

## ROLL CROWN GRINDING

The operator may specify crown height and length of the roll as well as the desired curve through the program commands. Then the computer will calculate the continuous feed path of the grinding wheel. As a result, smooth crown surface can be quickly accomplished. To meet working requirements, various curve types can be extended, such as sine curve, cosine curve, cvc curve, upc curve and experience curve, etc.

# WORLD CLASS

## HEAVY DUTY CNC CYLINDRICAL & ROLL GRINDERS

### CINCINNATI MACHINES

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### CINCINNATI MACHINES



CE    ISO-9001





**RIGOROUS THOROUGH  
QUALITY CONTROL TO  
ISO 9001-2000  
QUALITY STANDARDS  
INSURES CONSISTENT  
PRECISION PERFORMANCE**



CONSISTENT PRECISION QUALITY PERFORMANCE ASSURED



State-of-the-Art Precision Leveling



Precision Laser Alignment



World Class Heavy-Duty Precision Meehanite Castings



Grinding Accuracies  
0.000040" - 0.000080"  
(0.001 - 0.002mm)



### PLC CONTROL EASY TO OPERATE

The PT Series Cylindrical / Roll Grinder is designed to meet the requirements of high accuracy and extra-fine finishing of barrel and shaft grinding. Equipped with a PLC control, the PT series permits the operator to learn operations quickly.

#### MODEL IDENTIFICATION

# PT 85 - 40L - S

Traveling Table Type (PLC Module)    Max Swing: PT40: Ø400 mm PT60: Ø600 mm PT85: Ø850 mm    Distance Between Centers 40L: 4000 mm    S: Standard Roller H: Heavy Roller



PT-85-30L shown with optional Full Enclosure



MODEL	UNIT	PT40	PT60	PT85
Max. swing over bed	Ømm	400	600	850
Max. distance between centers	M	1.0/1.5/2.0/2.5/3.0	1.0/1.5/2.0/2.5/3.0/3.5/4.0	1.5/2.0/2.5/3.0/3.5/4.0/5.0/6.0
Max. weight of workpiece (with center)	KG	360	1200	2400
Max. weight of workpiece (with steady rests)	KG	600	3000	4000
Max. diameter of grinding	Ømm	Ø400	Ø600	Ø850
Grinding wheel speed (variable)	rpm	600~1600	600~1100	500~1000
Spindle speed (variable)	rpm	20~200	10~100	6~60
Spindle load (single side)	KG(mm)	50 (150)	100 (150)	200 (150)
Max. right / left travel	mm	1100~3100	1200~4200	1200~4200



#### NC CONTROL

- The NC control in combination with PLC interface provides convenient operation at a satisfactory price.



#### NON-SWIVEL WHEELHEAD

- The wheel spindle is supported by a combination of hydrodynamic and hydrostatic bearings for increased stability and feed accuracy.
- The wheel running speed is variable.



#### WORKHEAD

- Non-swivel structure helps upgrade rigidity.
- The workhead spindle is driven by belts to eliminate chattering issues. Crankshaft Grinder



## GENERAL PURPOSE SMALL TO MEDIUM SIZE CNC OD/(ID) GRINDER



FANUC CONTROL

SIEMENS CONTROL

GENERAL  
PURPOSE  
WITH  
OPTIONAL  
ID GRINDING  
HEAD

### MODEL IDENTIFICATION

## TT85-50L-C2-S-B

Traveling  
Table Type

Max Swing:  
TT40: Ø400 mm  
TT60: Ø600 mm  
TT85: Ø850 mm  
TT100: Ø1000 mm

Distance Between  
Centers  
50L: 5000 mm

C1: General Type  
C2: Crown Type

Back-Mounted  
Control Box

S: Standard Roller  
H: Heavy Roller



### RIGID WHEELHEAD

- The wheel spindle is supported by a combination of hydrodynamic and hydrostatic bearings for increased stability and accuracy.
- The grinding wheel feed is driven by a servo motor.



