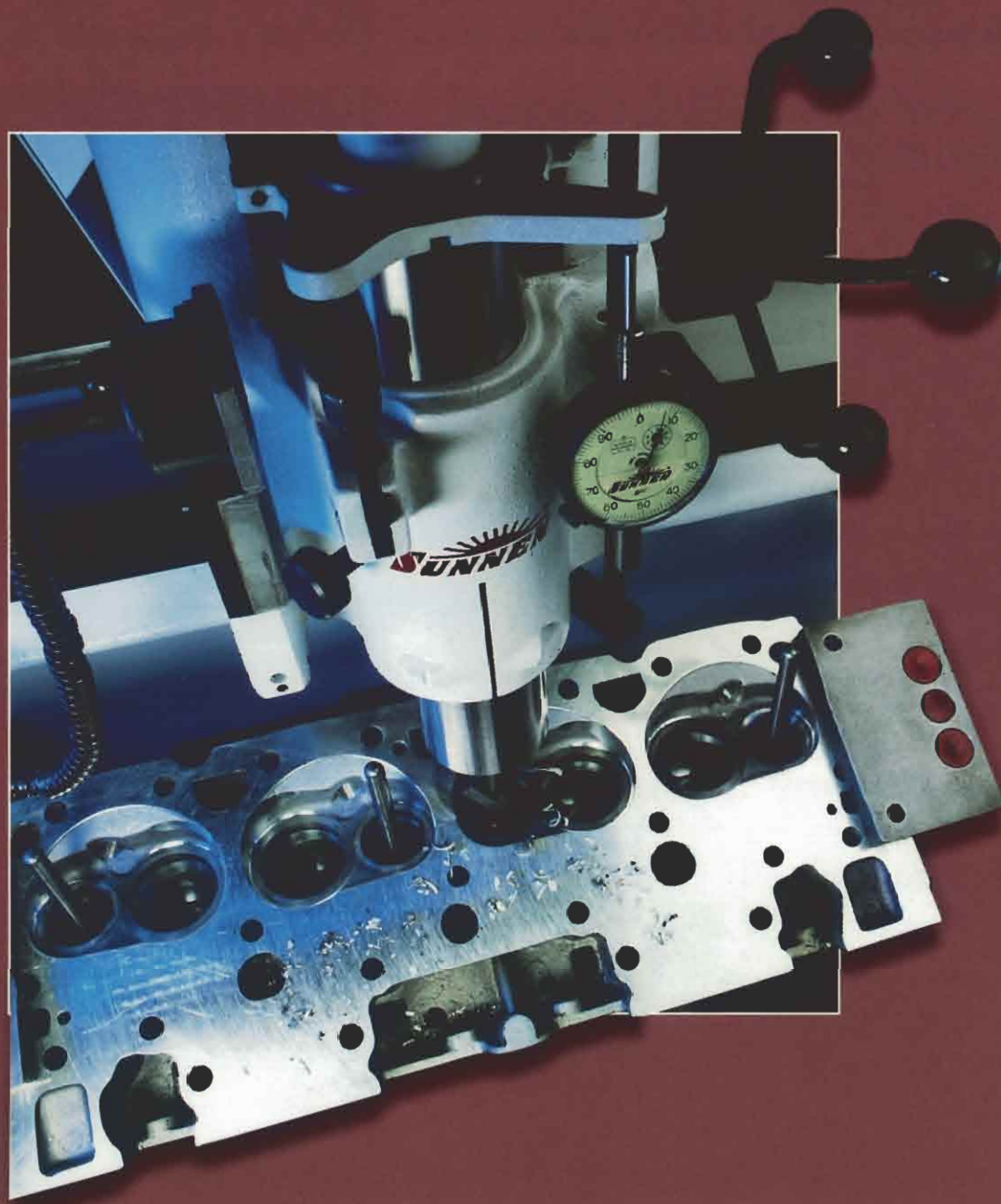


# SUNNEN<sup>®</sup>

## VGS-20 VALVE GUIDE AND SEAT MACHINE



**SUNNEN**

*Where Performance Starts*

# THE SUNNEN VGS-20 GUIDE AND SEAT MACHINE

**Puts your shop ahead in the fast growing headwork business with the most versatile and accurate machine on the market.**

