



PALMARY

A Total Dedication to New Technological Level

HIGH PRECISION CENTERLESS GRINDER SERIES

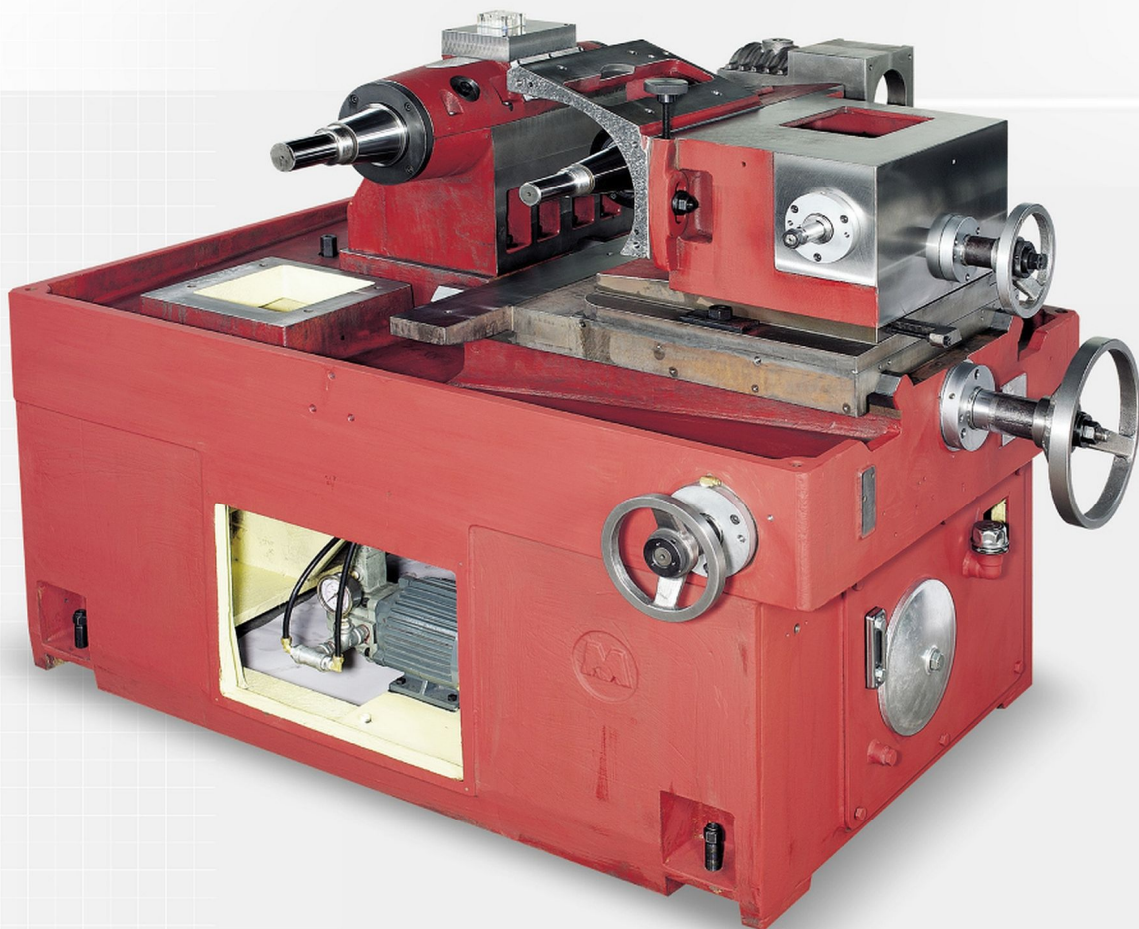


Precise, Perfect and Excellent

PALMARY Centerless Grinders

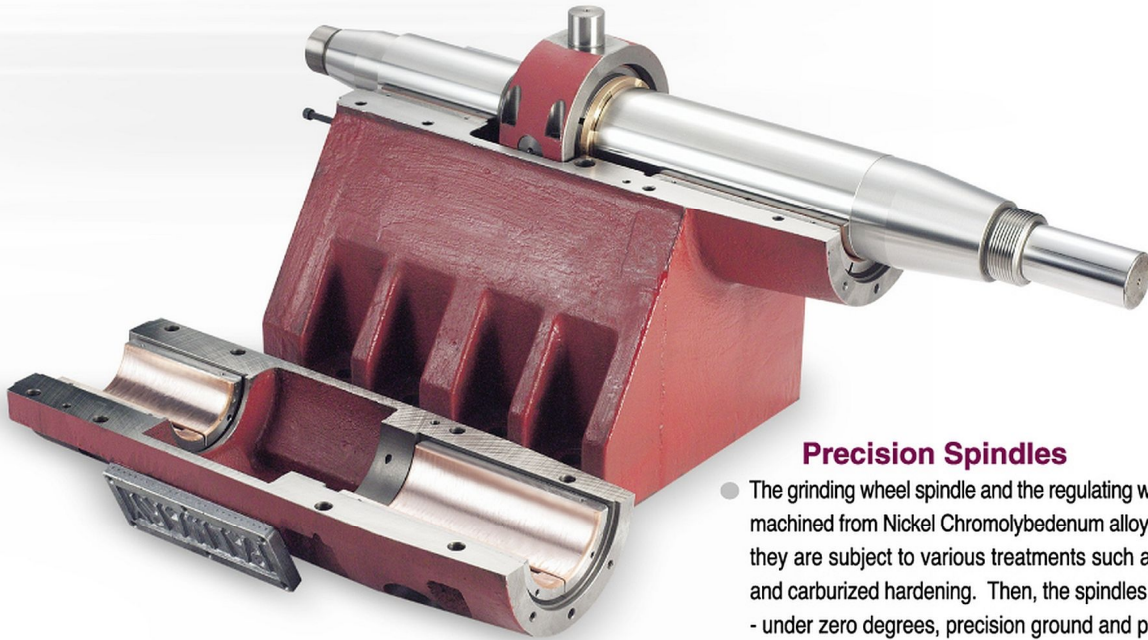
Set New Standards...

