

ROTTLER

THE CUTTING EDGE

H70A Series

CNC True Vertical Honing Machine



- Fast
Cycle Time
- Dual Stage Honing
Capability
- Quick Turn
Automatic Tool
Clamping

Rottler
Software senses
interference for
Automatic Crash
Prevention

Machining Equipment Created for Performance Racing & Engine Remanufacturing.
So Advanced, It's Simple.

H70 SERIES VERTICAL HONING MACHINES

Automatic Hole to Hole and Automatic Roll Over System

Optional Automatic Hole to Hole and Roll Over Systems allows an Inline or V Block to be honed unattended. The power of the combined options allow operators to set up a V block and walk away. This will substantially increase productivity with 50-70% labor savings over any manual honing machine. Imagine a cylinder honing machine running unattended while the operator performs other jobs! Simple automation allows you to run lights out for the ultimate in efficiency.

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 H70 starts honing a cylinder, the machine will check bores for issues avoiding potential damage to honing stones and holders. Variances in lower bores are common. Rottler H70 Controls verify lower bore interference prior to rotation start and stroking motion.

Vertical Stroking System

CNC Servo Controlled High Pitch Ball Screw and Hardened Steel Linear Slideway Systems allow precision vertical stroking and fully automated operation, creating a true constant cross hatch pattern throughout the entire length of the bore increasing oil retention while reducing oil 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 stones experience against the cylinder wall during the honing operation. Roughing cycles require higher loads for faster stock removal and finishing cycles requires lower loads to reduce distortion. The H70 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 Brush Operation

The machine automatically expands plateau brushes to programmed load and counts down the number of plateau strokes, then withdraws the brushes and retracts to the clearance position.

Automatic Zero Position Setting System

H70 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 H70 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

H70 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.

Roughing and Finish Bore Transition Sensing

Aggressive roughing mode allows for quick stock removal. The H70 automatically transitions to finishing mode by reducing honing stone pressure resulting in precision bore geometry created within the software produced by the experience of the Rottler engineering team.

**50% -70%
Labor
Savings**



CAT C280 - 3600 Liner

Linear slideway stroking and precision ball screw mechanisms create precise cross hatch angle & repeatable accuracy

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.

Filtration System and Coolant Tank

Large Capacity 70 Gal (265 Liter) and strong magnetic filter system keep the coolant cleaner and cooler. Two stage canister filter system allows removal of very fine particles from the honing fluid. Optional external magnetic coolant system increases coolant volume by 30 Gal (115 Liter). Easy cleaning improves efficiency while maintaining cleaner filters for extended fluid and filter life.

Electronic Hand Wheel

Moves work head from cylinder to cylinder and lowers the hone head into each bore. Manually expand stones inside the bore for the ultimate in versatility.

Rugged Design – Solid Construction

H70 Series machines ensure a lifetime of rigidity and accuracy. Heavy duty industrial powder coating creates a durable rust free finish to protect your machine and ease the cleaning process year after year.

Quick Change Spindle System

Spindle Taper and Quick Change System allows 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 H70 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 .0001" (.002mm) increments of bore diameter.

International Multi Language

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

Water Based Synthetic Coolant

Water based synthetic honing coolant can be used with Rottler diamond honing stones, greatly reducing heat buildup 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.

Large Capacity and Versatility

Large Capacity and Versatility – the H75 has capacity to hone from the smallest to large 6 cylinder in-line diesel blocks up to 55' (1400mm) long. The H75 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 H76 can hone very large liners up to 12" (305mm) Max Diameter

Stainless Steel Doors

Sliding stainless steel doors and optional Laser Curtain Safety System provide easy cleaning, smooth movement and long life with wide opening for easy loading of blocks. Doors are easily removed for cleaning of machine and changing fixtures. Operator safety is enhanced with a Laser Safety Curtain. If the operator breaks the plane of the Laser Safety Curtain, the H70 cuts power to moving systems.

Compact Size

Efficient design takes up less room in your shop increasing production while allowing room for future expansion. Built for easy adaptation and transfer line integration.

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 Honing.



Automatic Controls

The new Rottler H70 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 handles 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.

Rottler H70 Machines are manufactured with Precision Ball Screw Stroke Mechanisms to create precise cross hatch angle.

The Rottler H70 Series Advantage

There are several important features of the new Rottler H70 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.



