

Plasma clean  
Improved wettability and adhesion  
Functional nano-coatings

# Plasma Surface Treatment

**HPT-500** Benchtop plasma treater



# HPT-500 Benchtop Plasma Treater

The HPT-500 is a microprocessor controlled benchtop plasma treatment system which is ideally suited to surface activation, cleaning and modification of a wide range of materials including polymers, metals, glass and ceramics.

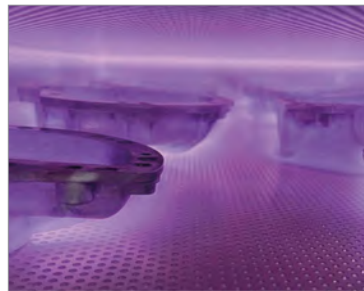
Available in single or dual gas inlet versions and with on-board gas mixing manifold, the HPT-500 is able to handle a wide range of gases for optimised treatments, including air, oxygen, hydrogen, argon, nitrogen and many others.

An optional vapour delivery inlet extends the use to liquid precursors and a corrosion resistant version expands the choice even further to address specific material treatments including;

- Plasma cleaning
- Plasma surface activation to improve adhesion
- Functional plasma coatings
- Plasma etching
- PDMS & microfluidic devices
- PEEK & other engineering polymers
- PTFE
- Metals
- Ceramics
- Glass & optical devices



## Markets & Applications



**Aerospace & Automotive**

**Composites**



# Plasma Environment



## Plasma Environment

The HPT-500 features a 240mmW x 405mmL plasma process chamber in stainless steel with vacuum compatible materials throughout. Our proprietary, high stability HPS plasma generator is continuously variable over the entire 0-300W power range rather than being limited to discreet levels, delivering much finer control when processing delicate materials.



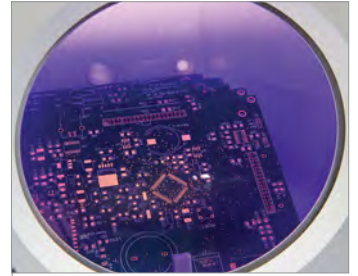
## Process Control

The 5.7 inch colour touchscreen provides a rich, user-friendly interface. Variables such as gas flow rate, pressure, power level and plasma processing time can be freely set and then stored to produce a fully interlocked process cycle from a single keypress. A handy status display and end of process audible alarm informs the user of every step in the process.



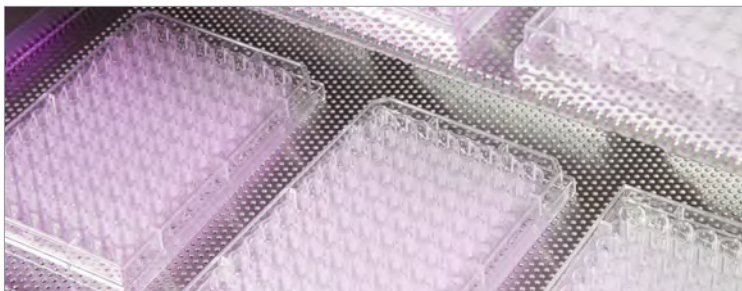
## Repeatable & Reliable

With precision digital mass flow controllers and integrated pressure gauge, the HPT-500 delivers unmatched reliability and repeatability by removing common errors in gas flow and gas type settings which will be familiar to users of equivalent equipment that utilise manual needle valves. Convenient recipe store software, a unique feature, allows fixed repeatability.

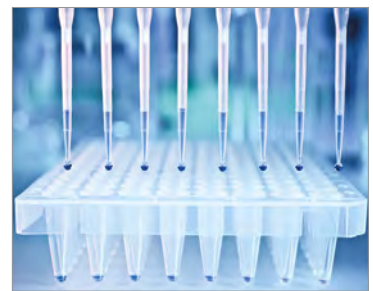


## Versatile

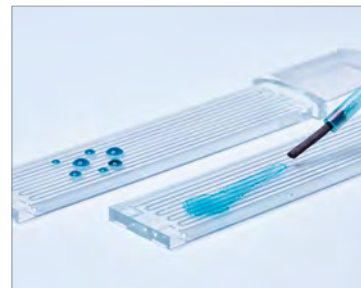
Recipe store allows users to select and store up to four recipes. Each recipe contains unique settings for power level, plasma process time and pressure. The base model HPT-500 has a single gas inlet and optional second gas or vapour delivery inlet. The unit is prepared so that either option can be added at a later time if required, ensuring that future requirements can be accommodated without expensive reconfiguration.



## Medical Plastics



## Microfluidics



# Some of Our Clients



*"Henniker provided visible results from the outset and confirming that we made the right decision in choosing a local UK manufacturer."*

Queen's University Belfast



*"We obtained quality results with their unit within minutes of setup & consistent results thereafter. The support they have provided has been rapid and helpful."*

