



**AS 2M (3D HS)**  
**3D Multi-Functional Headspace Autosampler**

AS 2M (3D Headspace) is a static headspace autosampler as base unit and upgradable by options for liquid sample injections and SPME. AS 2M 3D Headspace Autosampler realizes static headspace technique by heated syringe injections to GC inlet ports. It is easy to use and configure onto Chromatec GC or GC-MS systems. Modular configuration suggests additional Liquid Injection option and SPME option. These can be supplied separately and installed in the autosampler easily. Headspace syringes of SGE Diamond™ HS series provide good performance in carryover, repeatability and operating temperature range.

Thanks to side installation of the sampler:

- Inlet ports remain free for manual injection or service actions
- Vials tray is isolated from GC heating zones influence.

AS 2M 3D headspace autosampler has advanced errors checking and warning system:

- Wrong position detection
- Touch sensor to stop the sampler in case of any unexpected mechanical intervention
- Missing vial detection

### Technical Specification:

#### General Specification:

Working modes:	Headspace (standard) Liquid Injection (option), SPME (option)
Display	2-line, LCD
GC Injection port:	Up to 3
Control and Programming:	Chromatec Analytic Software

#### Headspace Mode:

Operation principle:	Syringe headspace sampling
Vial incubator capacity:	4 vials (20 mL and 10 mL)
Sample tray capacity:	30 vials
Vial size:	20 mL (standard), 10 mL (option)
Vial incubator temperature range:	35 ... 170°C
Incubator temperature setpoint resolution:	0.1 °C
Heating time:	1 ... 999 min
Injection interval:	1 ... 999 min

**Headspace Syringe:**

Syringe size:	1 ml (standard) or 2.5 ml (option)
Sample volume range:	0.1 – 2.5 ml
Syringe temperature settable range:	35 ... 150°C
Syringe temperature setpoint resolution:	0.1 °C
Syringe cleaning:	Purging by inert gas from the top through the syringe barrel
Syringe purging time:	1 ... 99 min
Needle:	Fixed in the syringe barrel, side hole needle tip

**Headspace Incubator Shaker:**

Shaking method:	Orbital
Shaking speed:	Fast / Slow
Shaking cycles:	On / Off, 1 ... 999 sec

**Liquid mode (option):**

Syringe:	10 µl (standard) 0.5, 1, 5, 100, 250 µl (option)
Vial volume:	2 ml
Tray capacity:	60 sample vials (2 ml) 4 solvent vials (4 ml) 2 waste vials (15ml)
Injection modes:	Simple injection, Simple sandwich Sandwich with solvent, Sandwich with internal standard Multiply injection for large volume, ambient headspace
Washing modes:	Washing from vial
Sampling programmable parameters:	Top, middle and bottom air layers volumes Solvent or internal standard layers volume Sample vial depth Plunger aspirating and flushing speed Viscosity delay,
Injection parameters:	Number of injection per vial: 1...99 Pre- and post-injection delay Priority vial Injection into 2 inlets within single run

**SPME mode (option):**

Extraction:	Liquid phase / headspace vapors
Apprx. Fiber lifetime:	up to 100 cycles

**Environmental Conditions:**

Ambient Operating Temperature:	from 10 to 35°C
Relative humidity:	not more than 80 %
Storage Temperature:	from -50 °C to 50°C
Power Requirements:	220 V ± 10% / 50 - 60 Hz
Power consumption:	300 W

**Other specification:**

Dimensions: (WxDxH);	390x440x530 mm
Weight:	17 kg

**Safety and Certification:**

Products designed and manufactured under regulations of GOST R ISO 9001 quality standard.  
 CE certified as a part of Chromatec Crystal 9000 Gas Chromatograph  
 At electromagnetic compatibility the chromatograph meets the requirements of IEC 61010-1

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 February 27, 2016  
 09-101-6018EN

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