

ROTTLER

THE CUTTING EDGE

HP7A Smart Hone



*Rottler
Multi-point
Diamond
Honing System*

Machine Tools for the Performance Racing, Engine Remanufacturing and OEM Manufacturing Industries

PROGRAMMABLE POWER STROKE AUTOMATIC DIAMOND HONING MACHINE

The new Rottler HP7A Cylinder Honing Machine employs the latest technology available for today's engine builder. The bright, user friendly, full color 10" (254mm) Windows Touch Screen Control makes honing faster, easier and more accurate than ever before. Rottler Manufacturing continues a lasting tradition of introducing state of the art machine shop equipment for the engine builder. Quality, service, and technical support is built into every Rottler machine.

The bottom line is greater control and efficiency with increased profits for today's machine shop.

Touch Screen Controls

The HP7A boasts a full color, easy to read, 10" (254mm) Windows Touch Screen control that simplifies all aspects of honing. The computer automatically senses tight areas at top or bottom and actuates short stroke or dwell as programmed. (See page 4 for details)

Bore Profile

The convenient, easy to read digital bore profile display allows you to visualize the geometry of the bore while honing.

Simple Stroke Setting

A thumb operated button locks the stroke position at the top of the cylinder to be honed. The lower stop can be adjusted while the machine is in operation to maximize stroking for blind hole honing. (Reference Manual for instruction)

Two Stage Auto Cycle

The HP7A features a programmable roughing and finish cycle. This gives you greater control, allowing the machine to aggressively remove material in the roughing cycle, then switch to the finish cycle with a lighter stone pressure to finish the cylinder accurately with reduced stone load against cylinder wall. With the increased pressure the machine will aggressively remove material during the roughing cycle. This reduces the pressure against the cylinder during the finish cycle, producing straighter, rounder cylinders with better size and surface finish control.

Fast Setup

Both versatility and large capacity come together with the standard combination fixture. Securing blocks as well as single cylinders has never been easier. Any angle can be easily set (7.5, 15, 30, and 45 degrees).

Stainless Steel Doors

Sliding stainless steel doors provide smooth movement and long life with wide opening for easy loading of blocks and cleaning of machine.

Rugged Design, Solid Construction

Larger, heavy duty base increases the capacity of the machine and ensures a lifetime of rigidity and accuracy. Heavy duty industrial powder coating ensures a lifetime of rust free paint protection and easy cleaning.

Only cylinder honing machine on the market with Automatic Load Control!

Automatic Load Control

A must for diamond cylinder honing. Allows for faster honing without bore distortion. 'Load' is used to describe the pressure the honing stones press on the cylinder wall while honing. Program the desired roughing and finishing loads and walk away! Without automatic load control, machine will continue to build pressure on cylinder walls when honing with diamonds causing bore distortion. The Rottler system controls stone pressure on cylinder walls thus reducing bore distortion.

Pneumatic Lock

The hone head locks pneumatically with no handles for setting stroke length.

Automatic Plateau Finish Cycle

The HP7A computer has a program specifically for Plateau Finishing of cylinders. By counting the number of strokes with a programmed light stone pressure, this automatic cycle provides the same plateau finish hole after hole, block after block.

Filtration System & Coolant Tank

With increased coolant capacity to 75 gallons (283 liters) and a strong magnetic filter system, the coolant stays cleaner and cooler. Performance builders can use the optional two stage micron filter system to remove very small contaminants from the honing fluid.

Water Based Coolant

Water based coolant can be used with Rottler diamond honing stones, greatly reducing heat buildup in the block during honing. Cost is substantially reduced over honing oils and block cleaning is almost eliminated. Disposal of used coolant is easy and more environmentally friendly than conventional honing oil.

Tooling for Tomorrows Standards

Unmatched, proven performance is displayed by the superior accuracy of Rottler's precision hone head. There is no other system that matches this in terms of flexibility and accuracy.

International Language

Windows Touch Screen Computer Controls allow for easy translation into multiple languages.

Large Capacity

The HP7A has capacity to hone large 6 cylinder in-line blocks up to 55" (1400mm). The HP7A has 40" (1000mm) of X Axis travel on linear slideways so that large blocks with cylinder bore centers up to 40" (1000mm) apart can be honed.

Linear Slideways

Hardened steel precision ground linear roller bearing slideways.