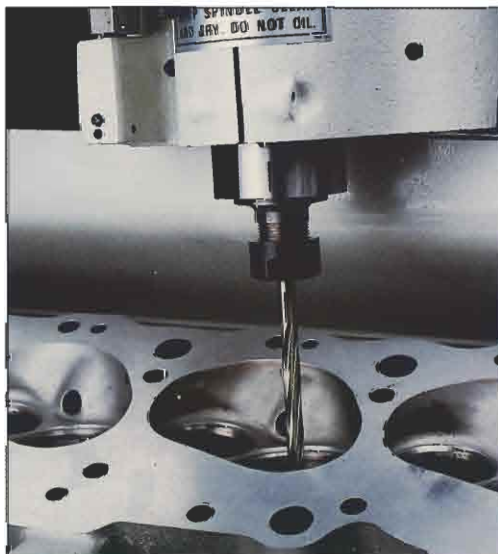
**Built to take on everything from subcompacts to big diesels.**

Big, Tough and Fast! You can set up and run any head up to 48" (1220 mm) long in record time. Up to 54" (1370 mm) with special fixture. And, it turns out the quality work you're proud to put your name on:

- Installation of Valve Guide Inserts
- Spot Facing Valve Guides and Bosses
- Cutting of Valve Insert Pockets – Aluminum or Cast Iron
- Simultaneous Multi-Angle Cutting of Valve Seats
- Drilling and Tapping for Threaded Studs or Removal of Broken Exhaust Studs
- Bronze Guide Liner Installation and Reaming



The VGS-20 can handle everything from subcompacts up to big heads like this Detroit Diesel.



Bronze liners can be installed and reamed quickly and accurately using Sunnen tooling.



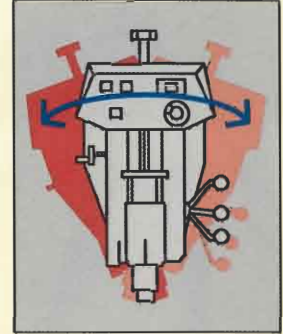
Drilling and tapping for screw-in studs and removal of broken exhaust studs is easy with the VGS-20.



## **Built with the features and benefits that assure the best valve seat concentricity of any machine – at any price!**

Don't be fooled by vacuum tests when buying a new machine. Insist on checking concentricity first to assure accurate seats. Sunnen can prove that the VGS-20 produces the best concentricity of any machine on the market!

- The 3-angle single blade cutters cut all three angles at once and produce accurate, finished seats with no grinding. They assure exact seat widths from head to head plus concentricity between seat and guide.
- Fixed pilot design and ball drive combine to automatically compensate for slight deviations in guide alignment, eliminating additional setup time from guide to guide.
- Lightweight power head "air-floats" on rails parallel to table surface up and away from the chips and dust. This gives you the most accurate alignment of any seat and guide machine and means no deflections of pilots even down to 4 mm. Exclusive pneumatic clamp system solidly locks power head in position when "air-float" pedal is released.
- Universal fixture handles any size head. It rotates 360° and locks at any position. Cylinder head is easily located with guides accurately aligned and securely held for machining. Fixture clamps to machine along with downward pressure during cutting to ensure the most concentric seats of any machine on the market.
- Takes minimum floor space to handle the complete range of cylinder heads.
- Spindle tilts at any angle up to 12° either side of vertical (see illustration at right). Speeds up both setup and machining of heads with canted guides and seats.
- Optional dial indicator system shows exactly how many thousandths you've removed from seat. When combined with the 12° spindle tilt feature, the dial indicator assures precise, consistent seat depth – critical for today's computer controlled engines and strict emission standards.
- Convenient tool storage rack puts tooling within easy reach at eye level.
- Removable chip trays make cleaning quick and easy.
- Dial in any spindle speed from 20 to 420 RPM without stopping rotation. Spindle even reverses for tapping.



