ROTTLER

THE CUTTING EDGE

SAD

Automatic Downfeed CNC Touch Screen Surfacing Machine

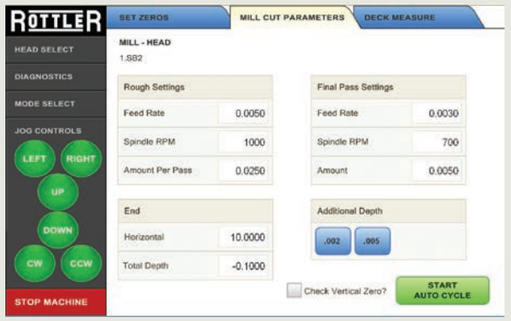
Performance Racing and Engine Remanufacturing Machinery and Equipment

TOUCH SCREEN CNC CONTROL

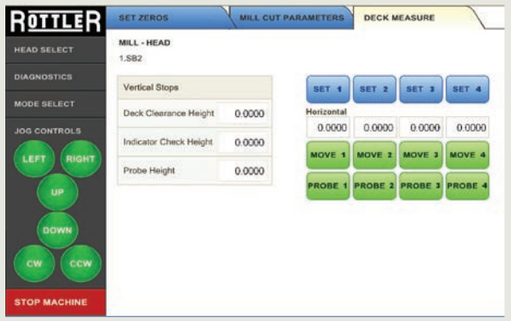
Nearly four decades ago, Rottler pioneered automation and programming by utilizing electronics and computers. Today, the SAD Surfacing machines incorporate the latest Rottler Touch Screen CNC Control Technology into a programmable Surfacing Machine capable of automatic wireless probing and multi-pass machining, automatically. Touch screen control technology make automation easy to learn, versatile to operate and upgradeable for future software. Windows operating systems and touch screen controls make a simple operator interface allowing only the buttons needed for each operation to be displayed at one time, 'hiding' the complex computer functions in the background.

Set Zeros

Set Parameters



Set Probing



Handwheel for Manual Movement and Variable Feedrate

The electronic handwheel of the SAD machines has many functions. For manual movement up/down or left/right, the operator is able to move the machine by rotating the handwheel just like a manual machine, this allows quick and easy setup of a new or different job. The handwheel has a clicking action and each click moves the machine an exact amount. In Coarse mode, the machine moves .010" (0.25mm) per click allowing very fast movement. In Medium mode, the machine moves .001" (.025mm) per click allowing slower movement. In fine mode, the machine moves .0001" (.002mm) per click, allowing very fine movement of the machine.

Once the machine is operating in automatic programmed cycle, the operator is able to vary the feedrate or speed of movement from zero to 100%. This allows the operator to slow down or speed up automatic movement while not changing the programmed values. This function is ideal for operators learning the machine and checking their programs to be sure they have the best productivity and safety, and not damaging cutting tools and jobs. This function is also very useful when trying to obtain a specific surface finish defined by surface roughness measuring instruments.

FEATURES

The Rottler SAD machines combine cutting edge control technology with proven machine tool dry surfacing technology to give the world's most advanced CNC surfacing machines available today. There are two models available, the S7AD and S8AD. The smaller S7AD is designed for the needs of the performance racing engine builder and production engine remanufacturer. The larger S8AD is designed for surfacing large heavy duty diesel heads. The programmable downfeed is ideal when large amounts of material need to be removed in one set up and automatic cycle. Angle milling and weld removal are easily done in one cycle.

Features

Latest CNC Control Technology

State of the art CNC Servo electronic controls make the most advanced surfacing machines available today.

Super Fine Surface Finish

Belt driven precision ball screw and infinitely variable speeds and feeds allows surface finished as low as 2Ra to 6Ra for today's MLS (Mult-Layer Steel) head gaskets.

Dry Cutting System

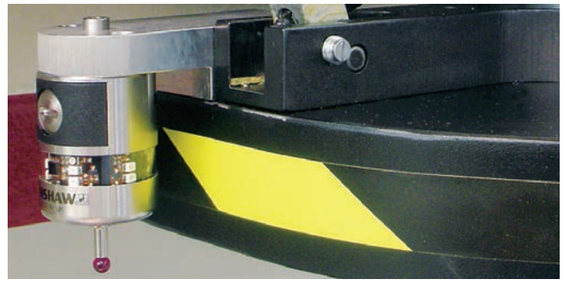
Eliminates coolant disposal and makes clean up a breeze! Cutterhead shroud directs the chips into the chip collector and fall into a collection tray on the floor.

