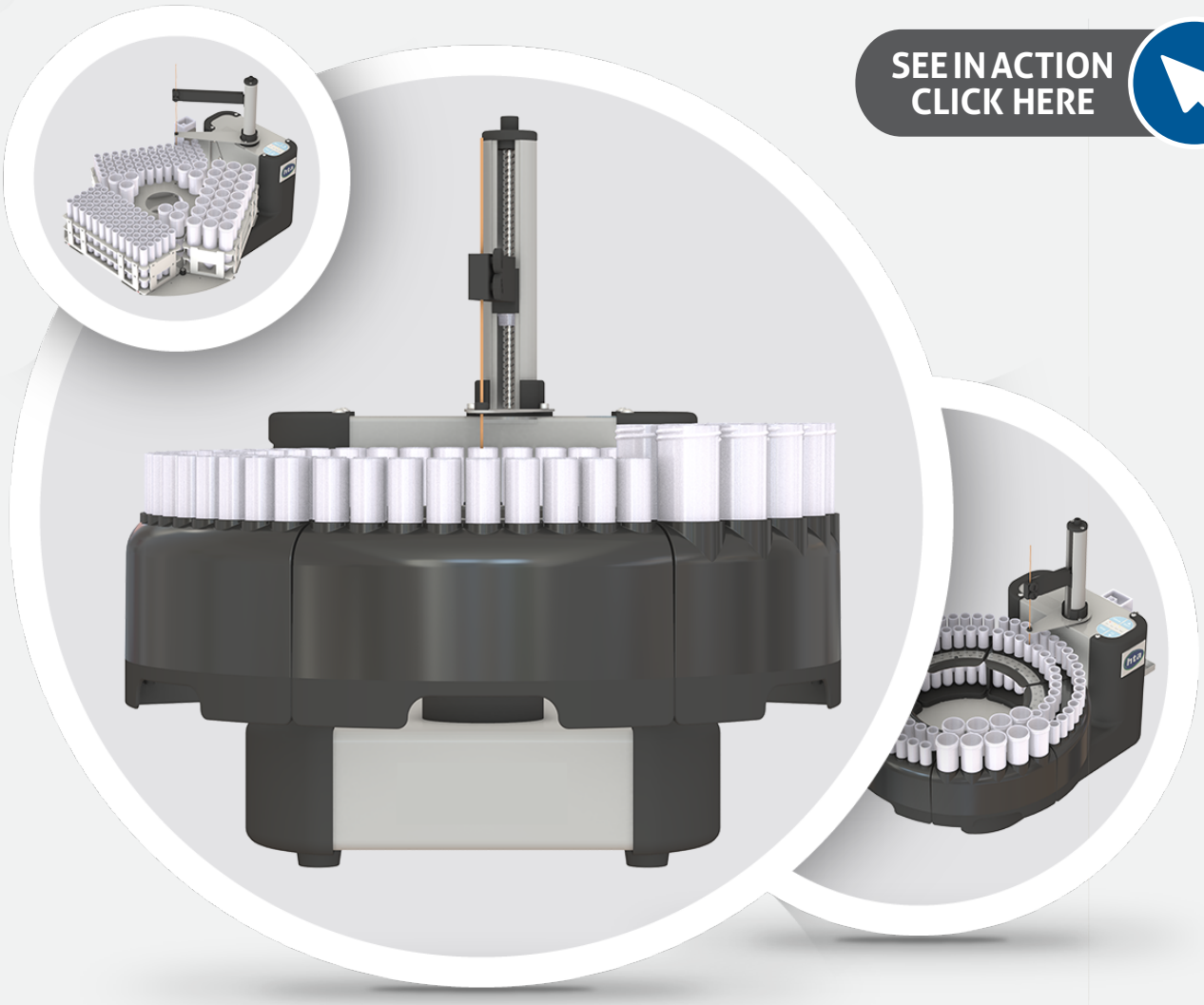
hta

sampling for science



SEE IN ACTION
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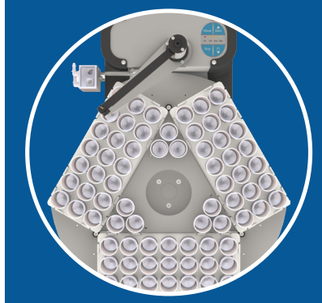
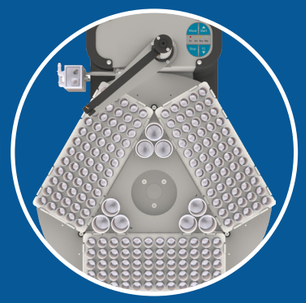
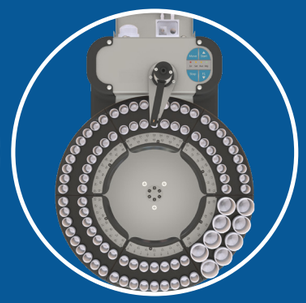
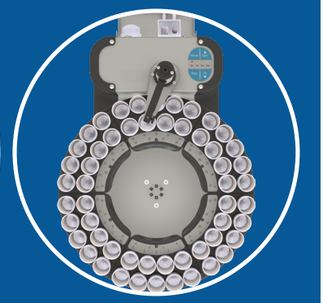
HT1000l series

ATOMIC SPECTROSCOPY AUTOSAMPLER: ICP-OES, ICP-MS, MP-AES, FLAME AAS

KEY **FEATURES:**

- **Next-generation electronics**
- **Optimised layout and short flow-path**
- **Removable racks for continuous feeding**
- **Different models available to meet any need**

HTA ICP autosamplers are compatible with a wide range of spectroscopy applications, including **ICP-OES, ICP-MS, MP-AES** and **FLAME AAS.**

The HTA ICP autosamplers **offer easy setup and operation**: for line priming, end-of-session washes and setup they feature an integrated keypad, while for sample processing they can be controlled by the most popular ICP and AAS software.

The carousel and the arm that holds the sample probe rotate to align the first sample tube to be processed. The probe is then inserted at the **programmable depth**; at that point, the sample is aspirated by the analyser through the **inert flow-path**.

As soon as this task is completed, the probe is automatically moved to the **washing port** where the washing pump **cleans the sample probe internally and externally to avoid cross contamination**. The autosampler is then ready to process the next sample!

NEXT-GENERATION ELECTRONICS: THE AGE OF SMARTER AUTOSAMPLERS IS ALREADY HERE

Up-to-date technologies run on the HTA ICP autosamplers. We have utilised our experience with chromatography autosamplers to make them the smartest autosamplers in the spectroscopy market.

