H85A
CNC Automatic Vertical Honing Machine

Machining Equipment Created for Performance Racing & Engine Remanufacturing.

So Advanced, It’s Simple.
Automatic Lower Crash Protection System
Many Engine Blocks have interference in the lower area of the bores and can damage honing stones and holders. Every time the H85 starts honing a cylinder, the machine will check bores for interference avoiding potential damage to honing stones and holders. Variance in lower bores are common. Rottler H85 Control senses lower bore interference prior to rotation and stroking motion starts, eliminating any stone or holder damage.

Vertical Stroking System
CNC Servo Controlled High Pitch Ball Screw and Hardened Steel Linear Slide Way Systems precision vertical stroking and fully automated operation, creating a true constant cross pattern throughout the entire length of the bore increasing oil retention while reducing consumption extending engine life and reliability.

Monitored Variable Load Control
A must for cylinder honing! 'Load' is used to describe the pressure that the honing experience against the cylinder wall during the honing operation. Roughing cycles higher loads for faster stock removal and finishing cycles requires lower loads to distortion. The H85 is programmed with roughing and finishing loads automatically controlling the stone pressure while honing cylinder bores producing the desired geometry and surface finish in every cylinder. Honing time is substantially reduced for maximum productivity and repeatability.

Programmable Plateau Operation
The machine automatically expands plateau brushes or CBN stones to programmed load and counts down the number of plateau strokes, then retracts the brushes/CBN and withdraws to the clearance position.

Automatic Zero Position Setting System
H85 Series machines automatically expand the stones to a preset load and allow the operator to set zero position. The Automatic Zero Feature allows the operator to calibrate the hone head to different diameters quickly and consistently. Automation eliminates guess work and intuitively removes variations created by the feel method.

Precision Stone Feed-Out System
Once the hone head is positioned in the bore, the hone head rotates slowly and expands the stones simultaneously. The spindle accelerates to full speed and begins the stroking process only after the stones have precisely contacted the bore.

Automatic Honing Stone Retract at End of Cycle
The Rottler H85 is designed to automatically retract the stones during the last stroke producing a perfect scratch free bore every time.

Infinitely Variable
Hone Head rotation and stroking speed is infinitely variable to produce any surface finish and cross hatch requirement - fast.

Cross Hatch Pattern Control
H85 Series machines offer programmable parameters to produce the Cross Hatch Pattern you desire on your bore finish. Cross Hatch Angle Patterns and Bore finish programs can be stored and pulled up for re-use easily. Digital camera and special software available to check cross hatch angle.

Independent Overstroke Control
Machine allows operator to independently adjust overstroke distance at top and bottom of stroke allowing much straighter cylinders without excessive dwelling. This same feature allows operator to adjust top overstroke while machine is honing!

Removable Coolant Tank
Large capacity 70 Gals (265 liters) coolant tank is mounted on wheels and is easily removed to the front of the machine to allow fast and easy cleaning. The coolant pump is mounted on an adjustable support allowing it to be easily lifted for removal of tank.

Electronic Hand Wheel
Lowers the hone head into each bore. Manually expand stones inside the bore for the ultimate in versatility.

Rugged Design – Solid Construction
H85 series machines ensure a lifetime of accuracy and reliability along with ease of cleaning and maintenance due to industrial powder coated finish and pullout coolant cart.

Quick Change Spindle System
Spindle Taper and Quick Change System allow hone heads to be changed in seconds with the Rottler Automatic Locking System - change from diamond to plateau brush in seconds. Wrenches are eliminated. Automatic tightening locks or releases nearly instantly!

Manual Simplicity. Digital Accuracy
The H85 boasts a bright full color, easy to read, ergonomically positioned 15” (400MM) Windows Touch Screen Control that simplifies all aspects of cylinder honing. Precision display in .001” (.002mm) increments of bore diameter.

Filtration System
The H85A is supplied with a dual gradient cartridge filter system. The filter starts filtering 50 micron particles and ends filtering 5 micron particles - keeping the coolant cleaner while removing very fine particles from the coolant. Optional lifetime magnetic cartridge filter is available for further filtration and extended life.

Water Based Synthetic Coolant
Water based synthetic honing coolant can be used with Rottler diamond/CBN honing stones, greatly reducing heat build up during the honing process. Cost is substantially reduced over conventional honing oils and cleaning is nearly eliminated. Disposal of used water based coolants is environmentally friendly and disposal effort is reduced compared to conventional honing oils.

International Multi Language
Windows Touch Screen Computer Control allows for easy translation into multiple languages.