“ The concept behind PALMARY is to design and manufacture the centerless grinder that provides the best possible quality. No matter whether for machine rigidity, stability, heavy machining capability, accuracy or humanified operations, every machine fully reflects PALMARY's tradition of "Care of Every Detail". ”



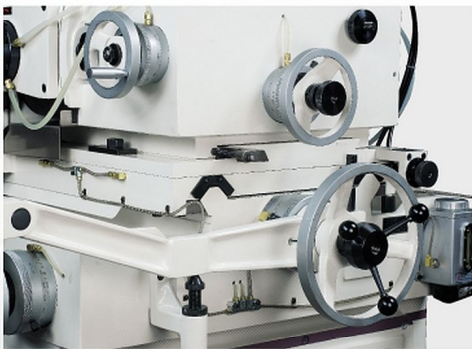
Rigid Machine Structure

- The machine structure is manufactured from high quality Meehanite cast iron, heat treated and stress relieved before machining.
- Slideways are high frequency hardened and precision ground. Maximum material stability for deformation-free and outstanding wear resistance.



Precision Spindles

- The grinding wheel spindle and the regulating wheel spindle are precision machined from Nickel Chromolybdenum alloy steel (SNCM-220). Also, they are subject to various treatments such as: normalized, tempered and carburized hardening. Then, the spindles are thru sub-zero treated - under zero degrees, precision ground and precision machined.
- The inside of spindle is tempered to hardness HRC 25°~30°, while surface hardness reaches over HRC 62. The precision ground spindle is excellent for heavy-duty machining and features powerful torque, long service life, deformation-free and maximum wear resistance.



Slide Table

- Upper slide swiveling is easy and accurate to adjust for making the machine suitable for infeed grinding. Also, it allows grinding for a varied diameter of workpieces. The Upper slide with $+5^{\circ} \sim -5^{\circ}$ swiveling allows taper grinding by using infeed grinding mode.
- With thrufeed grinding, the Upper slide provides a surface contact adjustment between the workpiece and grinding wheel. Swiveling adjustment range is $+5^{\circ} \sim -3^{\circ}$.
- Dovetailed slideway on the upper slide features smooth and accurate feeding and is lubricated by a centralized lubricator.
- The bottom slide moves on "Δ" shaped and double-wedged ways. The slideways are hardened and precision ground. They feature smooth movement and properly protected to prevent dust from entering. Micrometric feed adjustment unit is 0.001 mm to meet high accuracy requirements for all workpieces.

Example of Grinding Workpieces





PALMARY

Committed to Excellence

“ Stable, Precise, Internationally Recognized Quality

The structure of the PALMARY centerless grinder is thoroughly analyzed and designed by our R&D engineers. They conduct a deep structure analysis of the stress/strain relationship, assuring lifetime deformation-free performance. Each machine from PALMARY presents the outstanding accuracy as you have come to expect. That is why PALMARY's centerless grinders are fully recognized by worldwide customers. ”

Feed Screw

- The feed screw is manufactured from Nickel Chromolybedenum alloy steel (SNCM-4). It is also normalized, high frequency hardened treated and precision ground.
- Specially-designed adjustable nut features easy adjustment, high feeding accuracy, smooth motion and excellent wear resistance.



PALMARY Centerless Grinders Performance-Exceeding Your Expectations!

“ If you are serious about grinding accuracy and efficiency, the centerless grinders from PALMARY will meet your stringent challenges. No matter if you choose an economic model, a servo-controlled model, or NC-controlled model, each one is quality constructed throughout for delivering the operational performance that you expect. Also, you will agree with that: "This is a True Grinding Performer". ”



Automatic Unloading Equipment for Thrufed Grinding (Optional)

- Designed for automatic unloading for round tube and bar stock, this equipment can avoid workpiece surface scratching. It is also suitable for online operation while performing two to three grinding processes. The conveyor is easy to adjust. Equipped with a parts tray for convenient parts collection after grinding.



Loading and Unloading Equipment for Infeed Grinding (Optional)

- It employs a robot arm to pick workpieces from the tray and place them into the machine for grinding. The other robot arm picks the finished workpieces and places them on the collection tray. This equipment provides a fully automatic grinding operation that saves labor while enormously upgrading production efficiency.

Features and Construction

Lubrication System

- The automatic lubricator provides lubrication to the grinding wheel spindle.
- All slideways are lubricated by a centralized lubrication system, ensuring proper lubrication and feeding accuracy.



Automatic Loading Equipment for Thrufeed Grinding (Optional)

- Suitable for automatic loading operation for round tube and bar stock.
- Equipped with a storage tray for automatic workpiece infeed.
- It eliminates manual workpiece infeed while enormously increasing total efficiency.



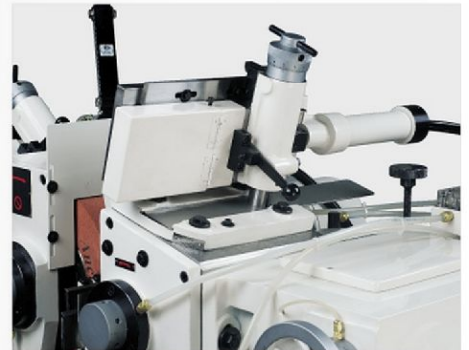
Pressure Switch

- When starting the grinding wheel and regulating wheel spindle, this pressure switch allows starting only when oil enters into bearings thereby providing safety protection for the spindle bearings.



Hydraulic Cooling Device

- The lubrication system for bearings on grinding wheel spindle, regulating wheel spindle and hydraulic system are driven by the same hydraulic pump. A cooling fan is equipped for effectively reducing oil temperature.



Dresser for Grinding Wheel and Regulating Wheel

- Dresser structure is manufactured from alloy cast iron and is heat treated for wear resistance.
- Hydraulically operated dressing motion.
- Variable dressing speed.
- Dresser stand for regulating wheel can be adjusted to suit workpiece requirements, assuring high cylindrical accuracy.

High Precision
Centerless Grinder
High Speed Series

PC-24S / 2410S / 2412S

- High peripheral speed of grinding wheel up to 3,000 M/min provides increased efficiency and for good parts surface finish.
- Hydraulically operated dressing for grinding wheel and regulating wheel.
- Regulating wheel speeds are variable, ranging from 15 ~ 300 rpm.
- Dresser stand is manufactured from special alloy for excellent wear resistance.
- Regulating wheel head and work rest swivel simultaneously providing added convenience for cylindricity accuracy adjustment.