Rottler Software is designed with Manual Operators in mind. Intuitive design allows for manual ease with digital accuracy. Programming is created by allowing Manual Operators to utilize Touch Screen icons for easy control. So Advanced, It's Simple.



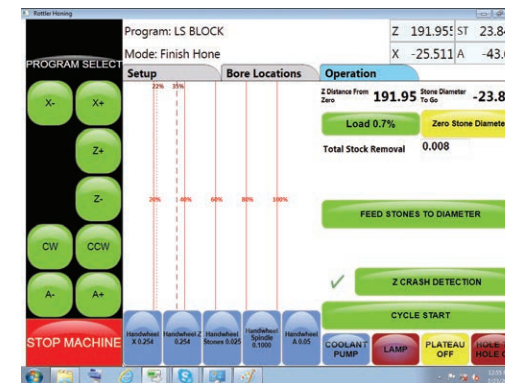
Home Screen

The home screen is where new programs are created and saved by name for future use. Unlimited number of programs can be saved in memory.



Setup Screen

All information and specifications are easily programmed in the Set Up screen for a specific engine or job. Recall is simple as past jobs are pulled up with a quick touch.



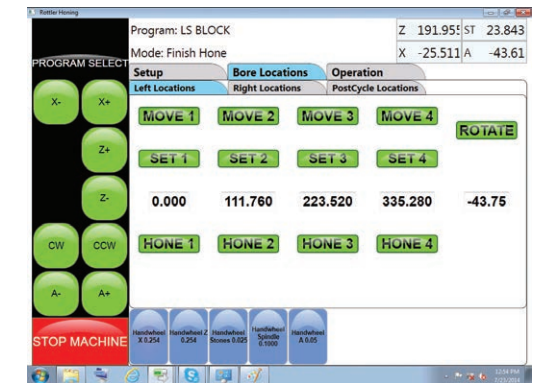
Running Screen

The Running Screen appears when running an automatic cycle allowing the operator to visually experience what is running on the machine at all times.



Operations Screen

The Operations Screen is where the operator spends the most time. Activating the Automatic Zero Setting is an innovative feature that creates final size accuracy that can be pulled up quickly on all new jobs. From the Operations Screen, the operator can program and control functions such as coolant, lights, plateau, hole to hole, jogging and more. On screen control lets you toggle between automation and touch screen movements that mirror old school manual control.



Locations Screen

Optional Hole to Hole System programming is managed on the Locations Screen. Dimensions between cylinder centers are vividly displayed and set up is extremely fast. Angle rotation programming is on the same screen to control the optional Automatic Roll Over Fixture. Once these dimensions have been input, simply touching the 'Move To' button will allow the hone head to move to each - automatically.

ROTTLER'S DIAMOND PROCESS

Rottler Manufacturing has powered the industry forward by innovating new and efficient application of diamond abrasives to the automotive aftermarket. Rottler developed engineering, in collaboration with experts, ranging from performance racing to the locomotive industry. Rottler engineering has created an entire process that proves diamond abrasive boring technology is the most accurate and cost effective method to produce superior bore finishes in a consistent fashion.

Automatic Pressure/Load Control

The H70 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 H70 control automatically senses and controls load to ensure correct loads during finishing for accurate geometry.

Advanced Rottler Diamond 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 H70 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, Mercedes, 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 H70 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

