

ROTTLER
THE CUTTING EDGE

SG7MTS

Cylinder Head Seat & Guide Machine



CONCEN

MANUALMATIC

Machining Equipment
Created for Performance
Racing & Engine
Remanufacturing.

So Advanced, It's Simple.

*The ultimate affordability
in valve seat machining*

SG7MTSMTS CYLINDER HEAD SEAT & GUIDE MACHINE

New SG7MTS MANUALMATIC Touch Screen Control Seat & Guide Machine

The SG7MTS uses the same proven fixed carbide pilot tooling as the SG7 but now has a front mount steering wheel for spindle downfeed. The machine has two modes of operation:

MANUALMATIC: Productivity increases of 30% to 50% are experienced due to the new concept of MANUALMATIC operation. Buttons and switches have been eliminated saving operator time. Feed the spindle and Rottler intuitive control easily manages functions such as workhead float/clamp, valve guide pilot centering and spindle power. When seat depth is reached, MANUALMATIC changes the spindle RPM automatically for equal seat depth and finish.

MANUAL MODE: Touch Screen Controls utilize proven Rottler Intuitive Software that displays spindle vertical position vividly on the screen eliminating external dial gauges. Feeding the spindle to the valve seat sets the cutting insert to zero. A quick touch sets the zero position allowing the Digital Display to show exact spindle position at all times. Workhead clamp and float pedals are eliminated saving valuable operator time. Low to High finishing speed transitions are controlled by separate buttons on the touch screen for manual operation.

Fast & Accurate

Heavy duty SGMTS Workheads are robust with the capability to machine large diameter valve seats. The lightweight design is engineered for speed and accurate centering creating the ultimate concentricity.

Concentricity

Rottler's Rigid Precision carbide centering pilots are manufactured to a fine tolerance. Combined with the manoeuvrability of the light weight air float Workhead, the SG7MTS gives perfect centering in the valve guide providing the best concentricity of any machine on the market.

High Torque Spindle Motor

The SG7MTS has a 1HP (.75kW) High Torque Spindle Motor with a Yaskawa Frequency Inverter with Vector Control to control spindle torque resulting in fine surface finish even with the hardest valve seats found in today's engines.

Precision Seat Cutting Inserts

Rottler's Precision CNC Ground Fine Grain Carbide Seat Cutting Inserts are substantially faster and less expensive than grinding. Inserts eliminate the need to purchase a different grinding stone for every angle. Rottler manufactures inserts in single and multi-angle. Curved and radius shapes are available.

Storage Cabinet

Three Drawers and a Top Tray allows convenient storage of a wide selection of Rottler Tooling.

Rigid Cast Iron Construction

Rottler SG7MTS machines are manufactured from heavy thick wall cast iron. The all cast iron rigid platform is precision machined providing superior accuracy as compared to welded steel. Rigidity is vital in producing high quality chatter free valve seat cutting.

Touch Screen Control Panel

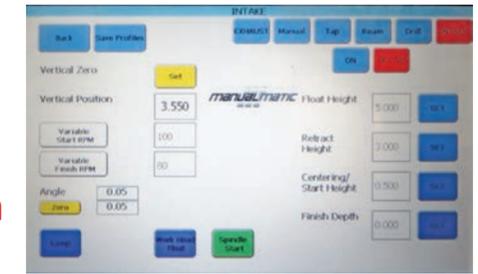
Soft Touch buttons are conveniently located at eye level height. One touch transitions from high speed material roughing to low speed fine surface finish providing accurate **CONCEN**.

Variable Speed Spindle from 40 to 400 rpm

Spindle Speed can be accurately selected for varying machining operations.

Digital Depth Indicator

Digital Depth indication shows operators the exact amount of material that has been removed from the seat resulting in consistent seat depths. Operations such as installing seat rings, reducing valve guides, facing spring seats and more are benefited by digital accuracy. One Touch Zero ensures accuracy.



