1800	1800	1800
Motor	Spindle motor	HP	5	5	10	10	10	10	10
	Crossfeed Z axis motor	Kw	0.2	0.2	0.5	0.5	1	1	1
	Elevating Y axis motor	Kw	1	1	1	1	3	3	3
	Hydraulic motor	HP	2	2	3	5	5	5	5
Weight	Net, approx.	kg	3000	3900	4700	6560	6100	8800	9850
	Gross, approx.	kg	3200	4200	5100	7500	6600	9800	10650
Packing Dimensions (LxWxH)		mm	2850x2250x2490	3060x2260x2550	3500x2280x2550	4860x2250x2250	3060x2240x2070	5180 x2280 x25502	6290 x 2280 x 2550

NC:PLC Control servo motor
CNC: CNC control servo motor (2 axes/3 axes)

■We reserves the right to change or improve specifications without notice.

SPECIFICATIONS

UNIT:mm

Description /Unit/Mode			24100	24120	3248	3280	3260	32100	32120
General Capacity	Table size	mm	600 x 2500	600 x 3000	810x1350	810x2150	810x1650	810x2650	810x3150
	Max. grinding length	mm	2550	3050	1250	2050	1550	2550	3050
	Max. grinding width	mm	610	610	810	810	810	810	810
	Distance from table surface to spindle centerline	mm	700	700	800 (Std.) / 1000 (Opt.)				
	Standard magnetic chuck size	mm	600 x 2500	600 x 3000	800 x 1200	800 x 2000	800 x 1500	800 x2500	800 x 3000
	Saddle/Column moving	per	Column-Type	Column-Type	Column-Type	Column-Type	Column-Type	Column-Type	Column -type
Longitudinal Movement X-Axis	Table speed (infinitely Variable)	mm	3 - 25	3 - 25	3 - 25	3 - 25	3 - 25	3 - 25	3 - 25
Cross Movement Z-Axis	Manual travel	m/min	660	660	860	860	860	860	860
	Rapid travel, approx.	mm	0.5 - 1	0.5 - 1	0.5 - 1.5	0.5 - 1.5	0.5 - 1.5	0.5 - 1.5	0.5 - 1.5
	Automatic increment feeds	mm	2 - 10	2 - 10	1 - 15	1 - 15	1 - 15	1 - 15	1 - 15
	Handwheel per graduation	mm	0.001/0.01/0.1(MPG)	0.001/0.01/0.1(MPG)	0.02 (Opt.)	0.02 (Opt.)	0.02 (Opt.)	0.02 (Opt.)	0.02 (Opt.)
	Handwheel per revolution	mm	0.1/1/10(MPG)	0.1/1/10(MPG)	5	5	5	5	5
Vertical Downfeed Y-Axis	Rapid travel	m/min	280	280	280	280	280	280	280
	Automatic downfeed	mm	0.001 - 0.03	0.001 - 0.03	0.001 - 0.05	0.001 - 0.05	0.001 - 0.05	0.001 - 0.05	0.001 - 0.05
	Handwheel per graduation	mm	0.01/0.1/1(MPG)	0.01/0.1/1(MPG)	0.005	0.005	0.005	0.005	0.005
	Handwheel per revolution	mm	0.1/1/10 (MPG)	0.1/1/10(MPG)	0.5	0.5	0.5	0.5	0.5
Grinding Wheel	Wheel size (OD x W x ID)	mm	Ø405x50xØ127	Ø405x50xØ127	Ø510 x 50 x Ø127 (Std.) / Ø510 x 75 xØ127 (Opt.)				
	Spindle speed (60HZ)	rpm	1800	1800	1100	1100	1100	1100	1100
Motor	Spindle motor	HP	10	10	15 (Std.) / 18 (Opt.) (6 Poles)				
	Crossfeed Z axis motor	Kw	1	1	500W	500W	500W	500W	500W
	Elevating Y axis motor	Kw	3	3	1	1	1	1	1
	Hydraulic motor	HP	5	5	7.5	10	7.5	10	10
Weight	Net, approx.	kg	10900	11990	7900	10100	8700	11500	12700
	Gross, approx.	kg	11700	12800	7400	9500	8200	11000	12000
Packing Dimensions (LxWxH)		mm	7600 x 2280 x 2550	7700 x 2650 x 2550	40HQ	40HQ	40HQ	40HQ	40HQ

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