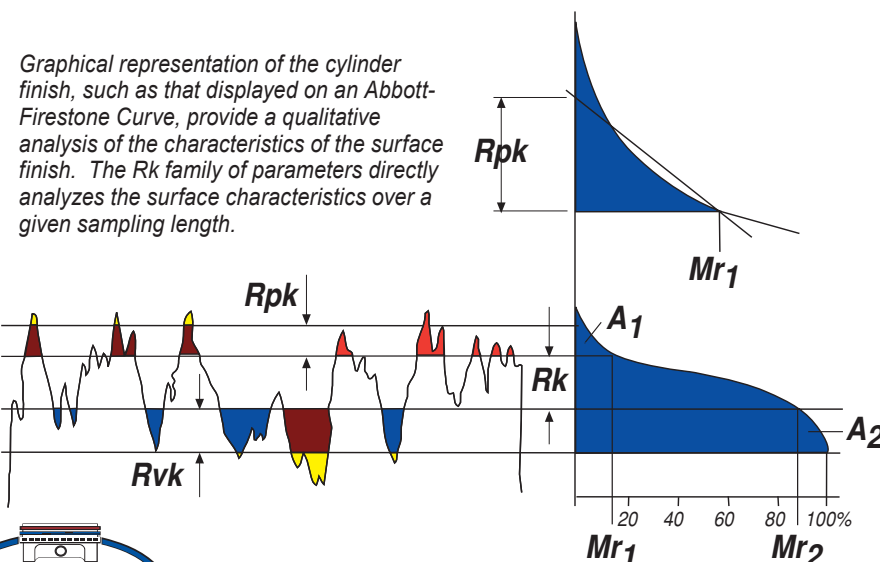
Manufacturing the most widely used diamond system in the engine manufacturing industry has allowed Rottler to optimize diamond abrasives for maximum life and correct finish. Rottler diamond abrasives last up to two times longer than other less expensive brands.

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 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 H70. Whether removing material or finishing the cylinder, the H70 makes money fast.



ROTTLER HAS MADE DIAMOND HONING TECHNOLOGY PROFITABLE FOR EVERY TYPE OF ENGINE BUILDER

HEAVY DUTY PRECISION DIAMOND HONE HEADS

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 11.98" (304.29mm). 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.

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.

Rigid 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.

Precision Hone Head

Honing range with Rottler Multi Point Diamond Abrasives

Medium Hone Head
2.34 - 3.05" (59.44 - 77.47mm)

Large Hone Head
2.99 - 7.38" (75.92 - 187.45mm)

Extra Large Hone Head
6.24 - 11.98" (158.50 - 304.29mm)

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



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)

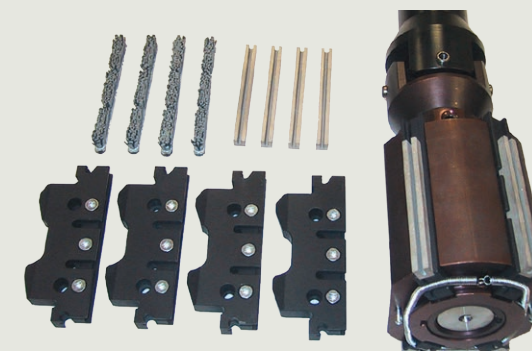


Extra Large Hone Head has 6" (150mm) long diamond stone holders and is able to hone cylinders up to 11.98" (304.29mm) diameter.



New 6 Stone Honing Head

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.



Quick Change Stone Holders

Rottler lifetime Quick Change stone holders are designed to clamp with three screws engineered for rapid changes and replacement. Replacement diamond stones and plateau brushes are quickly changed saving considerable cost over the lifetime of the machine.

Unattended Operation

Most aftermarket honing machines are extremely labor intensive – the operator literally has to stay at the machine and is unable to do any other work while the job is being honed. Rottler pioneered automatic ‘walk away’ diamond honing over 15 years ago. Rottler now introduces the H70A Series that allows a complete block to be honed unattended.

*Optional equipment needed.

The H75A has been developed for the small to medium size engine market. Honing capabilities include the smallest blocks and a range of liners. Automotive and small diesel engines are quickly set up with efficiency in mind. Jobber, performance and production remanufacturing shops will benefit from the features engineered into the H75A.

Ductile iron liners such as Darton MID system can be easily honed to precision tolerances and surface finish for maximum compression and performance.



Reverse Rotation Capability

H70 Series machines are capable of honing with both Clockwise and Counter Clockwise hone head rotation. Aggressive rough honing may cause metal folding due to porosity that may be present in the bore. Reverse rotation during the finishing or plateau cycle smooths potential folding resulting in improved bore quality and consistency.

