

**ROTTLER**  
THE CUTTING EDGE

# H85X Series

## CNC Automatic Vertical Honing Machines

**Xcelerate**  
your machining time,  
productivity and profits!



Machining Equipment  
Created for Performance  
Racing & Engine  
Remanufacturing.

So Advanced, It's Simple.

# H85X CNC VERTICAL HONING MACHINES

## 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 H85X starts honing a cylinder, the machine will check bores for interference avoiding potential damage to honing stones and holders. Variances in lower bores are common. Rottler H85X Control senses lower bore interference prior to rotation and stroking motion before honing cycle starts, eliminating any stone or holder damage.

## 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 exert against the cylinder wall during the honing operation. Roughing cycles require higher loads for faster stock removal and finishing cycles require lower loads to reduce distortion. The H85X 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

H85X 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 H85X 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

H85X 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!

## 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.

## Electronic Hand Wheel

The electronic handwheel is used during set up and programming, The various movements are made by rotating the handwheel

## Rugged Design – Solid Construction

H85X 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!

## Large, Clear Digital Display

The H85X 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.

## Reverse Rotation Capability

H80X 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.

## International Multi Language

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

## Large Capacity and Versatility

Large Capacity and Versatility – the H85X has capacity to hone from the smallest engine to a large 6 cylinder block up to 55" (1400mm) long. The H85X 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.

## 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.

## Filtration and Cleaning System

The H85X is supplied with 2 separate canister filter systems. The first canister has a lifetime magnetic cartridge that traps most particles. This cartridge is serviceable with a special tool and takes only few seconds to clean. The second canister has a dual gradient paper filter cartridge. This filter starts filtering at 50 micron particles and ends filtering 5 micron particles – keeping the coolant and the machine cleaner while removing very fine particles from the coolant. The coolant tank has 6 large removable magnets installed in slots under the tank. Once the tank is removed from under the machine, these magnets are removed and the tank is easily and quickly cleaned away from the machine.

## Roll Out Coolant Tank

Large capacity 70 Gal. (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. Multiple Coolant Tanks can be used allowing full production while cleaning - most honing machines must be taken out of service when cleaning which can take many hours and uncomfortable cleaning 'inside' the machine! The H80 Series can have multiple coolant tanks allowing the machine to be in service while another tank is being cleaned. This also allows cleaning to be done in a cleaning area of the shop and not at the honing machine. When different bore materials require different coolants, for example, ALUSIL requires honing oil, a separate tank can be filled with honing oil and used when honing ALUSIL blocks.

## Water Based Synthetic Coolant

Water based synthetic honing coolant can be used with Rottler diamond/CBN 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.



# HOLE-TO-HOLE AUTOMATION

**H85AX** Special Version Production Machine that can move automatically in X axis for programmable hole-to-hole block honing - hones a line of cylinders unattended.



At Roush Yates Engines, we machine and build over 900 high performance racing engines per year for NASCAR and Road Racing. We installed 2 Rottler CNC Vertical Honing Machines during the 2015 Season, and immediately noticed versatility and efficiency improvements with our block machining process. Rottler is an industry leader and continues to make advancements in block machining technology which is required to win in business or on the race track.

– Carson Dunn, Block Machining Manager

## 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 H80X Series that allows the machine to move automatically hole-to-hole – unattended!

The H85X 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 H85X.

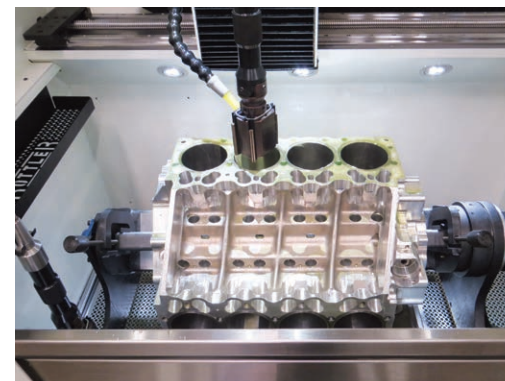
Ductile iron liners such as Darton MID system can be easily honed to precision tolerances and surface finish for maximum compression and minimum wear and oil consumption.

# UNATTENDED AUTOMATION

**H85AXY** Special Version High Production Machine that can move automatically in both X and Y axis for automatic honing offset cylinder blocks and parts. This feature allows use of optional programmable roll over fixture to be able to hone a complete V block automatically – unattended! Includes feature to drain coolant out of block at end of cycle.



**Xcelerate**  
your machining time,  
productivity and profits!



**AJPE**  
alan johnson performance engineering

“Our Rottler CNC Automated cylinder hone has decreased the manual labor needed to hone our solid billet blocks with semi-finished ductile iron sleeves. The simple set up and fully automated design allows our operators to hone blocks unattended while performing other block operations.”