While almost all competitors target an XYZ position in the deck, we target and check – by an **encoder-driven solution** – that the position is effectively reached. This **prevents the time-based drift** effect you may have experienced with other systems and allows the HTA ICP autosamplers – in case an obstacle is faced – to safely complete the operations as soon as the obstacle is removed.

A powerful ARM processor runs the autosampler, allowing support of sophisticated algorithms – such as the **automated calibration procedure**, the management of external stresses and **automatic recovery** – while minimising electric consumption.

THE SHORTEST FLOW-PATH

Our autosampler layout allows us - unlike our main competitors – **to move the sample rack instead of moving only the probe to the sample position**. Consequently, we have minimised the transfer line: we typically run with a sample transfer tube 0.5 metres shorter than that of our competitors! That leads to a shorter sample rinse time, simpler and faster cleaning step and reduced bench space occupation: expect reduced argon and power supply consumption; expect a longer lifetime of consumables like the tubing, the spray chamber and the torch as the contact time with the sample (matrix) is kept on a minimum level.

USER INTERFACE: KEYPAD AND SOFTWARE TO ENABLE A SUPERIOR USER EXPERIENCE

From the **autosampler keypad** you can perform all the operations that would be more convenient to do when in front of the autosampler, such as **sample loading, peristaltic pump priming, sample probe installation and extra washing.** These are operations that you may need at the beginning or end of your analysis session. The four integrated LEDs offer a simple visual indication of the autosampler status and PC connectivity.