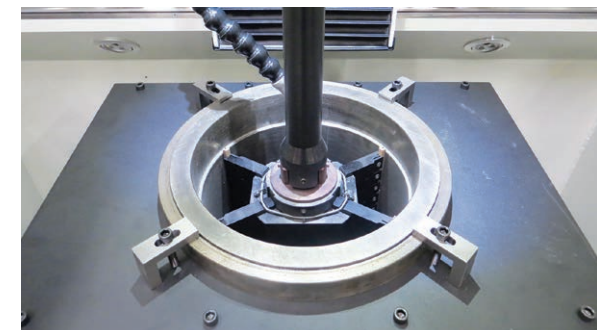
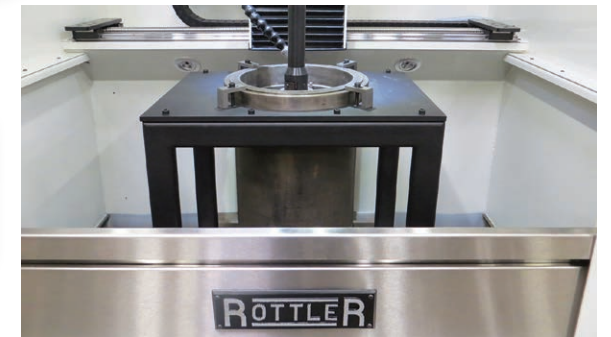


Performance Racing Engines

Solid Billet Aluminum Blocks with Ductile liners can be honed to exact tolerance and surface finish reducing blow by and increasing horse power.

As engine remanufacturers expand their businesses to include larger diesel engines, the requirement for honing larger blocks and cylinder liners is increasing. The H76A was developed to hone all the small to medium work that the H75A can hone plus larger cylinder liners such as CAT 3500 – C175, 3600 – C280, MTU 1163 & 8000, EMD and GE locomotive liners. The H76A has increased stroke capacity and is also able to hone liners such as EMD without removing the long upper studs saving hours of unnecessary work when remanufacturing these liners!

Remanufacturing diesel and natural gas cylinder liners is becoming a very lucrative process for engine remanufacturers as well as helping preserve the environment. After cleaning and a Rottler Honing finish, a majority of used liners are returned to service as good as new.



Extra Large Liners/Cylinders

The H76A is designed to hone up to very large liners such as CAT 3600, MTU 8000 and GE and EMD Locomotive liners. The optional extra-large liner fixture holds liners in the same fashion both installed in the block or when worked externally.

Dual Stage Hone Heads

Rottler offers special dual stage hone heads that allow two different types of honing abrasives to be used in one hone head and one automatic cycle. Many engines require a plateau finish and the best way to obtain the correct plateau surface finish is by brushing. Once the finishing diamond stones have completed honing the cylinders to final size diameter, the Rottler CNC honing control automatically retracts the finishing diamond stones and expands the plateau brushes to a preset load/force and then hones the cylinder to the preset number of strokes.

