Machining Equipment
Created for Performance Racing & Engine Remanufacturing.

So Advanced, It’s Simple.

F69ATC
Multi Purpose CNC Maching Center
with Automatic Tool Changer
Automatic Tool Changer
The 24 Space Automatic Tool Changer for CAT40 Taper can handle up to a 10” (250mm) diameter tool weighing 15.5 lbs (7kgs).

Spindle
Super hard finish resists wear for years of operation. 0-5000 RPM Spindle Rotation with quick change CAT40 Taper.

Vertical Box Way
Precision Ground, Hardened Box Way. Sideways are 28” (700mm) wide for increased rigidity and years of heavy duty production machining.

Sliding Side Doors
Side doors slide up for access, reducing footprint.

Chip Auger
Automatically removes chips from enclosure and deposits chips in wheeled disposal cart.

Massive Frame
Massive frame boasts full enclosure with sight panels in front and on sides of enclosure to view work area.

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

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

Coolant Tank
Complete coolant system for tool lubrication during machining. 30 gallon (120 liter) capacity.

F69ATC MULTI-PURPOSE CNC MACHINING CENTER

Windows Operating System
Rottler uses Windows Touch Screen Technology through 19” (483mm) touch panel. The Windows software has many advantages such as a common user reduces operator learning curve.

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.

Electronic Hand Wheel
Offers operator infinite control of machine movement in all axes for quick and easy setup. Also controls variable feed rate during automatic cycles.

Brushless Servo Motors with BISS Encoders
The F69ATC has the latest technology servo motors with BISS encoders offering 100 times finer resolution compared to previous models. These new Servo motors give maximum torque and performance throughout the RPM range for improved accuracy and increased productivity. BISS encoders eliminate any limit switches and do not require homing at start up saving time and increasing reliability.

Direct Drive
Direct drive precision ball screws for faster rapid feed rates and accurate positioning eliminating backlash problems relating to belt drive systems.

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

Simple CNC control, PC based with Windows operating system.

Dimensions input through touch screen:
- Bore Centers, Exact Depth, Speed, Feed, etc.
- Bores 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. Enter desired deck height of block and the machine will cut to that height. No more guess work!
- Lift 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 stroker 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.

www.rottlermfg.com
Crankshaft and Camshaft Centerline Fixture
All machining should be done with reference to the Crankshaft Centerline. It is not accurate to set up engine blocks on their pan rail or end faces! When any main or cam work is to be done, this work should be completed before any other machine work is done to the block. The Rottler 4th Axis quick load/unload fixture utilizes precision locators to set up blocks accurately and quickly on their crankshaft centerline. Some customers like to set up on Camshaft Centerline for machining lifter bores and this can also be done on the Rottler 4th Axis Fixture.

Automatic 4th Axis Block Roll Over Fixture
Rottler’s Universal quick load/unload Automatic 4th Axis Block Roll Over Fixture and Software allows the computer to rotate the block or cylinder head during the automatic machining cycle. Large V blocks can be rotated 360 degrees to allow special machining jobs such as stroker clearingance in same set up as boring, surfacing and lifter bore machining. The tail stock is pneumatically operated allowing easy and fast loading and unloading of heavy blocks.

360°

Cylinder Head Surfacing

Leveling 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 minimal stock removal when surfacing.

Dual Axis Level
Displays both axes simultaneously allowing quick leveling, eliminating any need for shimming and resulting in minimum metal removal when surfacing heads.

Part #7152A

Main Cap Conversions and Line Boring
All operations for conversion to 4 bolt splayed main caps including milling, drilling, tapping can be done in one automatic cycle with the 4th axis fixture. After the studs and main caps are fitted, line boring is done with Rottler exclusive Right Angle Drive and Line Bore Pivot Table. Line boring with Rottler Right Angle Drive is accurate to .0002" (.005mm) and does not require line honing.

Overhead Camshaft Fixture
Special fixture allows overhead camshaft in-line and V blocks to be machined with Rottler 4th Axis Automatic Roll Over Fixture.

CNC Lightening
Lightening parts such as blocks and main caps requires simultaneous movement of 4th axis for complete lightening programs. The P69ATC is able to complete advanced block lightening for maximum weight reduction.

Wireless Radio Probing
Computer controlled wireless probe automatically finds cylinder bore centers and at the same time measures bore diameters. The difference between the drawing blueprint and the probed dimensions can be displayed by touching one button. The deck (head gasket face) can be probed to check flatness and squareness to ensure accuracy and minimum metal removal when surfacing.

Upper and Lower Centering
With the use of a radio probe, the upper and lower areas of a cylinder bore can be probed to check concentricity and perpendicularity to ensure that the block is setup correctly before machining.
Flycutters and Milling Heads
Surfacing with the F69ATC machine can be done during the same set up as boring. 10” (250mm) flycutter can be used with CBN/PCD 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 up to about 26” (660mm) to be surfaced.

Boring Cutterheads
Rottler manufactures a complete range of CAT40 quick change boring cutterheads for boring and sleeving operations from .750” (19mm) to 5” (127mm). The air assisted CAT40 quick change retention system minimizes down time between tooling changes. Cutterheads can be changed in seconds!

Lifter Bore Tooling
Single point Lifter Tooling fixture for boring, facing and finishing lifter bores and bushings. Special tooling and software available to install lifter bushes automatically.

Lifter Bore Setting Fixture
Digital Setting Fixture allows exact size to be set for final lifter bore diameter finishing.

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.

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.

Rottler’s tag line is ‘The Cutting Edge’, and we take pride in offering many different grades of cutting inserts for dry, high speed cutting a wide variety of materials. Decades of experience machining engines worldwide allows Rottler machines to dry cut a wide variety of parts.

Rottler offers a range of lightening tooling packages.
Part #650-2-44W - for Dart Small Block Chevy
Part #650-2-44X - for World Products Small Block Chevy
Part #650-2-45J - for Big Block Chevy

Drill Chuck
Precision Drill Chuck Assembly.
Part #650-2-44M

Tap Holder
Quick change tap holder assembly with adaptor. Torque control tap holders available for 1/4” (6.35mm), 5/16” (7.95mm), 3/8” (9.52mm), 7/16” (11.13mm), and 1/2” (12.70mm) taps
Part #650-2-11K

Shell Mill
We offer both 2 1/2” (63.50mm) and 4” (101.60mm) Shell Mill assemblies.
Part #650-2-44N - 2 1/2” (63.5mm)
Part #650-2-44P - 4” (101.6mm)

Cam Line Boring Tooling
Camshaft Line Bore Tooling Package allows camshaft tunnel line boring for jobs such as roller bearing conversions. Special right angle drive and fixture available for line boring blocks such as Cummins 5.9
Part #650-3-43T

Rottler Boring and Surfacing Cutterhead
Rottler Boring and Surfacing Cutterhead installed in massive heavy duty F69ATC Spindle.

Lifter Bore Tooling
Lifter Bore Tooling Package includes Boring Head, Cartridges and Tool Holders, Digital Setting Fixture. Tools available for O-Ring groove cutting and chamfering.

Boring & Surfacing Cutterhead
Boring & Surfacing Cutterhead Package includes Boring Head, Cartridges and Tool Holders, Digital Setting Fixture. Tools available for O-Ring groove cutting and chamfering.
machines. Many of Rottler’s machines can easily be programmed to the parts manufacturing capabilities built into Rottler’s state of the industry adequacy of top-of-the-line industrial CNC machines - have recognized We find that more and more customers  - after researching the real-world Can’t find the parts you need for that one-off project? Make them yourself! ability to create a whole new reality.

CNC offers the real, tangible benefits of accuracy and repeatability, meaning your rebuilding machining operations will be precise, each and every time. Less need for operator error means less room for user error. But Rottler’s CNC machines and our unique CAD/CAM software not only ensure your rebuilding machining operations are on the money, but give you the ability to create a whole new reality.

Can’t find the parts you need for that one-off project? Make them yourself! We find that more and more customers - after researching the real-world adequacy of top-of-the-line industrial CNC machines - have recognized the parts manufacturing capabilities built into Rottler’s state of the industry machines. Many of Rottler’s machines can easily be programmed to custom-create the parts you need, when you need them.

What are our customers making in their own shops?

• Custom Tools and Fittings - Carburetor Spacers
• Suspension Components - Connecting Rods
• Bushings - Custom Intake and Exhaust Manifolds
• Non-Standard Blocks and Cylinder Heads - Industrial Components

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 P69AHD 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. Semi Finished Fixture Plate can be machined on the P69AHD for setting up overhead camshaft cylinder heads. Narrated training and instruction videos available on www.rottlerTube.com

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 F69A 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).

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### SPECIFICATIONS

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Specifications and design subject to change without notice.

May 2016