



Engine Rebuilding Equipment

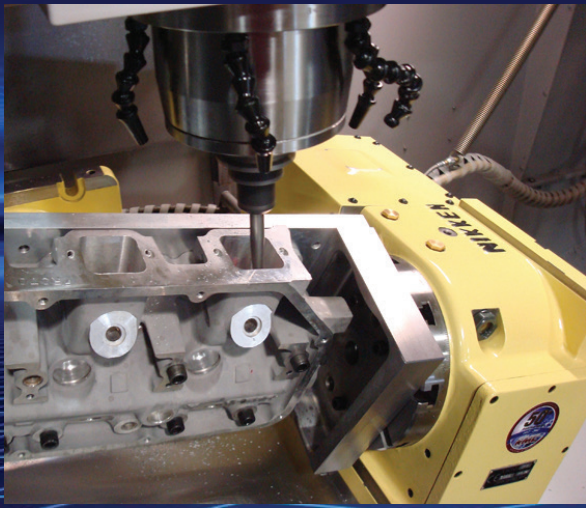
**Innovation  
Starts *HERE!***

## V40/50 5 Axis Head Porting

- *Machines*
- *Fixtures*
- *Programming*
- *Software*
- *Tooling*
- *Innovation*
- *Turn Key Packages*







**Highly accurate Nikken Rotary Tables** – make the system's repeatability and reliability far superior now and well into the future.

### **Packaged Precision ... For Fast and Efficient Head Porting ...**

The technologically advanced RMC V40/50HP takes CNC head porting to an all-new level of precision and efficiency. Its true simultaneous 5-axis, PC based CNC control handles all your precision head porting needs.

Until now, professionals looking for CNC head porting solutions had to buy very expensive products from three or four different suppliers, then hope someone could put it all together for them. No More! Today we've combined our popular CNC Engine Machining Centers with:

- » High accuracy Nikken rotaries
- » Specially designed head porting fixturing systems
- » High speed machining with ultimate rigidity
- » Ability to create a finished head from a raw casting

And it all adds up to "one" ... "one" supplier that makes your job easier by doing more jobs faster, with more precision and dependability.



**Modular design** – allows the complete 5 axis system to be removed and reinstalled exceptionally fast and accurate, for maintenance or changing to other machining operations.



**True CNC Machining** – the V40/50HP's use industry standard CNC programming language (G-code) and conversational programming as compared to other proprietary programs some suppliers use that limit machine versatility.

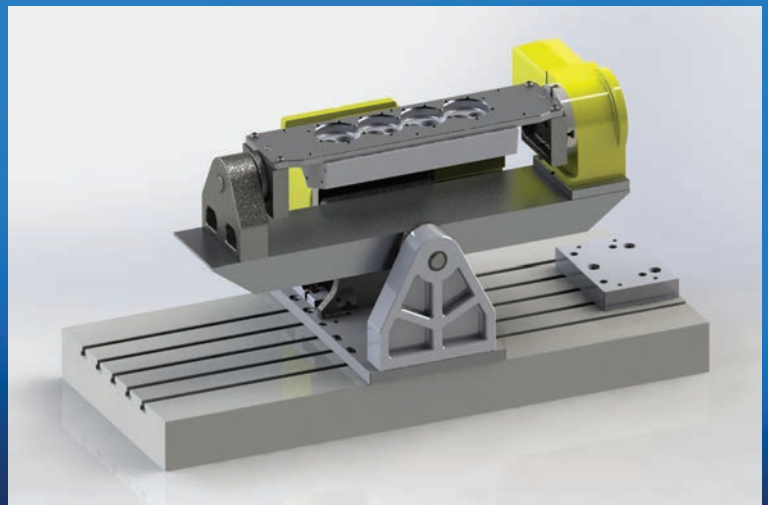
**Nikken Rotary Table** – this industry standard, heavy duty work horse helps achieve highly accurate head positioning requirements of the many machining operations needed for truly accurate head porting. When combined with our heavy duty head holding fixture, you have the ability to create a finished head from a raw casting.

**Rapid Traverse** – 945 ipm (24 mpm) traverse speed with look ahead and high speed machining memory is four times as fast as most industry models when moving from position to position greatly increases efficiency and production rates.

**Hardware and software Integration** – several software packages, to include cad cam and digital scanning (for on or off line digitizing) have been integrated into the overall head porting package. Utilizing these specific packages with our hardware, fixturing and tooling insures the success of each individual piece in this complex puzzle.

**Heavy-Duty Rigid Spindle** – 5.7 inch (145 mm) rigid spindle cartridge with exclusive 70 mm spindle bearings provides maximum stability for deep runner porting.

**Infinitely Variable High Speed Spindle** – 50 - 10000 rpm spindle speed allows the V-Series HP to achieve optimum finishes on a variety of materials such as cast iron, aluminum, compacted graphite and others.

