

Equipped an Automatic Swing Arm Tool Changer the A560 holds enough tools for both cylinder head and block work. Tool changes are fully automatic, taking just a few seconds. Tool changer is located up and out of the way of the work envelope of the machine and does not take up any work space.



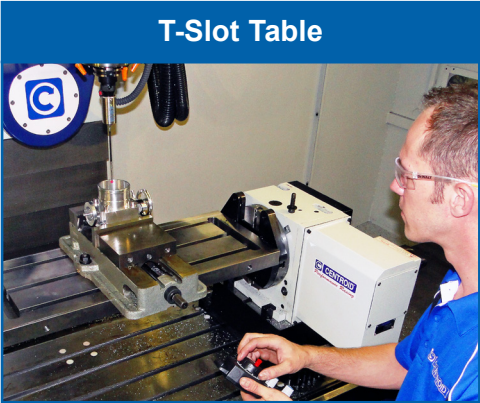
High Torque 36HP, 40 taper spindle delivers much more low end than the other guys. The A560 can easily machine a large variety of materials providing superior surface finishes while delivering the low end torque necessary for drilling, tapping & roughing out material. 100% duty cycle spindle operation.



Eliminates operator error and increases accuracy. Automatic Tool Length measurement, takes the guess work and labor out of setting up tools. Menu driven, push button measurement only takes a few seconds for each tool. More accurate and much faster than setting tools by hand.



Achieve low RA's with CENTROID's own surfacing tooling. Designed and manufactured in-house specifically for cylinder head and block surfacing. T-Slot table accepts cylinder heads for surfacing.



Bolt-on T-slot table to hold any part. Converts machine into a general machining center. Allows you to quickly switch from heads or blocks to general machining. T-Slot table accepts: parts, vises, custom fixtures, & cylinder heads with standard hardware.



Create all kinds of parts: Manifolds, injector rails, impellers, spacers, adapters, covers, suspension parts, exhaust parts, throttle body and carburetor parts, make anything you can imagine.



- ### Additional Features & Capabilities

 - Machine entire heads from billet
 - Manifold digitizing and porting
 - Rigid & Compression tapping
 - Threadmilling
 - Compound angle drilling and tapping
 - Valve spring pockets
 - Clean up oil returns, install screens
 - Rocker arm stud conversion
 - Block lightening
- 3D Digitizing and Surfacing
 - Design ports by model or 100% digitally
 - Auto part alignment to program
 - Auto rough and finish passes
 - State-of-the-art Linear Rail machine design
 - 1000 inch per minute rapids
 - Extra heavy rigid machine frame design
 - Precision mode machining
 - Remote support via internet

Included Software:

In addition to **Mastercam** Multi-Axis with Port Expert, Verify and 1st year Mastercam maintenance, the CENTROID CNC control includes: Windows 10, "Intercon" conversational part making software, CENTROID's digitizing and probing cycles, graphical part program preview, automatic tool measurement, cutter radius compensation, unlimited file size, advanced block lookahead, sub programs and macros, part scaling and mirroring, rigid tapping, compression tapping, multiple work coordinate systems, coordinate system rotation, programmable spindle speed, menu driven setup menus and extensive canned cycles including boring, pocketing, drilling & tapping cycles and threadmilling. The Block option includes all of the above plus: CENTROID's "True Block" Conversational Engine Block CNC Blueprinting and Machining software includes but not limited to: Automatic dimension probing before and after machining. Pre-programmed block operations with fill in the blank menus for common block operations. Boring, Surfacing, Four Bolt Main conversions, Chamfering, O-ring, Lifter boring. Remote diagnostics is also included and all software upgradable via the internet or USB.