– Rick Wilkinson  
Alan Johnson Performance Engineering

Rottler has been dedicated to the Engine Industry since 1923 and has designed and manufactured computer controlled machinery since the 1980s. We have used all these years of experience to bring you the most advanced, fast to learn and easy to operate Touch Screen Control available on the market today. Rottler innovation sets the standard in Diamond and CBN Honing!



## The Rottler H85X Series Advantage

There are several important features of the new Rottler H85X 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.

## 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.

## 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. Simply enter the angle and the computer will maintain the angle from top to bottom of the cylinder. Camera and Software available to measure Cross Hatch Angle.

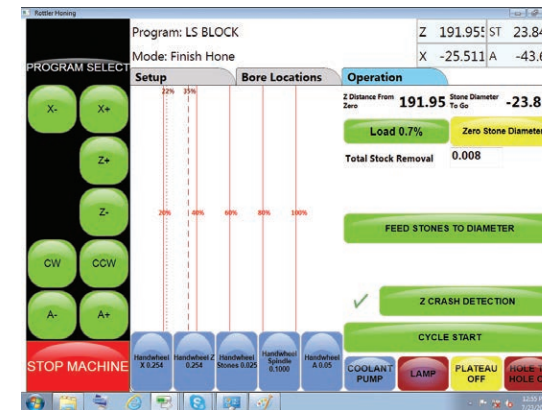
## Sensitivity Control

The operator can select a level of sensitivity that the control will sense any variance in diameter and the machine will automatically short stroke or dwell in that area.

## Stone Wear Compensation

When removing considerable amounts of material, the honing abrasive may wear by very small amounts. The stone wear compensation setting will allow the machine to adjust the expansion of the stones to compensate for any stone wear and obtain equal diameter cylinders.

**Rottler Software is designed with Simplicity in mind. Conversational software allows operators to quickly and easily learn and create their own programs. It takes only a few minutes to create a new block program then it is saved for future recall and use.**



## Operations Screen

The Operations Screen is used when the operator runs the machine. The Automatic Zero Setting function is activated allowing the operator to calibrate the hone head diameter and add amount of material to be removed to obtain a desired final diameter. The profile of the bore is displayed graphically to show the operator the straightness of the bore.



## Home Screen

The home screen is where the programs are created and saved by engine model or customer 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.



## 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 AND CBN PROCESS

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 locomotive 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.

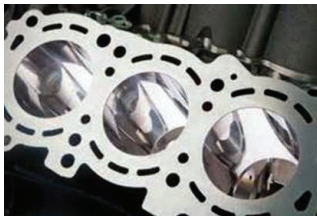
## Advanced Rottler Diamond & CBN Honing

Diamond abrasives do not break down like vitrified stones and require very precise, heavy duty, rigid hone heads. The Rottler Precision Hone Heads are designed and manufactured to exacting tolerances. Each stone holder set is designed to operate within a 1/4" (6.4mm) 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.

## Plated and Special Finish Bore Surface

Many engine blocks today have exotic cylinder bore surface finish to reduce friction, wear and oil consumption. Brand names like Alusil, Lokasil, Silitec, Sumbore, Nanoslide are common in today's engines. These surfaces can be extremely hard and rough after the plating process and require special abrasives and multiple steps to hone and finish the bore surface. Bores are often finished to a mirror like finish with extremely fine grit finishing abrasive stones.



## 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 thousands of times longer than conventional abrasives.

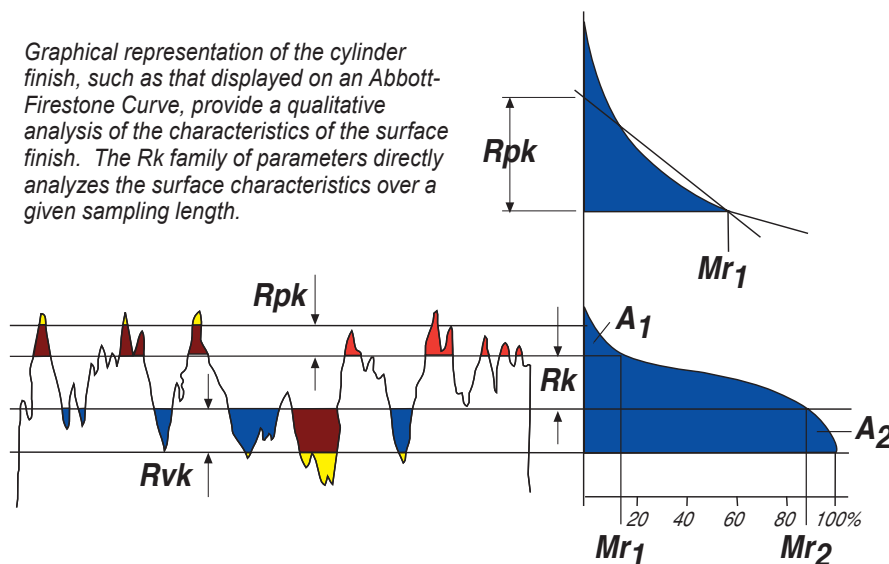
## Automatic Pressure/Load Control

The H85X control was specifically designed to correctly maintain honing stone to cylinder wall pressure/load 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.

## 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 machine and engine blocks is easy – the coolant will not contaminate washing machines. Water based coolant cools the surface of the block far better than oil giving more accurate bore geometry.

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.



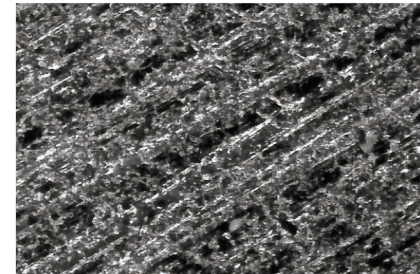
**ROTTLER HAS MADE DIAMOND AND CBN HONING TECHNOLOGY PROFITABLE FOR EVERY TYPE OF ENGINE BUILDER**

# SURFACE & FINISH ACCURACY

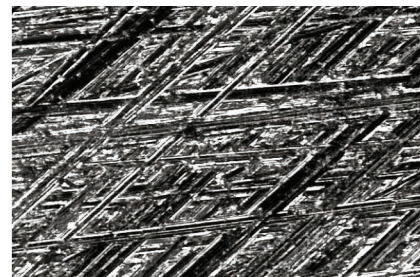
## CBN Super Abrasives

Rottler has a new super abrasive available for honing cast iron cylinders. It is metal bonded CBN - cubic boron nitride abrasive suspended in a metal base. CBN gives a clean finish with no torn, folded or fragment metal left behind – see close up photos of both surface finishes below. In many cases, CBN is replacing brushes or plateau honing tools for finishing cylinders. This is intended for performance racing applications to meet the parameters of high performance piston rings such as Total Seal Piston Rings. Diamond stones can be used for the base finish then the CBN abrasives are used for the finishing or plateau operation.

### Diamond Abrasives



### CBN Abrasives



## Keith Jones

Field Engineer at Total Seal Piston Rings



Total Seal Piston Rings are used in all applications such as Formula 1, NASCAR, Indy, NHRA – you name it!

As the name suggests, at Total Seal we are all about piston ring seal.

We have spent countless hours using the Rottler CNC Vertical Honing Machine in the hunt for the proper surface finishes required to achieve perfect ring seal.

Until recently we have been limited to using vitrified or diamond abrasives.

The vitrified stones gave us nice clean cuts and make it easy hit the target surface finish numbers but consumable costs are much higher compared to diamond stones.

Diamonds can create better bore geometry and give extremely long life but the surface finish is nowhere near as clean a cut and we see lots of debris and burnishing of cylinder surface.

After testing CBN abrasives from Ed Kiebler of Rottler, I was amazed at the surface texture, we now have the best of both worlds.

We have an abrasive with extremely long life and a surface finish that is as good as or better than the vitrified delivered. Little to no debris, no burnishing and almost thread like consistency in the valleys.

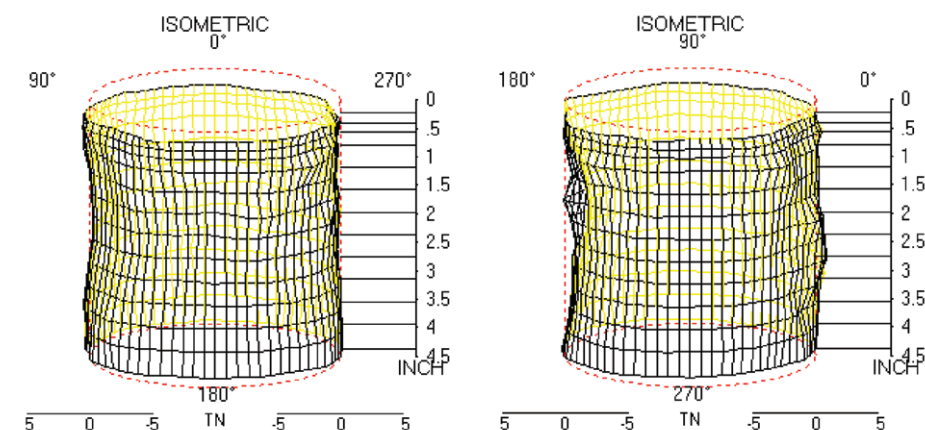
We've examined these different abrasives and the surface textures they leave under high power microscope and the results are consistently the same.

CBN honing stones are a real game changer.

# INCOMETER PRECISION MEASUREMENT

Incometers (Inner Contour Meters) are the most accurate way to determine the roundness and cylindricity of bores. They take an immense number of measurement points from inside the bore, and then produce readings within ± one micron. Because Incometers are computer-controlled, it is possible to perform detailed analyses of these measurements. The system operates with Windows software, and is compatible with the latest computer hardware. Incometers can perform radial, axial or 3D measurements. Collected data runs through a series of calculations for roundness, cylindricity, straightness and parallelism. Outputs are presented in numerical and graphical format.

