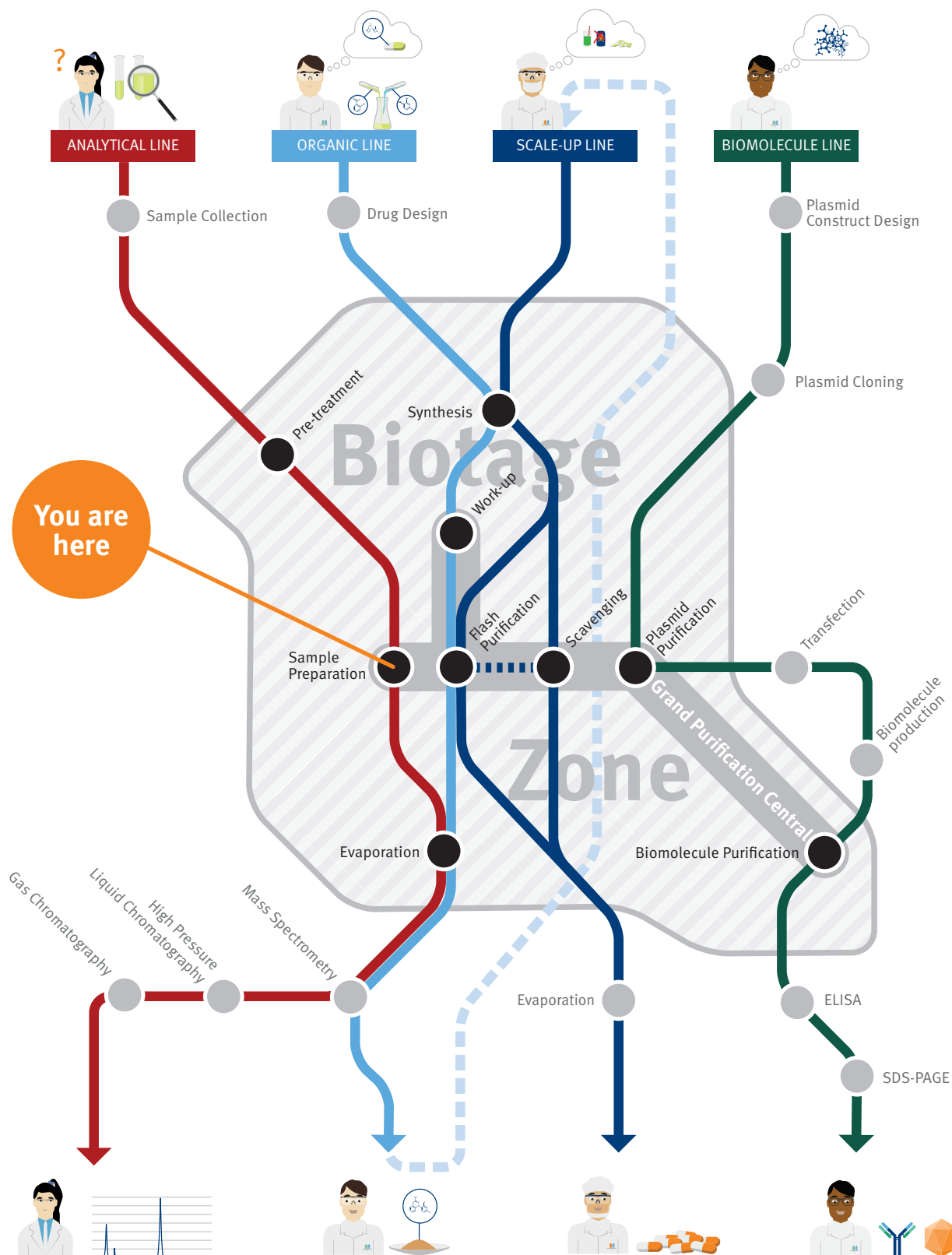# Biotage® Extrahera™ HV-5000

Your High Volume Sample Prep Workstation

Welcome to Our World

Biotage is a Global Impact Tech Company committed to solving society's problems. We offer workflow solutions and products to customers in drug discovery and development, analytical testing and water and environmental testing.