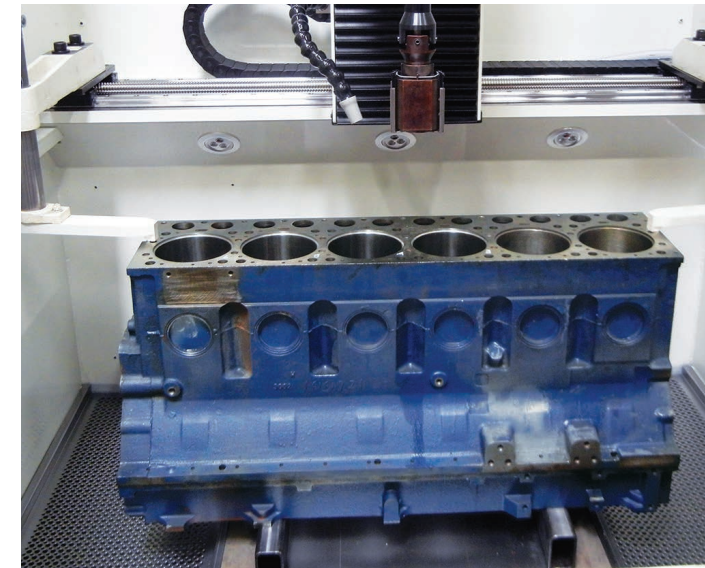
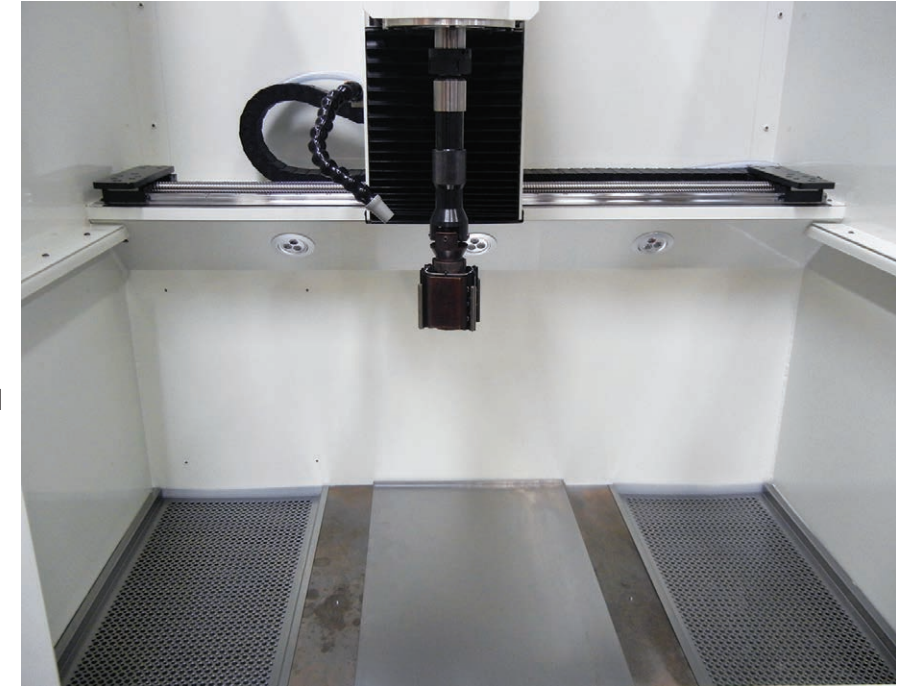
Some engine builders like to finish their bores with a fine diamond and this can also be done with these dual stage hone heads. Six roughing diamond stones and four finish diamond stones get the job done. Fine diamond finishing can be accomplished with these dual stage hone heads. Rottler CNC controls can easily be programmed to run the preset load/force for both roughing and finishing.

Rottler can manufacture CBN honing stones for specialized applications.



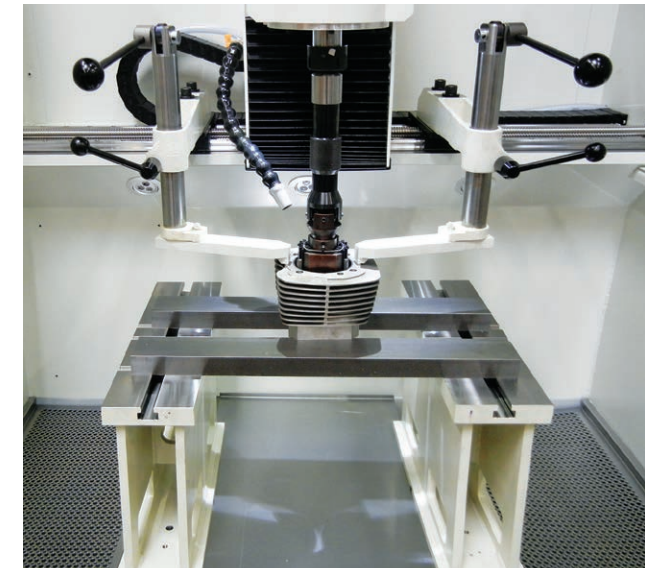
Universal and Large Capacity

Rottler H70 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 H70 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

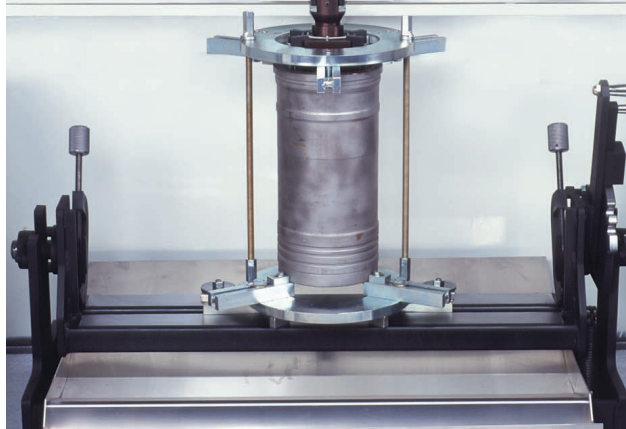
Universal Quick Clamp Handles allow for rigid clamping of small single cylinders. Large Inline diesel blocks utilize the Quick Clamp System for fast and versatile set up.