Fine Feed Handle

Dual Speed Spindle Fine Feed

Rapid feed is accomplished through the large hand wheel. Use the small hand wheel to perform precise fine feed spindle control when depth of cut is required to attain extreme levels of accuracy.

Electronic Level

Digital readout for quick and accurate leveling of cylinder heads

Built in Vacuum Tester

Quality check valve seats while the cylinder head is still set up on the machine!

Adjustable Spindle Tilt & Depth Stop

Spindle tilts up to 15° from vertical, in both directions, providing quick alignment on all canted valve cylinder heads. Each seat is cut to identical depths for optimal performance of computer controlled engines.

Large Diameter Spindle

2.190 inch (56mm) diameter heavy duty spindle assures rigidity for chatter free operation. Outer spindle support bearings are adjustable over the entire length of the bearing area. Superior High Precision Rottler design is built in for durable operation.

360° Rollover Fixture

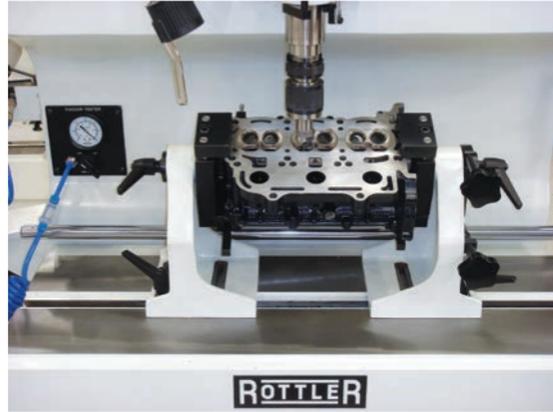
360° roll provides quick and easy access to all sides of the head. Precision adjustments are accomplished fast using the Micro Adjust Feature. Clamps onto table firmly for chatter free cutting and extremely accurate concentricity.



SPRING FREE TOOLING



Rottler Patented exclusive multi-angle seat tooling eliminates the need for bounce springs. The Rottler patented tooling holds the ball driver firmly yet allows ball to float during seat cutting. This eliminates the cumbersome/ troublesome bounce springs but gives you the ultimate in valve seat concentricity.



Rottler Patented Spring Free Tooling Eliminates Bounce Springs



Rottler Patented Tooling

Rottler's patented SG tooling totally eliminates any bounce springs. The quick change spherical spindle adapter allows different tool holders to be changed in a few seconds. Change from multi angle seat cutting to pocket boring or reaming in just a few seconds! When the collar is moved down it aligns the tool holder vertically to allow the tool holder to be easily lowered down over the fixed pilot. While the tool holder is being lowered, the collar is lifted to release the sphere for precision centering and cutting. One hand pilot removal wrench allows fixed pilots to be moved from guide to guide - fast and easily.



Wide selection of Tooling available for Valve Seat Cutting and Insert Ring Replacement, Valve Guide Reaming and Boring, Modifications for Replacement Valve Guides, Spring Seats and Stem Seals, etc.

MEASURING INSTRUMENTS



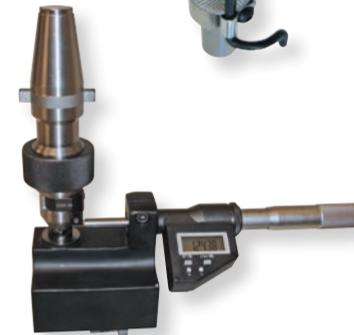
Valve CONCENT Measuring Gage

Spring loaded V supports allow valve stem to be rotated around its own centerline and valve seat run out to be measured with a precision gage .0001" (.002mm) per division. A second dial gage can be used to check that the valve stem has no run out or bend.