Biotage is contributing to sustainable science with the goal to make the world healthier, greener and cleaner – **HumanKind Unlimited.**

Our customers span a broad range of market segments including pharmaceutical, biotech, contract research and contract manufacturers as well as clinical, forensic and academic laboratories in addition to organizations focused on food safety, clean water and environmental sustainability.

Biotage is headquartered in Uppsala in Sweden and employs approximately 500 people worldwide. Our products are sold in more than 70 countries. Biotage's share (BIOT) is listed in the Large Cap segment on NASDAQ Stockholm.

Vision
Biotage does its part for the future of our planet by helping to shape the sustainable science of tomorrow.

Mission
We help our customers make the world a healthier, greener, and cleaner place

Meet the new member of the Biotage® Extrahera™ family

The new Biotage® Extrahera™ HV-5000, is a GLP capable, positive pressure driven sample prep workstation solution dedicated to column-based sample prep with support for classical SPE and SLE column consumable formats.

The system caters to larger sample volumes compatible with 3, 6, 10 and 15 mL column consumables and is able to aspirate and dispense volumes from 250 – 5000 µL through each one of its 4-channel pipette tips.

Like its predecessors, Extrahera™ Classic and Extrahera™ LV-200, the HV-5000 maintains the family's small footprint, intuitive software, and robust positive pressure system for uniform processing of all samples. Dedicated to both SPE and SLE techniques, the new HV-5000 comes pre-programmed with Biotage application notes and new sample matrices, new user-friendly prompts to assist in method building, added features like SMART pipetting to prevent aspirating air into samples and triple waste segregation.

Biotage® Extrahera™ HV-5000

4168S4SP

Biotage® Extrahera™ HV-5000

Run Method

Run Individual Samples

Reports

Manage Methods

Data Administration

System Administration

Maintenance

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Biotage®

Biotage Extrahera HV-5000

Designed for labs who process large volume samples manually,
but need the reliability and precision of automation.

Forensic toxicology

» GLP available software supports chain of custody
via audit trail management and user account
management for enhanced security.

» ISOLUTE® SLE+, HCX, HAX and EVOLUTE® EXPRESS ABN,
CX consumables providing high, reproducible analyte
recoveries and clean extracts for reliable quantitation.

» Intuitive software interface ensures new lab personnel
can use the system directly, without advanced training.

Doping

» The system has passed validation compared
to historic needle systems.

» Preloaded methods on Anabolic Steroids in Horse Urine,
Steroids in Horse Hair and Growth Promoters in Urine.

Food & agriculture

» Sample tube compatibility with front
end homogenization systems.

» Compatible with mycotoxin extraction methods
that meet EU and FDA regulation requirements.

» Compatible with acrylamide extraction methods
from multiple matrices using the ISOLUTE ENV+
ISOLUTE Multimode and ISOLUTE SLE+ columns.

Environmental

» VOA vial compatibility allows direct loading
of samples collected from the field.

» Efficient cleanups of extracts produced from
wastewater, biosolids, soils, and tissues.

» Consistent fraction collection for methods
requiring elution fractionation.