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.

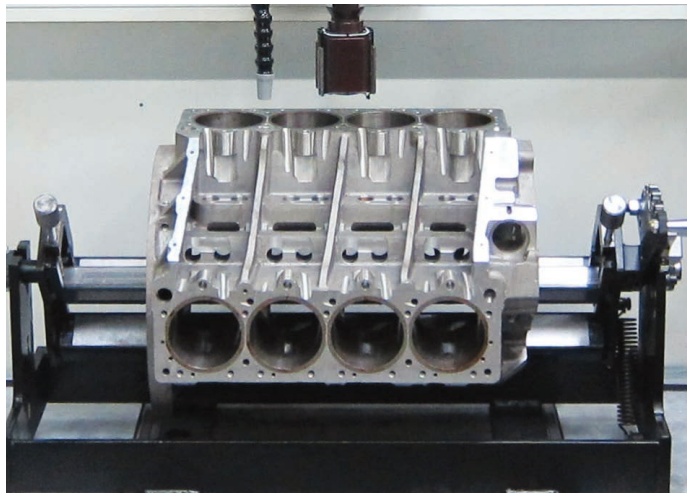


Multiple Liner Honing Fixture

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!

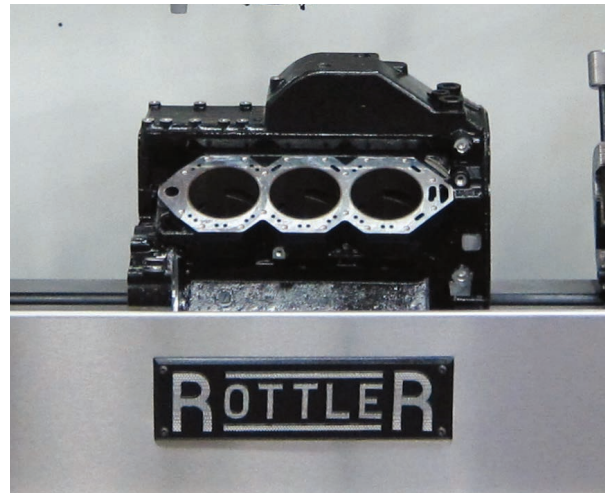
Manual Roll Over Fixture

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.