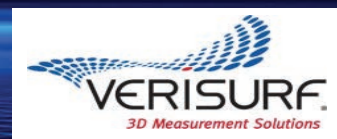


**These heavy duty rotary tables combined with RMC's (patent pending) fixturing** – meets the demanding needs of today's serious head porting operators, from one supplier, at a remarkably realistic price.





**RMC's Digitizing system** – a totally unique method of reproducing expertly ported heads and replicating the results over and over again on RMC's amazing V-Series Head Porting system.



**20 Position Automatic Tool Changer** (standard) – after setup, the V50HP can run many operations unattended allowing the operator to handle other jobs for increased shop efficiency.

**Powerful 20/15 Hp. (15/11 kW) Main Spindle Motor** – constant torque inverter ensures superior cutting consistency at any speed.

**Digital Probe Option** – a must option that is unique to engine building and combined with CNC controls makes the V50HP a stand-out in the industry. The digital probe acts as an automated coordinate measuring device, eliminating many tedious and time-consuming manual measurements.

**Cat 40 Taper Tooling** – unlike competitive machines, the V40/50HP uses industry standard, readily available Cat 40 tooling, which makes "tooling up" for special jobs much easier.

**Full metal enclosure** with safety doors retains work chips to maintain a cleaner work area. The normally optional chip auger has been included as part of the head porting package's standard equipment.

**Powerful AC Brush-less Servo Motors** – provide precise, on demand torque and spindle travel performance on all axes.



**Superior head porting results** – are the result of this complete head porting CNC based system.

Three years in development and design, countless hours of testing, much appreciated customer input and lots of just plain hard work has gone into the creation of this package.

We have combined accuracy, repeatability and high speed machining with all the necessary fixturing, tooling and software you need to meet the high standards that your professional head porting customers demand.





## RMC's CNC Head Porting Machining Center ...

These are **true** simultaneous 5 axis, PC based **CNC controlled** machining centers equipped to handle precision head porting as well as other CNC related engine rebuilding operations. All of RMC's CNC based machines employ simple conversational menu driven programming as well as conventional "G" coding capabilities.



Flood & Coolant Through Spindle

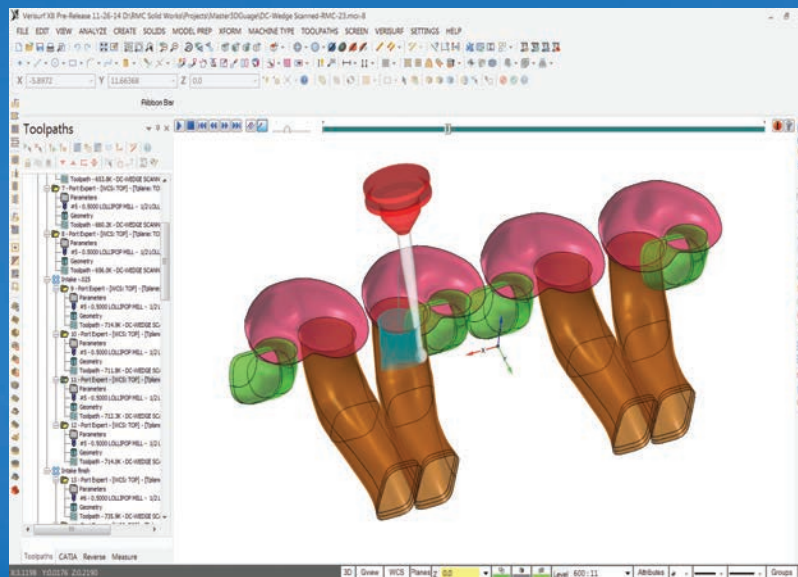


Manifold Fixturing

Specifications	V40HP	V50HP
X Axis Travel	40"	50"
Y Axis Travel	20"	20"
Z Axis Travel	20"	20"
Table size (l x w)	46 x 20"	52 x 20"
Spindle nose to table height	35"	34.25"
Spindle center to column	20.5"	20.5"
Main Rotary Table A Axis	360°	360°
Tilting Rotary Table B Axis	±32°	±40°
Tool Changer	20 pocket	20 pocket
Rapid traverse (X-Y-Z axis)	945 ipm	945 ipm
Maximum cutting feed rate	500 ipm	500 ipm
Accuracy: Positioning	± .0002"	± .0002"
Repeatability	.0002"	.0002"
Max weight on table	2,000 lbs	2,000 lbs
Main spindle motor (intermittent/constant)	20/15 hp	20/15 hp
Standard spindle speed	10,000 rpm	10,000 rpm
Spindle taper	Cat 40 BIG PLUS®	Cat 40 BIG PLUS®
Net weight	11,000 lbs	12,000 lbs
Work space required (wx dxh)	112x110x120"	112x110x120"



Master#DGauge Portable CMM Arm



**Mastercam** - Port Design

# RMC

**Engine Rebuilding Equipment**

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*In order to bring you the most advanced features as soon as possible, all features, descriptions and technical specifications are subject to change*