SPECIFICATIONS	PC-24S	PC-2410S	PC-2412S
Grinding Wheel			
Standard grinding range (dia.)	Ø1~Ø100 mm	Ø1~Ø100 mm	Ø1~Ø100 mm
Grinding wheel size (O.D. x Width x I.D.)	Ø610 x 205 x Ø304.8 mm	Ø610 x 255 x Ø304.8 mm	Ø610 x 305 x Ø355.6 mm
Grinding wheel motor	30 HP x 4 P	30 HP x 4 P	30 HP x 4 P
Grinding wheel speed	1400 R.P.M.	1400 R.P.M.	1400 R.P.M.
Regulating Wheel			
Regulating wheel speed (Infinitely variable)	15~300 R.P.M.	15~300 R.P.M.	15~300 R.P.M.
Regulating wheel size (O.D. x Width x I.D.)	Ø305 x 205 x Ø127 mm	Ø305 x 255 x Ø127 mm	Ø305 x 305 x Ø127 mm
Regulating wheel motor	3.5 KW servo motor	3.5 KW servo motor	5 KW servo motor
Regulating wheel tilt angle	-2° +5°	-2° +5°	-2° +5°
Regulating wheel swivel angle	±45°	±45°	±45°
Drive Motors			
Hydraulic pump motor	0.75 kw	0.75 kw	0.75 kw
Coolant pump motor	1/2 HP	1/2 HP	1/2 HP
Machine Dimensions			
Net weight	2610 x 1900 x 1650 mm 4500 kgs	2610 x 1900 x 1650 mm 4800 kgs	2810 x 2100 x 1650 mm 6000 kgs
Gross weight	4850 kgs	5150 kgs	6400 kgs

**High Precision
Centerless Grinder
Economic Series**

PC-12 / 14 / 16

- Standard machine construction with an economical price.
- Special alloy bearings on grinding wheel spindle and regulating wheel spindle feature superior accuracy, easy maintenance and adjustment.
- The grinding wheel spindle and the regulating wheel spindle are precision machined from high quality alloy steel with multiple treatments. The spindles feature high torque and deformation-free making the machine ideal for heavy-duty machining.



Powerful Gear Box

- Gears are precision machined from SNM-4 material, and then carburization treated. Teeth and inside diameter are precision ground for smooth and quiet running.
- The splined shafts provide smooth and easy speed change.
- The gear box features high accuracy, stable speed, superior heavy load resistance and maximum wear resistance.

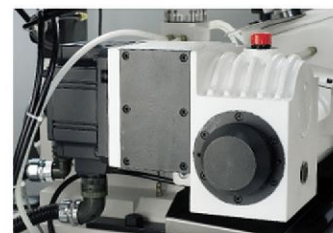


SPECIFICATIONS	PC-12	PC-14	PC-16
Grinding Wheel			
Standard grinding range (Dia.)	Ø1~Ø40 mm	Ø1~Ø40 mm	Ø1~Ø50 mm
Capacity increases with special arrangement	Ø30~Ø60 mm	Ø30~Ø60 mm	Ø40~Ø100 mm
Grinding wheel size (O.D. x width x I.D.)	Ø305 x 150 x Ø120	Ø355 x 150 x Ø180	Ø405 x 205 x Ø203.2
Grinding wheel speed	1900 R.P.M.	1637 R.P.M.	1600 R.P.M.
Grinding wheel motor	7-1/2 HP x 4P	7-1/2 HP x 4P	10 HP x 4P
Regulating Wheel			
Regulating wheel size (O.D. x width x I.D.)	Ø205 x 150 x Ø90	Ø205 x 150 x Ø90	Ø255 x 205 x Ø111.2
Regulating wheel speed	20~337 R.P.M. (10 steps)	20~337 R.P.M. (10 steps)	13~308 R.P.M. (10 steps)
Regulating wheel motor	1 HP x 6P	1 HP x 6P	2 HP x 6P
Regulating wheel tilt angle	+5°~-3°	+5°~-3°	+5°~-3°
Regulating wheel swivel angle	±5°	±5°	±5°
Handwheel Graduation			
Upper slide feed graduation	4 mm/rev. 0.025 mm/graduation	4 mm/rev. 0.025 mm/graduation	3.5 mm/rev. 0.05 mm/graduation
Upper slide micro-feed graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation
Lower slide feed graduation	7 mm/rev. 0.05 mm/graduation	7 mm/rev. 0.05 mm/graduation	9 mm/rev. 0.05 mm/graduation
Lower slide micro-feed graduation	0.2 mm/rev. 0.001 mm/graduation	0.2 mm/rev. 0.001 mm/graduation	0.2 mm/rev. 0.001 mm/graduation
Trimming device graduation	1.25 mm/rev. 0.01 mm/graduation	1.25 mm/rev. 0.01 mm/graduation	2 mm/rev. 0.01 mm/graduation
Drive Motors			
Hydraulic pump motor	1 HP x 4P	1 HP x 4P	1 HP x 4P
Coolant pump motor	1/8 HP x 2P	1/8 HP x 2P	1/4 HP x 2P
Machine Dimensions			
Net weight	1750 x 1050 x 1400 mm 1650 kgs	1750 x 1050 x 1400 mm 1750 kgs	2100 x 1700 x 1500 mm 2400 kgs
Gross weight	1900 kgs	2000 kgs	2700 kgs

High Precision
Centerless Grinder
Economic Servo Series

PC-12S / 14S / 16S

- Regulating wheel is driven by servomotor.
- Low speed; high torque output.
- Easy to operate and adjust.



S Series:

Regulating wheel is driven by AC servomotor.



SPECIFICATIONS	PC-12S	PC-14S	PC-16S
Grinding Wheel			
Standard grinding range (Dia.)	Ø1~Ø40 mm	Ø1~Ø40 mm	Ø1~Ø50 mm
Capacity increases with special arrangement	Ø30~Ø60 mm	Ø30~Ø60 mm	Ø40~Ø100 mm
Grinding wheel size (O.D. x width x I.D.)	Ø305 x 150 x Ø120	Ø355 x 150 x Ø180	Ø405 x 205 x Ø203.2
Grinding wheel speed	1900 R.P.M.	1637 R.P.M.	1600 R.P.M.
Grinding wheel motor	7-1/2 HP x 4P	7-1/2 HP x 4P	10 HP x 4P
Regulating Wheel			
Regulating wheel size (O.D. x width x I.D.)	Ø205 x 150 x Ø90	Ø205 x 150 x Ø90	Ø255 x 205 x Ø111.2
Regulating wheel speed	10~300 R.P.M. (Variable)	10~300 R.P.M. (Variable)	10~300 R.P.M. (Variable)
Regulating wheel motor	1.5 KW servo motor	1.5 KW servo motor	2.0 KW servo motor
Regulating wheel tilt angle	+5°~3°	+5°~3°	+5°~3°
Regulating wheel swivel angle	±5°	±5°	±5°
Handwheel Graduation			
Upper slide feed graduation	4 mm/rev. 0.025 mm/graduation	4 mm/rev. 0.025 mm/graduation	3.5 mm/rev. 0.05 mm/graduation
Upper slide micro-feed graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation
Lower slide feed graduation	7 mm/rev. 0.05 mm/graduation	7 mm/rev. 0.05 mm/graduation	9 mm/rev. 0.05 mm/graduation
Lower slide micro-feed graduation	0.2 mm/rev. 0.001 mm/graduation	0.2 mm/rev. 0.001 mm/graduation	0.2 mm/rev. 0.001 mm/graduation
Trimming device graduation	1.25 mm/rev. 0.01 mm/graduation	1.25 mm/rev. 0.01 mm/graduation	2 mm/rev. 0.01 mm/graduation
Drive Motors			
Hydraulic pump motor	1 HP x 4P	1 HP x 4P	1 HP x 4P
Coolant pump motor	1/8 HP x 2P	1/8 HP x 2P	1/4 HP x 2P
Machine Dimensions			
Net weight	1750 x 1050 x 1400 mm 1650 kgs	1750 x 1050 x 1400 mm 1750 kgs	2100 x 1700 x 1500 mm 2400 kgs
Gross weight	1900 kgs	2000 kgs	2700 kgs

High Precision
Centerless Grinder
NC Servo Series

PC-12S-NC / 14S-NC / 16S-NC

- Humanified operation. Easy to set and adjust.
- Servo motor with micrometric feed adjustment.
- PLC control for high accuracy grinding feed setting.
- Effectively saves adjustment time while greatly upgrading production efficiency.
- Available to equip with automatic dressing and compensation function (optional accessory).



NC Series:
Ball Screw (Standard accessory)



SPECIFICATIONS	PC-12S-NC	PC-14S-NC	PC-16S-NC
Grinding Wheel			
Standard grinding range (Dia.)	Ø1~Ø40 mm	Ø1~Ø40 mm	Ø1~Ø50 mm
Capacity increases with special arrangement	Ø30~Ø60 mm	Ø30~Ø60 mm	Ø40~Ø100 mm
Grinding wheel size (O.D. x width x I.D.)	Ø305 x 150 x Ø120	Ø355 x 150 x Ø180	Ø405 x 205 x Ø203.2
Grinding wheel speed	1900 R.P.M.	1637 R.P.M.	1600 R.P.M.
Grinding wheel motor	7-1/2 HP x 4P	7-1/2 HP x 4P	10 HP x 4P
Regulating Wheel			
Regulating wheel size (O.D. x width x I.D.)	Ø205 x 150 x Ø90	Ø205 x 150 x Ø90	Ø255 x 205 x Ø111.2
Regulating wheel speed	10~300 R.P.M. (variable)	10~300 R.P.M. (variable)	10~300 R.P.M. (Variable)
Regulating wheel motor / S series	1.5 KW servomotor	1.5 KW servomotor	2.0 KW servo motor
Regulating wheel tilt angle	+5°~-3°	+5°~-3°	+5°~-3°
Regulating wheel swivel angle	±5°	±5°	±5°
Handwheel Graduation			
Upper slide feed graduation	4 mm/rev. 0.025 mm/graduation	4 mm/rev. 0.025 mm/graduation	3.5 mm/rev. 0.05 mm/graduation
Upper slide micro-feed graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation
Lower slide feed graduation	7 mm/rev. 0.05 mm/graduation	7 mm/rev. 0.05 mm/graduation	9 mm/rev. 0.05 mm/graduation
Trimming device graduation	1.25 mm/rev. 0.01mm/graduation	1.25 mm/rev. 0.01mm/graduation	2 mm/rev. 0.01 mm/graduation
Drive Motors			
Hydraulic pump motor	1 HP x 4P	1 HP x 4P	1 HP x 4P
Coolant pump motor	1/8 HP x 2P	1/8 HP x 2P	1/4 HP x 2P
Machine Dimensions			
Net weight	1700 kgs	1800 kgs	2450 kgs
Gross weight	1950 kgs	2050 kgs	2750 kgs

**High Precision
Centerless Grinder
Economic Series**

PC-18 / 1810 / 20

- Grinding wheel and regulating wheel spindles are 3-point supported for greatly upgrading machining stability.
- Highly rigid spindle construction makes the machine ideal for heavy duty and precision grinding.
- The grinding wheel and regulating wheel spindles are mounted on class KJ4 special alloy bearings, ensuring outstanding stability and accuracy.