Reduced Floor Space

Compact, one piece castings and multi-layer slideway guards give the most compact surfacing machines available today.

Fast Floor to Floor Time

Heads can be surfaced in less than two minutes and a pair of V8 heads in less than eight minutes.



Optional Radio Height Probe

The optional Renishaw radio height probe and touch off software package automatically finds the height of the surface to be machines so the control can remove exactly the programmed amount. The large amounts of material can be removed in one programmed cycle using multiple pass software - roughing and finishing parameters control productivity and surface the finish accuracy.

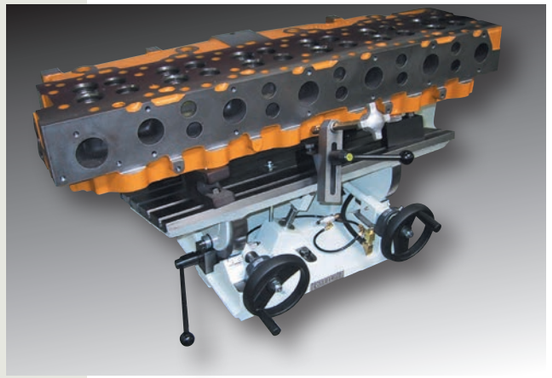
Part# 650-3-59W

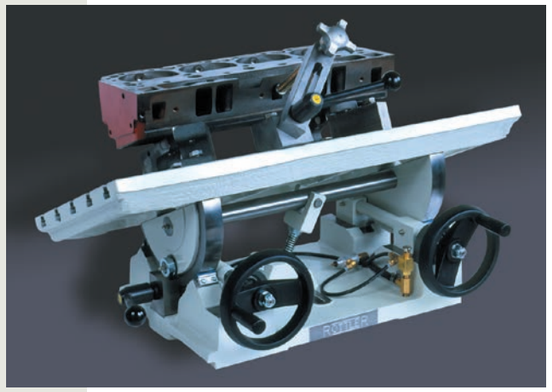
Universal T Slot Base

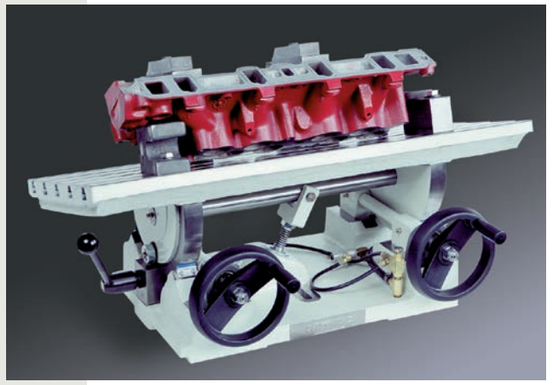
Large, flat T Slot One Piece Mehanite Cast Iron Base allows mounting of any fixture and any job - jacks and clamps can be placed anywhere!

Protection and Long Life

Multi-Layer Steel Guards cover and protect the slideways for extra long service life.







Intake/Exhaust Manifold Tooling

Increases flexibility and profit on the SAD series surfacers. Damaged mainfolds can be surfaced with indexable shell mill in a few minutes.