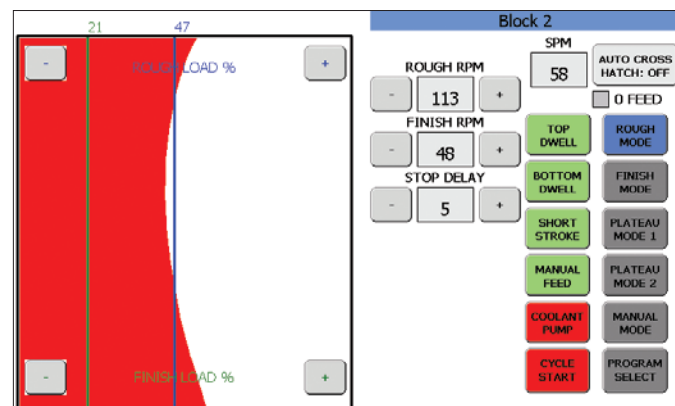
**Honing Range with Rottler
Multi Point Diamond Abrasives
2.25" to 9.6" (57.1mm to 244mm)
Range with other brands of hone heads
0.75" to 9.6" (19mm to 244mm)**

WINDOWS TOUCH SCREEN CONTROL

Rottler has been dedicated to the Engine Rebuilding industry since 1923 and has produced computer controlled machinery since the 1980s. We've used these years of experience combined with dedicated R&D and precision engineering to bring you the most advanced, easy to learn and operate touch screen controls available on the market today and into the future. This is the new standard in Diamond Honing.

Automatic Controls

The new Rottler HP7A control is the result of feedback from the market place of what is required and development by our team of technical and electronic experts. The new control is easy to understand and simple to use. The control handles a wide variety of precision bore finishing work - from automotive and diesel blocks to motorcycle, outboard marine, snowmobile, airplane, and industrial applications.



Program Select

With memory to store each job, operators can save programs to go back to without needing to re-enter any parameters. All settings for each block are saved under fully customized names for instant recall. Select any saved program from the startup screen and you're ready to start honing. This improves quality and consistency of the honing process from day to day and from operator to operator.

The Key Features

There are several important features of the new Rottler HP7A computerized control which account for substantial improvements in accuracy and productivity.

- The digital bore profile display projects an exact profile of the bore during honing.
- The computer senses any taper at top and bottom and automatically dwells or short strokes as programmed, correcting the tight area.
- Two stage roughing and finishing cycle allows higher loads in the roughing cycle for fast stock removal and light loads for finishing, increasing productivity and accuracy.
- Infinitely variable hone head speed (80-275 RPM) allows high speeds for roughing and a slower speed for finishing giving the desired cross hatch angle and surface finish.
- The finishing cycle operates much like a "spark out" system where there is very light stone load eliminating any distortion and resulting in accurate bore geometry and consistent surface finish.
- Automatic Plateau Mode holds the stones at a preset load and counts down the number of strokes so that each cylinder has the same plateau surface finish.
- Manual controls are available on the touch screen for fine adjusting settings during automatic cycles and R&D.

Self-Guided Tutorial

The Rottler HP7A offers a step-by-step guide through the machine controls for all skill levels. Even an operator who has never honed before will be able to learn how to successfully operate the machine by simply pressing a button direct on the machine at startup for a guided tour.

Automatic Cross Hatch Angle

Automatic cross hatch is simple to use and automatically obtains any desired cross hatch angle and self-adjusts automatically. There is no manual calculating. The Automatic Cross Hatch angle system is solution capable, simply enter the angle and the computer will maintain the angle from top to bottom of the cylinder.

Stroking System

The HP7A Stroking System changes direction instantly at top and bottom providing consistent cross hatch from the top to the bottom of the bore.

ROTTLER'S DIAMOND PROCESS

Rottler Manufacturing has led the industry in the application of diamond abrasives to the automotive aftermarket. The process was engineered by experts from many fields to create an entire process to bring diamond technology into the hands of the performance racing, production rebuilder and jobbing shop. The process has proven to be the most economical available, giving consistent acceptable bore finish. The main ingredients to a successful process are:

Automatic Pressure/Load Control

The HP7A control was specifically designed to correctly maintain honing stone to cylinder wall pressure/load for diamond finishing. Diamond stones are capable of exerting excessive load which results in poor finish and geometry. The HP7A control automatically senses and controls load to assure correct loads during finishing for accurate geometry.

Correct Hone Head

Diamond abrasives do not break down like vitrified stones and require very precise, heavy duty, rigid hone heads. The Rottler Precision Hone Head was designed and is manufactured to exact tolerances. Each stone holder set is designed to operate within a 5/16" (8mm) range, which is the recommended diameter range of a diamond stone set.

The process has been developed and proven after years of in-house and in-field experience. Rottler now leads the industry with more installations of diamond honing systems for engine cylinder finishing than any other company worldwide.

Today's boring finish standards are becoming more demanding

Today's progressive engine builder must be responsive to the dynamic changes in the industry. With the latest piston ring sealing requirements and the diverse number of block configurations, the machinist needs the versatility offered by the Rottler HP7A honing machine. Cylinder finish is becoming more of a science as the demands continue to grow.



Correct Abrasives

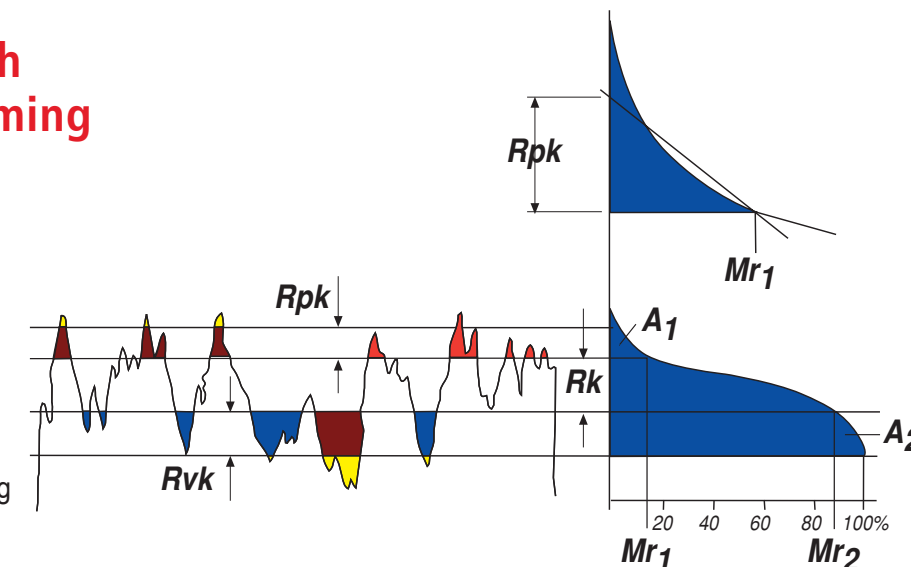
Having the most widely used diamond system in the engine building industry has allowed Rottler to optimize diamond abrasives for maximum life and correct finish. Rottler diamond abrasives last up to two times longer than other less expensive brands.

Correct Coolant

Using correct coolant is critical to obtaining the best possible finish. Rottler brand water based coolant have been developed to work specifically with Rottler diamond abrasives. New synthetic coolants are environmentally friendly when compared to traditional honing oils. Cleaning jobs is easy and coolant does not contaminate washing machines.

Profits for the Machine Shop

Turn difficult jobs into dollars with Rottler's new HP7A. Whether removing material or finishing the cylinder, the HP7A makes money fast.



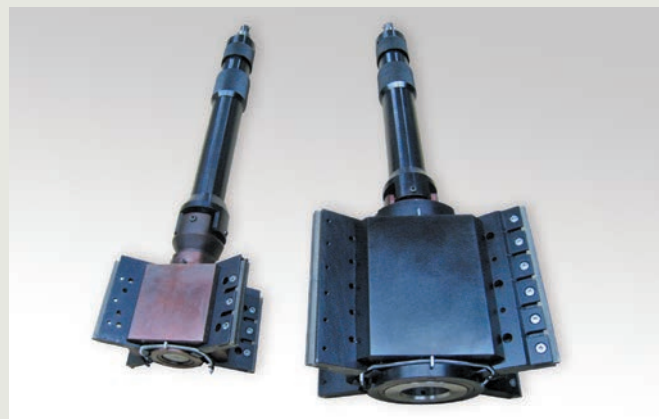
Graphical representation of the cylinder finish, such as that displayed on an Abbott-Firestone Curve, provide a qualitative analysis of the characteristics of the surface finish. The Rk family of parameters directly analyzes the surface characteristics over a given sampling length.