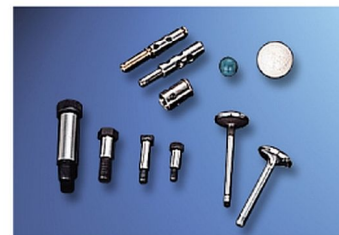


SPECIFICATIONS	PC-18	PC-1810	PC-20
Grinding Wheel			
Standard grinding range (Dia.)	Ø1~Ø80 mm	Ø1~Ø80 mm	Ø1~Ø80 mm
Capacity increases with special arrangement	Ø40~Ø150 mm	Ø40~Ø150 mm	Ø40~Ø150 mm
Grinding wheel size (O.D. x width x I.D.)	Ø455 x 205 x Ø228.6	Ø455 x 255 x Ø228.6	Ø510 x 205 x Ø304.8
Grinding wheel speed	1260 R.P.M.	1260 R.P.M.	1200 R.P.M.
Grinding wheel motor	15 HP x 4P	15 HP x 4P	20 HP x 4P
Regulating Wheel			
Regulating wheel size (O.D. x width x I.D.)	Ø255 x 205 x Ø111.2	Ø255 x 255 x Ø111.2	Ø305 x 205 x Ø127
Regulating wheel speed	13~308 R.P.M. (10 steps)	13~308 R.P.M. (10 steps)	13~308 R.P.M. (10 steps)
Regulating wheel motor	2 HP x 6P	2 HP x 6P	3 HP x 6P
Regulating wheel tilt angle	+5°~-3°	+5°~-3°	+5°~-3°
Regulating wheel swivel angle	±5°	±5°	±5°
Handwheel Graduation			
Upper slide feed graduation	3.5 mm/rev. 0.05 mm/graduation	3.5 mm/rev. 0.05 mm/graduation	3.5 mm/rev. 0.05 mm/graduation
Upper slide micro-feed graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation
Lower slide feed graduation	9 mm/rev. 0.05 mm/graduation	9 mm/rev. 0.05 mm/graduation	9 mm/rev. 0.05 mm/graduation
Lower slide micro-feed graduation	0.2 mm/rev. 0.001 mm/graduation	0.2 mm/rev. 0.001 mm/graduation	0.2 mm/rev. 0.001 mm/graduation
Trimming device graduation	2 mm/rev. 0.01 mm/graduation	2 mm/rev. 0.01 mm/graduation	2 mm/rev. 0.01 mm/graduation
Drive Motors			
Hydraulic pump motor	1 HP x 4P	1 HP x 4P	1 HP x 4P
Coolant pump motor	1/4 HP x 2P	1/4 HP x 2P	1/4 HP x 2P
Machine Dimensions			
Net weight	2200 x 1840 x 1530 mm 2900 kgs	2200 x 1840 x 1530 mm 3000 kgs	2200 x 1900 x 1530 mm 3700 kgs
Gross weight	3200 kgs	3300 kgs	4000 kgs

High Precision
Centerless Grinder
Economic Servo Series

PC-18S / 1810S / 1812S / 20S

- Regulating wheel is driven by servomotor.
- Low speed; high torque output.
- Easy to operate and adjust.



SPECIFICATIONS	PC-18S	PC-1810S	PC-1812S	PC-20S
Grinding Wheel				
Standard grinding range (Dia.)	Ø1~Ø80 mm	Ø1~Ø80 mm	Ø1~Ø80 mm	Ø1~Ø80 mm
Capacity increases with special arrangement	Ø40~Ø150 mm	Ø40~Ø150 mm	Ø40~Ø150 mm	Ø40~Ø150 mm
Grinding wheel size (O.D. x width x I.D.)	Ø455 x 205 x Ø228.6	Ø455 x 255 x Ø228.6	Ø455 x 305 x Ø228.6	Ø510 x 205 x Ø304.8
Grinding wheel speed	1260 R.P.M.	1260 R.P.M.	1260 R.P.M.	1200 R.P.M.
Grinding wheel motor	15 HP x 4P	15 HP x 4P	20 HP x 4P	20 HP x 4P
Regulating Wheel				
Regulating wheel size (O.D. x width x I.D.)	Ø255 x 205 x Ø111.2	Ø255 x 255 x Ø111.2	Ø255 x 305 x Ø111.2	Ø305 x 205 x Ø127
Regulating wheel speed	10~300 R.P.M.(Variable)	10~300 R.P.M.(Variable)	10~300 R.P.M.(Variable)	10~300 R.P.M.(Variable)
Regulating wheel motor / S series	2.0 KW servo motor	2.0 KW servo motor	3.5 KW servo motor	3.5 KW servo motor
Regulating wheel tilt angle	+5°~3°	+5°~3°	+5°~3°	+5°~3°
Regulating wheel swivel angle	±5°	±5°	±5°	±5°
Handwheel Graduation				
Upper slide feed graduation	3.5 mm/rev. 0.05 mm/graduation	3.5 mm/rev. 0.05 mm/graduation	3.5 mm/rev. 0.05 mm/graduation	3.5 mm/rev. 0.05 mm/graduation
Upper slide micro-feed graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation
Lower slide feed graduation	9 mm/rev. 0.05 mm/graduation	9 mm/rev. 0.05 mm/graduation	9 mm/rev. 0.05 mm/graduation	9 mm/rev. 0.05 mm/graduation
Lower slide micro-feed graduation	0.2 mm/rev. 0.001 mm/graduation	0.2 mm/rev. 0.001 mm/graduation	0.2 mm/rev. 0.001 mm/graduation	0.2 mm/rev. 0.001 mm/graduation
Trimming device graduation	2 mm/rev. 0.01 mm/graduation	2 mm/rev. 0.01 mm/graduation	2 mm/rev. 0.01 mm/graduation	2 mm/rev. 0.01 mm/graduation
Drive Motors				
Hydraulic pump motor	1 HP x 4P	1 HP x 4P	1 HP x 4P	1 HP x 4P
Coolant pump motor	1/4 HP x 2P	1/4 HP x 2P	1/4 HP x 2P	1/4 HP x 2P
Machine Dimensions				
Net weight	2900 kgs	3000 kgs	3400 kgs	3700 kgs
Gross weight	3200 kgs	3300 kgs	3700 kgs	4000 kgs

**High Precision
Centerless Grinder
NC Servo Series**

PC-18S-NC / 1810S-NC / 1812S-NC / 20S-NC

- Equipped with a touch-sensing screen with teach-in operational control.
- Easy to adjust sizes. Easy to learn and understand without need of program editing.
- PLC controls oil temperature to reduce errors to minimum.
- Servo control for feeding mechanism with accurate micrometric feed adjustment.
- Variable speed for regulating wheel spindle.
- Available to equip with automatic dressing and compensation function. (optional accessory)