The following is a graphical display of a cylinder bore that has been honed with Rottler CNC Vertical Honing System. Cylindricity, Roundness, Straightness and Parallelism are within microns.



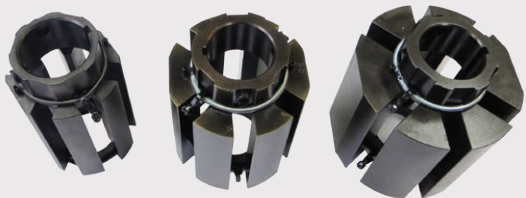
# HEAVY DUTY PRECISION HONE HEADS



## Rottler Precision 6 Stone Holder 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.

Rottler Hone Heads have interchangeable sleeves that extend the diameter capacity for each hone head



Rottler Precision 4 Stone Holder Hone Head Systems have set the Diamond Honing Standard for decades. Economical-ly Priced and Proven Performance is engineered into every hone head to give years of excellent honing results.



## Special Hone Heads

Rottler offers a wide variety of special application hone heads to suit customer requirements.

### 12 Stone Holder Hone Head

12 Stone Holder Hone Head has 12 independent stone holders for special applications.



## 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, CBN and brush abrasives, allowing for unmatched flexibility to customize your finish to the piston rings exact requirement. Exotic materials like sumebore, nickasil and alusil can be honed with special abrasives. Abrasives are held in the stone holders with a clamping system designed for speed. Designed for speed and rigidity, 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

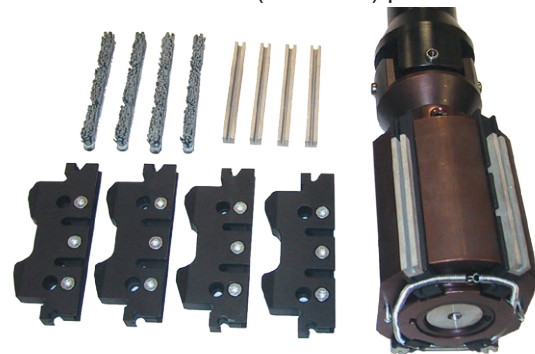
Rottler abrasives are available in many different grit sizes and lengths to give perfect surface finish for all kinds of materials and cylinders. Ranging from tiny two stroke motorcycles with blind holes to huge liners and cylinders, Rottler produces a full line of abrasives to meet your your exact surface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

## 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.



## Quick Change Stone Holders

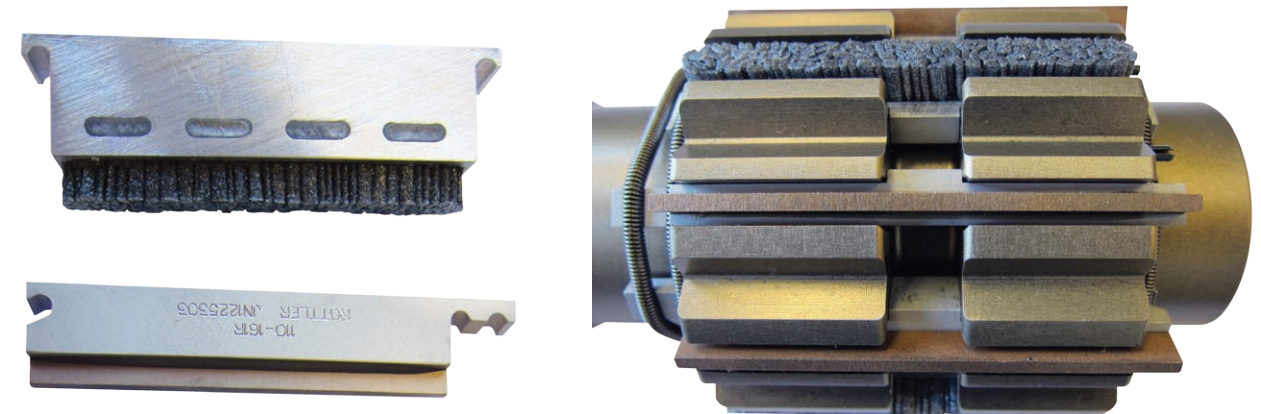
Rottler lifetime Quick Change stone holders are designed to clamp with three screws engineered for rapid changes and replacement. Replacement diamond stones and plateau brushes are quickly changed saving considerable cost over the lifetime of the machine.

# DUAL STAGE HONE HEADS

## 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 or CBN, this can also be done with these dual stage hone heads. Six roughing stone holders and four finish stone holders are available. Fine diamond or CBN 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.