Optimum speeds mean no chatter, and assure superior finishes and geometry. You get top cutting efficiency over the full range of speeds and operations, assuring top quality work job after job.

The exclusive features of Sunnen's VGS-20 mean maximum convenience and minimum downtime for setup and changeover. More production time! More profit time!

## Built with a tooling system that does it all!

All the tools you need to do all the jobs that come your way. Available when you need them. From one reliable source – SUNNEN.



- All the core drills, piloted reamers, spot facers and drivers for 1/2" (12,7 mm) O.D. guides.
- All the cutter heads, carbide inserts plus a tool setting fixture for cutting seat pockets from 1.5" to 2.25" (30,1 mm to 57,1 mm) diameters – 15/16" to 3" (23,8 mm to 76,2 mm) with optional cutter heads. Allows machine operators to easily set the correct fit for the application.
- Adjustable three-angle boring heads, (in both three-blade\* and single-blade models), setting fixture and tool bit assemblies for cutting valve seats to any diameter from .669" to 2 1/2" (17 mm to 63,5 mm).

\*Three-blade model handles valve seats from 1" - 2 1/2" (25,4 mm - 63,5 mm).



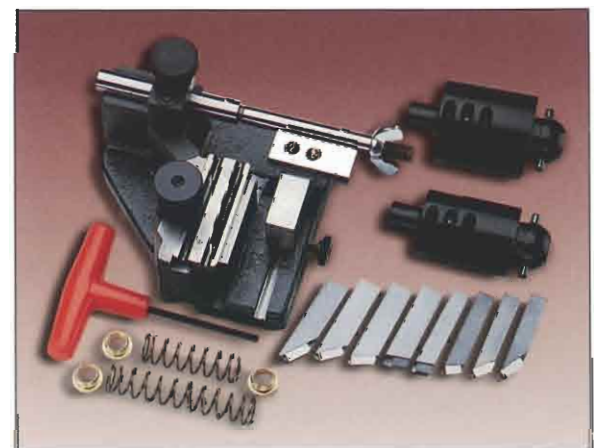
VSC-700 single-blade, three-angle seat cutting kit.



VSC-500 single-blade, three-angle seat cutting kit.



VGS-300 valve seat pocket cutter kit.



VGS-500 three-blade, three-angle seat cutting kit.

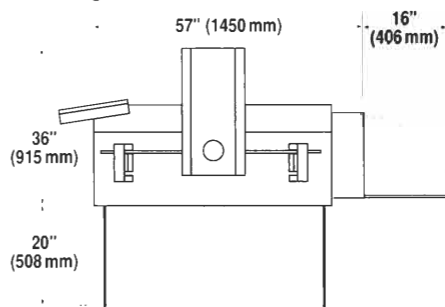




# Sunnen VGS-20 Valve Guide and Seat Machine

## Sunnen VGS-20 Specifications

<b>Standard Equipment:</b>	<ul style="list-style-type: none"> <li>• Universal, 360° tilting fixture</li> <li>• 3/4 HP, infinitely variable speed, reversible spindle (speed range 20 - 420 rpm)</li> <li>• Tool storage rack and built-in cabinet</li> </ul>
<b>Electrical Requirements:</b>	208/230 volt, single phase, 50/60 Hz. 12.2 amp maximum current
<b>Compressed Air Requirement:</b>	4 cubic feet/minute ( <i>a</i> . 100 P.S.I. (120 liters/minute ( <i>a</i> . 6.8 bars)
<b>Shipping Weight:</b>	1272 lbs. (580 kg)
<b>Color:</b>	Pearl Gray
<b>Physical Size:</b>	57" wide (1450 mm), 36" deep (915 mm), 78" high (1982 mm)



## Optional Equipment:

<b>VGS-300</b>	<b>Valve Seat Pocket Cutter Kit</b> 1.500"-2.250" (38.1-57.1 mm)
<b>VSC-500</b>	<b>Single-Blade 3-Angle Seat Cutter Kit</b> 1.000"- 2.500" (25.4-63.5 mm)
<b>VSC-700</b>	<b>Single-Blade 3-Angle Seat Cutter Kit</b> .669"-1.000" (17-25 mm)

NOTE: Sunnen reserves the right to change specifications and product design without notice. Such changes do not entitle the buyer to corresponding changes, improvements, additions, or replacements for equipment, supplies or accessories previously sold. The information contained herein is considered to be accurate based on information available at the time of printing. Should any discrepancy of information arise, Sunnen recommends that the user verify the discrepancy with Sunnen before proceeding in any machining operation.