NC Control Panel

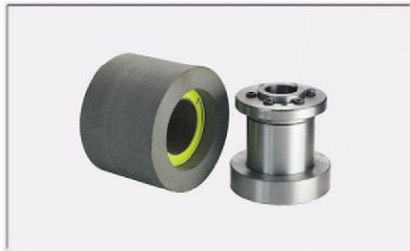


SPECIFICATIONS	PC-18S-NC	PC-1810S-NC	PC-1812S-NC	PC-20S-NC
Grinding Wheel				
Standard grinding range (Dia.)	Ø1~Ø80 mm	Ø1~Ø80 mm	Ø1~Ø80 mm	Ø1~Ø80 mm
Capacity increases with special arrangement	Ø40~Ø150 mm	Ø40~Ø150 mm	Ø40~Ø150 mm	Ø40~Ø150 mm
Grinding wheel size (O.D. x width x I.D.)	Ø455 x 205 x Ø228.6	Ø455 x 255 x Ø228.6	Ø455 x 305 x Ø228.6	Ø510 x 205 x Ø304.8
Grinding wheel speed	1260 R.P.M.	1260 R.P.M.	1260 R.P.M.	1200 R.P.M.
Grinding wheel motor	15 HP x 4P	15 HP x 4P	20 HP x 4P	20 HP x 4P
Regulating Wheel				
Regulating wheel size (O.D. x width x I.D.)	Ø255 x 205 x Ø111.2	Ø255 x 255 x Ø111.2	Ø255 x 305 x Ø111.2	Ø305 x 205 x Ø127
Regulating wheel speed	10~300 R.P.M. (Variable)	10~300 R.P.M. (Variable)	10~300 R.P.M. (Variable)	10~300 R.P.M. (Variable)
Regulating wheel motor / S series	3.0 KW servo motor	3.0 KW servo motor	3.5 KW servo motor	3.5 KW servo motor
Regulating wheel tilt angle	+5°~3°	+5°~3°	+5°~3°	+5°~3°
Regulating wheel swivel angle	±5°	±5°	±5°	±5°
Handwheel Graduation				
Upper slide feed graduation	3.5 mm/rev. 0.05 mm/graduation	3.5 mm/rev. 0.05 mm/graduation	3.5 mm/rev. 0.05 mm/graduation	3.5 mm/rev. 0.05 mm/graduation
Upper slide micro-feed graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation	0.1 mm/rev. 0.001 mm/graduation
Lower slide feed graduation	9 mm/rev. 0.05 mm/graduation	9 mm/rev. 0.05 mm/graduation	9 mm/rev. 0.05 mm/graduation	9 mm/rev. 0.05 mm/graduation
Trimming device graduation	2 mm/rev. 0.01 mm/graduation	2 mm/rev. 0.01 mm/graduation	2 mm/rev. 0.01 mm/graduation	2 mm/rev. 0.01 mm/graduation
Drive Motors				
Hydraulic pump motor	1 HP x 4P	1 HP x 4P	1 HP x 4P	1 HP x 4P
Coolant pump motor	1/4 HP x 2P	1/4 HP x 2P	1/4 HP x 2P	1/4 HP x 2P
Machine Dimensions				
Net weight	3000 kgs	3000 kgs	3500 kgs	3600 kgs
Gross weight	3300 kgs	3300 kgs	3800 kgs	3900 kgs

Carbide Blade for Both Thrufeed and Infeed Grinding (Selection Table)

Workpiece	Carbide Blade Thickness	Workpiece	Carbide Blade Thickness 12	Carbide Blade Thickness 18
1.5 - 2.5m/m	t=1 m/m	8.1 - 10 m/m	t=6 m/m for Ø10	t=6 m/m for Ø10
2.6 - 4.0m/m	t=2 m/m	10.1 - 16 m/m	t=8 m/m for Ø16	t=8 m/m for Ø16
4.1 - 5.0m/m	t=3 m/m	12 - 20 m/m	t=8 m/m for Ø20	t=10 m/m for Ø20
5.1 - 7m/m	t=4 m/m	15 - 30 m/m	t=13 m/m for Ø30	t=13 m/m for Ø30
7.1 - 8m/m	t=5 m/m	25 - 50 m/m	t=20 m/m for Ø40	t=20 m/m for Ø50

Standard Accessories



1. Regulating wheel and flange x 1 set (mounted on machine)



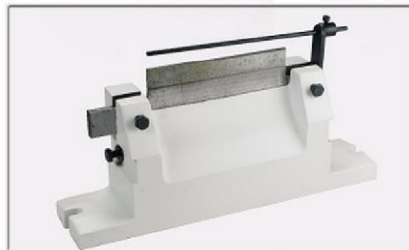
2. Grinding wheel and flange x 1 set (mounted on machine)



5. Standard electric equipment x 1 set (mounted on machine)



8. Diamond tools x 2 pcs (mounted on machine)



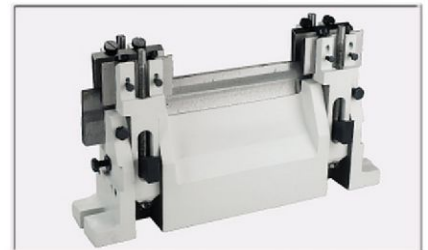
3. Infeed work rest and carbide blade x 1 set



6. Oil tank x 1 set (incl. oil cooling fan)



9. Work lamp x 1 set (mounted on machine)



4. Thrufeed work rest and carbide blade x 1 set



7. Standard coolant system x 1 set

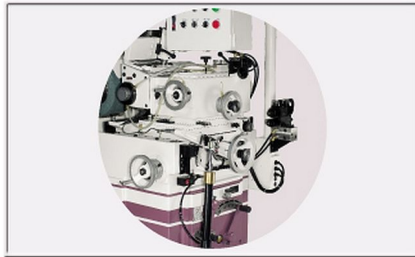


10. Tool box and kits x 1 set

Optional Accessories



1. Wheel balancing stand and arbor



2. Automatic infeed attachment



3. Manual feeder for infeed grinding (up and down)



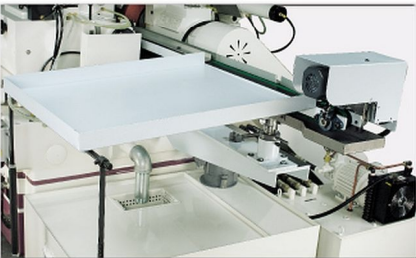
4. Hydraulic work ejector (infeed grinding)



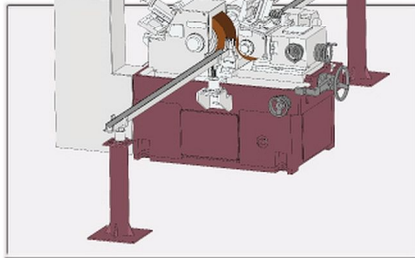
5. Automatic loading attachment (thrufeed grinding)
(\varnothing 5-20 mm, L100-600 mm)