ROTTLER HAS MADE DIAMOND HONING TECHNOLOGY AFFORDABLE FOR THE ENGINE BUILDER

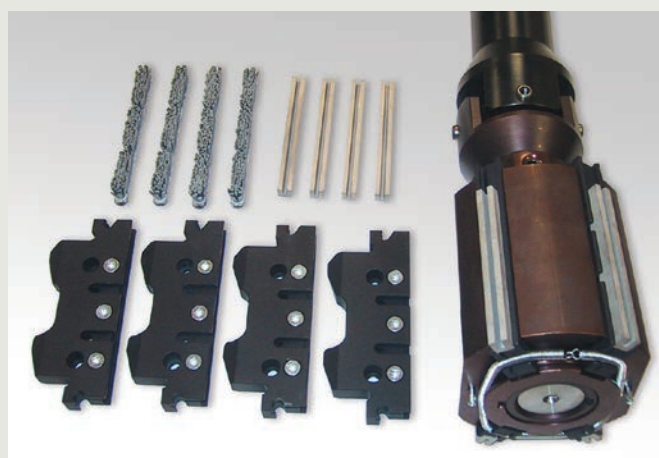
HEAVY DUTY PRECISION DIAMOND HONE HEADS



Large hone head has interchangeable sleeves that extend the diameter capacity from 2.75" (69.85mm) all the way up to 7.63" (186.94mm)



Extra Large Hone Head has 6" (150mm) long diamond stone holders and is able to hone cylinders up to 9.6" (244mm) diameter and 18" (457mm) long.



Quick Change Stone Holders

Rottler quick change lifetime stone holders are designed to clamp with three special screws allowing interchangeable and replacement diamond stones and plateau brushes saving considerable cost over the lifetime of the machine.

Hone Heads

The Rottler Precision Hone Heads were developed to create a universal system capable of high precision with the flexibility to accommodate a bore diameter range of 2.25" (57mm) to 9.6" (244mm). The Rottler Precision Hone Heads will accommodate diamond, vitrified, cork and brush abrasives, allowing for unmatched flexibility to customize your finish to the piston rings exact requirement. Exotic materials like nickasil and alusil can be honed with special abrasives. Abrasives are held in the stone holders with a clamping system and stone holder assemblies are easily and quickly interchangeable in the hone head to cover different diameter ranges or surface finish requirements. Using coarse, aggressive stones, bores can be quickly enlarged eliminating the need for a boring machine for next oversize cylinder bores.

Abrasives

Rottler abrasives are available in many different grit sizes and lengths to give perfect surface finish for all kinds of materials and cylinders, from tiny two stroke motorcycles with blind holes to huge liners and cylinders.

Rigid Guide Shoes

The diamond particles are imbedded in hard bronze material so the diamonds stones work as rigid guides shoes supporting the hone head.

Feed Out System

The Precision Hone Head feed out system controls stock removal to .0002" (.005mm) per increment.

Rottler also offers a wide variety of honing tools and accessories to easily size and finish bores in extra large, heavy or odd-shaped work pieces.

Precision Hone Head

Honing range with Rottler Multi Point Diamond Abrasives

Medium Hone Head
2.25 - 3" (57.15 - 75.20mm)

Large Hone Head
2.75 - 7.36" (69.85 - 186.97mm)

Extra Large Hone Head
6.1 - 9.6" (15.94 - 243.84mm)

CAPACITY & FIXTURES

Universal and Large Capacity

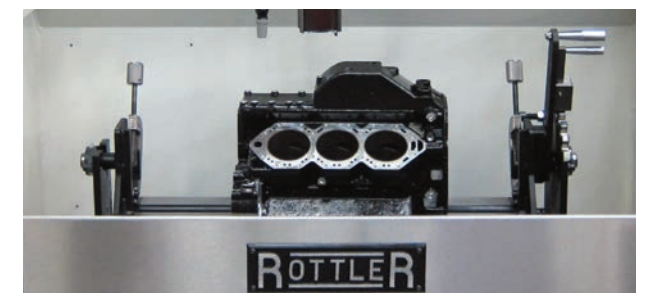
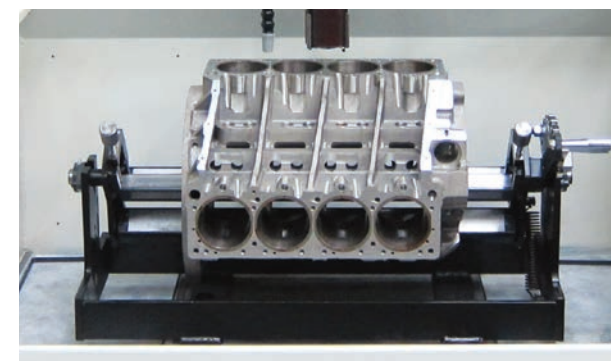
The Rottler HP7A has a large coolant cabinet capable of honing large in-line blocks up to 55" (1400mm) long. The standard Roll Over Fixture can easily be removed allowing large blocks and optional fixtures to be quickly set up. Optional Quick Clamp Handles can be used to hold various blocks and cylinders for honing.