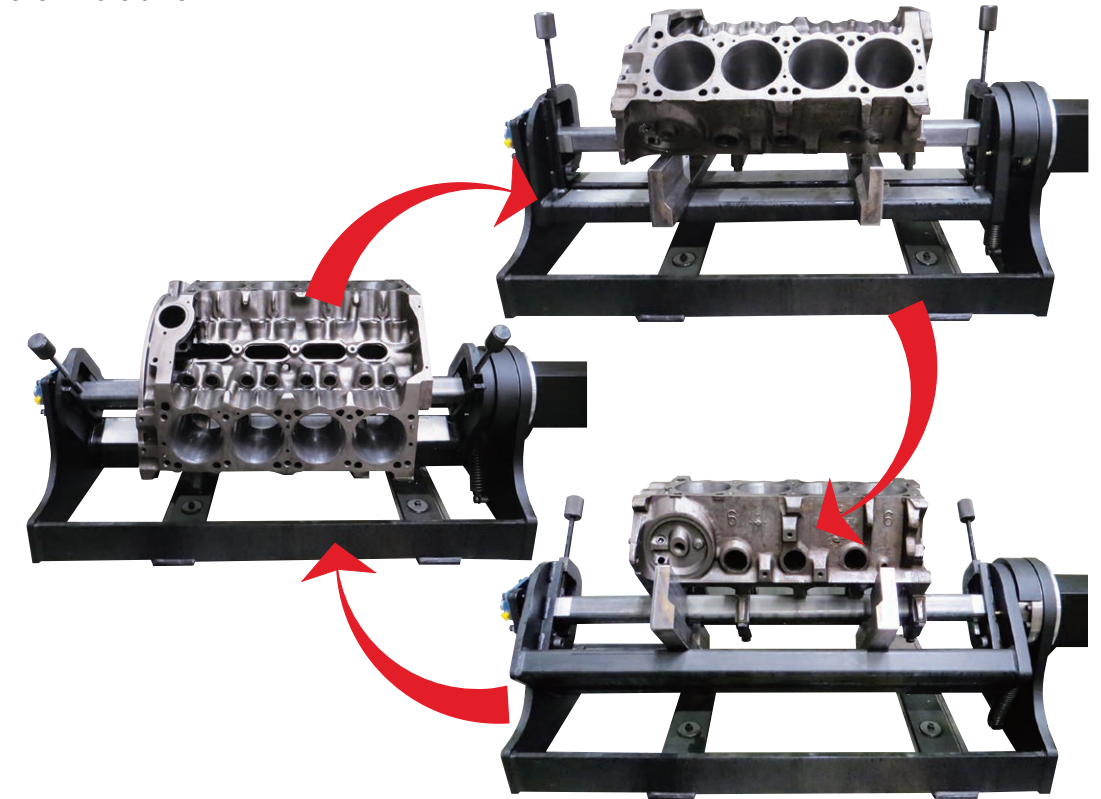


Marine Outboard, Snowmobile, Motorcycle and other similar cylinders can be easily mounted and rolled over for precision blind hole honing.

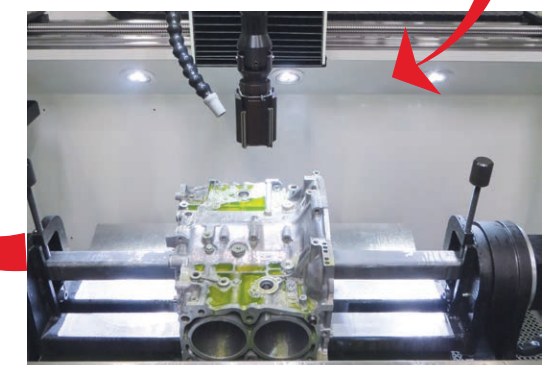
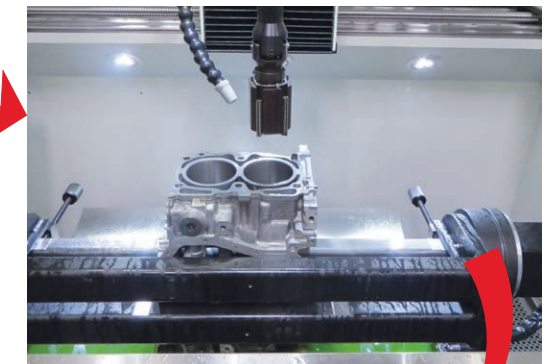
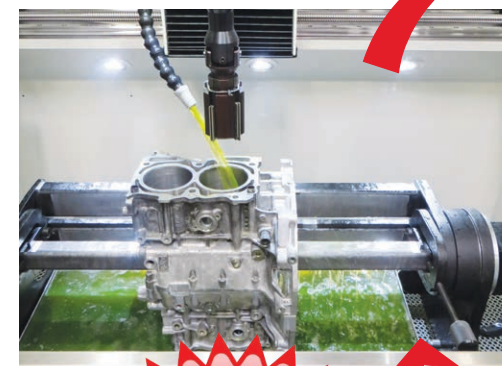
ROLL OVER FIXTURES

Automatic Programmable Roll Over Fixture

Optional automatic programmable Rottler Roll Over Fixture allows a complete V block to be honed unattended! The CNC control will automatically roll the block to the correct angle as it completes the programmed cycle. Automatic coolant drain feature rolls the block at the end of the cycle to allow coolant to drain out saving the operator even more time.



Odd shaped blocks such as the Subaru "Boxer" are set up easily. All cylinders are Automatically honed in one cycle with the efficiency of unattended operation.