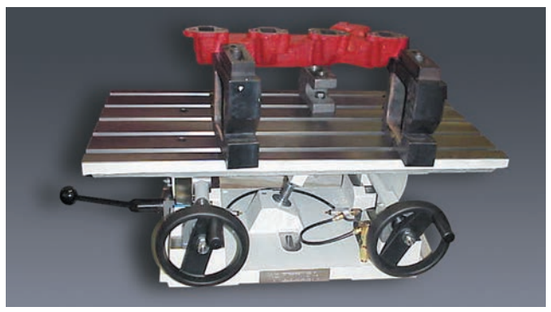
#7226G Intake/Exaust Manifold Tooling

Rottler's answer to holding a wide variety of Heads, Blocks and Manifolds

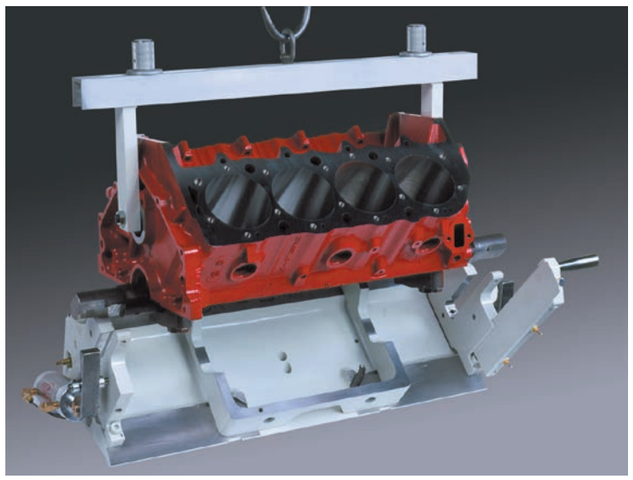
The Rottler Dual Axis Leveling Table allows clamping to be completed first, then the level to be quickly adjusted in both directions simply by rotating the two handwheels! Combined with Rottler's Dual Axis Level, any workpiece can be clamped and leveled in seconds! Air Float allows the table to be floated out from the machine for easy loading and clamping then floated back into the machine for positioning for surfacing. Designed for fast, universal clamping for minimum "one cut" 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.



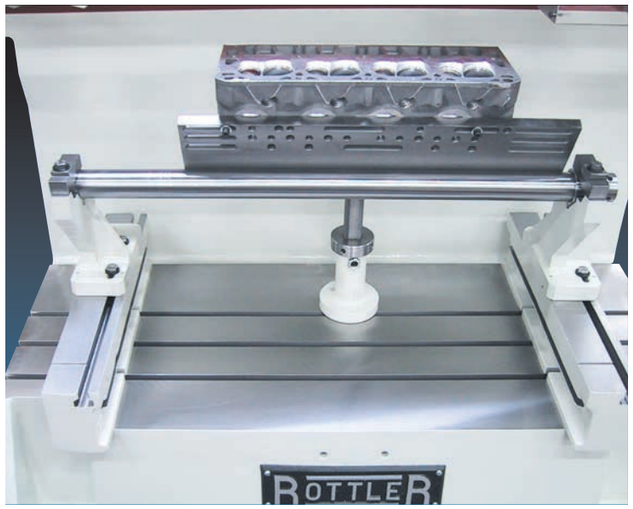
Exhaust



V-Block Fixture Multiple Angle 15°, 30°, 60°, 90°

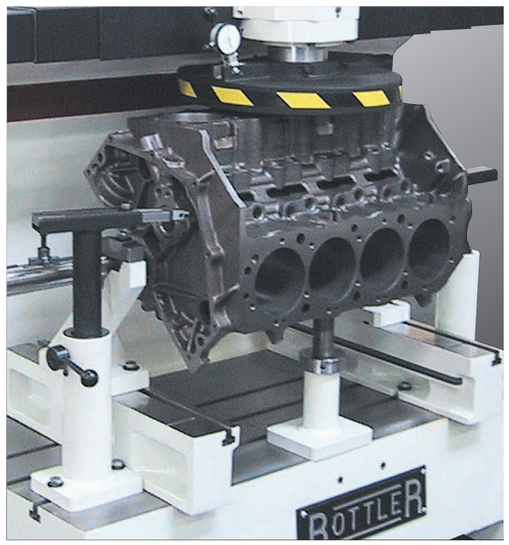
V-Block fixture has two modes of operation; one mode automatically aligns to main bearing and pan rail; the adjustment mode allows you to use the fixture to align to the original deck surface. The same fixture can be used on Rottler boring machines. Block hander allows easy handling for loading/unloading and rotation of block.

#502-1-72F Fixture with Airfloat and Air Clamp
#502-1-72H Fixture with Manual Clamp
#502-1-95 Block Handler



Universal Head & Block Fixture

Angled and parallel heads, and In-Line and V-Blocks can be easily mounted and leveled on the same universal fixture. The optional parallels can be removed and the supports bolted directly on the T Slot base for tall blocks. Custom fixtures can also be easily mounted on the base of the machine.



Universal Head and Block Fixture

Mount V and In-Line blocks, angled and parallel heads, manifolds on one universal fixture. 2" (50.80mm) Main Line Bar can be leveled for decking blocks parallel to the main line centerline or fine adjusted with eccentric bearings.