<b>VGS-500</b>	<b>Three-Blade 3-Angle Seat Cutter Kit</b> 1.000"- 2.500" (25.4-63.5 mm)
<b>VGS-20890</b>	<b>Clamp Kit</b> for OHC Heads
<b>VGS-20956</b>	<b>Drill, Reamer, and Spot Facer Kit</b>
<b>VGS-20518</b>	<b>Valve Guide Kit</b> 9/16" (14.28 mm) O.D. Valve Guides
<b>VGS-20960</b>	<b>Valve Seat Driver Kit</b> .925"-2.375" (23.49-60.32 mm)
<b>VGS-20964</b>	<b>Valve Guide Installation Kit</b> for 5/16" (7.93 mm), 11/32" (8.73 mm), 3/8" (9.52 mm), and 7/16" (11.11 mm) Guides
<b>VS-1005</b>	<b>Rapid Seat Checker</b> 1.625"-2.250" (41.3-57.2 mm) (VS-1005M for metric use) Note: Diameters from .875"-2.500" (22.22-63.5 mm) can be measured with optional indicating wheels.
<b>VGS-750</b>	<b>Rapid Seat Checker</b> for Smaller Valves Down to .625" (15.8 mm) Diameter
<b>VGS-1750</b>	<b>Seat Depth Indicator Kit</b> (VGS-1750M for metric use)
<b>VGSA-2500</b>	<b>Air Clamp Fixture</b>
<b>VGS-20524A</b>	<b>Worn Guide Alignment Fixture</b>
<b>VGSA-3000</b>	<b>Tooling Kit for Aluminum Heads</b>
<b>VGS-3100</b>	<b>Harley-Davidson Head Holder Fixture</b>
<b>VGS-660</b>	<b>Electronic Level</b>
<b>VGS-850</b>	<b>Light Kit</b>
<b>TS-100</b>	<b>Precision Tool Sharpener</b>
<b>VSC-100</b>	<b>Cutter Sharpening Fixture</b>
<b>VGS-2682</b>	<b>Stud Level Pin</b>
<b>VGS-1800A</b>	<b>Collet Chuck</b>

Versions of this machine are available for sale worldwide. They are certified for the European Economic Community (EEC). These versions have been altered to be in accordance with safety directives enacted in the EEC and carries a "CE" mark. For further information call Sunnen Customer Service in St. Louis.



## SUNNEN PRODUCTS COMPANY

7910 Manchester Ave., St. Louis, Missouri 63143 U.S.A., 314-781-2100  
U.S.A. Toll-Free Automotive Sales and Service: 1-800-772-2878  
Fax: 314-781-2268

International Division: Fax: 314-781-6128, Telex: 4312052 SUNNEN PRODSTL, Cable Address: "SUNPROCO" All Codes

### SUNNEN PRODUCTS LIMITED

No. 1 Centro, Maxted Road  
Hemel Hempstead, Herts HP2 7EF ENGLAND  
Phone: ++44 1442 39 39 39  
Fax: ++44 1442 39 12 12

### HONE TECHNIQUE AG

A wholly owned subsidiary of Sunnen Products Limited  
Fabrikstrasse 1  
8586 Ennetaach-Erlen SWITZERLAND  
Phone: ++41 71 648 16 16  
Fax: ++41 71 648 31 31  
(Responsible for sales and service in Eastern Europe)

### SHANGHAI SUNNEN MECHANICAL CO., LTD.

Gaoxi Cun, Kangqiao Hengmian, Xiaogu, Pudong  
Shanghai 201319 CHINA  
Phone: 86-21-5-813-3322  
Fax: 86-21-5-813-2299

Visit us at our web site: <http://www.sunnen.com>