### HEADSTOCK

- Non-swivel structure helps upgrade rigidity.
- The workhead spindle is driven by belts to insure smooth precision grinds.



### TAILSTOCK

- A wheel dresser is fitted on the tailstock for dressing wheel according to programmable setting.
- The tailstock features air floating for reducing friction when it is moved.



### EASY CONVERSION FOR I.D / O.D GRINDING SWIVELING WHEELHEAD

- Swiveling cylindrical grinding to internal grinding is quickly accomplished by simply swiveling the wheelhead.
- The programmable workpiece rotating to improve the grinding efficiency and the concentricity between the external & internal grinding.

MODEL	UNIT	TT40	TT60	TT85	TT100
Max. Swing Over Bed	Ømm	400 (15.7")	600 (23.6")	850 (33.4")	1000 (39.3")
Max. Distance Between Centers	M	1, 2, 3	1, 3, 4 ~ 6	2, 3, 4 ~ 8	2, 3, 4 ~ 8
Max. Weight of Workpiece (With Center)	KG	S type: 360 H type: 600	S type: 1200 H type: 3000	S type: 2400 H type: 4000	S type: 2400 H type: 6000
Max. Weight of Workpiece (With Steady Rest)	KG	S type: 360 H type: 1200	S type: 5000 H type: 6000	8000	10000
Max. Diameter of Crown	Ømm		C1 type: 0 / C2 type: 0.05 ~ 10		



### GENERAL PURPOSE SMALL TO MEDIUM SIZE CNC OD/(ID) GRINDER (continued)



#### APPLICABLE INDUSTRIES

- Steel industry
- Roll machining industry
- Manufacturing and machining industry

#### Advanced Features to Create the Ultimate Accuracy Your No. 1 Choice in Small and Medium Workpiece Grinding

The TT Series CNC Cylindrical/ Roll Grinder is user friendly.

The TT Series is very easy to operate. Simply set the parameters and the machine will perform automatic grinding until the desired accuracy is achieved.



#### RIGID WHEELHEAD

- The wheel spindle is supported by a combination of hydrodynamic and hydrostatic bearings for increased stability and smooth operation.
- The grinding wheel feed is driven by a servo motor.

#### HEADSTOCK

- Non-swivel structure helps insure rigidity.
- The headstock spindle is driven by belts to insure smooth precision grinds.

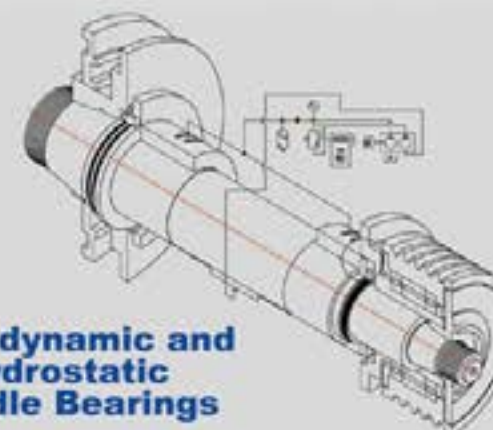
#### TAILSTOCK

- The grinding wheel dresser is fitted to the tailstock to provide maximum operator convenience.
- The tailstock features air flotation assist when moving it.

#### CNC CONTROL

The CNC control system in combination with PLC interface provides added convenience of operation at a very affordable price.