Valve Seat CONCENT Measuring Gage

Rottler's CONCENT gage allows concentricity to be easily and quickly checked to ensure accuracy



Digital Boring Micrometer

Accurately set boring diameter to any size with single blade adjustable cutting inserts and tooling for boring valve seat housings for new seat rings

WHAT IS CONCENT

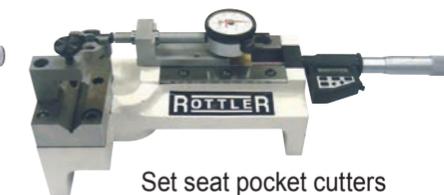


Rottler's trade mark that ensures that you our customer get the most accurate and versatile machine possible. Rottler combines precision carbide centering pilots with our light weight air float work head to give you perfect centering with the valve guide. This guarantees the best CONCENT of valve seat to valve guide centerline in the industry. Accuracy of .0005" per inch (.01mm per 25mm) is easily obtainable.

MEASURING INSTRUMENTS



Check pilots for bend and diameter



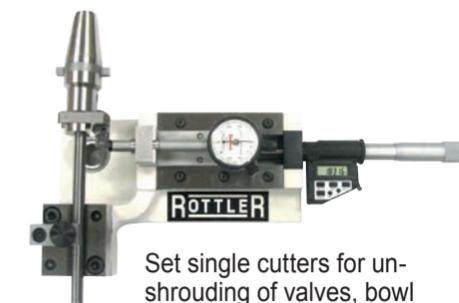
Set seat pocket cutters to proper diameter



Set multi-angle seat cutters to exact diameter



Rottler's 6 in 1 Setting Fixture makes precision valve work simple and fast!

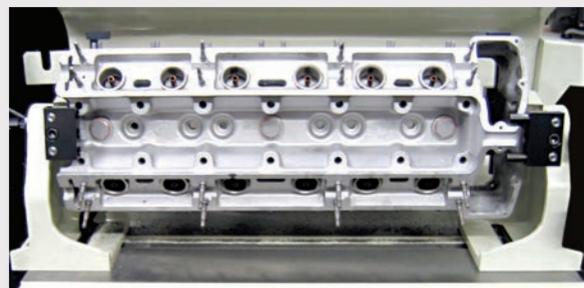
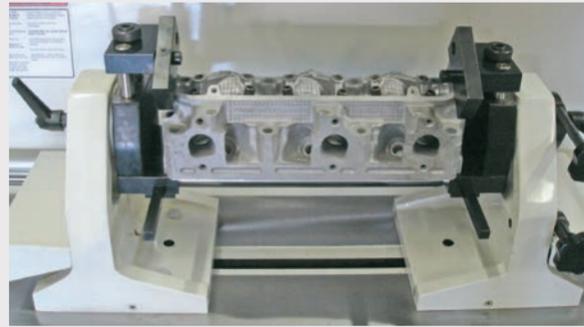


Set single cutters for unshrouding of valves, bowl work or seat ring removal.



Check valves for run out and diameter (also allows precision setting of valve margin when setting up multi-angle cutters)

UNIVERSAL FIXTURING



360 Degree Roll Over Fixture

The standard 360 degree rollover fixture allows large, long heads, such as this Jaguar XJ6, to be rolled 360 degrees for multiple operations such as boring cam follower bores and repairing broken exhaust studs by drilling and tapping.

Difficult, Angle and Canted heads like GM 2.0L are easily clamped and Rolled 360 Degrees.

The two piece frame kit included allows mounting of overhead camshaft and difficult to mount cylinder heads.



MANUAL MATIC



SG7MTS machining special side valve engine



Aircraft Cylinders

Rottler offers special fixturing and tooling for cutting seats in one piece aircraft cylinders.

TOOLING



Universal Chuck

For general drilling and tapping work. Often used for spring seat and valve guide seal tooling.



Drivers

Rottler makes an assortment of drivers for our patented spring free spindle drive system. Combined with our wide range of insert/bit holders, valve seats from .550" to 3.0" (14mm to 76mm) can be cut on the SG7MTS.



Precision Collet Chuck

Allows holding of reamers, cutters, drills, taps and other tools for special machining operations.



Cutting Insert Sharpener

Rottler offers machine mounted diamond wheel cutting insert sharpeners for fast easy sharpening of multi-angle tool bits.