Machine Specifications:	A560	A560 XL
Table Size:	20" x 49.5" (508mm x 1257mm)	25.5" x 66.9" (650mm x 1700mm)
Longitudinal travel (X):	42" (1067mm)	60" (1525mm)
Cross travel (Y):	24" (607mm)	26" (660mm)
Vertical travel (Z):	37" (904mm)	37" (904mm)
A axis:	360 degree rotation	360 degree rotation
B axis:	+/- 90 degrees of tilt	+/- 90 degrees of tilt
Maximum table load:	2200lbs (1000kg)	2425lbs (1100kg)
Spindle power:	36HP/ 27kW, (42 HP Optional)	36HP/ 27kW, (42 HP Optional)
Spindle taper:	CAT 40	CAT40 (BT40 Optional)
Spindle speed:	20,000 RPM	20,000 RPM
ATC	30 Position Swing Arm tool changer	40 Position Swing Arm tool changer
Rapid feed rates (X,Y,Z):	X,Y 1000 IPM, Z 865 IPM	X,Y 1000 IPM, Z 865 IPM
Accuracy:	0.0005" (0.0127mm)	0.0005" (0.0127mm)
Repeatability:	0.0002" (0.0051mm)	0.0002" (0.0051mm)
Axis drive motors (X,Y,Z,A,B):	X,Y, B 2.9kW, Z 5.5kW, A 1kW AC Brushless	X,Y,B 2.9kW, Z 5.5kW, A 1.8kW AC Brushless
Enclosure	Full Enclosure with Chip Auger	Full Enclosure with Chip Conveyor
Guide ways	Heavy Duty Linear guideways	Heavy Duty Linear guideways, X, Y(Twin), Z
Coolant pump:	75 PSI Max, up to 35 gal/min, 85 Gallon Capacity	75 PSI Max, up to 35 gal/min, 110 Gallon Capacity
Auto lubrication pump:	2.5 Amp 2 litre reservoir	2.5 Amp 2 litre reservoir
Coolant separator	Disc type Oil/Coolant separator	Disc type Oil/Coolant separator
Way Covers	Telescoping metal way covers, XYZ	Telescoping metal way covers XYZ
Power requirement:	208-240 VAC 3 Phase, 100 AMP	208-240 VAC 3 Phase, 100 AMP
Air requirement:	90-100 PSI, 6.2-6.8 Bar, 15 cfm	90-100 PSI, 6.2-6.8 Bar, 15 cfm

Machine Footprint:	A560	A560 XL
Length:	148" (3760 mm)	206" (5233 mm)
Width:	115" (2921 mm)	120" (3048 mm)
Max Height:	129" (3277 mm)	135" (3429 mm)
Shipping Footprint:		
Length:	154" (3912 mm)	166" (4217 mm)
Width:	96" (2439 mm)	94" (2388 mm)
Height:	118" (2998 mm)	118" (2998 mm)
Weight:		
Machine:	15,500 lbs (7031 Kg)	23,000 lbs (10,432 Kg)

Full Service Training and Warranty:

- Customized one-on-one training, tailored to each customers specific needs.
- Two year standard warranty on parts, labor, and technical support. Machine in-shop setup included.
- Personalized service and support. Support available outside M-F 9-5
- One number to call for every component in the system. Direct support phone numbers.
- Internet enabled with on machine remote access trouble shooting & programming assistance.

Copyright © 2010-2024 CENTROID rev10 11-14-24
Specifications and features subject to change without notice.
Mastercam® is a registered trademark of CNC Software, Inc.