#### Hydrodynamic and Hydrostatic Spindle Bearings



#### GRINDING ACCURACY

- Roundness: 0.001 ~ 0.003 mm (0.00004" - 0.00011")
- Concentricity: 0.001 ~ 0.003 mm (0.00004" - 0.00011")
- Cylindricity: 0.001 ~ 0.003 mm/m (0.00004" - 0.00011")
- Profile accuracy:  $\pm 0.002 \sim 0.005$  mm/m (0.00008" - 0.00019")
- Surface roughness:  $Ra \leq 0.3 \mu m$



## Swing Over Bed 1000mm (39.3") - 3000mm (118")

**DISTANCE BETWEEN CENTERS: 16M (630")**  
**DESIGNED FOR EXTRA LARGE ROLL GRINDING**

The TH Series Heavy-Duty CNC Roll Grinder is a true traditional traveling-head style machine that is unexcelled in the world of roll grinding. Whether it be steel, paper, rubber, aluminum, or other exotic materials, Cincinnati Machines can provide the style and size machine that your require. And we can provide machines with grinding capacities from 1000mm (39.3") up to 3000mm (118") diameter grinding capacity, 16M (630") between centers, and weight capacities exceeding 210 tons (460,000 lbs).

Each Cincinnati Machines CNC Heavy-Duty Cylindrical or Roll Grinder is backed up by over 50 years, and 4000 grinding machines experience. These machines are used in in steel, paper, rubber, and aluminum mills all over the world.

**EXCELLENCE - PERFORMANCE - QUALITY**  
**PRECISION - PRODUCTIVITY**



### APPLICABLE INDUSTRIES

- Steel industry
- Roll machining industry
- Manufacturing and machining industry
- Paper-Making Industry

### MODEL IDENTIFICATION

# TH 200 - 15 L

Traveling Wheelhead  
TH : Common Grinding  
THC: Between Centers Grinding

Max. Swing Over Bed  
TH100: Ø1000 mm  
TH125: Ø1250 mm  
TH160: Ø1600 mm  
TH200: Ø2000 mm  
TH300: Ø3000 mm  
THC160: Ø1600 mm  
THC200: Ø2000 mm

Max. Distance Between Centers  
15L: 15 m

### GRINDING ACCURACY

- Roundness: 0.002 ~ 0.005 mm (0.00004" - 0.00019")
- Concentricity: 0.002 ~ 0.005 mm (0.00004" - 0.00019")
- Cylindricity: 0.002 ~ 0.005 mm/m (0.00004" - 0.00019")
- Profile accuracy:  $\pm 0.002 \sim 0.005$  mm/m (0.00004" - 0.00019")
- Surface roughness:  $Ra \leq 0.3 \mu m$

### HEAVY DUTY PRECISION



State  
of  
the  
Art  
Technology



Up to 118" Diameter Grinding, up to 630" Centers and 460,000lb capacity

### BETWEEN CENTERS GRINDING ESPECIALLY APPLICABLE FOR ROLL MANUFACTURING

Swing Over Bed

Ø1000~Ø3000mm

DISTANCE BETWEEN CENTERS: 16M

#### MACHINE FEATURES

- Specially designed between centers grinding construction allows heavy roll to be held by two centers.
- The new roll body, **neck** and transmission parts can be ground simultaneously with just one setup.
- Custom designs are available.
- Ruggedly constructed throughout. High efficiency and accuracy.

#### APPLICABLE INDUSTRIES

- Roll manufacturing industry

State  
of  
the  
Art  
Technology

WORLD CLASS ROLL GRINDING BETWEEN CENTERS



## **CNC Orbital Crankshaft Grinder**

### **STATE - OF - THE - ART CRANKSHAFT GRINDING TECHNOLOGY**

The THOC Series Heavy-Duty CNC Crankshaft Grinder is a true Orbital grinder that brings together 50 + years grinder experience and State-of-the-Art control software technology to allow unexcelled crankshaft grinding. The large vehicle, ship, and locomotive industries will benefit from the capabilities of the THOC Crankshaft Grinder.

**EXCELLENCE - PERFORMANCE - QUALITY  
PRECISION - PRODUCTIVITY**



#### **MACHINING CAPACITY:**

- Max. Swing diameter: Ø750 mm
- Max. Length of workpiece: 6,000 mm
- Grinding wheel dia: Ø1,400 mm
- Max. Weight of workpiece: 6,000 kg



## **WORLD CLASS CRANKSHAFT GRINDING**