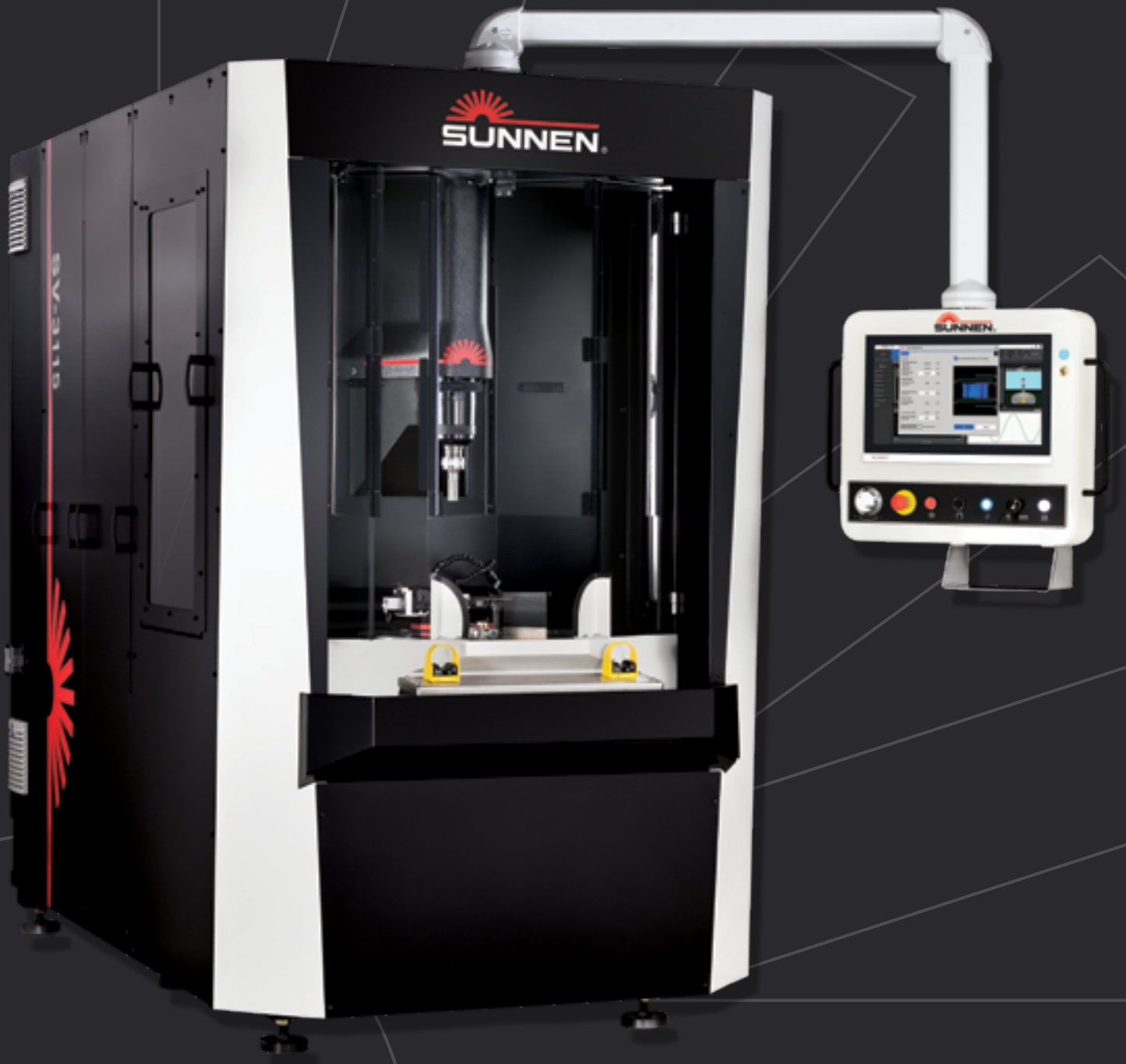




Partnership · Precision · Performance

SV-3100 SERIES

PRECISION VERTICAL HONING SYSTEM





563.20 mm
(100' 913")
344.00 mm
(52' 9")

1292.00 mm
(50' 9")

THE NEW

SV-3100 Series

Designed for seamless
integration with automation
to improve productivity.

SUNNEN'S SV-3100 SERIES

A Flexible Solution That Delivers The Lowest Cost Per Honed Part

The SV-3100 is the next step in the continuing evolution of the Sunnen SV series. A new look combined with the new Sunnen2 controls.