Milling Heads

Fixed Diameter Milling Heads for boring seat ring housings for standard seat rings – gives correct interference for press fit with no adjusting or setting. Indexable Carbide Inserts have 4 corners and are easy to change when dull without any adjusting or setting. No need to purchase a new cutterhead when the inserts get dull.



Electronic Level

For precision leveling of valve guides (pictured with canted guide fixture).



Digital Boring Micrometer

Accurately set boring diameter to any size with single blade adjustable cutting inserts and tooling for boring valve seat housings for new seat rings.



Triangle Tool Holders

Indexable Triangular Coated Carbide Tool Holders in 10, 20, 30, 45 degrees. Ideal and economical when cutting only one seat angle and for boring out old inserts and boring new insert housings.



Spindle Adaptors

.375 (9.52mm) and .500" (12.70mm) inside diameter spindle adaptors for driving standard reamers, core drills, spot facers, etc.

STANDARD EQUIPMENT

The Standard Control has 2 modes of operation:

1. MANUALMATIC Touch Screen Control for increased production
 2. MANUAL Touch Screen Control for simple manual operation
- Operations such as valve guide reaming, drilling and tapping are included
 - LightWeight Air Float Work Head for precise centering
 - Universal Bolt Down 360 degree Roll Over Cylinder Head Fixture
 - Holder Kit for heads that Roll Over Fixture is not able to clamp - two piece frame - adjustable for different length heads
 - Maximum Cylinder Head Length in 360 degree Roll Over Fixture - 28" (700mm) adjustable to 32" (800mm)
 - Rottler R1 Taper 2.19" (56mm) Hardened and Ground Spindle with 6.7" (170mm) of hand wheel travel
 - Spindle Rotation Speed Infinitely Variable from 40-400RPM with AC Motor and Vector Drive
 - Quick change of Spindle RPM from High to Low for fine finishing of the valve seat
 - Quick Change Tool Retention System for fast location over pilot and accurate centering (Patented)
 - Steering Wheel for Rapid and Fine Spindle Feed for Precise Valve Seat Depth and Finish
 - Work head tilts 15-degrees in both directions for Canted Valve Guides
 - 2 LED Work lights - either side of the spindle giving shadowless view of valve seat area
 - Tool Storage Cabinet with three drawers, mounts on the machine and swivels for ease of use
 - Digital Electronic Level for quick, precise alignment of Fixed Carbide Pilots
 - Digital Display for repeatable Depth Control of Spindle Travel
 - Built in Vacuum Tester complete, Kit includes hose and quick change pads

SPECIFICATIONS



	INCH	METRIC
Valve Seat Diameter Range	.550" to 3.000"	14mm to 76mm
Spindle Diameter	2.190"	56mm
Spindle Speed	40 to 400 rpm	
Spindle Motor - AC Vector Inverter	1 HP	.75 kW
Spindle Taper	R1 QUICK CHANGE	
Spindle Travel/Stroke Vertical	6.70"	170mm
Maximum Spindle Tilt (either side of zero)	15 degrees	
Distance from Table to Spindle	19.5"	495mm
Cylinder Head Dimensions (with 360 degree rollover fixture)	32"L x 9"W x 6"H	800L x 230W x 150mmH
Work Head Travel Horizontal - Airfloat/Airclamp	29"	736mm
Work Head Travel In/Out - Airfloat/Airclamp	2.125"	54mm
Roll Fixture Movement In/Out with Clamp	4.75"	121mm
Electrical Requirements	210-240V, 50/60HZ, 15A, 1PH	
Air Requirements (Pressure & Usage)	90 psi - 10CFM	6 Bar - 270 l/min
Shipping Dimensions	37"W x 49"D x 83"H	940W x 1245D x 2100mmH
Shipping Weight	1800 lbs.	818 kg
Paint Color Code	RAL9002 (Grey White)	

Specifications and design subject to change without notice.

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