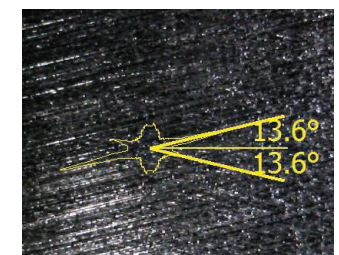
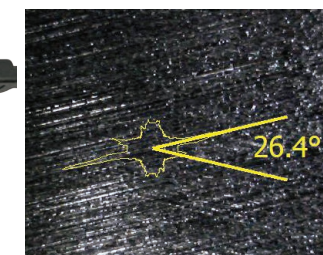
Rottler 10 stone holder dual stage hone head allows roughing/finishing or finishing/plateau in one automatic cycle.



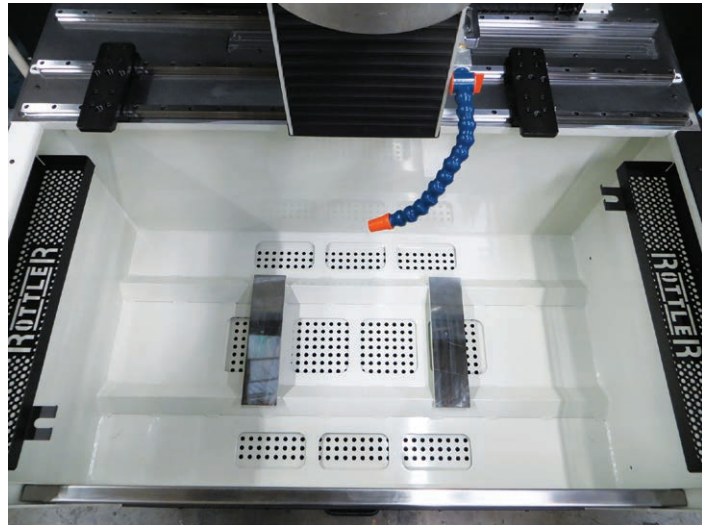
# CROSS HATCH ANGLE MEASUREMENT

## Optional Cross Hatch Camera

Digital camera and software available to measure cross hatch angle. Photos of bore surface showing cross hatch angles can be exported for reporting and quality control purposes.

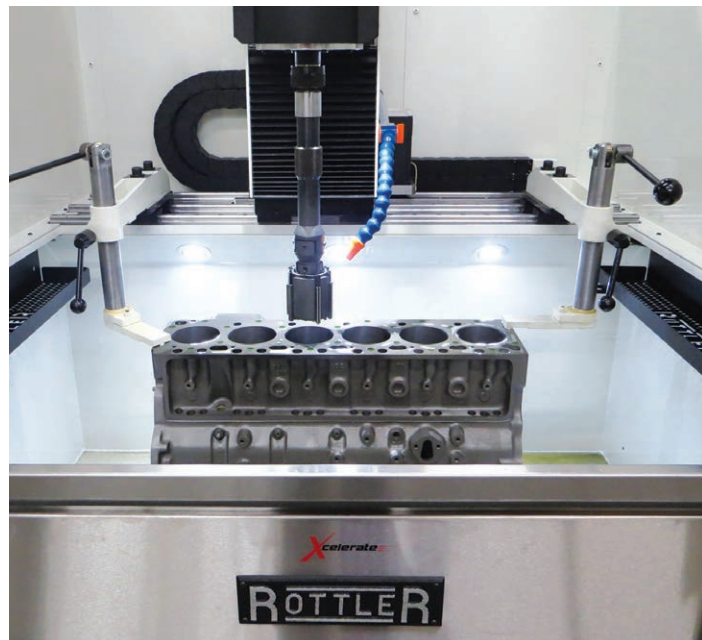


# VERSATILE OPERATION



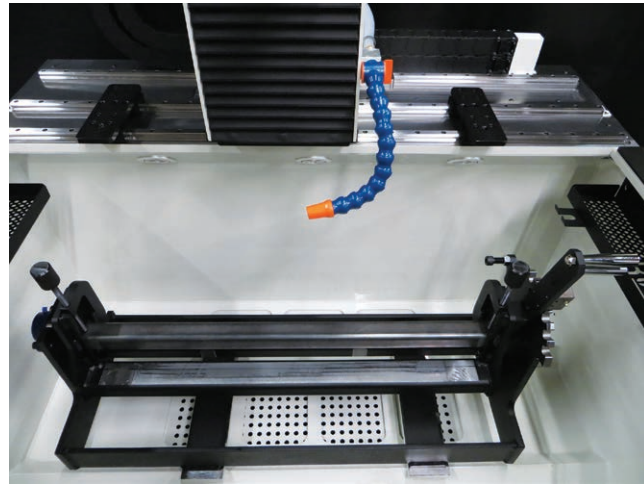
## Universal and Large Capacity

Rottler H85X 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. The extra large cabinet allows large race blocks with long studs and torque plates to be honed. 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. Coolant drains directly down into the removable coolant tank keeping the honing machine clean and dry at all times.



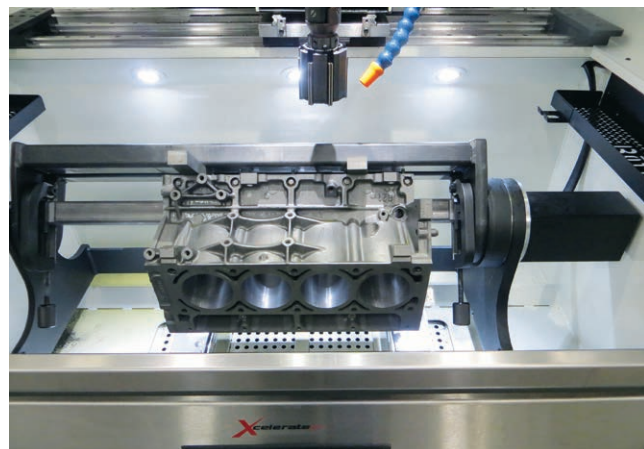
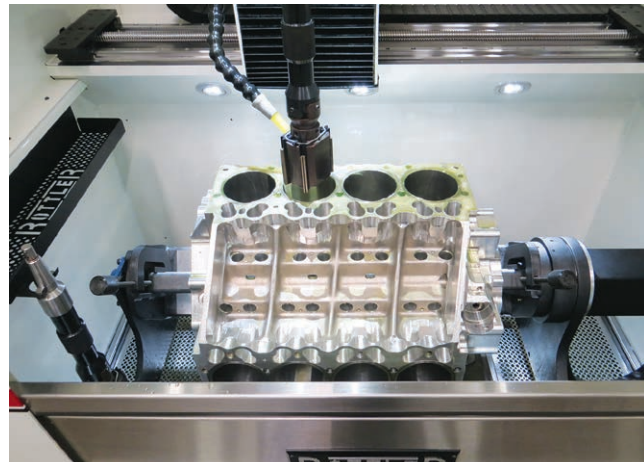
## Universal Quick Clamp Handles

Universal Quick Clamp Handles allow for rigid clamping. Large In-line diesel blocks utilize the Quick Clamp System for fast and versatile set up. This system allows easy clamping of engine blocks that do not have main caps available or fitted.



## Easy Removal Fixture System

Automatic and manual V Block Roll Over fixtures can be easily installed or removed allow quick set up of parallels and special fixtures.



## Coolant Drain Feature

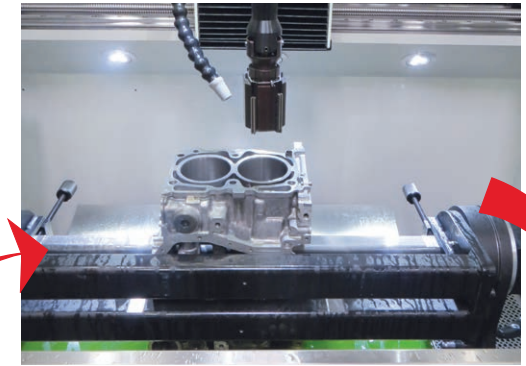
The Automatic Roll Over fixture is able to rotate a block allowing the coolant to drain out of the block so that the block is dry when removed from the machine.

# AUTOMATIC ROLL OVER FIXTURES

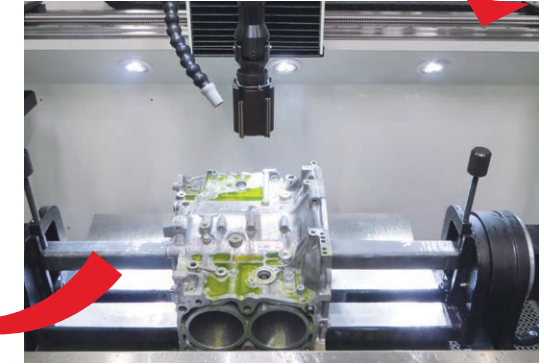
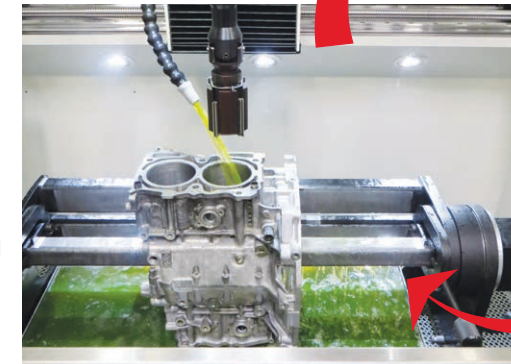


## Automatic Programmable Roll Over Fixture

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.