The SV-3100 Series is capable of holding the industry's tightest production environment tolerances – as fine as 0.00025 mm (0.000010 in.) – tolerances far superior to I.D. grinding.

The SV-3100 is a precision solution focused on small bore applications of 19 mm (.75 in.) and less.

This agile system is suited for an impressive range of applications, including:

- Hydraulic valves, valve bodies, and pumps
- Diesel fuel injectors
- Gears, including transmission and other precision gears
- Gun barrels
- Turbocharger housings and bearings
- Medical parts

Perfect for mid- to high-production manufacturers, the SV-3100 Series delivers the lowest cost per honed part with the tight bore tolerances you expect from Sunnen.

THE SUNNEN SERVICE TEAM

Your Sunnen Technical Specialist will work with you to determine the best solution for your needs – it's all part of the added value you get with Sunnen. Plus, our worldwide sales and service team provides comprehensive support for the installation and operation of every system we make. Whatever your need, we have the expertise and product range to create the right solution for you and the dedication to support you for the long run.

To find the Sunnen representative nearest you, visit our website at www.sunnen.com



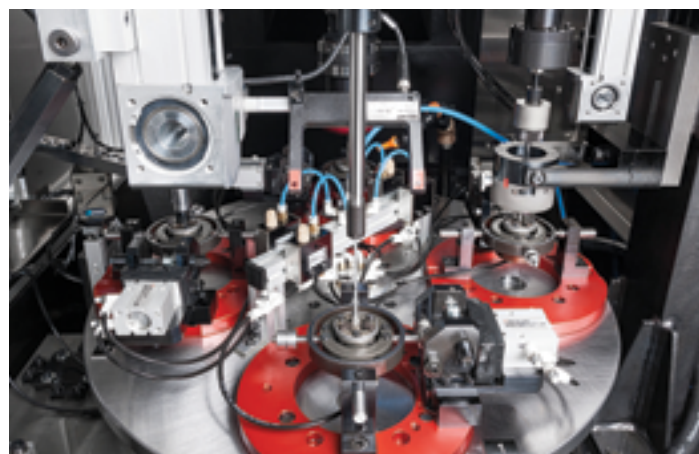
The SV-3100 Series: Built For Performance, Designed For Customization

STANDARD & OPTIONAL FEATURES

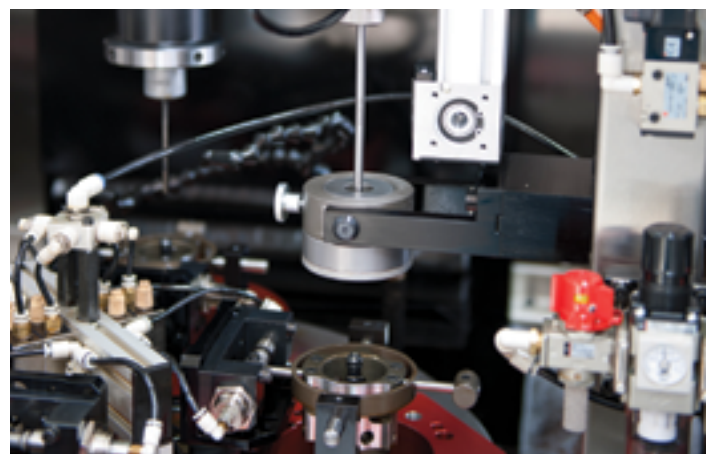
- Centrally mounted operator station can be swiveled 180° for flexibility during setup and production modes.
- Work area enclosure includes removable side panels for easy access during setup and maintenance.
- “Lubed-for-life” over-sized stroke guideways ensure superior performance and long, trouble-free life.
- Precision 3.3 kW (4.4 hp) servo spindle.
- Patented load-sensing feed system can operate in constant rate or pressure mode to optimize the process.
- Advanced servo stroke control allows the machine to short stroke or dwell in any part of the bore.
- Synchronized servo stroke and spindle maintain constant crosshatch finish throughout the bore from end to end with no rollover.
- Multiple-spindle configurations available.
- Rugged, solid cast polymer composite base reduces vibration for enhanced performance and precision honing (*standard on single-column machines; custom-welded base on multi-column configuration*).
- Brushing stations for demanding surface finish requirements.
- Cast iron column for increased rigidity and optimum precision.
- Latest in safety technology with safety PLC, safe drive systems, and a secondary stroker brake.
- Standard LED work area lighting.