Large Capacity and Versatility
Large Capacity and Versatility – the H85 has capacity to hone from the smallest to large 8 cylinder in-line diesel blocks up to 55” (1400mm) long. The H85 has 38” (965mm) of X axis travel on linear slideways so that large blocks with cylinder bore centers up to 38” (965mm) can be honed – automatically! The H85 can hone very large liners up to 7.38” (187mm) Max Diameter

Stainless Steel Door
Sliding stainless steel door provides easy cleaning, smooth movement and long life with wide opening for easy loading of blocks. The door is easily removed for cleaning of machine and changing fixtures.

Compact Size
Efficient design takes up less room in your shop increasing production while allowing room for future expansion.

Lighting
Three LED lights in the cabinet and two LED lights under the work head illuminate the complete work area so the operator can clearly see the honing operation.

Upgradeable, Not Obsolete
The Rottler H85A is the only ground level hone that can be upgraded for increased speed and productivity. Start with the Rottler H85A model and as your customer demand increases simply call Rottler to automate your hone. No need to replace the machine with a higher production model. In addition to being fully upgradeable, Rottler hones are proven to last decades in the field. Their rugged base, linear slideways and ball screw with auto lubrication work together to increase life expectancy.

In addition, the H85AX can be upgraded to the H85AXY in the field with a retrofit upgrade package. This upgrade feature allows a customer to purchase a H85AX at a lower price and, as budget allows, upgrade to get the full automation for maximum productivity.

50%-70% Labor Savings
www.rottlermfg.com

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**Rottler H85 Series Advantage**

There are several important features of the new Rottler H85 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.
- Rottler software continuously analyzes the bore and senses taper anywhere in the cylinder - top, middle or 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 (1-400 RPM) allows high speeds for roughing, for fast stock removal 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 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 within easy reach on the touch screen for fine adjusting settings during automatic cycles and R&D.
- Special software packages such as “Thin Wall” allow blocks and cylinders with very thin wall thicknesses to be honed to accurate dimensions.

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**Automatic Controls**

The new Rottler H85 Control is an intuitive easy to use Touch Screen created by our team of technical and electronic experts. Feedback from the marketplace is built in, creating a control that is easy to understand and simple to use. Rottler Touch Screen Controls handle a wide variety of precision bore finishing work such as automotive, diesel blocks, motorcycle engines, outboard marine applications, snowmobile, airplane and more. Industrial applications experience the ultimate in versatility.

**Program Select**

With memory to store each job, operators can save programs and refer back to past jobs without the need 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, use the automatic zero setting function 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.

**Automatic Cross Hatch Angle**

Automatic cross hatch is simple to use and automatically obtains any desired cross hatch angle and self-adjusts automatically. Manual calculating is eliminated. 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.

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**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. Rottler innovation sets the standard in Diamond and CBN Honing.**
Rottler Manufacturing has powered the industry forward by innovating a new and efficient application of diamond and CBN abrasives to the automotive aftermarket. In collaboration with experts, ranging from performance racing to the automotive industry, Rottler developed engineering has created an entire process that proves diamond/CBN abrasive honing technology is the most accurate and cost effective method to produce superior hone finishes in a consistent fashion.

**Automatic Pressure/Load Control**

The H85 control was specifically designed to correctly maintain honing stone to cylinder wall pressure/loads for diamond or CBN finishing. Diamond and CBN stones are capable of exerting excessive load which results in poor finish and geometry. The H85 control automatically senses and controls load to ensure correct loads during finishing for accurate geometry.

**Advanced Rottler Diamond & CBN Honing**

Diamond abrasives do not break down like vitrified stones and require very precise, heavy duty, rigid hone heads. The Rottler Precision Hone Head is designed and manufactured to exacting 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.

**Alusil, Lokasil & Silitec Honing**

Rottler’s H85 offers versatility to hone Alusil, Lokasil or Silitec cylinders with specialized stones available directly from Rottler. These new materials are becoming quite common in many of the models of BMW, Porsche, and Audi.

**Today’s honing 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, staying on top of the latest trends is vital. The versatility offered by the Rottler H80 honing machine provides the machinist with the latest technology to meet the demands of the evolving honing market. Cylinder finish requirements are now a science and Rottler tools are engineered to create cylinder surface finishes to meet your honing requirements both today and tomorrow.

**Innovative Abrasives**

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

**Rottler Water Based Coolant Superiority**

Using the correct coolant is critical to obtaining the best possible finish. Rottler brand water based coolant has been developed to work specifically with Rottler diamond and CBN abrasives. New synthetic coolants are environmentally friendly when compared to traditional honing oils. Cleaning is easy and Rottler coolant eliminates washing machine contamination.

**Profits for the Machine Shop**

Turn difficult jobs into dollars with Rottler’s new H85. Whether removing material or finishing the cylinder, the H85 makes money fast.