For anything else, the autosampler is operated via a PC. For **setup and service,** we include the software "**HTA Autosampler Manager** (Standard Version)" for free, while for **sample analysis the autosampler can be integrated with most common analyser software packages,** after installing the communication driver (also included for free).

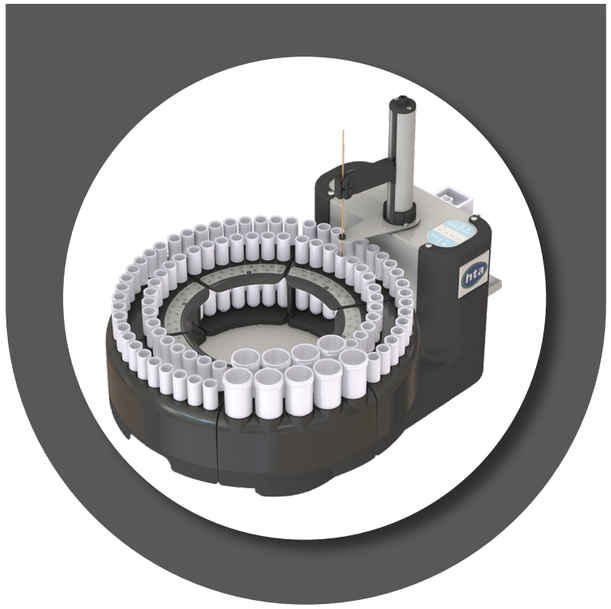
CHOOSE THE VERSION THAT BETTER MATCHES YOUR NEEDS

The HTA ICP autosamplers are available in three main versions.

The HT1100I model includes a peristaltic pump, which can directly manage the aspiration of the liquid required **for probe cleaning**.

If the analyser already mounts a pump with a line free for probe purging, the **HT1000I model** is a more suitable solution. This model **does not include the rinse peristaltic pump and features a lower price.**

The third available solution is the **HT1200I model**, which is different from the other versions because it supports **sealed tubes** and it satisfies the needs of labs running **large sample number**.



HT1000I
HT1100I

- ✓ **Optimised layout to save bench space**
- ✓ **Sample carousel designed to fit your routine**

OPTIMISED LAYOUT

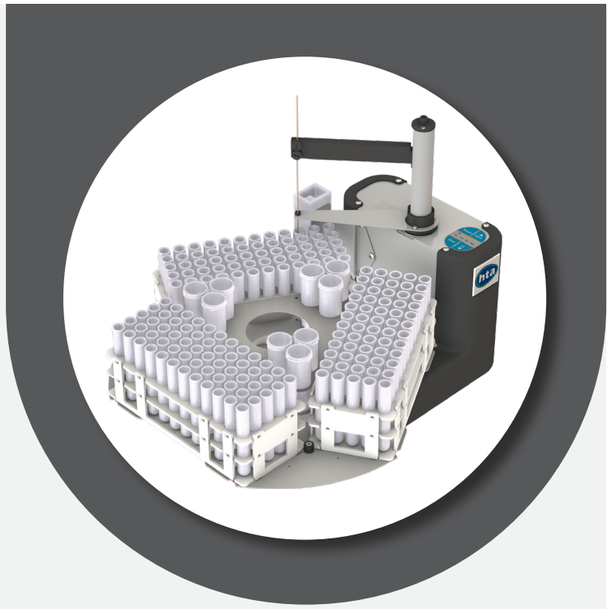
When you look at autosamplers, automatic sample changers or any other automation equipment, the larger it is, the more expensive it is. By surveying labs in many countries, we have sized the HT1000I series to offer **enough sample capacity to satisfy the needs of a standard lab**.

Oversized instruments lead to oversized costs: at the initial purchase, during operations – due to usage of long transfer line – and at maintenance – being more expensive to care about. Therefore, choosing the correct size is the best way to optimise your total cost of ownership.

CONTINUOUS SAMPLE FEEDING

The sample carousel is organised in six racks, each of which may run a different type of sample tubes. Therefore you may designate one rack for standards and control samples using large 50ml tubes, while using smaller tubes in the other racks to maximise capacity.

