

ROTTLER

THE CUTTING EDGE

SG7

Cylinder Head Seat & Guide Machine

CONCEN™

*The ultimate
affordability
in valve seat
machining*



Machine Tools for the Performance Racing, Engine Remanufacturing and OEM Manufacturing Industries

SG7 CYLINDER HEAD SEAT & GUIDE MACHINE

Light Weight Work Head

The SG7 has a light weight work head for extremely fast and accurate centering for the ultimate minimum concentricity. Outer spindle support bearings are adjustable over the whole length of the bearing area, similar to High Precision Boring Bar design

Concentricity

Rottler's Rigid Precision carbide centering pilots are manufactured to less than one tenth tolerance. Combined with the light weight air float work head the SG7 gives perfect centering in the valve guide and the best concentricity of any machine on the market.

LED Work Light

Tidy, built-in LED Work Light ensures no obstruction of view and light just where you need it.

Built in Vacuum Tester

for quick checking of valve seats before removing the cylinder head.

Storage Cabinet

Three drawers and top tray allows convenient storage of wide selection of tooling available from Rottler.

360 Degree Rollover Fixture

Provides quick loading and easy access to all sides of the head. Quickly levels head using the micro adjust feature. Fixture bolts down firmly with quick release handles. Clamps onto table firmly for chatter free cutting with extremely accurate concentricity.

Rigid Machine Construction

Heavy thick wall cast iron machine castings and precision machining during the manufacturing process give excellent chatter free valve seat cutting. Heavy duty cabinet/base extended to the rear for safe handling when machine has to be moved. Recessed toe kick allows more comfortable machine operation.

Following Included as Standard Equipment:

- Fine feed for precision spindle movement
- +/-15 degree work head tilt
- Digital display rpm
- Tool Storage Cabinet (three drawers)
- Digital Electronic Level
- Dial gage for depth control of spindle travel
- Built in Vacuum Tester
- LED Work Light



Variable Speed Spindle from 40 to 400 rpm

Accurately select specific spindle speeds required for different machining operations. Soft touch buttons and bright digital display allow ease of operation.

Electronic Level

Digital readout for quick, accurate adjustment.

Digital Depth Indicator

Shows the operator exactly how much has been removed from the seat assuring consistent seat depth. Also useful for installing seat rings, reducing valve guides, facing spring seats, etc.

Dual Speed Spindle Feed

Large hand wheel provides rapid feed and small hand wheel allows precise fine feed control of the spindle. Very helpful when depth of cut must be maintained to extreme levels of accuracy.

Adjustable Depth Stop

15 Degrees Tilt

Spindle tilts up to 15 degrees from vertical in both directions, providing quick alignment on all canted valve cylinder heads. Cuts each seat to the exact same depth - a must for today's computer controlled engines.

Spindle Nut

Offers quick tooling change for a wide selection of tooling and spindle adapters.

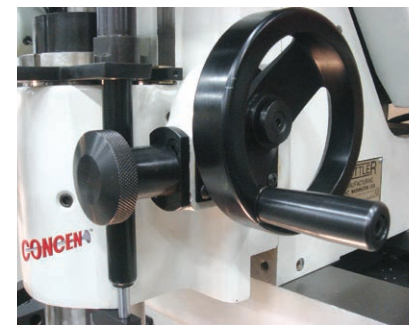
Rottler Patented Tooling

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.



Control Panel

Soft Touch buttons conveniently located at eye level height. One touch button to change from high speed for roughing and fast stock removal to low speed for fine surface finish and accurate CONCEN.