**HELICAL GUIDE SHOES**

Diamond particles are imbedded in hard bronze material allowing the diamond stones to work as rigid guide shoes supporting the hone head with even bore pressure.

**Feed Out System**

The Precision Hone Head feed out system controls stock removal to .0001” (.0025mm) 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.

**Rottler Precision Honing Heads**

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 2.34” (59.44mm) to 7.38” (187.45mm). Rottler Precision Hone Heads are compatible with 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 designed for speed. The stone holder assemblies are quickly and easily interchangeable in the hone head to cover different diameter ranges or surface finish requirements. Using coarse, aggressive stones, bores can be quickly enlarged accommodating the next oversize cylinder bores and eliminating additional boring machine set ups.

**Diamond and CBN Abrasives**

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

**Rapid Change Stone Holders**

Rottler engineers are committed to providing customers with versatile honing head technology. 6 Stones provide dependable accuracy and longer stone life producing superior finishes. The increased surface area removes material efficiently providing the next level in honing performance. Rottler honing heads are engineered to pair with a variety of grit options to generate any surface finish required. Rottler is well positioned to accurately hone the new sprayed on materials being applied in racing applications. Rottler Honing Science eliminates variables allowing you to focus on accurate and productive output.

**Rottler 6 Stone Hone Head**

Rottler Precision 4 Stone Hone Head Systems have set the Diamond Honing Standard for decades. Proven performance is engineered to produce accurate and cylindricity for the ultimate in roundness.

**New 6 Stone Hone Head**

Large hone head has interchangeable sleeves that extend the diameter capacity from 2.99” (75.92mm) all the way up to 7.38” (187.45mm).
CAPACITY

Universal and Large Capacity

Rottler H85 Machines have an oversize coolant cabinet with parallel supports. The rigid cabinet allows the use of various fixtures and parallels for honing a variety of engine blocks and parts. Often, large race block studs can be left in the block as the increased size of the tank has the clearance required. The H85 Series handles single cylinders to large diesel In-line blocks up to 55" (1400mm) long can be easily setup. Optional Quick Clamp Handles can be utilized to efficiently hold parts for honing.

Universal Quick Clamp Handles

Universal Quick Clamp Handles allow for rigid clamping of small single cylinders. Large Inline diesel blocks utilize the Quiet Clamp System for fast and versatile set up.

Universal Parallels

Universal Parallels allow for small single cylinder or smallest compressor cylinders to be set up and honed.

UNIVERSAL FIXTURES

Universal Liner Clamping System

Liners and cylinders can be clamped using the optional universal liner clamping fixture #514-7B. The fixture holds loose liners and cylinders such as Deutz and Porsche. Requires Optional Roll Fixture.

Multiple Liner Honing Fixture

Special Liner Honing Fixture allows multiple liners to be clamped and honed with the same setup. The Multiple Liner Honing Fixture is shown here with four CAT 3500 liners. Fixtures for smaller cylinders such as Harley can hold up to six or eight liners/cylinders. Profit from the lucrative business of recycling liners!

Manual Roll Over Fixture

Optional Manual Roll Over fixture provides exceptionally fast set up and block roll over is simple for V blocks with deck angles - 7.5°, 15°, 30° and 45°. A bar through the main line firmly holds the block on the cradle for rigid honing.

Fixtures Engineered for Industrial Applications

The easy clamp system built to provide the industrial market multiple options to attain the ultimate in flexibility and efficiency.

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

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**Internet Support**

Rottler offers cutting edge internet support direct from your machine to the factory. Our cutting edge internet support even enables us to “Log In” and remotely control your machine from our factory if necessary. Shop too busy or noisy for talking? The pre-installed Skype™ application gives you instant messaging capabilities with Rottler Factory Technicians.

**Video Chat and Instant Messaging**

Skype™ and a webcam are installed on the H85 for video conferencing, instant messaging and internet support. This feature gives you instant, direct contact with Rottler right on the machine without even making a phone call. The standard webcam comes pre-installed so that Rottler technicians can see exactly what you are seeing. This saves a tremendous amount of time when trying to answer questions. Video communication to the machine is required.
Since 1923, Rottler Manufacturing has had a solitary mission —- to develop the highest quality engine machining equipment for the performance race engine builder, medium duty diesel jobber shop, production gas engine remanufacturer or heavy duty diesel engine repair facility. An unwavering commitment to excellence continues to result in advanced designs and equipment designed to meet the most demanding engineering needs of the most successful engine builders.

Rottler’s “Cutting Edge” can be seen in a complete range of machines specifically designed to meet the unique challenges of today’s engine builders. Engines that move the world are machined with Rottler.