Racks are removable to support off-instrument sample preparation and continuous sample feeding. Furthermore, the **racks are recognized so that a mismatch is not possible** (e.g., putting rack #2 in the position of rack #3) to comply with the best lab practices.



HT1200I

- ✓ **High productivity lab solution**
- ✓ **Support custom sample vessels**
- ✓ **Sealed sample and reagent tubes**

HIGH PRODUCTIVITY AND FLEXIBILITY

HT1200I holds three sample racks. Each rack has a consistent capacity to reach a **remarkable total number of samples.**

Conventional tube racks are supported to accommodate a **wide range of sample tubes.** Furthermore, custom racks can be integrated to accommodate **custom sample vessels.**

ENJOY SEALED SAMPLE AND SOLVENT TUBES

Aggressive chemicals used for atomic spectroscopy applications lead to corrosion and unpleasant smell. Autosampler enclosures have been used to address these issues. However, they offer a partial solution: they do not limit corrosion stress on the autosampler, they are quite expensive and they do not always fit available spaces on the bench.

The HT1200I model offers the definitive answer to corrosion and bad smell by adding support to sealed samples and reagent tubes. The usage of sealed tubes helps to reduce the amount of chemical vapours in the environment, improve the quality of lab air and increase the lifetime of any object that could be affected by corrosion phenomena in the short- or long-term.

The HT1200I model is the first and only ICP autosampler to support sealed sample and reagent tubes.

	HT1000I	HT1100I	HT1200I
Rack Number	6	6	3
Tube Capacity (up to)	89	89	189
Tube Type	10/50ml	10/50ml	Any
Closed Tubes	-	-	√
Rinse Station	Included	Included	Included
Peristaltic Pump	-	√	√
Upgradable	to HT1100I	-	-

TECHNICAL SPECIFICATIONS

General features

Maintenance:	Preventive counters available
Electrical control:	USB 2 Relays, 2 Auxiliary inputs
PC[1]:	Required for operations, installation and service
Required PC ports:	1 USB (standard configuration) 2 USB and 1 RS232 (special configurations)

Washing

Rinse station:	Included
Peristaltic pump:	Included, depending on model

Physical features

Weight:	8kg
Power supply:	100-240±10%Vac; 50-60Hz; 18W

HT1000I/HT1100I

Dimensions

Dimensions (WxHxD)[2]:	355x380x540mm

Carousel

Number of racks:	6 (removable)
Rack type (open tubes):	16 tubes - 10ml (16x100mm) 9 tubes - 50ml (30x115mm)
Featuring:	Rack polarization Flexible position assignment Random access Priority samples

Tube capacity (Samples/ Standards)

HT1001I/HT1101I/HT1103I:	80 (10ml) + 9 (50ml)
HT1002I/HT1102I/HT1104I:	54 (50ml)

HT1200I

Dimensions

Dimensions (WxHxD)[2]:	355x380x550mm

Carousel

Number of sample racks:	3 (removable)
Rack type:	check product catalogue
Featuring:	Flexible position assignment Random access Priority samples

Tube capacity (Samples/ Standards)

Open tube:	Samples: 180 (10ml) or 63 (50ml) Standards: 9 (50ml)
Closed tubes	Samples: 180 (10ml) or 54 (50ml) Standards: 3 (50ml)

[1]For PC specifications refer to "HTA Autosampler Manager" flyer
[2]Without accounting sample probe

When it comes to designing and manufacturing robotics solutions, there's no company more dedicated, experienced and knowledge about the scientific industry than HTA. We offer an extensive collection of analyzer front-ends and sample preparation workstations designed to fit applications in analytical chemistry, life sciences and clinical laboratories. This even includes GC, LC and ICP autosamplers. HTA manufactures in Italy under a certified UNI EN ISO 9001:2015 and 13485:2016 quality management systems.

HTA s.r.l.

via del Mella, 77-79 - 25131 Brescia - ITALY
T: +39 030 3582920
www.hta-it.com | enquiry@hta-it.com

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