6. Automatic feeder for thrufeed grinding
(hopper type) (\varnothing 2-8 mm, L50-180 mm)



7. Automatic unloading attachment (thrufeed grinding)



8. V Type Supporter for long bar grinding (\varnothing 2-14 mm)



9. Profile grinding attachment



8. Magnetic coolant separator



11. Magnetic with paper filter



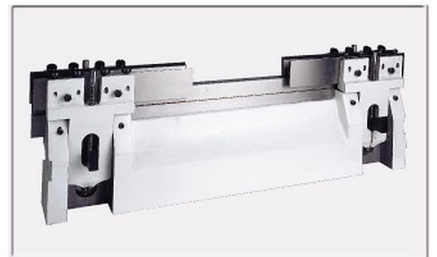
12. Hydrocyclone coolant separator



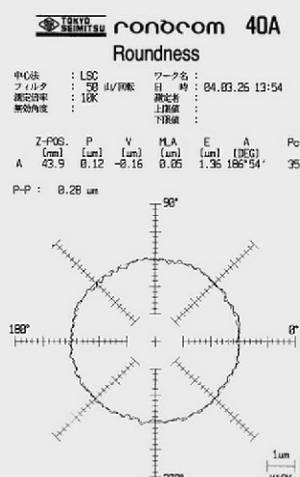
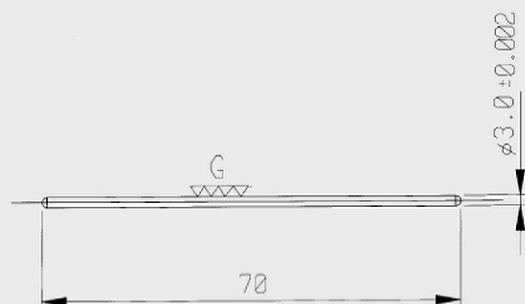
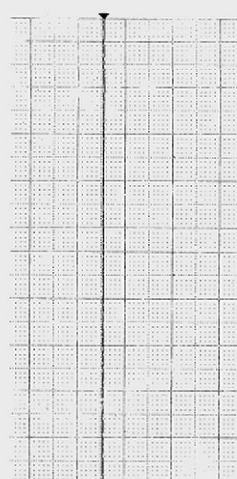
13. Auto. loading and unloading attachment
(infeed grinding)



14. Vibratory feeder (thrufeed grinding)

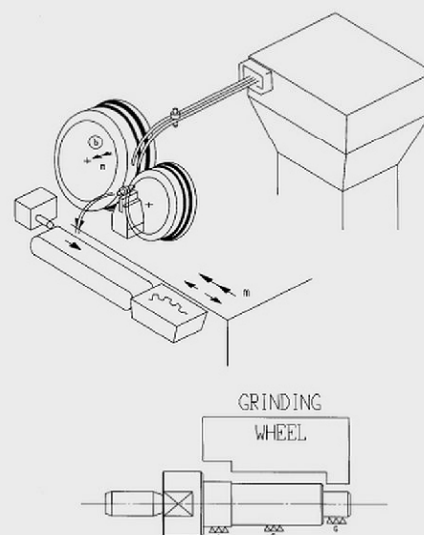
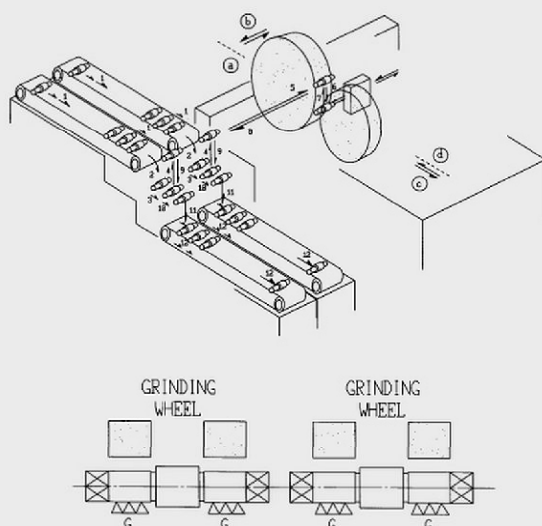


15. Large work rest (thrufeed grinding)
L: 250 - 500mm



- | | | | |
|----------------------|-----------------------------|------------------|-----------------|
| ● Work sample | Motor shaft | ● Stock Removal | |
| ● Grinding wheel | GC100KV | ▲ 1st rough | 0.15 |
| ● Peripheral speed | 2,000 M/min | ▲ 2nd fine | 0.025 |
| ● Workpiece material | SUS430 | ▲ 3rd finish | 0.02 |
| ● Roundness | 0.2 μm (stock removal 0.15) | ● Feed Speed | 2.6 M/min |
| ● Cylindricity | 0.3 μm | ● Surface Finish | Ra = 0.029 μm |
| | | | Rz = 0.220 μm |
| | | | Rmax = 0.300 μm |

Automation Process



- | | | | |
|--------------------------|--------------------------------------|--------------------------|--------------------------------------|
| ● Work sample | gear shaft | ● Work sample | shaft |
| ● Material | SCM415 | ● Material | S45C |
| ● Grinding wheel | 38A60L | ● Grinding wheel | WA60L |
| ● Peripheral speed | 2,000 M/min | ● Peripheral speed | 2,000 M/min |
| ● Regulating wheel | A120R | ● Regulating wheel | A120R |
| ● Regulating wheel speed | 21 rpm | ● Regulating wheel speed | 30 rpm |
| ● Cycle time | 15 sec. | ● Cycle time | 18 sec. |
| | (including loading time of 2.5 sec.) | | (including loading time of 2.5 sec.) |
| ● Stock removal | 0.09 mm/dia. | ● Stock removal | 0.25 mm/dia. |
| ● Roundness | 0.6 μ | ● Roundness | 1.0 μ |
| ● Cylindricity | 1.0 μ | ● Cylindricity | 1.3 μ |
| ● Surface finish | 0.15 Ra | ● Surface finish | 0.20 Ra |

