

ROTTLER

F80S Series Multi Purpose Machining Centers

PERFORMANCE RACING AND ENGINE REBUILDING MACHINERY AND EQUIPMENT



THE CUTTING EDGE

F84S

Designed for "On Highway" size truck and bus diesel engines, such as Cummins, Detroit, CAT3400, Mercedes, Iveco, Hino, Mitsubishi, John Deere, etc.



The F84S and F85S machines are designed with high speed, automatic capabilities for boring, surfacing and line boring operations. With infinitely variable spindle speeds up to 2000rpm, as well as variable feed rates, these machines are the stronghold for both the job shop and the production environment.

F85S

Designed for Dual Workstations for Production Engine Rebuilders. Auto-rotate fixturing rotates V blocks during the boring cycle so that all cylinders are bored without any operator attendance, the operator can load another block while the F85S completes a V block!



F88S

Efficiency and Versatility in One Machine

The massive F88S employs state of the art technology for machining large diesel engines used for earthmoving, mining, oil and gas industry, power generation, marine, etc. The efficient design and ease of operation make heavy duty machining more profitable than ever before. The open sided design allows large castings and jobs to be easily mounted.

Optional Automatic cycle software and production tooling allow complete block banks to be machined without operator attendance, once the job is set up and the "cycle start" button is pressed, the operator is free to "walk away" and do other work while the F80S completes a block bank or main line bore unattended!

New Software

Automatic line boring, lower sleeve repair, water jacket and thread repair operations.

Flexibility

Block boring and surfacing, head surfacing and line boring capabilities. Rottler's new connecting rod fixture allows large conrods to be accurately machined.

Automated Control Program

Automatically machines counter bores to programmed depth.

Power Drawbar

Change cutterheads from surfacing to boring in 15 seconds.

Heavy Duty Solid Construction

Rottler rugged machine tool quality for long life and accuracy.

Pendant Control

Controls located on one panel for ease of operation.



Productivity

For many jobs 75% time savings over traditional machines.

Features

Efficiency, Versatility and Flexibility in one machine

F80S Series machines employ an entire array of features which help maximize the performance and efficiency capabilities of the machines. Quick tooling change-over maximizes the versatility and flexibility of the machine, allowing boring and surfacing in one set-up. All F80S Series machines have the capability of **Boring, Surfacing, and Line Boring**. Traveling column and spindle movements operated by precision ball screws and AC servo motors **eliminating bar sag error** associated with horizontal bar type line boring.



Control Panel

The conveniently located control panel centralizes the machine controls, minimizing operator involvement while maximizing ease of operation. Precision components allow the machine to operate in .001" (.01mm) or .0001" (.002mm) increments. Machine operations can easily be done manually or automatically, with the ability to store ability to store programs in memory. Digital readout allows the operator to accurately monitor location parameters. Control operates in metric and inch systems.

Tooling

Rottler design allows for a variety of tooling and fixturing. The F80S Series employs state-of-the-art Rottler technology, increasing the capabilities as well as the performance of the machines. Digital Micrometers allow accurate size control.



Boring Cutterheads

Rottler manufactures a complete range of Boring Cutterheads for boring and sleeving from 1.0" (25mm) to 20" (500mm). A quick change tool retention system minimizes down time between tooling changes. Cutterheads can be changed in as little as 15 seconds.



Flycutters, Milling Heads and Spindle Adapters

Surfacing with the F80S machines can be done in the same set-up as boring. 10" (250mm), 14" (360mm), 18" (460mm), 22" (570mm) flycutters can be used with CBN inserts for high speed dry surfacing. A large block such as a CAT3516 can be surfaced in less than 10 minutes. Multi Teeth Milling Heads can be used for welding and spray build up. Spindle adapters allow various tools to be used on F80S machines.

Specifications

	F-84S	F-85S	F-88S
Maximum Height Table to Cutterhead	35" (890mm)	35" (890mm)	45" (1143mm)
Table Size – 3 T Slots	26" x 66" (660 x 1676mm)	26" x 80" (660 x 2032mm)	33-1/2" x 111" (850 x 2820mm)
Maximum Distance Spindle to Column	16" (406mm)	16" (406mm)	21" (533mm)
Horizontal Column Travel	56" (1400mm)	80" (2000mm)	108" (2750mm)
Vertical Spindle Travel	20" (500mm)	20" (500mm)	30-1/2" (775mm)
Infinitely Variable Column & Spindle Feed Rate	.001" (.025mm) to .040" (1.02mm) per revolution	.001" (.025mm) to .040" (1.02mm) per revolution	.001" (.025mm) to .040" (1.02mm) per revolution
Spindle Speeds (Infinitely Variable)	to 2000 RPM	to 2000 RPM	to 1000 RPM
Spindle Motor	9 HP	9 HP	10.5 HP
Bore Range with Optional Cutterheads	1-1/2" (38mm) to 20" (508mm) diameters		
Resurfacing Cutter Diameters	10" (250mm), 14" (360mm), 18" (460mm) and 22" (570mm)		
Horizontal & Vertical Position Resolution	.0001" (.0025mm)	.0001" (.0025mm)	.0001" (.0025mm)
Machine Weight	10,000 lbs. (4536 kg)	12,000 lbs. (5443 kg)	15,000 lbs. (6800 kg)
Power & Air Service Required	12 KW, 3 phase - 100 psi @ 1 cf/min. or 7 kg/cm ² @ .028 m ³ /min.		

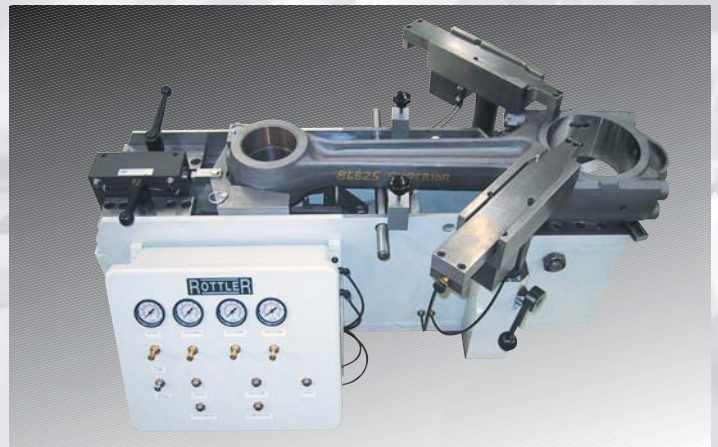
Specifications and design subject to change without notice.

Applications *Versatile Tooling and Fixtures allow any job to be mounted and machined fast and accurately.*



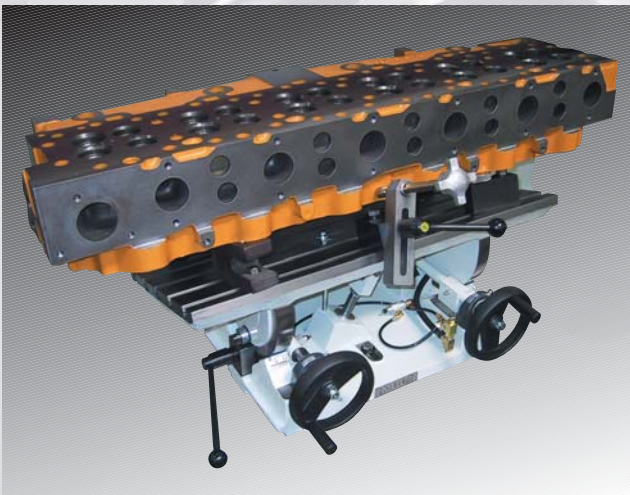
Line Boring Attachments

Rottler's Unique Right Angle Drive Line Boring Attachments allow for accurate machining of main lines from small cylinder heads such as a Detroit 60 Series up to large diesel blocks such as CAT3500 and Waukesha 7042. Bar Sag Error associated with horizontal bar type machines is totally eliminated. Machining main lines is considerably faster and size control is consistently within tenths! Thrust facing can be done in the same set-up.



Connecting Rod Fixture

Rottler's patented Connecting Rod Fixture allows large conrods to be bored on the F80S machines. This method results in perfect parallelism between the big and small ends as well as all the rods in a set being the exact same center to center distance, a must for today's high compression diesel engines!



Dual Axis Leveling Table

Rottler's answer to the problem of holding a wide variety of heads from a single cylinder to a CAT3412. The Rottler Dual Axis Leveling Table allows clamping of the head to be completed first - then the level to be adjusted in both directions - simply by rotating the 2 handwheels - fast and rigid! Combined with Rottler's Dual Axis Level, any workpiece can be clamped and leveled in seconds! This process results in the minimum stock removal from head gasket face.



Dual Work Stations

Rottler's versatile fixturing allows In-Line and V Blocks to be mounted on the same fixture and heads can be surfaced without removing the block. Blocks are fixtured with reference to the center of the main line for perfect parallelism and square bores and counterbores. Universal tower type hold down assembly makes clamping a breeze.

Results

What can Rottler F80S series machines do for your machine shop?

The distinct advantage of an F80S machine over the competition can be easily seen with time savings as well as an improved, quality finished product. Justification of the machine purchase becomes a reality when the efficiency is analyzed.

Common machining times achieved on Rottler F80S machines:

Cummins 855:

Machining the uppers, lowers, and surfacing the deck can be done quickly and accurately in one set-up. The average time for machining less than 2 hours.

Detroit 8V71:

Completely machining both banks (boring, counter boring, and surfacing) takes only 1 hour, 20 minutes.

V-8 Block:

Complete boring for both block banks can be done in as little as 6-1/2 minutes floor-to-floor with the use of Rottler's auto-rotate fixturing.

In-Lines:

Boring an in-line 6 cylinder automotive block can be done in about 5 minutes floor-to-floor. 4 cylinder in-line blocks can be bored in as little as 4 minutes floor-to-floor.

Cylinder Head Surfacing:

Surfacing cylinder heads is simple and requires a floor-to-floor time of about 3 to 5 minutes.

Large Block Surfacing:

The F88S is capable of machining large blocks such as the CAT 3500 and the Waukesha 7042, both decks can be surfaced in 1.5 hours floor-to-floor..

Line Boring:

An in-line 6 cylinder diesel can be set up and line bored, floor to floor, in less than 30 minutes. Keyed fixtures and cradles make mounting and line up of V-blocks a breeze! a CAT 3500 can be line bored in less than 2 hours.

Versatility

One distinct advantage that the F88S offers to the machinist is the flexibility to do a complete variety of work. With the diverse tooling offered and capabilities of the machine, unique jobs such as large rocker arms, gear housings and other often overlooked jobs can be performed. The open-sided design allows large jobs to be mounted, oversize castings can be supported on the floor as they are stationary during machining operations.

The flexibility presented by the F80S allows the machinist to do many applications that before could not be done on similar machines. With premium performance comes the versatility that today's machine shop is often confronted with. Rottler's F80S series machines address this demand with a productive solution. Versatility is enhanced with the great diversity of precision tooling and accessories for the machine. Efficient and accurate machining, combined with reliability and technical support is the answer that Rottler's F80S Series machines give to today's automotive aftermarket. Give this same standard to your machine shop.

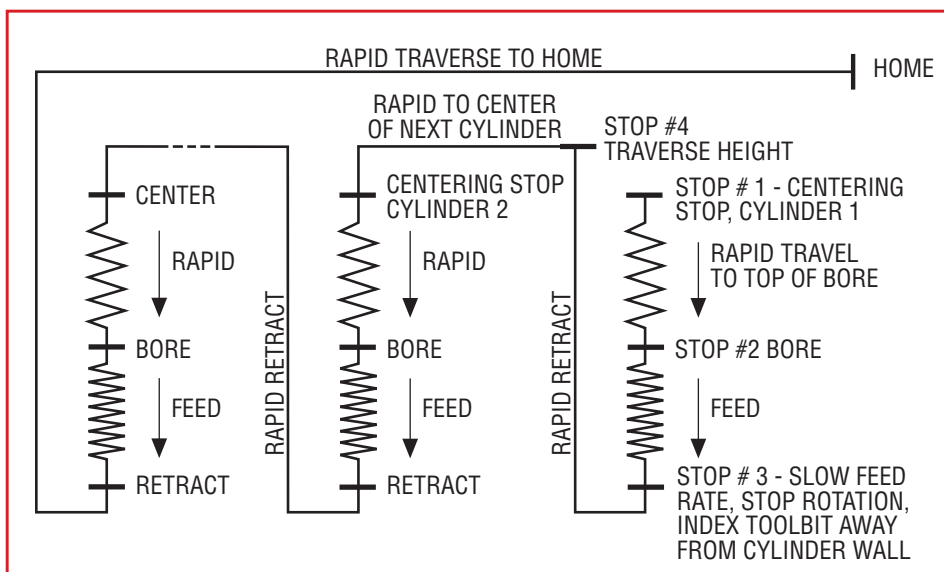
Design Features

- All F80S machine incorporate the use of a large diameter hard chromed spindle, utilizing high precision angular contact bearings.
- Machine ways are coated with turcite material and supplied with air pressure to reduce friction and give long service life.
- Anti friction ball screws and AC Servo motors provide precise machine positioning and rapid feed rates.
- Air power drawbar allows cutterheads to be changed in seconds increasing productivity and reducing operator fatigue - the machine can be changed from boring to surfacing in 15 seconds!
- Control and display conveniently located on pendant arm for comfortable positioning.
- Productivity - jobs can be completed in 1/3 the time of conventional machines while operators can also do other work while the F80S completes automatic cycles unattended.

The performance parameters of the F80S machines make them ideally suited to operate in the diesel job machine shop as well as the production environment. Fixturing allows a wide range of machining, from a single cylinder to a large diesel block, with speed capabilities often utilized in PER machine shops. Special in-line fixturing and auto-rotate V-block fixturing maximizes performance for automotive production machine shops.

In-line 6 blocks can be automatically bored in about 5 minutes. Operator attendance is only required for set-up. The machine is capable of boring along a cylinder bank automatically, centering accurately in each cylinder.

The F80S centering system can be operated in 2 modes: 1: The spindle moves down to the programmed centering stop then the workhead floats on an air cushion and precision centering fingers, built into the cutterhead, expand and center the spindle in the cylinder bore. Once stabilized, the airfloat stops, the workhead clamps and the centering fingers withdraw back into the cutterhead. 2: The bore centers are programmed into the memory and the column moves the spindle accurately to each bore center without air float of the workhead.



Speed and flexibility with accuracy is a combination inherent in the design of every Rottler machine. The F80S Series machines enhance the tradition of quality and service that Rottler gives to the automotive aftermarket.

Performance racing and engine rebuilding machinery and equipment



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SURFACING

SF8A
SURFACING



F65A
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CONNECTING
ROD BORING



VR416
VALVE
GRINDING



SGF8
SEAT AND GUIDE



SG80
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SEAT AND GUIDE



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