Shown with optional hold down clamps

Roll Over Fixture

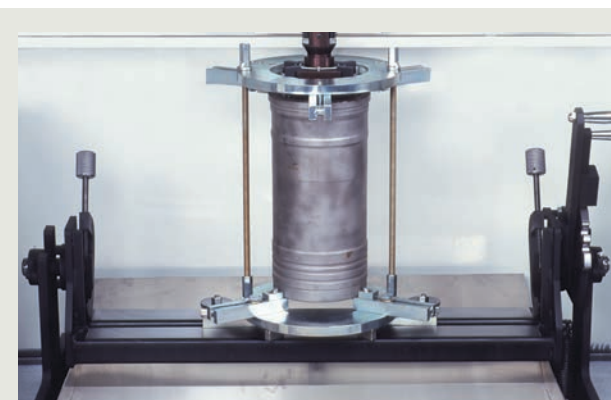
The Rottler combination Roll Over Fixture provides exceptionally fast set up and block roll over is simple for V Blocks 7.5°, 15°, 30°, 45°. A bar thru the main line firmly holds the block on the cradle for rigid honing.



Marine Outboard, Snowmobile, Motorcycle and other similar cylinders can be easily mounted and rolled over for precision blind hole honing.

Alusil, Lokasil & Silitec Honing

Rottler's HP7A offers versatility to hone Alusil, Lokasil or Silitec cylinders with special stones available from Rottler. These new materials are becoming quite common in many of the models of BMW, Mercedes, Porsche, and Audi.



Universal Liner Clamping System

Liners and cylinders are easily clamped using Rottler's optional liner clamping system #514-7B. Holds liners up to the CAT 3516 and loose cylinders such as Deutz and Porsche. Fits on standard Roll Over Fixture.



Multiple Liner Honing Fixture

Special Liner Honing Fixture allows multiple liners to be clamped and honed at same setup, shown here with 4 CAT 3500 liners. Fixtures for smaller cylinders such as Harley can hold up to 6 or 8 liners/cylinders. Profit from the lucrative business of recycling liners!

STANDARD EQUIPMENT

- 10" (254mm) Windows Touch Screen Control
- Programmable Automatic Roughing and Finishing Load Sensing System
- Programmable Cross Hatch Angle System
- Automatic Stone Feed-out System
- Automatic Controlled Stock Removal with .0002" (.01mm) Resolution
- Automatic Plateau Brush Finish Program
- Automatic Lower Bore Short Stroke or Dwell Finish Program
- Unlimited memory to save each job for future use
- Infinitely Variable Stroke Speed Control
- Infinitely Variable Spindle RPM Control
- Combination Fixture for In-line and V-Blocks with support parallels
- Stone Tray with Dial Bore Gage Holder
- 75 gallons (283 liter) Coolant System with Magnetic Separation
- Operation, Programming and Spare Parts Manual - Digital
- Electrical requirements: 208/240V, 20A, 50/60Hz, 1Ph

SPECIFICATIONS

	INCH	METRIC
Diameter Capacity		
Rottler Diamond Hone Heads	2.25 - 9.6"	57 - 243mm
Other Brand Hone Heads	0.75 - 9.6"	19 - 243mm
Workpiece Capacity		
Workpiece Length	55"	1400mm
Workhead Travel	40"	1000mm
Power Stroke Length of Machine	13"	330mm
Maximum Length of Cylinder	18"	457mm
Stroking Speed	Infinitely Variable for any Cross Hatch Angle	
Spindle Drive Motor	2 HP	1.5kW
Spindle Speed	80-275 RPM Infinitely variable	
Floor Space Required	72" x 72"	1829 x 1829mm
Shipping Dimensions	67 x 77 x 82"H	1702 x 1956 x 2083mmH
Shipping Weight	2300 lbs	1045 kgs
Paint Color Code	RAL9002 (Grey White)	



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