OTHER FEATURES & OPTIONS

Multiple-spindle configurations available for high-end production solutions.



Air gage servo column with size and shape feedback control loop.



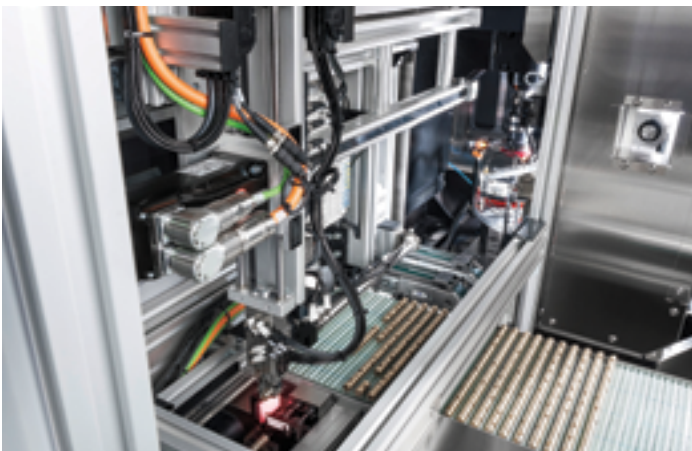


NEW

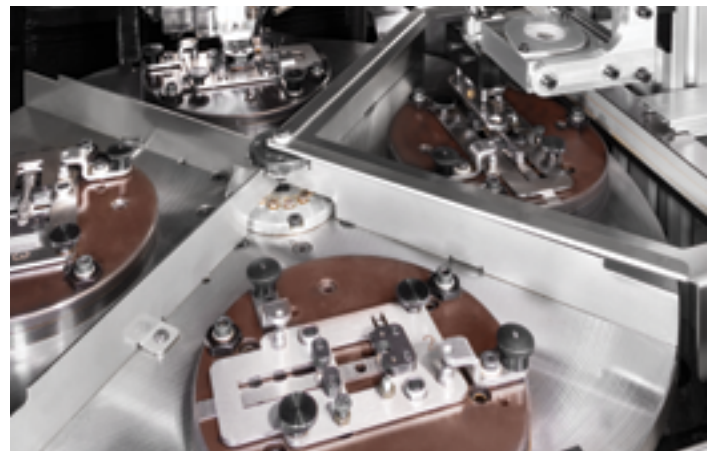
Sunnen2 Control System

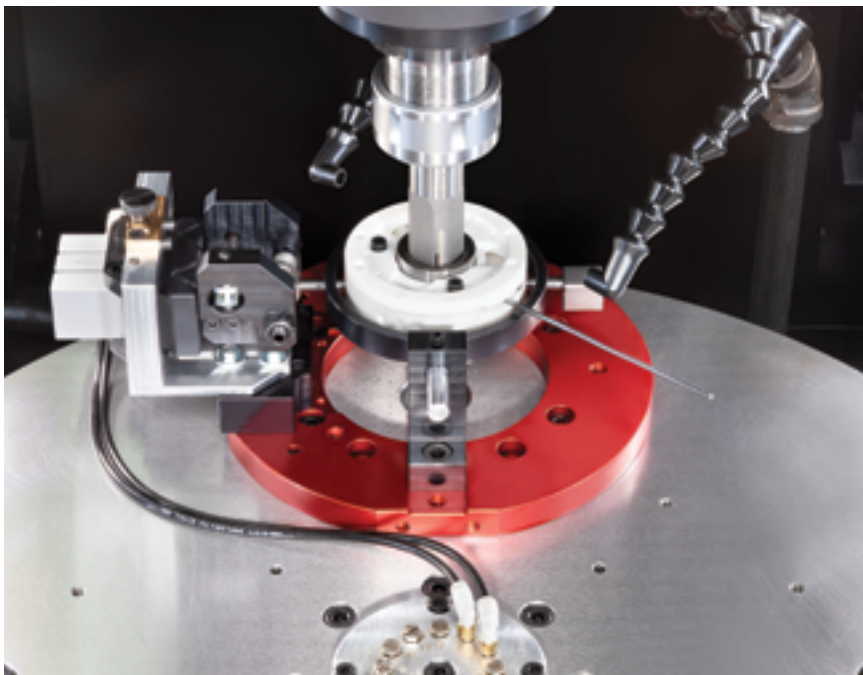
- Windows®-based PC touch screen control system coupled with servo tool feed provides optimum process control with ease of set-up.
- Intuitive touch screen ensures new machine operators are quickly trained. Setup time is minimized.
- Spindle speed and carriage speed can be varied as needed.
- Infinite adjustability of honing parameters allows processing of complex bore configurations such as blind bores, thin wall parts, etc.
- Large 470 mm (18.5 in.) color touch screen.
- System includes Ether CAT industrial communication to minimize response time and increase level of control.
- Configurable, multi-level permissions allow varying levels of access depending on user role.
- Standard automation interface provides seamless automation integration.
- Multiple setups can be entered and saved for future production runs of the same components.
- Setup history allows easy trouble shooting of machine setup issues.
- State-of-the-art Beckhoff electronics with touch screens and hand wheel controls reduce setup time and increase machine "up time."
- Rapid feed-to-load reduces cycle time.
- Standard OPC-UA interface allows access for remote process monitoring.
- Multiple languages available.

Custom automated parts handling.



Custom fixtures and table configurations.





Customize the SV-3100 To Your Exact Requirements

Sunnen's high-precision SV honing systems represent the very finest solutions available anywhere in the world. With over 600 systems delivered globally, they are reliable, durable, and flexible systems designed to deliver the production quality and precision our customers have grown to expect.

From design to delivery, you have the Sunnen commitment to service and quality assurance. Our technical experts will work with you to determine the number of spindles, style of tooling, fixturing, abrasives, in-process and/or post-process gaging, and method of parts loading and unloading (including robotics) you require. Then we'll provide you a written proposal.

After your system is built, we'll set up a live run-off demonstration at our facility. Once it meets all specifications, we'll commission your system and train your staff.

SV-3100 Series Automation Options

Our automation options are designed to increase the operational efficiency of your precision honing system. They shorten cycle times, increase tool life, and – most importantly – radically reduce labor costs. Sunnen automation solutions can keep your system running 24 hours a day, seven days a week.

A two-axis or multi-axis servo robot can be integrated into a Sunnen modular honing system.



Specifications

DIAMETER RANGE:*

3 to 19 mm (.120 to .75 in.)

MAXIMUM WORKPIECE LENGTH

250 mm (9.8 in.)

MAXIMUM WORKPIECE AND FIXTURE WEIGHT*

SV-3110: 225 kg (500 lbs.)

SV-3115: 27 kg (60 lbs.)

SV-3152: 900 kg (2,000 lbs.)

WORK AREA ENVELOPE (TABLE)

SV-3110/SV-3115: 175 x 175 x 150 mm
(6.88 x 6.88 x 5.9 in.)

CARRIAGE TRAVEL

SV-3110/SV-3115: 630 mm (24.8 in.)

SV-3152: 1321 mm (52 in.)

CARRIAGE SPEED

0.008 to 0.84 mps (20 to 2000 ipm)

RECIPROICATION RATE (STROKE)

1 to 400 spm (*dependent on stroke length*)

STROKER MOTOR

8 kW (10.8 hp)

SPINDLE SPEEDS

100 to 4000 rpm

SPINDLE MOTOR

3.3 kW (4.4 hp)

COOLANT SUMP PUMP

Centrifugal Pump

(Separate Coolant Tank Required)

0.27 kW (0.36 hp)

80 imp (20 gpm)

FLOOR SPACE (*Coolant Tank Not Included*)

SV-3110/SV-3115: 3000 W x 4268 D x
2764 H mm (118.1 x 168.0 x 108.8 in.)

SV-3152: 2602 W x 3578 D x
3789 H mm (102.5 x 141 x 149 in.)

FLOOR WEIGHT (*Dry*)

SV-3110: 2525 kg (5,567 lbs.)

SV-3115: 2615 kg (5,765 lbs.)

SV-3152: 4500 kg (9,900 lbs.)

PNEUMATIC REQUIREMENTS

Base system does not require air.

5.5 to 6.9 Bar (80 to 100 psi) required
for special system options.

ELECTRICAL REQUIREMENTS

460V, 60Hz, 3Ph 400V, 50Hz, 3Ph

BI-DIRECTIONAL INDEXER (SV-3115)

Infinitely adjustable servo driven,
(2, 3, 4, 6, 8, 10...stations are
easily configured). .001 degrees
repeatability.

STANDARD MACHINES

SV-3110: Base single-column machine with fixed tooling plate.

SV-3115: Same as SV-3110 but includes servo rotary table and 12-position rotary air union.

SV-3152: Extended stroke length 1321 mm (52 in.) single-fixed column mounted on a riser with cast iron walk-in base with stainless steel enclosure.

Two and three column models available in two standard stroke lengths – 620 mm (24.8 in.) or 1321 mm (52 in.).

STANDARD MACHINE OPTIONS

- Adaptors available for a variety of Sunnen tooling (both floating and adjustable runout available)
- Tooling alignment gage
- SVF-15 coolant systems – magnetic separator/paperbed: eight configurations/sizes available
- Automatic index cycle
- Light stack
- Robot interface
- Air gage servo column with size, taper, straightness feedback control loop (available for single or multiple columns)
- Additional stroke length/setup configuration
- Mist elimination system
- Custom risers for non-standard height workpieces
- Modular brush stations

* Diameter range, length range and workpiece weight are contingent on workpiece and application.

+ For diameter sizes below or above the standard range, or for specially designed high production tools, contact your Sunnen Field Engineer.

FOR EVERY APPLICATION

Tooling

The SV-3100 Series incorporates the latest technology in vertical honing. Tooling choices include diamond or CBN multi-stone tools, plated diamond KROSSGRINDING® tools and vitrified abrasive tools.

MMT HIGH-PRODUCTION MULTI-STONE MANDRELS

MMT Turbohone® mandrels offer faster cycle times, superior accuracy, longer time between stone changeovers, and maintain superior bore geometry and bore centerline. Every mandrel is manufactured using high-strength steel to ensure long production life.

Bore Diameter Range (I.D.): 4 mm – 65 mm (0.156 in. – 2.56 in.)+

CGT KROSSGRINDING® DIAMOND PLATED TOOLS

CGT high-precision diamond-plated tools provide extreme accuracy, excellent stock removal capability and durable diamond grit for long tooling life. These tools provide consistent bore size and unparalleled roundness, holding tolerances to within 00025 mm (0.000010 in).

Bore Diameter Range (I.D.): 3 mm – 32 mm (.118 in. – 1.26 in.)+

SRT MULTI-STONE TOOLS

SRT multi-stone honing tools are known for their dependability for both production and high precision applications. Each uses a series of seven stone holder types, featuring replaceable abrasives to reach the specified diameter range.

Bore Diameter Range (I.D.): 35 mm – 102 mm (1.4 in. – 4.0 in.)+

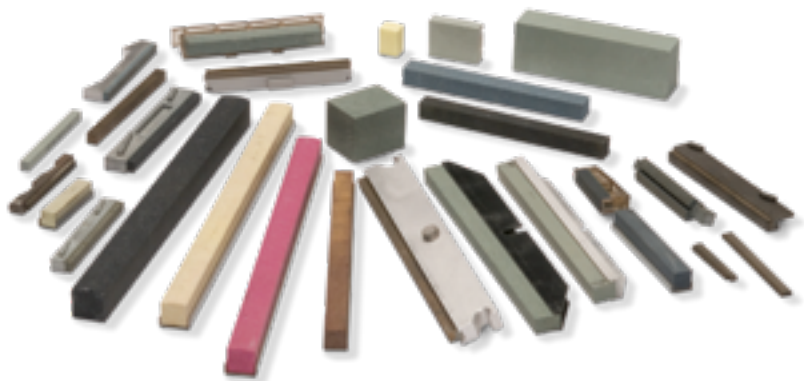
TC HIGH PRECISION MANDRELS

TC precision mandrels feature a four-segment design with six to eight stones per segment or a total of 24 to 36 abrasive sticks. The abrasives are precisely arranged to ensure accurate bore geometry and no “washout” on the edges of the bore interruptions.

Bore Diameter Range (I.D.): 32 mm – 65 mm (1.26 in. – 2.56 in.)+

Sunnen Abrasives, Honing Oils and Coolants

Complete your honing system with Sunnen's precision honing abrasives, teamed with Sunnen premium honing oils and coolants. They are designed to work together to deliver optimum bore geometry at the lowest cost-per-part.



A LEGACY OF EXCELLENCE SINCE 1924

Sunnen Worldwide

With world headquarters in St. Louis, Missouri, Sunnen is the largest fully integrated company in the world specializing in precision bore creation, sizing and finishing equipment. A Sunnen solution might include honing, lapping, skiving/roller burnishing or deep hole machining...or a combination of those processes.

Our 12 international affiliates and over 40 authorized distributors allow us to deliver top quality Sunnen machines, tools, service and training wherever they are needed around the globe.

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