www.centroidperformanceracing.com



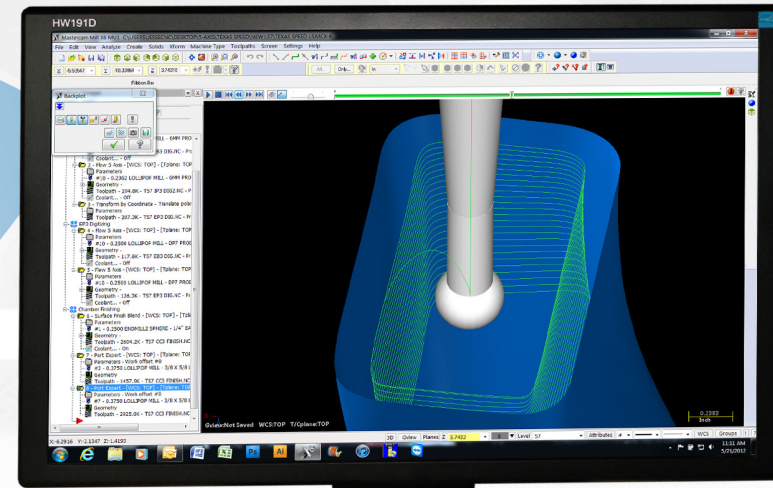
Heads, Blocks and Parts
Same Machine, Same Fixture

Super Duty 5-axis CNC
360° A-axis & 180° B-axis Spindle

CENTROID™
Performance Racing
159 Gates Rd.
Howard, PA 16841
(814) 353-9256 ext.101
(814) 353-9265 Fax
sales@centroidcnc.com

① Digitize

With up to +/- 90° of tilt, the A560 easily reaches into the most extreme port designs. Heads are digitized in 5-Axis right on the machine – no need to purchase additional equipment to digitize your race-winning designs.



② Create

The digitized data is exported to Mastercam where surfaces are created and edited. 5-axis toolpaths are created on your desktop PC or Laptop, no need to tie up the machine to program a cylinder head. The machine can be running a job while you are programming the next head in the comfort of your office, home, remotely etc.

③ CNC Port

The CNC programs are copied into the CENTROID CNC control via USB, Ethernet or Wifi. A new casting is loaded into the machine and the porting begins. The A560 machines exact copies of your ports for the ultimate in consistency and power gains.

Automatic Tool Changer

40 taper, 36Hp, High Torque
20,000 RPM spindle w/drilling
and rigid tapping

+/- 90 degree Roller Cam driven
B-axis Spindle
w/ hydraulic brake

Big work envelope, Machine a wide
variety of materials such as iron and
aluminum castings, steel or aluminum
billet heads, composites & plastics

Rollercam driven 360 degree
A-axis w/ Auto Brake and
Heavy Duty Tailstock w/ Auto
Brake for superior rigidity

Windows 10 IOT embeded
OS,Touch screen, High-end
CNC computer w/ multi core
CPU,SSD,Wifi,USB 3.0 &
Remote support

MPG electronic
handwheel

Fully enclosed cabinet with
flood coolant wash down

Wide door opening for
easier loading/unloading
of large parts

Rigid cylinder head fixture
plate accommodates wide
range of cylinder heads

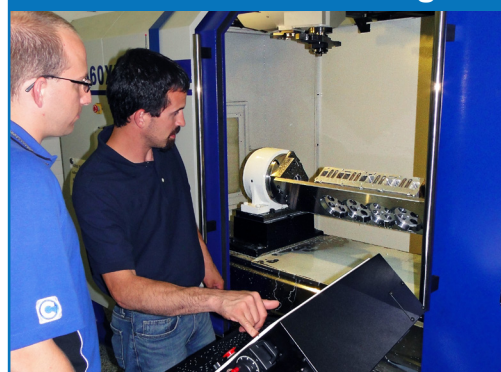
Heavy duty cast iron frame with linear
guideways provide superior accuracy
and rigidity for amazing surface finishes.

Air blast and coolant
wash down hose

Turnkey System Includes

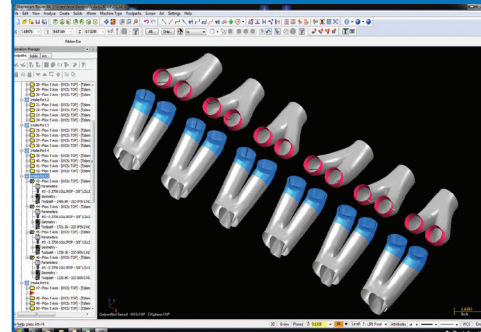
- ✓ 5-Axis machining center
- ✓ M400 5-Axis CNC control
- ✓ Roller Cam driven A and B axes
- ✓ **Mastercam** CAD/CAM software
- ✓ Personalized CNC porting training
- ✓ Digitizing probe & software
- ✓ Carbide lollipop porting tool
- ✓ Auto tool length setter
- ✓ Cylinder head fixture plate
- ✓ 36Hp / 20,000RPM spindle
- ✓ Curated CNC Tooling
- ✓ MPG electronic handwheel
- ✓ Industry's best warranty & support