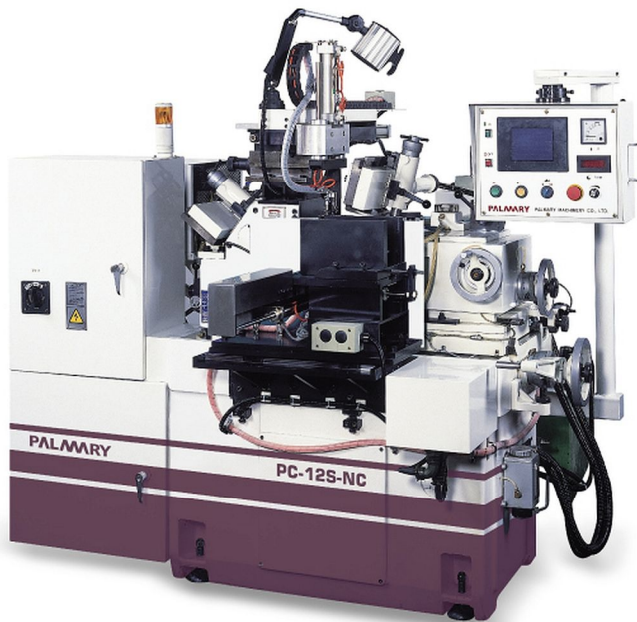


Rigorous Quality Inspection

- PALMARRY's Q.C. department is fully equipped with comprehensive high precision inspection instruments, providing in-process and final product inspection. These precision instruments enable us to achieve the highest quality level. PALMARRY centerless grinders are fully satisfied to each customer around the world. This achievement results from our tradition of "Insisting on Quality".



Automated Special Purpose Centerless Grinders



PC-12S-NC is equipped with automatic loading and unloading equipment.



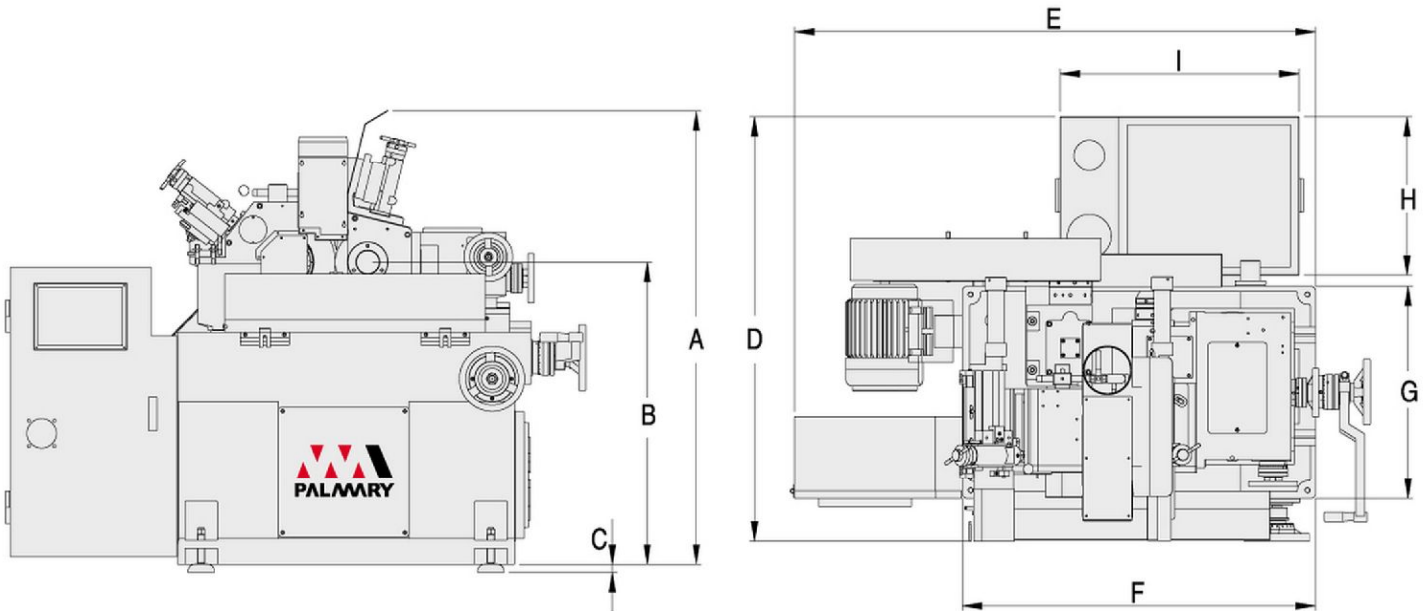
PC-12S-NC is equipped with manual workpiece feeder.



PC-18S-NC is equipped with double-side automatic loading and unloading equipment for infeed grinding.



Dimensions and Floor Occupation



Model	A	B	C	D	E	F	G	H	I
12	1400	931	25	1310	1785	1085	660	490	735
14	1400	931	25	1310	1785	1085	660	490	735
16	1515	988	25	1785	2265	1450	925	800	1200
18/1810	1515	988	25	1785	2265	1450	925	800	1200
1812/20	1580	990	25	1900	2530	1930	810	800	1200
24/2410	1690	990	25	2210	2930	1930	810	1220	875
2412	1690	990	25	2080	2880	1975	940	695	1010

Product Range

- Centerless Grinder
- NC Centerless Grinder
- CNC Centerless Grinder
- High speed Centerless Grinder
- Precision Universal Cylindrical Grinder
- NC Universal Cylindrical Grinder
- CNC Universal Cylindrical Grinder
- CNC Vertical Composite Grinder
- Engine Valve Seat Grinder
- NC Internal Grinder
- CNC Internal Grinder
- Surface Grinder
- Automatic Loading and Unloading Equipment for Grinders

Sales Network All Over the World



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India
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Czech
France
Bulgaria
Hungary

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New Zealand
Israel
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Singapore
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Vietnam
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Sri Lanka
Turkey
Pakistan
Belgium
Slovenia

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Hong Kong

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Taiwan
Egypt

USA
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Costa Rica
Brazil
Colombia
Argentina

Product Range

- Centerless Grinder
- NC Centerless Grinder
- CNC Centerless Grinder
- High Speed Centerless Grinder
- Precision Universal Cylindrical Grinder
- NC Universal Cylindrical Grinder
- CNC Universal Cylindrical Grinder
- CNC Vertical Composite Grinder
- NC Internal Grinder
- CNC Internal Grinder
- Surface Grinder



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