Optional Roll Over Fixture allows for Walk Away Operation

STANDARD EQUIPMENT

- Automatic Lower Crash Protection System – before each cylinder is honed, the machine will automatically check that the stones will not interfere with lower bore before starting rotation and stroking.
- Spindle with Quick Change System - change honing heads nearly instantly with the innovative wrench free Automatic Clamping System.
- Automatic Zero Position Setting System – the H70 Series will automatically set zero position and move to clearance position for calibration purposes.
- Automatic Honing Stone Retract at End of Cycle – the H70 Series will automatically retract the stones during last stroke so that the stones do not leave any scratches or marks in the bore.
- Automatic Cross Hatch Angle System – the H70 Series will automatically adjust parameters to programmed cross hatch angle and finish the bore to programmed angle.
- Automatic Roughing and Finishing Load Sensing System - machine short strokes or dwells anywhere it senses a tight area.
- Electronic Hand Wheel for moving work head from cylinder to cylinder and lowering hone head into each bore.
- Automatic Stone Feed-out System - once hone head is positioned in the bore, the H70 Series automatically expands stones and rotates slowly before starting hone cycle.
- Automatic Plateau Brush Finish Program - the Rottler H70 Series automatically expands plateau brushes to programmed load and counts down number of plateau strokes, then withdraws the brushes and retracts to the clearance position.
- Control and programming through 15" (400mm) CNC Touch Screen Control.
- Precision Display in .0001" (.002mm) resolution.
- Industrial PC with Intel Processor and Windows Operating System.
- USB Flash Drive and Ethernet connections.
- Remote training, service and support via internet connection to machine (required).
- Operation in either US Inches or Metric systems.
- Horizontal Movement (X Axis) - Left and Right Direction - 38" (965mm).
- Vertical Movement (Z Axis) - Up and Down - 28" (711mm).
- Spindle Rotation System - CNC SERVO Controlled High Torque Spindle Rotation System - 3.7HP (2.75kW) 117 in-lb (53NM).
- Stroking System - CNC SERVO Controlled High Pitch Ball Screw System - 3.3HP (2.47KW) 88.5 in.lbs (40NM).
- Infinitely Variable Stroke Speed Control - Variable from 0 to 1500IPM (38m/min).
- Stroke System Acceleration - 200in/s², metric 5m/s².
- Infinitely Variable Spindle RPM Control - Variable from 0 to 400RPM.
- Stone Tray for up to 6 stone holder sets with built-in Dial Bore Gage Holder.
- Coolant System - Large Capacity 70 Gal (265 Liter).
- Filter System - Volume pump with 2 canisters for dual filtration.
- Operation, Programming and Spare Parts Manual - Digital.



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 H70 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.

MADE IN U.S.A.

SPECIFICATIONS

	H75A	H76A
Diameter Range	2.34" to 7.38" (59.44 to 187.45mm)	2.34" to 11.98" (59.44 to 304.29mm)
Workpiece Capacity - Length	55" (1400mm)	55" (1400mm)
*Travel of Workhead - X axis	38" (965mm)	38" (965mm)
Stroke Length of Machine	19" (483mm)	40" (1143mm)
Length of cylinder to be honed	17" (432mm)	37" (940mm)
Spindle Motor Power	3.7 HP (2.77KW)	3.7 HP (2.77KW)
Spindle Motor Torque	117 in.lbs (53 NM)	117 in.lbs (53 NM)
Torque at Hone Head	585 in.lbs (265NM)	1170 in.lbs (530NM)
Spindle/Hone Head Rotation Speed - variable	1 to 400RPM	1 to 200RPM
Stroker Motor Power	3.3HP (2.47KW)	3.3HP (2.47KW)
Stroker Motor Torque	88.5 in.lbs (40NM)	88.5 in.lbs (40NM)
Stroke System Acceleration	200in/sec ² (5m/sec ²)	200in/sec ² (5m/sec ²)
Spindle/Hone Head Stroke Speed - variable	0 - 1500IPM (38m/min)	0 - 1500IPM (38m/min)
Coolant capacity	70 Gal (265L) Optional 100 Gal (378L)	70 Gal (265L) Optional 100 Gal (378L)
Floor space requirement	60"W x 49"D (1.5mW x 3.8mD)	60"W x 49"D (1.5mW x 3.8mD)
Electrical requirement	208-240 V, 30 A, 3 PH, 50/60HZ	208-240 V, 30 A, 3 PH, 50/60HZ
Shipping Dimensions	74"x 64" x 89" (1.8 x 1.6 x 2.2m)	74"x 64" x 108" (1.8 x 1.6 x 2.4m)
Shipping Weight	2850lbs (1293kgs)	3500lbs (1588kgs)
Paint Color Code	RAL 9002 (Grey White)	

* Maximum distance for outer cylinders of engine block



Valve Refacing



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Boring



Seat & Guide



Surfacing



Heads

Big Blocks

Honing



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