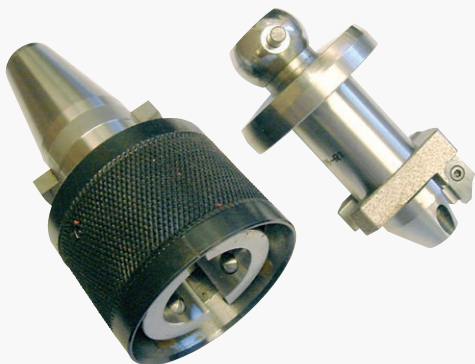
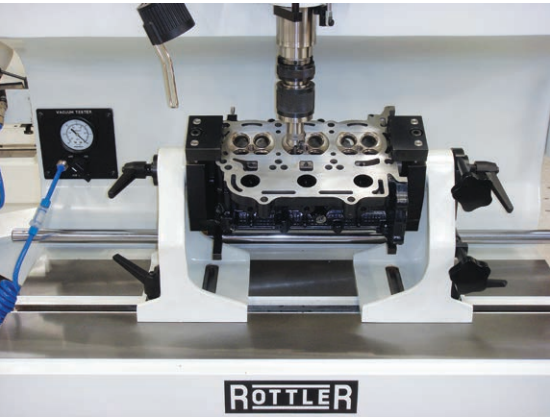
Fine Feed Handle



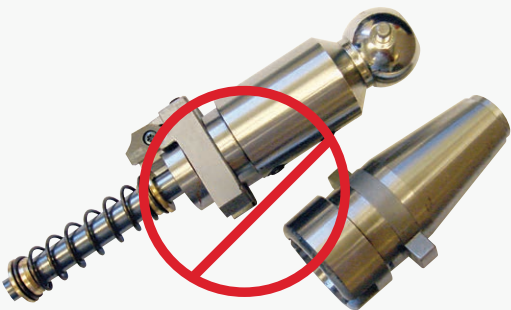
SPRING FREE TOOLING



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

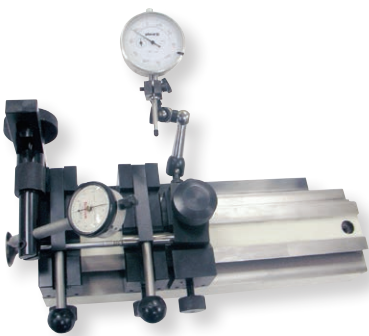
Rottler's patented SG tooling totally eliminates any bounce springs. The quick change spherical spindle adapter allows different tool holders to be changed in a few seconds. Change from multi angle seat cutting to pocket boring or reaming in just a few seconds! When the collar is moved down it aligns 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

WHAT IS CONCEN



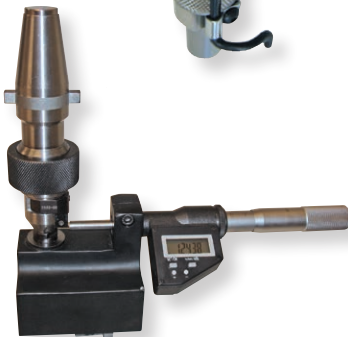
Valve CONCEN Measuring Gage

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 CONCEN Measuring Gage

Rottler's **CONCEN** 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

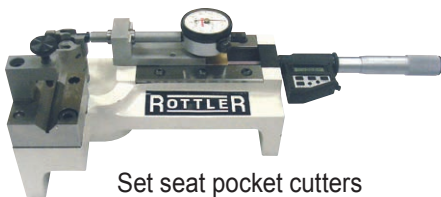


Rottler's trade mark that ensures that you our customer get the most accurate and versatile machine possible. Rottler combines precision carbide centering pilots with our light weight air float work head to give you perfect centering with the valve guide. This guarantees the best **CONCEN** of valve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

