

# SG7

## Cylinder Head Seat & Guide Machine

### Concentricity

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

### Built in Vacuum Tester

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

### Storage Cabinet

3 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.

### Light Weight Workhead

The SG7 has a light weight workhead 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

### 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.

### 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.

### Adjustable Depth Stop

### Dual Speed Spindle Feed

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

### 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.

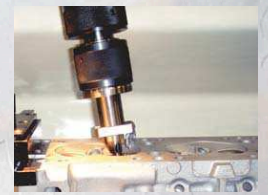


### Control Panel

Soft Touch buttons conveniently located at eye level height.



Fine Feed Handle

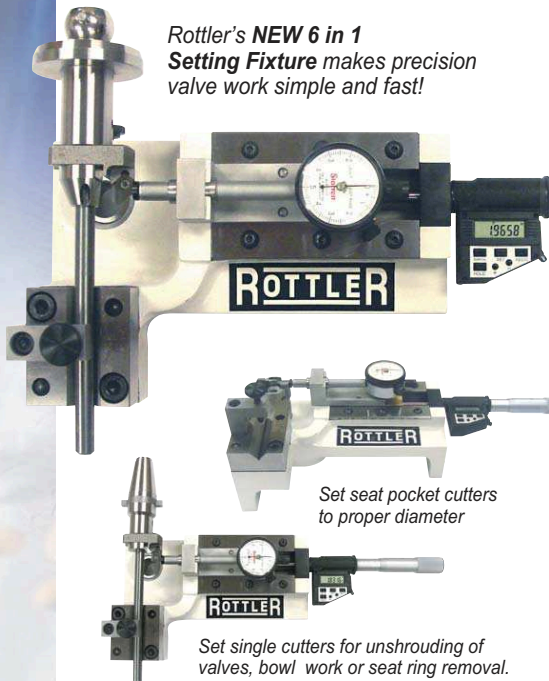


THE CUTTING EDGE

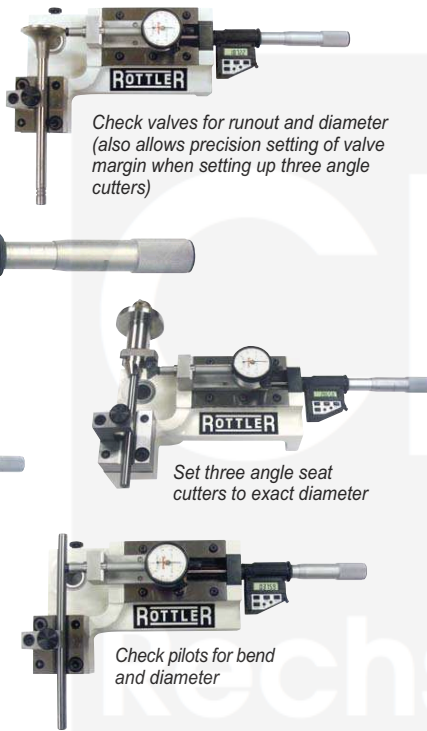
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THE CUTTING EDGE

# Tooling



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



Check valves for runout and diameter (also allows precision setting of valve margin when setting up three angle cutters)

Set three angle seat cutters to exact diameter

Set seat pocket cutters to proper diameter

Check pilots for bend and diameter

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

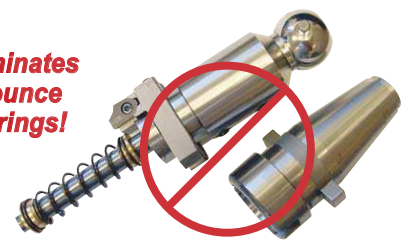
Rottler Patented exclusive multi-angle seat tooling eliminates the need for bounce springs. The Rottler patented tooling holds the ball driver firmly yet allows ball to float during seat cutting. This eliminates the cumbersome/ troublesome bounce springs but gives you the ultimate in valve seat concentricity.



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



**Eliminates Bounce Springs!**



# Tooling



Precision Collet Chuck allows holding of reamers, cutters, drills, taps and other tools for special machining operations.



Universal Chuck for general drilling and tapping work. Often used for spring seat and valve guide seat cutting.



Fit into existing valve seats for ball seating holes. No need for standard seat. Direct interface with inserts fit with no adjusting or setting. Indexable inserts allow easy change of cutting edge. Easy to change inserts. No need to change cutting edge. No need to change inserts. No need to change inserts. No need to change inserts.



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 2.36" (14mm to 60mm) can be cut on the SG7.



Electronic level fixture for leveling guides (pictured with level guide)



Lower Spindle fixture for depth of cut of the Valve seat. Measured from the head gasket face.



Insert holders in 1/2" and 3/4" diam. for cutting on 1/2" and 3/4" diam. reamers and boring new inserts.

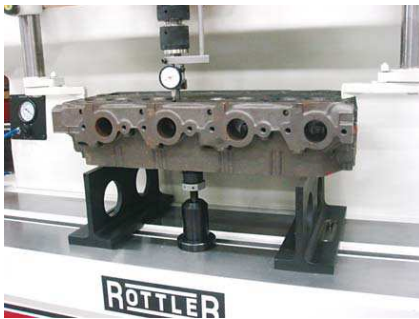


3/8" (9.5mm) and 1/2" (12.7mm) diameter spindle adapters for driving standard reamers, core drills, spot facers, etc.

## Fixturing



Rottler offers special fixturing for cutting seats in one piece aircraft cylinders. SG 8 only.

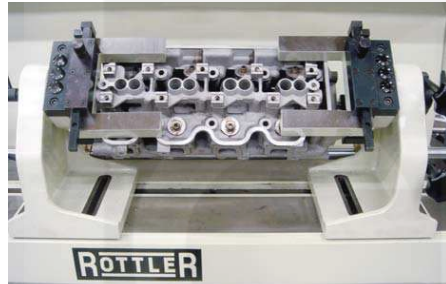


Rottler's small to medium diesel head fixture allows fast set up of inline cylinder heads. SG8 only.

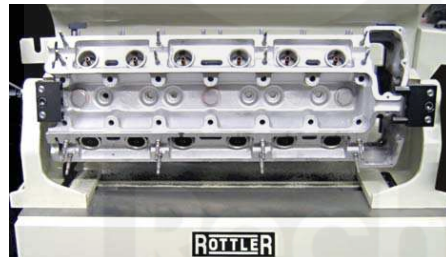
## Diamond Wheel Cutting Insert Sharpener



Rottler offers machine mounted tool sharpener for fast easy sharpening of multi-angle tool bits.



2 piece frame kit allows mounting of overhead camshaft and difficult to mount cylinder heads.



Rottler's 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.



Quick clamp adjustable clamps allow fast clamping of large diesel cylinder heads. SG8 only.

## Standard Equipment

### Shipped with SG7

- Air float work head and pedal control
- Universal heavy duty 360 degree rollover fixture for cylinder heads
- Flexible compact halogen work light mounted on work head
- 2 piece frame kit allows mounting of overhead camshaft and difficult to mount cylinder heads (shown on page 6).

- Fine feed for precision spindle movement
- +/-15 degree work head tilt
- Digital display rpm
- Tool Storage Cabinet ( 3 drawer )
- Digital Electronic Level
- Dial gage for depth control of spindle travel
- Built in Vacuum Tester

## Optional Equipment

Part Number	Description	Part Number	Description
RBHAR1	Rottler Spring Free Spherical self aligning adapter	RT212	Triangular insert with 1/32 (0.8mm) radius
SAD500R1	Spindle adaptor for 1/2 (13mm) diameter shank tools	FCPDom-Kit 12	Domestic Automotive Carbide pilots - .2752, .2756, .313, .3134, .3142, .3146, .315, .3425, .3429, .3728, .3732, .3736 (7mm - 9.5mm)
SAD375R1	Spindle adaptor for 3/8 (10mm) diameter shank tools	FCPimp-Kit 12	Import Automotive Carbide pilots - .2169, .2173, .2362, .2366, .2602, .2606, .276, .2764, .3157, .3161, .3535, .3925 (5.5mm - 10mm)
PC375R1	Universal three jaw chuck	FCP8Diesel 8	Diesel Carbide Pilots - .2496, .2504, .4362, .437, .4516, .4524, .4992, .500 (6.3mm - 13mm)
Collet-KITR1	Collet chuck set of 8 collets -1/4, 5/16, 11/32, 3/8, 7/16, 9/16 (6mm, 9mm, 10mm, 11mm, 14mm) spring collets	FCPHD-Kit 11	Harley Davidson Carbide pilots - .3106, .311, .3118, .3413, .3421, .3429, .376, .3768, .3776, .3783, .3791 (7.8mm - 9.6mm)
BWS02	Diamond Tool Bit sharpener	Complete range of Carbide pilots available	
502-1-30	Clamp arm assembly (set of 2)	Fixed degree replaceable tip holders listed below: (use RT211 Triangular inserts)	
7618	Large cylinder head clamping fixture	TH2000-00	TH2002-20
CANTEDFIX	Canted guide bar alignment fixture for canted guides	TH2001-00	TH2003-30
BH375WR1	Rottler Spherical self aligning tool holder 1.570 to 3.150 dia. (40mm to 80mm)	TH2002-00	TH2004-20
BH375R1	Rottler Spherical self aligning tool holder .750 to 2.400 dia. (19mm to 61mm)	TH2002-00	TH2005-20
BH600R1	Rottler Spherical self aligning mini tool holder .551 to .984 dia. (14mm to 25mm)	TH2002-10	TH2005-30
BD105	Rottler Spherical Milling head driver for seat ring cutting .625 (16mm) ID.	TH2003-00	TH2004-30
BD560	Rottler Spherical Milling head driver for seat ring cutting .562 (14mm) ID.	TH2003-00	TH2005-45
TH1999	Tip holder Mini .551 to .984 dia. (14mm to 25mm)	CDR312	Combo Drill/Reamer .312/8mm pilot with .500/13mm diameter for 1/2"13mm OD guides has 3/8"/9.5mm shank
TH2000	Tip holder Small .787 to 1.180 dia. (40mm to 30mm)	CDR343	Combo Drill/Reamer .343/9mm pilot with .500/13mm diameter for 1/2"13mm OD guides has 3/8"/9.5mm shank
TH2001	Tip holder Medium 1.100 to 1.570 dia. (28mm to 40mm)	CDR375	Combo Drill/Reamer .375/9.5mm pilot with .500/13mm diameter for 1/2"13mm OD guides has 3/8"/9.5mm shank
TH2002	Tip holder Large 1.570 to 2.360 dia. (40mm to 60mm)	VSD100-Kit	Valve seat driver kit (includes body and 5 dual seat ring drivers from 1 inch to 2.125 dia./25mm-54mm)
TH2003	Tip holder Medium for use with BH375WR1 1.570 to 2.360 dia. (40mm to 60mm)	VGD-Kit	Valve Guide driver Kit (includes 7mm, .312, .343, and .375 guide drivers) requires air hammer (not furnished with Rottler equipment)
TH2004	Tip holder Large for use with BH375WR1 2.280 to 3.150 dia. (58mm to 80mm)	VGTC-Kit 3	Valve Guide Top cutter kit with 1/2"13mm straight shank. Includes 5/16, 11/32, & 3/8 (8mm, 9mm 9.5mm) pilots.
TH2005	Tip holder for use with BH375WR1 only 3.071 to 4.724 dia. (78mm to 120mm)	FMH	Fixed size replaceable seat pocket cutters (specify size 1/16 increments)
PRW375	Pilot removal tool for .375 diameter pilots	8FMH-Kit	Kit of 8 replaceable insert seat pocket cutters - 1-9/16, 1-5/8, 1-11/16, 1-3/4, 1-13/16, 1-7/8, 1-15/16, 2.00 (40mm - 51mm) requires driver.
PRW600	Pilot removal tool for 6.00mm diameter pilots	ICC003	Indelexible carbide inserts for seat pocket cutters (1.562/40mm and larger)
T8D	T8 Torx screw driver	ICC002	Indelexible carbide inserts for seat pocket cutters 1.250 to 1.500 diameter (32mm to 38mm)
511-29-12F	T7 Torx screw driver		
DSP	Tool setting device with interchangeable point		
BM	Boring Micrometer (Digital Reading inch or metric) with setting standard for .375 and 6.00mm pilots		
6-1SETTINGFIX	Six in one measuring fixture		
LISIBRACKET	Lower spindle indicator bracket		
7038Y	Dial Indicator		
VSG102-375	Precision Valve seat concentricity gage for .375 dia. Pilot		
VSG102-6mm	Precision Valve seat concentricity gage for 6.00mm Pilot		
502-11-39L	Metric indicator for valve seat concentricity gage		
502-11-39D	Inch indicator for valve seat concentricity gage		
14RCBit-kit 14	Automotive Import, Domestic, and Diesel Bits		
6RCSMBIT-KIT 6	Automotive Import & domestic bit package		
7RCHPBit-Kit 7	High Performance Bits		
3RCHDBit-Kit 3	Harley Davidson Bits		
RT211	Triangular insert with 1/64 (0.4mm) radius		