Personalized Training



Our skilled technicians teach you how to reproduce your race winning designs with ease. The comprehensive personalized one-on-one training is tailored to your specific application.

Mastercam CAD/CAM software with "Port Expert"



Mastercam's new "Port Expert" toolpath has special features designed specifically for cylinder head porting that simplify the process and create toolpaths with reduced run-time and superior surface finish. Mastercam allows you to quickly create accurate reproductions of your intake, exhaust and combustion chambers, or design ports from scratch based on the stock castings. Easily view, copy, analyze and modify intake ports, exhaust ports, and combustion chambers. And you have the full power of the world's #1 selling CAD/CAM package for other machining needs including custom engraving and general part machining.

Combustion Chambers



Machine perfect combustion chambers every time. By combining CENTROID's smooth motion control and built-in digitizing software with Mastercam's advanced toolpaths, you can easily reproduce your hand-ported designs with results superior to other methods and machines.

Starter Tooling Package



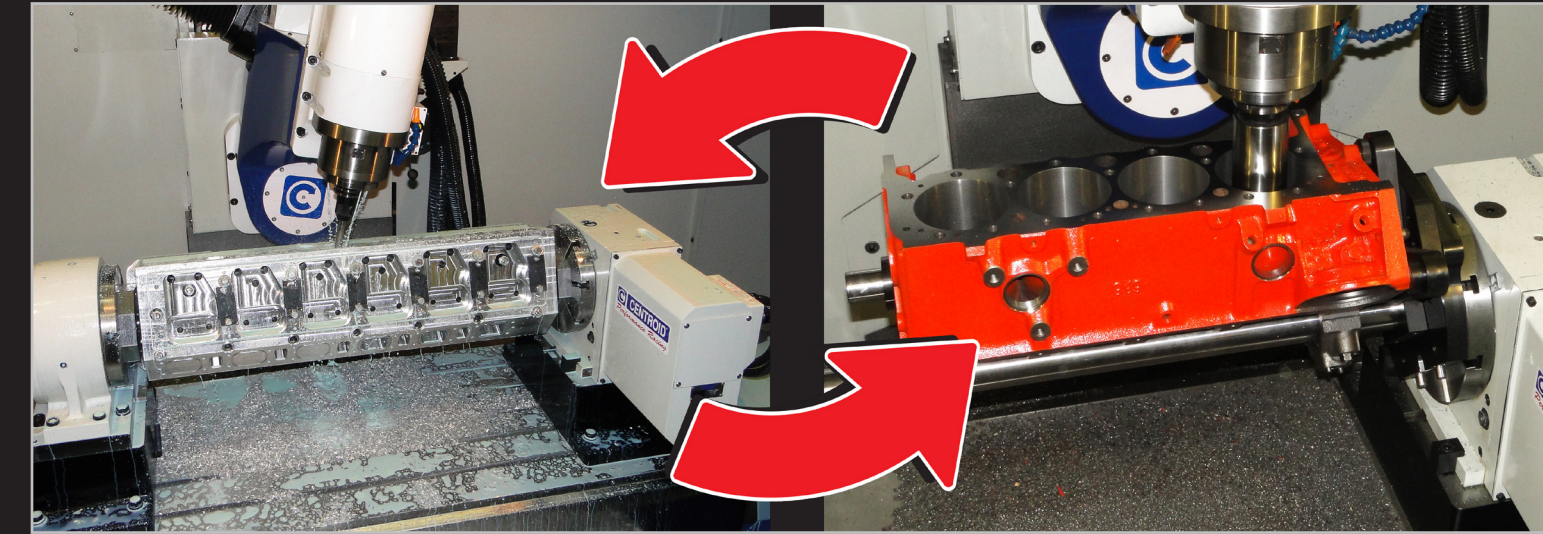
The comprehensive tooling package includes everything you'll need to go straight into production including a "MPG" jogging handwheel, digitizing probe, automatic tool length setter, a custom cylinder head fixture plate, combustion chamber ball end mill and a carbide lollipop cutter specially designed by CENTROID to provide optimal chip removal and a superior surface finish.