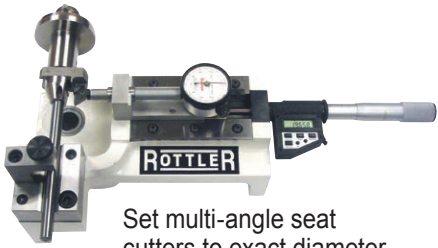
6 IN 1 SETTING FIXTURE



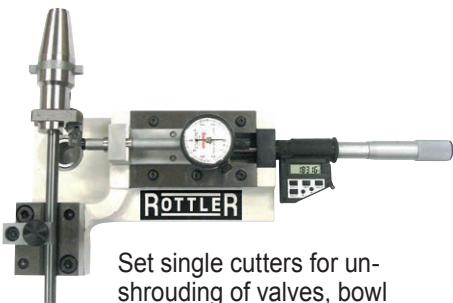
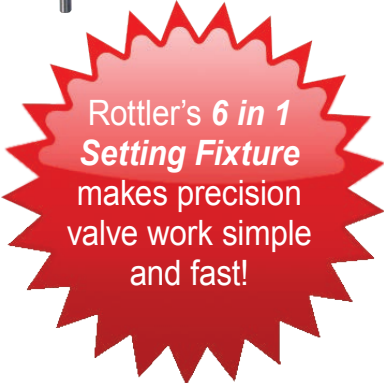
Check pilots for bend and diameter



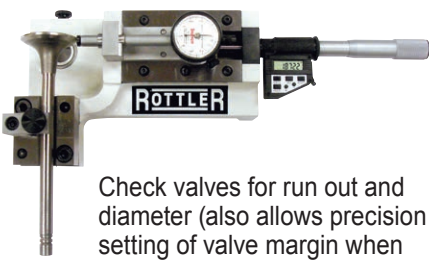
Set seat pocket cutters to proper diameter



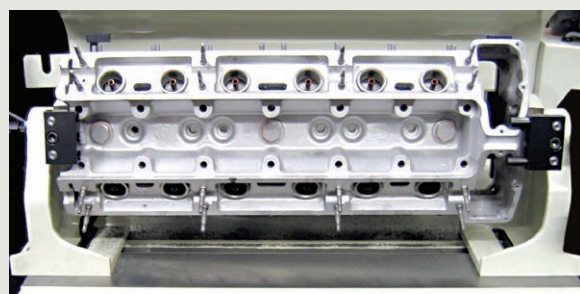
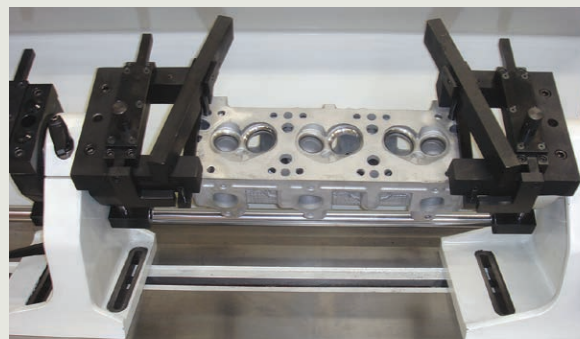
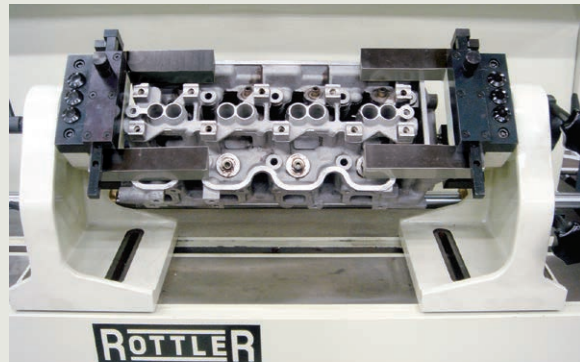
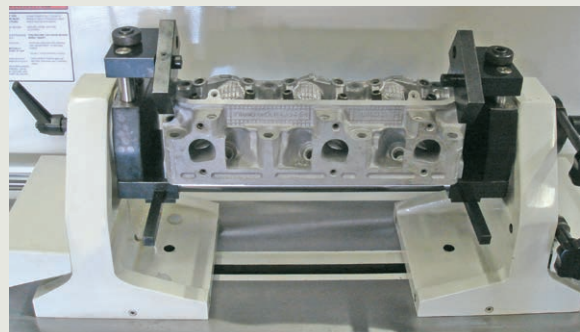
Set multi-angle seat cutters to exact diameter



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)

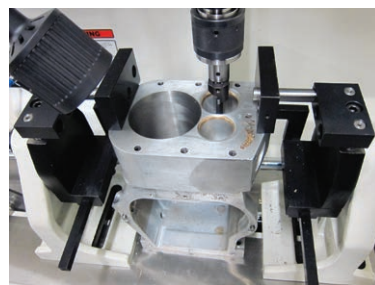


360 Degree Roll Over Fixture

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 follow 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.

