



**HTE-1600W**

**HORIZONTAL TUBE HONE**





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# Sunnen's Ultra-Sensitive HTE-1600W Tube Hone is Ideal for Small-Bore Parts

Sunnen's HTE-1600W tube hone is the company's first all-electric, cost-effective hone designed specifically for small diameter/long bore length parts. The HTE produces ideal bore geometry and surface finish on parts with ID's from 4 mm – 20 mm (0.16 in. – 0.79 in.) and lengths up to 1,500 mm (59 in.).

The HTE features a one-piece base design that aligns tool and part. A special feature of the feed system provides maximum protection against tool overloading that often leads to breakage. Tool specific force limits and run settings are stored in the Windows®-based touchscreen control. A unique feed control system senses tight sections in the part and automatically corrects them.

The HTE is ideal for improving the size, form and finish of small bores such as:

- Safety Valves in Oil Field Parts
- Small hydraulic and pneumatic actuators
- Raw Materials for Medical Stents
- Gun Barrels

The HTE is available with three fixturing options: a manual chuck, a pneumatic chuck, or a custom V-type chain vise for parts with OD's up to 375 mm (14.75 in.), dependent on application.

When the HTE is part of a total Sunnen solution, the system will provide a durable and efficient precision honing system to perform to your exact application needs.

FACE SPOTFACED  
T HEAD SCREWS

## 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](http://www.sunnen.com)



# Developed to Hone Small Diameters, the HTE is Both Flexible and Precise

## FEATURES AND BENEFITS

- 100 percent process control with tool overload protection.
- The active 3-axis function control manages stroke positions, motion control, stone feed, spindle speed and cutting pressure ensuring high accuracy and superior bore geometry.
- Stroke repeatability within 0.15 mm (0.006 in.) during operation (dependent on application).
- One-piece base design provides a rigid, reliable structure.
- Traveling steady-rest is standard.
- Optional guide pot automatically guides the honing tool straight into the bore without operator assistance.
- Proven steel reinforced servo belt-drive stroking system with variable stroke speeds (stroke rate adjustable through operator interface adjustable during cycle).
- Temperature compensated spindle assures constant performance without bearing warm-up time required.
- Size lock system with stone wear compensation.
- Optional safety system consisting of light curtain and fencing (pictured).



## BUY WITH CONFIDENCE

Sunnen backs the quality of its machines with a "best in the business" 3-year standard machine warranty.





## Operator Interface and Software Features

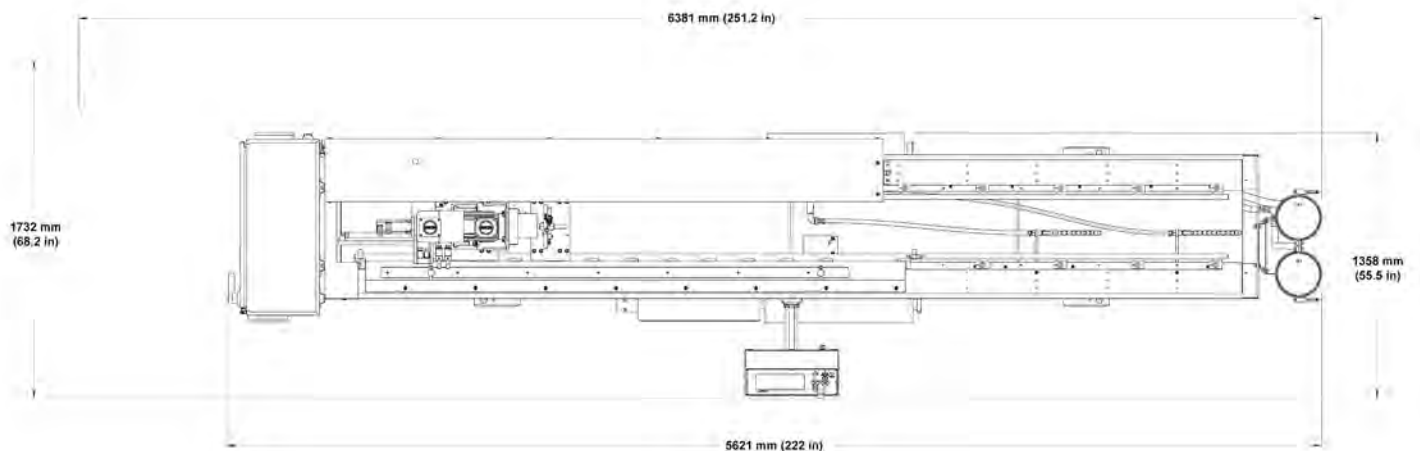
All machine features are controlled via a proven Windows® software platform and PC controlled operator station, meaning no hydraulic valves to adjust or limit switches to move. The operator station swivels for ease of use. Large 305 mm (12 in.) color monitor is standard.

### FEATURES INCLUDE

- Variable stroke speeds (stroke rate adjustable in 1 m/min. (3.2 ft./min.) increments through operator interface adjustable during cycle)
- All axes are electrically driven (efficiency up to 90 percent)
- Crosshatch angle display
- Automatic and manual operations mode
- Ability to save up to 999 setups
- Automatic stonewear compensation
- Jog buttons for easy setup
- Recommended machine settings for ease of setup
- Capable of honing for time, number of strokes or to a programmed diameter
- 13 languages available



HTE-1600 Floor Plan Layout and Dimensions

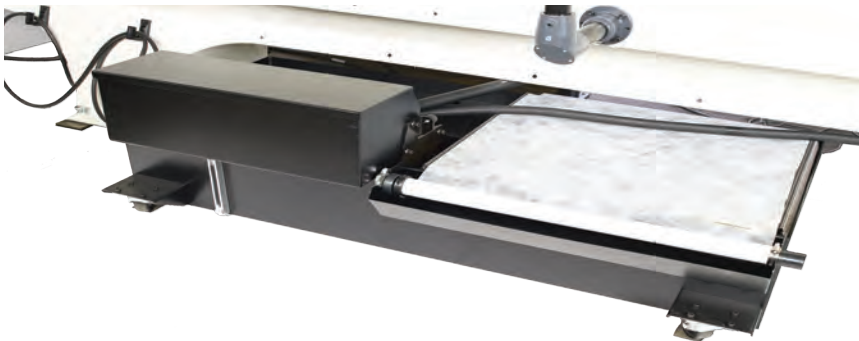


# The HTE in Action

The value-priced HTE-1600W is packed with features you would expect in a more expensive system. Here are just a few of the features.



The temperature-controlled servo spindle, stoker and feed system assure complete process control.



Standard dual filtration 55 gallon capacity manual paper bed filter which is easily accessible from the front of the machine.

The additional standard dual cartridge filter ensures clean honing fluid for demanding processes.



## Specifications

### SPINDLE SPEED

5 to 2,100 RPM

### SPINDLE POWER (SERVO)

0.75 kW (1 Hp) variable speed controlled

### STROKE (SERVO)

2.17 kW (2.9 Hp) belt drive

### STROKE SPEED RANGE

1 to 30 m/min. (3.3 to 98.4 ft./min.)

### I.D. DIAMETER RANGE

4 mm to 20 mm (0.15 in. to 0.79 in.)

### O.D. DIAMETER RANGE

See work holding options

### MAXIMUM PART LENGTH

1,500 mm (59 in.)

### MAXIMUM STROKE LENGTH

1,600 mm (63 in.)

### APPROXIMATE WEIGHT

(Includes Coolant Cart)

1,240 kg (2,734 lbs.)

### ELECTRICAL SYSTEM

400 VAC, 50 Hz, 3-phase  
FLA = 18.6

460 VAC, 60 Hz, 3-phase  
FLA=16.25

### PNEUMATIC REQUIREMENTS

20 lpm @ 0.65 to 0.85 MPa  
(5.3 gpm @ 94 to 123 psi)

### OPTIONAL EQUIPMENT

- Workholding configurations:
  - V-Block/Chain 375 mm (14.75 in.) max. (customized for application)
  - Pneumatic chuck 57 mm (2.24 in.) max.
  - Manual chuck 57 mm (2.24 in.) max
- Automatic size control (ASC)
- Tool Park Unit with Bushing and Coolant Injection
- 230 VAC to 460 VAC step-up transformer
- Splash Guards
- Basic Part Coolant Application Kit
- Tubular Part Drain Rack
- CE Compliant Guarding including rear/end fencing and light curtain

### MODEL NUMBERS

**HTE-1600 WG:** 400 VAC 50 Hz 3Ph

**HTE-1600 WCG:** Same as HTE-1600 WG with CE compliant guarding

**HTE-1600 WE:** 460 VAC 60 Hz 3Ph

**HTE-1600 WCE:** Same as HTE-1600 WC with CE compliant guarding

# Tooling, Abrasives, Honing Oils and Coolants

## TOOLING

The HTE is compatible with Sunnen MMT tools and LBT tools for small, long diameter bores.

### LBT

The LBT tool was designed for small, long diameter tube hone applications.

Bore Diameter Range: 4.27 mm – 12.7 mm (0.168 in. – 0.500 in.)

### MMT

The tools features accuracies within 0.2 microns (0.000008 in.) for roundness; 0.4 microns (0.000016 in.) for straightness; and 0.6 microns (0.000024 in.) for cylindricity.

Bore Diameter Range: 4 mm – 19 mm (0.156 in. – 0.758 in.)



## SUNNEN ABRASIVES & LUBRICANTS

From aluminum oxide to silicon carbide to diamond and CBN, Sunnen offers the industry's largest variety of mounted or un-mounted stick abrasives, bond types, grain sizes and stone configurations.

Before any stone is shipped, it is graded and qualified, maintaining the most exacting quality control standards in the industry to assure you of the most precise honing performance available.



## SUNNEN PREMIUM HONING OILS & COOLANTS

Sunnen's premium honing oils and coolants provide extreme lubricity for higher honing pressure and harder abrasives, delivering faster, lower cost-per-part and ultimately more profitable cutting rates.



## SUNNEN DIAL BORE GAGES

Sunnen Dial Bore Gage system provides quick, easy way to gage I.D.'s on bores with a wide range of sizes and lengths. Dial Bore Gages and Setting Fixtures are available to cover diameters from 13.71 mm – 152.4 mm (0.054 in. – 6 in.), optional to 309 mm (12 in) diameters.





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 14 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.

### SUNNEN PRODUCTS COMPANY

World Headquarters – St. Louis, USA  
(314) 781-2100  
(800) 325-3670  
sunnen@sunnen.com  
www.sunnen.com

### AUSTRIA

Sunnen Austria GmbH  
+43 5576 74194  
sales@sunnen.eu  
www.sunnen.com

### BELGIUM

Sunnen Benelux BVBA  
+32 38 80 2800  
info@sunnen.be  
www.sunnen.com

### BRAZIL

Sunnen do Brasil LTDA  
+55 11 4368-4900  
sunnen@sunnen.com.br  
www.sunnen.com

### CANADA

Sunnen Products Company  
(844) 356-0006  
canadasales@sunnen.com  
www.sunnen.com

### CHINA

Shanghai Sunnen Mechanical Co. Ltd.  
+86 21 5813 3990  
sales@sunnensh.com  
www.sunnen.com

### CZECH REPUBLIC

Sunnen S.R.O.  
+420 383 376 317  
sunnen@sunnen.cz  
www.sunnen.com

### FRANCE

Sunnen SAS  
+33 169 300 000  
info@sunnen.fr  
www.sunnen.com

### GERMANY

Sunnen Deutschland, GmbH  
+49 221 348 049 0  
info@sunnen.de  
www.sunnen.com

### INDIA

Sunnen India Pvt. Ltd.  
+91 22 6139 2800  
sales@sunnen.in  
www.sunnen.com

### ITALY

Sunnen Italia S.r.l.  
+39 02 383 417 1  
sunnen@sunnenitalia.com  
www.sunnenitalia.com

### MEXICO

Sunnen Mexico  
314-781-2100  
sunnen@sunnen.com  
www.sunnen.com

### POLAND

Sunnen Polska Sp. z o.o.  
+48 22 814 34 29  
sunnen@sunnen.pl  
www.sunnen.com

### SWITZERLAND

Sunnen AG  
+41 71 649 33 33  
sales@sunnen.eu  
www.sunnen.com

### UNITED KINGDOM

UK – Sunnen Products Ltd.  
+44 1442 39 39 39  
hemel@sunnen.co.uk  
www.sunnen.com