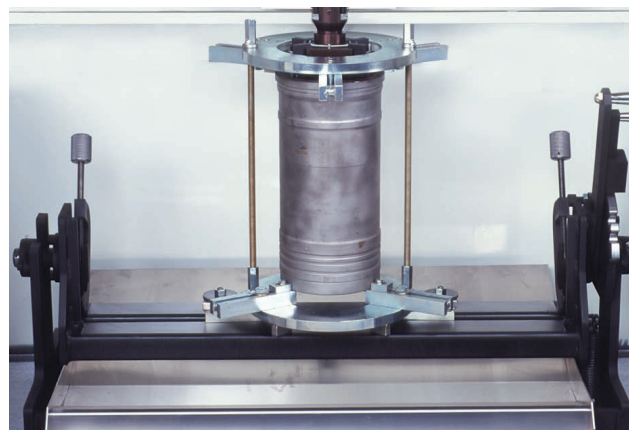


Odd shaped blocks such as the Subaru "Boxter" are set up easily. All cylinders are Automatically honed in one cycle with the efficiency of unattended operation.



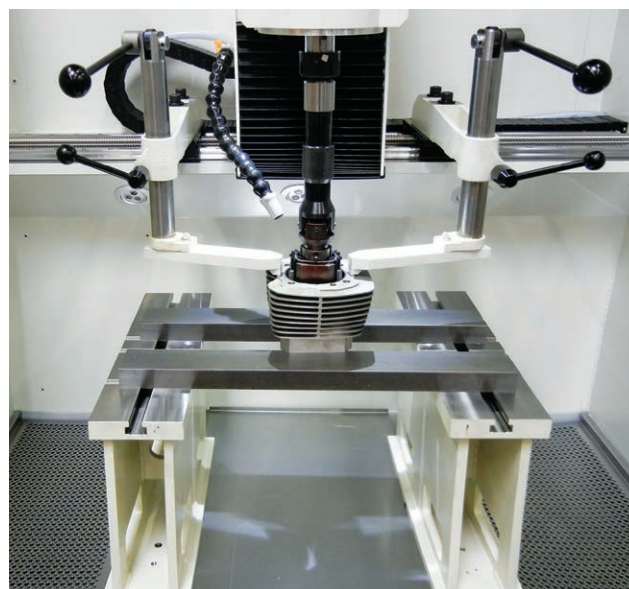
# UNIVERSAL FIXTURES

Rottler design and manufacture a wide range of fixtures to allow set up of virtually anything that will fit inside the enclosure of the machine.



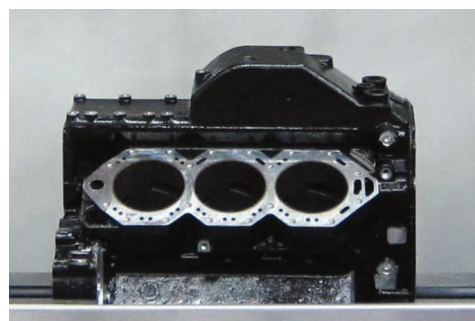
## Universal Liner Clamping System

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 Over Fixture.



## Universal Parallels

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

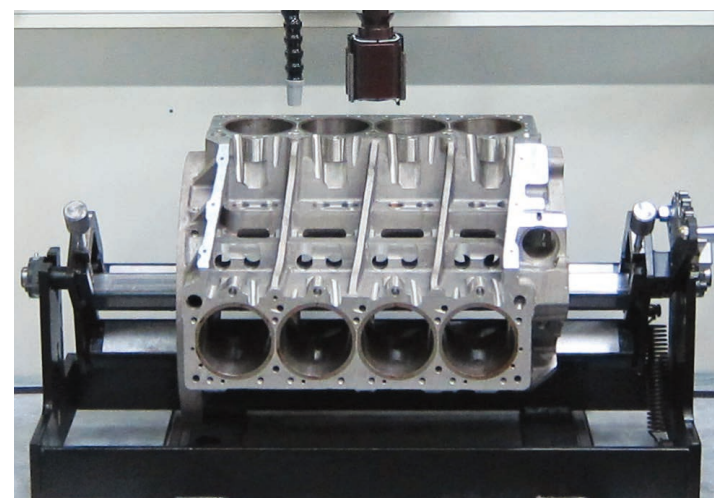


*Marine Outboard, Snowmobile, Motorcycle and other similar cylinders can be easily mounted and rolled over for precision blind hole honing.*



## 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.

# STANDARD EQUIPMENT

- Automatic Lower Crash Protection System – every time cycle start is activated, the machine will check that the stones will not interfere with lower bore before starting rotation and stroking under full power preventing stone and stone holder damage.
  - Spindle Taper with Quick Change System - change hone heads in seconds without any wrenches
  - Automatic Honing Stone retract at End of Cycle – the machine 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 machine 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 lowering hone head into each bore
  - Automatic Stone Feed-out System - once hone head is positioned in the bore, the machine automatically expands stones and rotates slowly before starting hone cycle
  - Automatic Plateau Brush Finish Program - the machine 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 a color 15" (400mm) CNC Touch Screen Control
  - Precision Display in .0001" (.002mm) resolution
  - Industrial PC with Windows Operating System
  - USB Flash Drive and port for file transfer
  - Remote training, service and support via internet connection to machine (required)
  - Operation in either American or Metric systems
  - Horizontal Movement (X Axis) - Left and Right Direction - 38" (965mm) - movement is on linear slideways
  - Horizontal Movement (Y Axis) - Front and Back Direction - 3" (75mm) - movement is on linear slideways
  - Vertical Movement (Z Axis) - Up and Down - 19" (483mm)
  - Stroking System - CNC SERVO Controlled High Pitch Ball Screw System and Linear Slideways
  - Infinitely Variable Stroke Speed Control - Variable from 0 to 1500IPM (38m/min)
  - Stroke System Acceleration - 250in/sec (6.35m/sec)
  - Spindle Rotation System - CNC SERVO Controlled High Torque Spindle Rotation System - 530 in-lb (60NM)
  - Infinitely Variable Spindle RPM Control - Variable from 0 to 400RPM
  - (2) Stone Trays for up to 6 stone holder sets with built-in Dial Bore Gage Holder
  - Hone Head Storage Rack for up to 5 Hone Heads
  - Coolant System - Large Capacity coolant tank 70 Gal (265 Liter) - tank is located under the machine on wheels and is removable for servicing from front or rear of machine
  - Magnetic system for primary filtering inside coolant tank. Magnets are removable for easy tank cleaning once tank is removed from under the machine
  - Replacable Cartridge Canister Filter System. Dual Gradient 50-5 Micron replacement filter cartridge keeps coolant and cabinet clean. Filter Cartridge 514-2-42C
  - Machine Cabinet finished in Baked Enamel is Power Coated for easy cleaning and appearance
  - Lifetime Magnetic Canister Filter System includes tools for cleaning filter
  - Operation, Programming and Spare Parts Manual - Digital
- Optional Safety Feature:**
- Safety Laser Curtain - Operator safety is enhanced with an optional Laser Safety Curtain. If the operator breaks the plane of the Laser Safety Curtain, the H80X cuts power to moving parts. The H80X Software remembers all settings and can continue to complete the automatic cycle to final size after the control has been reset.
- Optional Cross Hatch Camera:**
- Cross Hatch Angle Measurement - Digital camera and software available to measure cross hatch angle. Photos of bore surface showing cross hatch angles can be exported for reporting and quality control purposes.

## 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.



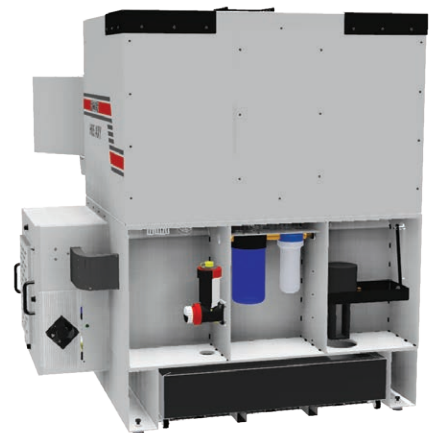


# SPECIFICATIONS

## MADE IN U.S.A.

	American	Metric
Diameter Range (with Rottler Hone Heads)	1.69" - 7.38"	43mm – 187.45mm
Spindle/Hone Head Rotation Speed	1 to 400 RPM	1 - 400 RPM
Torque at Hone Head	44 ft.lbs	60NM
Spindle Motor - Torque	15 ft.lbs	20NM
Spindle Motor - Power	3.7HP	2.77 Kw
Stroker Motor - Torque	88.5in.lbs	10NM
Stroker Motor - Power	1.94HP	1.45KW
Stroke System - Acceleration	250 in/sec <sup>2</sup>	6.35m/sec <sup>2</sup>
Spindle Stroke - Speed	0-1500-ipm	0-38-m/min
Stroke Length - Vertical Travel (Z Axis)	19"	483mm
Length of Cylinder to be Honed	17"	432mm
Workpiece Capacity - Length	55"	1400mm
Workhead - Horizontal Travel (X Axis)	38"	965mm
Coolant Capacity	70 Gallons	265 Liters
Dimensions - Floor Space Requirements	48"D X 75"W x 86"H	1.2mD X 1.1.9mW X 2.2mH
Dimensions - Shipping	67"D X 87"W X 90"H	1.70mD X 2.21mW X 2.29mH
Weight - Shipping (excluding optional equipment)	3400 lbs	1540 kg
Electrical Requirements	208-240V, 30A, 50/60Hz, 3Ph	
Paint Color Code	RAL9002 (Grey White)	

Specifications and design subject to change without notice.



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