Making Lab, Francis Crick Institute



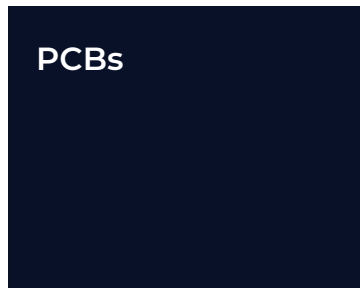
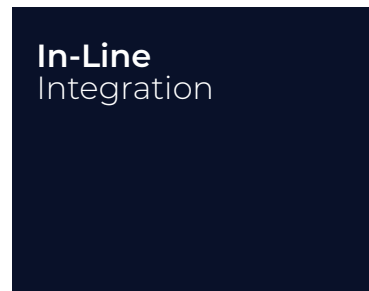
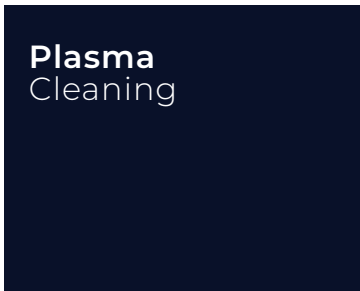
*"We are very impressed with the ease of use and reliability of our plasma unit and were producing results within minutes of setting it up."*

Warwick University



*"Our collaborative work with the team at Henniker was a very positive experience and one that we look forward to developing further."*

TWI



# HPT-500 Specifications

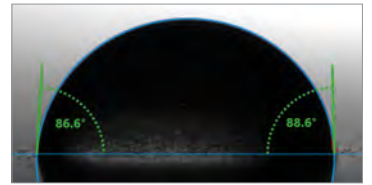
	BASE MODEL	OPTIONS
<b>ENCLOSURE</b>		
Dimensions	W 533mm x H 600mm x L 615mm (+50mm on rear for cables)	
Weight	~45kg	
<b>CHAMBER</b>		
Material	Stainless Steel	
Form	Rectangular	
Dimensions	240mm W x 240mm H x 405mm L	
<b>REMOVABLE PARTS CARRIER</b>		
Material	Aluminium	stainless steel
Form	Flat tray	multi-level shelf/electrode
Dimensions	200mm W x 370mm L	others to suit application
<b>PLASMA POWER SUPPLY</b>		
Power	0-300W, continuously variable output	
Frequency	40 kHz	
<b>PROCESS CONTROL</b>		
Interface	5.7" Colour TFT with recipe store	
Gas channels	x1 MFC	x2 MFC or x1 MFC and x1 vapour inlet
Vent inlet	x1	soft ventilation option
Connections	6mm compression	1/4" compression
Process timer	1sec – 99.59min	
Recipe Store	Stores up to 4 x recipes with individual parameters	
Pressure gauge	Pirani sensor	
Vacuum pump	10 to 15 m <sup>3</sup> /hr pumping speed	
Vacuum pump options	2-stage rotary pump (air/inert gas), PFPE rotary pump (oxygen compatible), dry pumps. All pumps include exhaust filter and connections	
<b>SERVICES</b>		
Electrical	210-250 VAC, 50-60Hz, 1500 VA (including pump), fused 6.3 A T	
Power cord	Suited to region	
Compliance	CE – UKCA - ROHS - WEEE	

## Benefits

- compact benchtop unit
- user friendly TFT interface
- recipe store
- fast treatment time
- precise & repeatable
- no hazardous emissions

## Typical Process Results

- Material : PEEK
- Oxygen plasma
- 60 seconds



Contact Angle Before Treatment

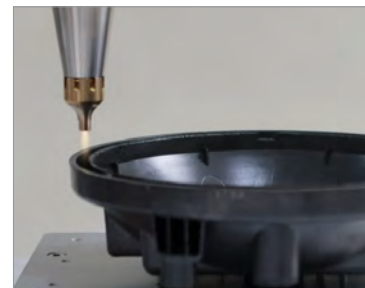


Contact Angle After Treatment

*Henniker strive for continuous improvement and specifications are subject to change without notice*



- benchtop systems
- high throughput systems
- atmospheric plasma
- robot systems
- surface test & analysis
- process development



## About Henniker

Henniker Plasma are an international leader in the design, development and manufacture of plasma surface treatment systems & advanced plasma processes.

Our products are installed worldwide and trusted to deliver consistent, reliable results in both leading research institutes and in critical manufacturing steps.

We are experts in plasma technology and surface science. We are trusted partners, valued for our courtesy, professionalism and dedication to delivering the correct solution for our clients.

## Services

### Contract plasma treatment

Our technical staff will be happy to discuss contract treatments, from small one-off batches to regular, large throughput requirements.

### Proof of concept treatment

Let's discuss your application and then we will provide a quick, no-nonsense feasibility study.

### Surface testing laboratory

With a comprehensive suite of surface analysis equipment, we are able to conduct a wide range of surface property tests, both before and after plasma treatment, in order to provide you with the whole picture.

### After sales support

We are proud of our reputation for being approachable, thorough and easy to work with.

*"Henniker's after sales support is first class. They have always been extremely responsive if we have ever had need to call on them."*

Steve Rackham, Teledyne

### Rental plasma systems

We carry a wide range of our standard equipment in stock and available for short or long term hire. This is particularly useful for in-house proof of concept trials or to satisfy short term contract work.

*"The low risk option of hiring a plasma unit for evaluation was a key reason that we chose to work with Henniker and one that enabled us to proceed with confidence."*

Dr. Chris Nicklin, Reinnervate

### Method development

We have invested significantly in laboratory facilities to assess, test and investigate all aspects of plasma surface modification on a wide range of materials. Coupled with extensive in-house and real-world knowledge, we can usually deliver a tailored treatment quickly and efficiently to suit your individual product or production needs.

*"The technical team at Henniker are very knowledgeable and supportive and always approachable. I have found it a pleasure to work with them."*

Simon Baxter, BAE Systems, AI

### Henniker Plasma

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Represented by:

