



ABOVE AND BEYOND HONING

# HTE-1600W

HORIZONTAL TUBE HONE



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**SUNNEN**

**SUNNEN**  
HTE-1600W

UPPER SURFACE SPOTFACED  
FOR SOCKET HEAD SCREWS

7/8

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# SUNNEN'S ULTRA-SENSITIVE HTE-1600W TUBE HONE



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 4-20 mm (0.16-0.79 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.

# IS IDEAL FOR SMALL-BORE PARTS



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

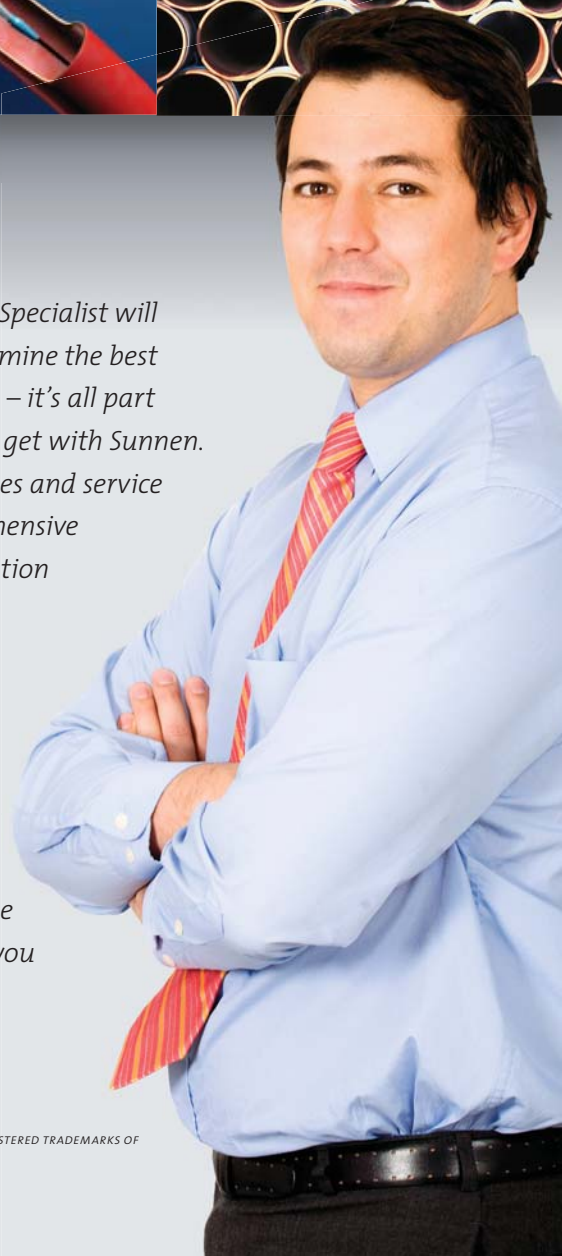
- Safety Valves in Oil Field Parts
- Small hydraulic and pneumatic actuators
- Raw Materials for Medical Stents
- Gun Barrels

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

*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.*



DEVELOPED TO HONE SMALL DIAMETERS, THE HTE IS BOTH FLEXIBLE AND PRECISE



**FEATURES AND BENEFITS:**

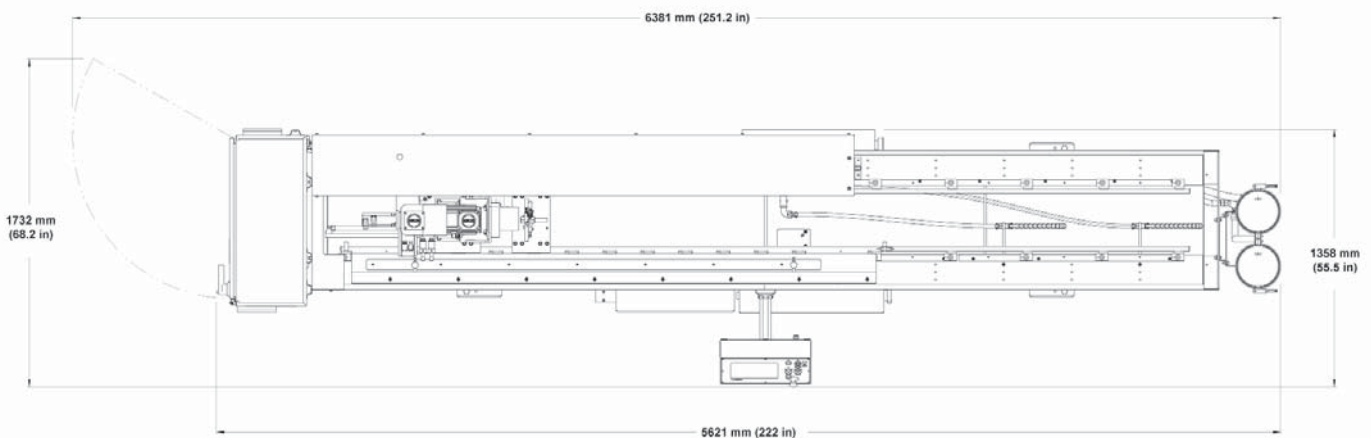
- 100 percent process control with tool overload protection.
- The active 3-axis function control manages stroke positions, motion control, stone feed, spindle speed and cutting pressure ensuring high accuracy and superior bore geometry.
- Stroke repeatability within 0.006 in (0.15 mm) during operation (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 (shown above).

## 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 12 in (305 mm) color monitor is standard. Features include:

- Variable stroke speeds (stroke rate adjustable in 3.2 ft/min (1 m/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
  - Recommended machine settings for ease of setup
  - Capable of honing for time, number of strokes or to a programmed diameter
  - 13 languages available
- Ability to save up to 999 setups
  - Automatic stonewear compensation
  - Jog buttons for easy setup

## 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, stroker and feed system assure complete process control.



Standard dual filtration 55-gallon capacity manual paperbed 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 – 2100 RPM

#### **SPINDLE POWER (SERVO):**

1 Hp (.75 kW) variable speed controlled

#### **STROKE (SERVO):**

2.9 Hp (2,17 kW) belt drive

#### **STROKE SPEED RANGE:**

3.3 – 98.4 ft/min (1 – 30m/min)

#### **I.D. DIAMETER RANGE:**

0.15 - 0.79 inches (4 - 20 mm)

#### **O.D. DIAMETER RANGE:**

See workholding options

#### **MAXIMUM PART LENGTH:**

59 inches (1,500 mm)

#### **MAXIMUM STROKE LENGTH :**

63 inches (1,600 mm)

#### **APPROXIMATE WEIGHT (INCLUDES COOLANT CART):**

2,734 lbs. (1,240 kg)

#### **ELECTRICAL SYSTEM:**

400 VAC, 50 Hz, 3-phase

FLA = 18.6

460 VAC, 60 Hz, 3-phase

FLA=16.25

#### **COMPRESSED AIR REQUIREMENT:**

5.3 gal (30 liters) per minute at 94-123 psi (20 liter per minute at .65 - .85 MPa)

#### **OPTIONAL EQUIPMENT:**

- Workholding configurations:
  - V-Block/Chain 14.75 in (375 mm) max (customized for application)
  - Pneumatic chuck 2.24 in (57 mm) max
  - Manual chuck 2.24 in (57 mm) max
- Automatic size control (ASC)
- Tool Park Unit with Bushing and Coolant Injection
- 230 VAC - 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

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

**LBT:** The LBT tool was designed for for small, long diameter tube hone applications. (Pictured at right and in inset.)

**BORE DIAMETER RANGE:**

- .0168 - .500 IN (4,27 0 12,7 mm)

**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:**

- 0.156 - .758 IN (4 - 19 mm)



## SUNNEN-MADE ABRASIVES

From aluminum oxide to silicon carbide to diamond and CBN, Sunnen manufactures 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 and consistent 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 .054" to 6" (13,71 mm to 152,4 mm), optional to 12" diameters (309 mm).





A LEGACY OF EXCELLENCE SINCE 1924.

## WORLDWIDE

Our global manufacturing, distribution, and sales and service network allows us to deliver quality Sunnen solutions worldwide.

And our state-of-the-art Technical Services Centers allow our technical experts to develop innovative solutions to customer application challenges. The Centers also provide answers for customer questions and training for Sunnen representatives around the world.

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