User-Friendly 5-Axis CNC

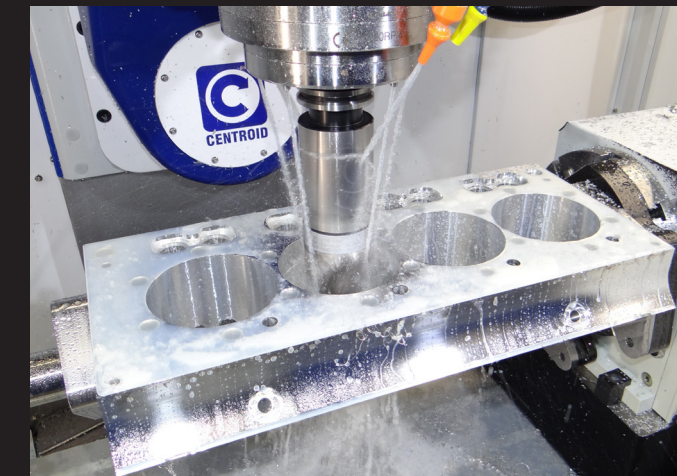


Simple to operate, the CENTROID CNC control is designed with the operator in mind. Graphically assisted part and tool setups along with straightforward menus and an easy to read display ensures every operator will be machining quality cylinder heads in no time. Windows 10 IOT Embedded OS, touch screen, remote assistance, internet ready, the control software is easily updated giving you access to the latest CNC technology for years to come.

✓ Block Option: Port and Block, Same Machine, Same Fixture

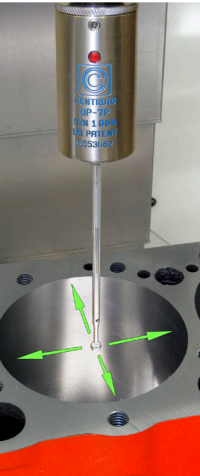


CNC machine both Cylinder Heads and Blocks with the A560 Port Block option

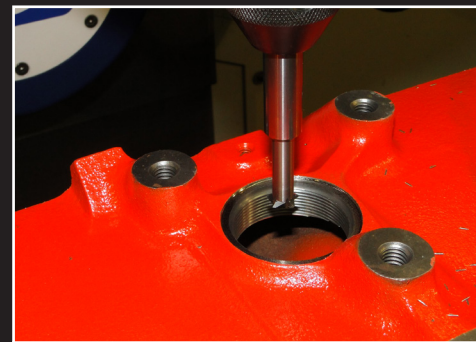


Cylinder Boring

Zero swap over time with no fixtures to re-remove, realign or re-indicate. Equipped with automatic block cnc blueprinting, the machine locates existing dimensions and allows you to adjust and modify for machining exactly where you want the feature to be located. Control size, angle and location of a feature accurately with the push of a button. Built-in block blueprint database, modify, save or create your own custom block programs.



Deck Surfacing



Threadmilling



Head Stud Conversion



Stroker Clearance

Additional capabilities:
Lifter Boring, Chamfering, O-ring groove, Spot facing, Engraving, Rigid Tapping, Threadmilling, Drilling, Four Bolt Main Conversions, Pock-eting, Block Sleeving and general machining. See video of all these operations and more on our website.