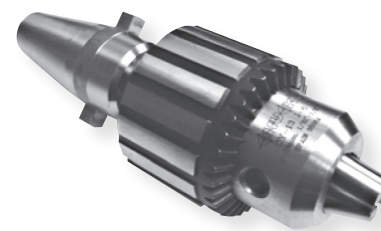


SG7 machining special side valve engine used for Junior Drag Racing



Aircraft Cylinders

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



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 3.1" (14mm to 80mm) can be cut on the SG7.



Precision Collet Chuck

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



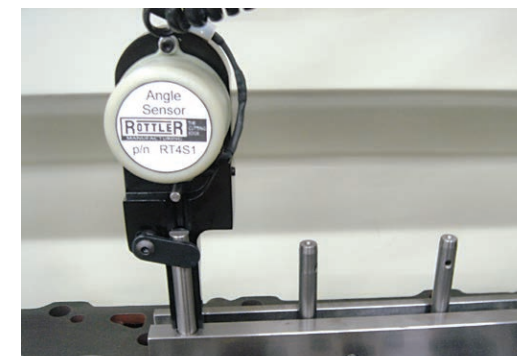
Cutting Insert Sharpener

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 adapters for driving standard reamers, core drills, spot facers, etc.

STANDARD EQUIPMENT

- Air Float Work Head with Foot Pedal Control for Hands Free Air Clamping
- Universal Bolt Down 360 degree Roll Over Cylinder Head Fixture
- Maximum Cylinder Head Length in 360 degree Roll Over Fixture - 28" (700mm) adjustable to 32" (800mm)
- Flexible, compact LED work light mounted on Work Head
- Rottler R1 Taper 2.25" (58mm) Hardened and Ground Spindle with 8" (200mm) of hand wheel travel
- Quick Change Tool Retention System for fast location over pilot and accurate centering (Patent Pending)
- Rapid and Fine Feed Mechanism for Precise Spindle Feed
- Work head tilts 15-degrees in both directions
- Spindle Rotation Speed Infinitely Variable from 40-400RPM
- Quick change of RPM for Low and High by single push of button on the control panel
- 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 Depth Gage for repeatable Depth Control of Spindle Travel
- Holder Kit for heads that Roll Over Fixture is not able to clamp - two piece frame - adjustable for different length heads
- Built in Vacuum Tester complete, Kit includes hose and pads
- Space requirement with Tool Cabinet mounted: 52 X 34 X 78" H (1321 X 864 X 1981mm)

SG7 SPECIFICATIONS

	AMERICAN	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	3/4 HP	.56 kW
Spindle Taper	R30	
Spindle Travel/Stroke Vertical	7.250"	184mm
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)	31L x 9W x 6H	787 x 230 x 150 mm
Cylinder Head Dimensions (with optional Diesel Fixture)	37.5L x 12W"	950 x 305mm
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	208-240V, 1PH, 15A	
Air Requirements	90 psi	6 Bar
Shipping Dimensions	37" W x 49" D x 83" H	940 x 1245 x 2108mm
Shipping Weight	1800 lbs.	818 kg
Paint Color Code	RAL9002 (Grey White)	

Specifications and design subject to change without notice.

February 2013

www.rottermfg.com

www.youtube.com/rottermfg
www.facebook.com/rottermfg
email: contact@rottermfg.com

8029 South 200th Street
Kent, Washington 98032 USA

+1 253 872 7050

1-800-452-0534

Represented by: