“The F69A takes us to the highest levels of technology in block machining!”

Doug Yates
Roush Yates Performance Engine Group

Machining Equipment
Created for Performance Racing & Engine Remanufacturing.

So Advanced, It’s Simple.
When we learned of the Rottler F69A’s capabilities we knew right away this was going to be a major component to take our production to the next level. The addition of the F69A will significantly improve our through put in the shop by cutting down set up times, eliminating the need for multiple machines, and the need for us to send blocks to our other facilities for separate operations. In addition to the time savings, the versatility will allow us to move between different block types quickly, allowing us to meet the varying needs of our customers while providing consistent quality.

Jon Giles, General Manager
Roush Yates Performance Engine Group

Instant Internet Support

Rottler offers cutting edge internet support direct from your machine to the factory. Skype™ and a webcam are installed for video conferencing 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. Shop busy or too noisy for talking? The pre-installed Skype™ application gives you instant messaging capabilities with Rottler Technicians.

Spindle
Super hard finish resists wear for years of operation.

0-4000 RPM Spindle Rotation with CAT40 Taper.

Vertical Box Ways
Precision ground, hardened box way slideways are 28” (700mm) wide for increased rigidity and years of heavy duty high production machining.

T-Slot Table
Allows operator to clamp or fixture any job quickly and easily.

Ball Screws
Large diameter 40mm (1.58”) precision ground direct drive ball screws for rapid feed rates, accurate positioning and repeatability.

Turcite Box Ways
Turcite coated bedways for reduced friction, longer life and better accuracy.

Automatic Lubrication
For years of trouble free life and reduced wear.

Windows Operating System
Rottler uses Windows Touch Screen Technology through 15” (381mm) touch panel. The Windows software has many advantages such as a common user interface that the whole world is familiar with.

AC Brushless Servo Motors with BISS Encoders
The F69A has the latest technology AC servo motors with BISS encoders offering 100 times finer resolution compared to previous models. These new AC servo motors give maximum torque and performance throughout the RPM range for improved accuracy and increased productivity.

Touch Screen Control
INDUSTRY EXCLUSIVE
Two Operating Systems!
1: Rottler System for simple, fast and easy programming of common jobs such as boring, surfacing and line boring - anyone can learn in a few hours!
2: Rottler CAM System for advanced, CNC programming for making parts, engraving names, and much more.

Manual Hand Wheel
Offers operator infinite control of machine movement in all axes for quick and easy setup.

WWW.ROTTLERMFG.COM
US: 800-452-0534 | INTL: +1 253 872 7050
**Mode Screen**
Allows operator to select operation to perform.

**Blueprint**
Type locations from blueprint into machine.

**Set Zeros**
Simply set zeroes to begin set-up of block.

**Vertical Stops**
Allows operator to set machine to beginning boring. Also allows operator to offset bore at bottom of cylinder to clearance main web for cylinder honing.

**Indicate**
Older blocks that may not clean-up by blueprinting. Center bore and touch set button.

**Probe**
Machine will probe all eight bores and set dimensions for boring. Once finished touch “Start Auto Cycle” to begin boring.

**Fully Programmable Cycles**
Simple 4 axis CNC control, PC based with Windows operating system.

Dimensions input through touch screen:
- Bore Centers, Exact Depth, Speed, Feed, etc.
- Bore complete bank in Automatic Cycle.
- Lower Bore Relief, off center boring for Honing Clearance.
- Surfacing - Multiple Pass programmable for roughing and finishing - can remove any amount of material in one automatic cycle.
- Lifter Bore Machining - bore housings and bushings to exact final size.
- Automatic line bore cycle completes all main bearing housings to within .0002.
- Face main line thrust bearing faces square to crankshaft centerline.
- Machine a radius for stoker crank connecting rod and bolt clearance.
- Rottler CAM CNC program allows G code programming and file transfer with CAD/CAM programs.

**Rottler Cam**
Rottler Cam software offers even more versatility, for machining parts, combustion chambers on cylinder heads, etc.

**Versatility & Simplicity**

**Thrust Cutting**
Allows operator to easily program for thrust cutting on main cap.

**Crank Clearance**
Stroker Crank & Rod Clearancing of blocks.

**Lifter Bore**
Operator can easily program lifter bore dimension by blueprinting, indicating or probing.
Rottler's patented Connecting Rod Fixtures allow large connecting rods to be surfaced and bored on the F69A machines. The Rottler boring fixtures allow both big end and small end to be bored in one set up resulting in perfect parallelism between big end and small end. All the rods in a set can be accurately bored for equal center to center distance, a must for today's high compression diesel engines. Special heavy duty fixtures available for boring very large, heavy connecting rods found in natural gas compressors and workboat marine engines are available.

Performance Fixture
Precision Performance Fixture references from the centerlines of crankshaft and camshaft for machining operations – precise bore locations and square block deck height. Bore and surface a V8 block in less than 30 minutes. Lifter bore angles are accurately set with gage blocks in the Performance Fixture. Complete a lifter bushing job in less than one hour!

Part #650-3-1

Dual Axis Level Table
Rottler’s patented dual axis leveling table and universal quick clamping system for surfacing/milling heads, blocks and manifolds with CBN and PCD tooling. The Rottler Dual Axis Leveling Table allows clamping of the head to be complete first, then the level adjusted in both directions simply by rotating the two hand wheels. Combined with Rottler’s Dual Axis Level, any job can be clamped and leveled in seconds! This process results in minimum stock removal when surfacing.

Part #7208M

Connecting Rod Fixtures
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Flycutters and Milling Heads
Surfacing with the F69A machine can be done during the same set up as boring. 10" (250mm) and 14" (360mm) flycutters can be used with CBN inserts for high speed dry surfacing giving excellent surface finish results. The deck of a large block such as a V12 can be surfaced in less than 10 minutes. Multi Teeth Milling Heads can be used for milling welded and spray built up surfaces. Small diameter milling heads are ideal for facing main bearing housing contact surfaces in preparation for line boring to standard diameter. Special Surfacing Software allows very wide surfaces.

Boring Cutterheads
Rottler manufactures a complete range of CAT40 quick change boring cutterheads for boring and sleeving operations. The air assisted CAT40 quick change retention system minimizes down time between tooling changes. Cutterheads can be changed in seconds!

CBN inserts give exceptional long life for surfacing gasket faces as well as produce fine surface finishes for reliable sealing of metal gaskets. Dry CBN surfacing eliminates the need for wet grinding and at the same time gives flatter surfaces as cutting pressure is substantially reduced compared to surface grinding. PCD inserts allow soft metals such as Aluminum to be surfaced at high speed without coolant.

Rottler offers several different grades of indexable carbide inserts for cylinder boring & sleeving and main & cam line boring. Special Black coated carbide inserts are capable of standard to heavy sleeve cuts up to 1000rpm. Triangle inserts work well where cutting a bore to a square shoulder is needed, such as sleeves and counterbores. Finishing inserts provide a sharper edge which results in a smoother surface finish on the cutting surface, ideal for finishing counterbores. Carbide inserts are available with 1/64" (0.4mm) and 1/32" (0.8mm) corner radius. Specially custom sharpened tools are available for operations such as chamfering, O-ring grooving, undercutting and blind hole boring.

Octagonal Cutting Inserts
New Octagonal 16 Cutting Corner Surfacing Inserts have increased corner radius to allow faster feed rates and finer surface finish.

PCD Tipped Insert for Boring Aluminum
PCD cutting corner allows aluminum to be bored at high speed without any coolant.
This system comes complete with Rottler Cylinder Head Digitizing, Programming and Porting Software for fast, easy digitizing and porting of cylinder heads directly on the machine. Includes the same great ability to manipulate port profiles and balance cross section areas as our P69 Porting Machine. Programming can be done directly on the machine, not necessary for any stand alone computers or third party software. Factory and on-site operator training is included in the package. Cylinder head fixture plates and porting tools to suit cylinder heads to be digitized and ported must be ordered separately.

Features
- 360 degrees on A axis
- 35 degrees of tilt in either direction on B axis
- 25” (635mm) Cylinder head length capacity (extendable for special applications)
- Overall Length of fixture 44” (1120mm); Overall depth of fixture 19” (483mm), Overall height of fixtures 20” (500mm)
- Quick disconnect electrical connections
- One piece system with alignment keys and four bolts quickly and easily attach to machine table.
- With a one piece base, alignment keys and quick disconnect electrical connections this fixture is easy and fast to set-up on any P69A or F69ATC machine.
- Exclusive to Rottler is the use of cycloidal gear drives on both A and B axes for near zero backlash of less than one arc minute.
- This system comes complete with Rottler Head Porting Software for the same fast easy digitizing of cylinder heads on the machine and the same great ability to manipulate port profiles. (Digitizer must be ordered separately).

For cast iron only.

Thrust Facing
Rottler’s unique circular interpolation software and thrust facing tooling allow thrust faces to be machining perfectly square to bearing centerline using the same right angle drive that is used for line boring. Single point cutting allows build up to be removed without chatter resulting in fine surface finish.

Line Bore Pivot Table
The Rottler Line Bore Pivot Table is a fast and easy system to set up blocks and heads for line boring. The table has five T-slots which allow set up of locating devices such as V-cradles. The pivot table is preloaded which allows machining without clamping.

This fixture is used for main and camshaft line boring. It can also be used for jobs such as roller bearing conversions, stroker crankshaft clearancing and machining registers for new main caps and four bolt conversions. Rottler’s slim line extended right angle drive can line bore both main and cam tunnel in one set up.

Precision Line Boring with Right Angle Drive
Precision Line Boring with Rottler’s exclusive 90 degree right angle drive provides perfectly round bores and straight lines, no honing necessary! Hard steel main caps and aluminum blocks can be lined bored in one process!
CNC (Computer Numerical Control) Machine using Windows Operating System and Industrial PC with Intel Processor. Precision Programming and Control thru a 15” (381mm) Computerized Touch Screen.

Software options available for Programmable & Automated Cycles such as Boring, Surfacing, Lower Sleeve Offset Boring, Water Hole Repairs, Porting, Main & Cam Line Boring, General CNC Machine Work

Internet connection to the machine computer

Electronic hand wheel for manual movement - per click: Coarse Mode .01” (.25mm) Medium Mode .001" (.01mm) Fine Mode .0001" (.002mm)

Precision Digital Readout, .0001” (.002mm) Resolution in 3 Axis

3 Axis Movement by Precision Ball Screws & AC Servo Motors - Infinitely Variable

X Travel - Horizontal Movement (Left/Right) - 40.5” (1029mm)
Y Travel - Horizontal Movement (In/Out) - 20.5” (521mm)
Z Travel - Vertical Movement (Up/Down) - 30.5” (775mm)
Extra Clearance Between Spindle Nose and Machine Table - 39” (990mm)
High Speed, Rigid Spindle for Chatter Free Cutting
Spindle Rotation by AC Servo Motor - Infinitely Variable 100-5000RPM
Automatic Central Lubrication System
Power Quick Change Tool Retention System - Cat 40
Chip Shield Assembly
Operation and Spare Parts Manual

**STANDARD EQUIPMENT**

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>AMERICAN</th>
<th>METRIC</th>
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<tbody>
<tr>
<td><strong>Table Size</strong></td>
<td>59 x 20”</td>
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<tr>
<td><strong>T-Slots (no. - wid. x dis.)</strong></td>
<td>5 - 0.63” x 3.94”</td>
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<tr>
<td><strong>Travels</strong></td>
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<td>X Travel (Horizontal)</td>
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<td>Z Travel (Vertical)</td>
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<td>Spindle Diameter</td>
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<tr>
<td>Rapid Travel - X,Y</td>
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<td>Feed Rate</td>
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<td>Spindle Motor</td>
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<td>3 Axis Motors</td>
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<tr>
<td>Floor Space (D x W x H)</td>
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<td>Paint Color Code</td>
<td>RAL9002 (Grey White)</td>
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Specifications and design subject to change without notice.

Made in U.S.A.

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