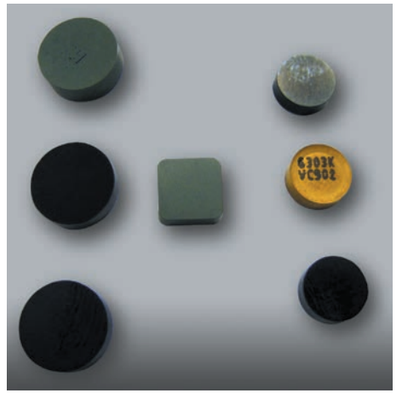
Extra clearance below and behind the fixture allow high deck height V-Blocks to be rolled to both banks for surfacing without removing the block from the machine.

#7241 Universal Head and Block Fixture
#7219W Heavy Duty T Slot Parallels
#7242M Tower Holddown Clamps

CUTTING INSERTS

Versatile tooling provides the right tool for every job!

Rottler SAD machines use indexable cutting inserts held by adjustable toolholders in the standard double insert flycutterheads. Rottler offers inserts designed specifically for high speed dry milling of cast iron, aluminum, diesel heads with prechambers, aluminum blocks with iron liners, and optional cutterheads for weld removal.



CBN (Cubic Boron Nitride) **Inserts**

These inserts provide an excellent finish on cast iron and have an exceptionally long life giving savings over grinding stones.

PCD (Poly-Crystalline Diamond) **Inserts**

These inserts are designed for high speed dry cutting of aluminum giving a super fine surface finish for today's MLS (Multi-Layer Steel) head gaskets.

Coated Carbide Inserts

These inserts are inexpensive and can be used for roughing work at low speeds.

Special Inserts

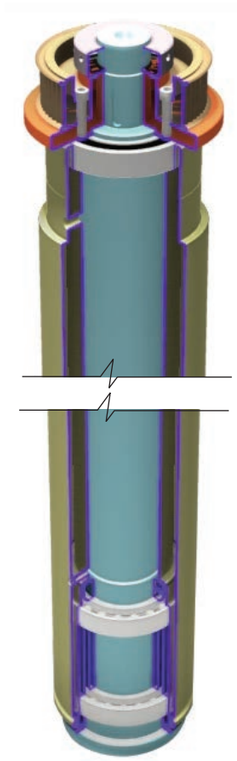
Rottler has developed special inserts for surfacing difficult jobs such as aluminum heads with steel pre chambers and aluminum blocks with ductile iron liners.

HEAVY DUTY SPINDLE

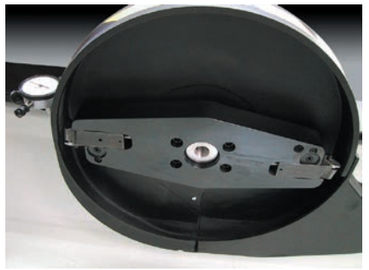
Extra Heavy Duty Spindle Specially designed for CBN and PCD tooling.

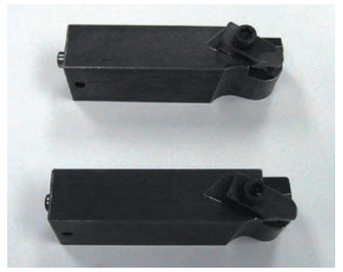
CBN and PCD require precision bearings to give an accurate surface finish and long insert life. Large diameter, hard chromed tool steel spindle utilizes high precision high speed angular contact bearings resulting in years and years of super fine surface finishes.

Visit www.rottlermfg.com to view the complete Cutting Insert bulletin.



CUTTERHEADS





Rottler Surfacing Machines use two Toolholders which are radially and axially adjustable. The standard toolholders use 3/8” (9.52mm) IC round or square inserts. Optional interchangeable 1/2” (12.7mm) IC Round and square insert toolholders are available. An optional tool holder for surfacing cylinder heads with pre-combustion chambers is available.

The S7AD has a 14” (360mm) cutterhead and the S8AD has a 16” (420mm) cutterhead.

Multi Insert Face Mill

Special design Face Mill with Wiper Insets allows high feed rate surfacing of difficult metals.

ACCESSORIES & FEATURES

Pre-Combustion Chamber Tool

You can surface pre-combustion chambers with SAD surfacers or use the Rottler Pre-Combustion Chamber Tool to take the Counterbore back to standard depth.

#7213A thru K

Shell Mills

2-1/2” (60mm) and 4” (100mm) diameters install quickly without removing the fly cutterhead. Shell mills can also be fitted after removal of cutterhead for maximum height capacity. The large cutter will remove heavy welds without grinding or use of coolants. A diesel cast iron welded head takes less than 15 minutes for surface finishing from a rough weld condition. The 2-1/2” (60mm) cutter can be used to surface areas inaccessible to other surfacing machines, such as exhaust ports on heads and for surfacing manifolds.

#7224 2-1/2” (60mm) Shell Mill #7225 4” (100mm) Shell Mill

Solid Steel Way Guards

Heavy duty sliding steel guards cover the complete slideway for long life. Friction surfaces are coated with Turcite for low friction, long life, and smooth operation for super fine surface finish.

Workhead moves to home position and leveling table floats out on an air cushion for easy loading of large, heavy jobs such as this CAT3406E head.

Belt drive precision ball screw for Turcite coated workhead.

STANDARD EQUIPMENT

- New Technology Touch Screen CNC control uses Direct Motion Control Technology and Windows Operating System.
- Conversational Touch Screen Control allows simple programming for any cylinder heads such as depth of cut, multiple passes, total material removed, speeds and feeds.
- Internet connection to the machine computer must be provided for training support and service.
- Programmable Rapid Touch Off Set Point for reduced Cycle Times
- On completion of Automatic Cycle, Cutterhead returns to Vertical Zero Height
- Infinitely Variable Spindle Speeds from 350 - 1800 RPM for machining different metals
- Infinitely Variable Travel Feeds .001 - .080" (.025-2mm) per Cutterhead Revolution for Desired Surface Finish Roughness
- Large diameter ball screw for precise movement of vertical travel on cutter head
- Maximum Work Head Travel 50" (1270mm)
- High Rapid Traverse Rate for Reduced Cycle Time - 160" (4mm) per minute
- Belt Driven Precision Ground Ball Screw for Work Head Traverse
- Large Diameter Triple Angular Contact Bearings in Heavy Duty Hard Chromed Spindle
- Slideways Coated with Low Friction Turcite for Durability
- Automatic Scheduled Maintenance Monitor
- 16" (420mm) Cutterhead
- Tool holders (2) for 3/8" (9.52mm) IC round or square inserts (Optional 1/2" (12.70mm) IC Tool holders available)
- Cutterhead Guard with Chip Collection
- Depth Dial Indicator Assembly for Rapid Touch Off on Surface to be Machined
- Large One Piece Base Casting with 3 T Slots for Universal Fixture Mounting
- Multi Piece Metal Slideway Covers protect Ball Screw and Slideways from Dust and Chips
- Instruction and Spare Parts Manual
- Floor Space Requirement 85 X 46" (2160 X 1170mm)
- Paint Color Code: RAL9002 (Grey White)
- Electrical requirements: 208/240V, 15A, 50/60Hz, 1Ph
- Shipping weight 4100 lbs. (1860 kg) without fixtures
- Shipping dimensions: 60 X 86 X 81" H (1524 X 2184 X 2057mm H)

SPECIFICATIONS

	S7AD		S8AD	
	Inch	**Metric**	**Inch**	**Metric**
Cutter Diameter	14”	360mm	16”	420mm
Cutter Travel Horizontal	40”	1000mm	50”	1275mm
Cutter Travel Vertical	6”	150mm	6”	150mm
Max. Distance - Cutting Inserts to Machine Base	25”	635mm	25”	635mm
Spindle Speeds Variable RPM	350-1800			
Spindle Feeds Variable per Rev	.001”-.080” .025-2mm			
Rapid Traverse Rate per Min	.160” 4mm			
T Slot Table Size	50” x 21”	1270 x 530mm	54” x 21”	1370 x 530mm
Floor Space Required	75” x 46”	1900 x 1170mm	85” x 46”	2160 x 1170mm
Electrical Requirement	208-240V, 15A, 50/60 Hz, 1Ph			
Air Requirement	.5 cfm @ 100PSI 14.15 L/min @ 6 Bar			
Shipping Weight excluding Fixtures	3600lbs	1636kg	4100lbs	1860kg
Machine Dimensions	48"D x 55"W x 75"H	1219 x 1397 x 1905mm	48"D x 65"W x 75"H	1219 x 1651 x 1905mm
Shipping Dimensions	67”D x 77”W x 82”H	1702 x 1956 x 2083mm		
Paint Color Code	RAL9002 (Grey White)			

Specifications and design subject to change without notice.

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