System Overview

Integral Exhaust Fan
Allows for flexible installation outside or in chemical fume hood.
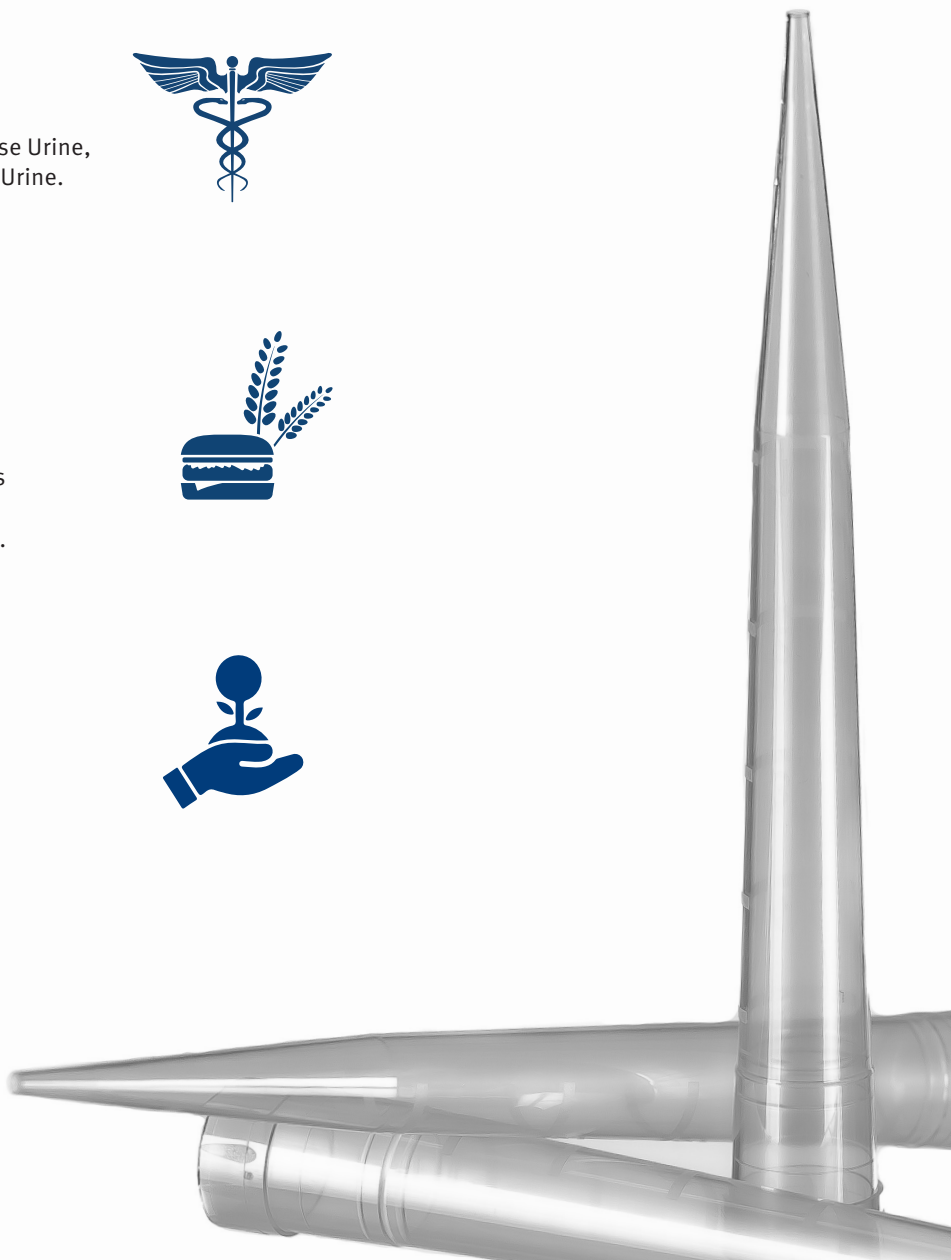
Powerful Positive Pressure Processing
Reproducible flows and elution control results in robust methods.

Three Channel Waste Segregation
Separation of organic, aqueous, or chlorinated waste reducing waste disposal costs.

Modular Two-tier Design
Minimizes footprint to increase your labs work area.

Tip Configurations
Position 1: Sample Tips:
24 sample tips with ability to expand to a maximum of 48 sample tips (Position 6).

Position 2: Solvent Tips:
24 reusable solvent tips reduces tip usage.

Consumable Rack (Position 3)
Capable of supporting 12, 24, and 48 position configuration for processing of 3, 6, 10, and 15 mL sample prep columns.

Sample Rack (Position 4)
Supports 12, 24, or 48 position sample racks for 16x100 mm tubes, 15 or 50 mL centrifuge tubes, or 20 and 40 mL VOA vials.

Collection Carousel
Versatile four position collection carousel allows multiple waste collection or elution positions for maximum flexibility during method development.

Biotage® Extrahera™ HV-5000
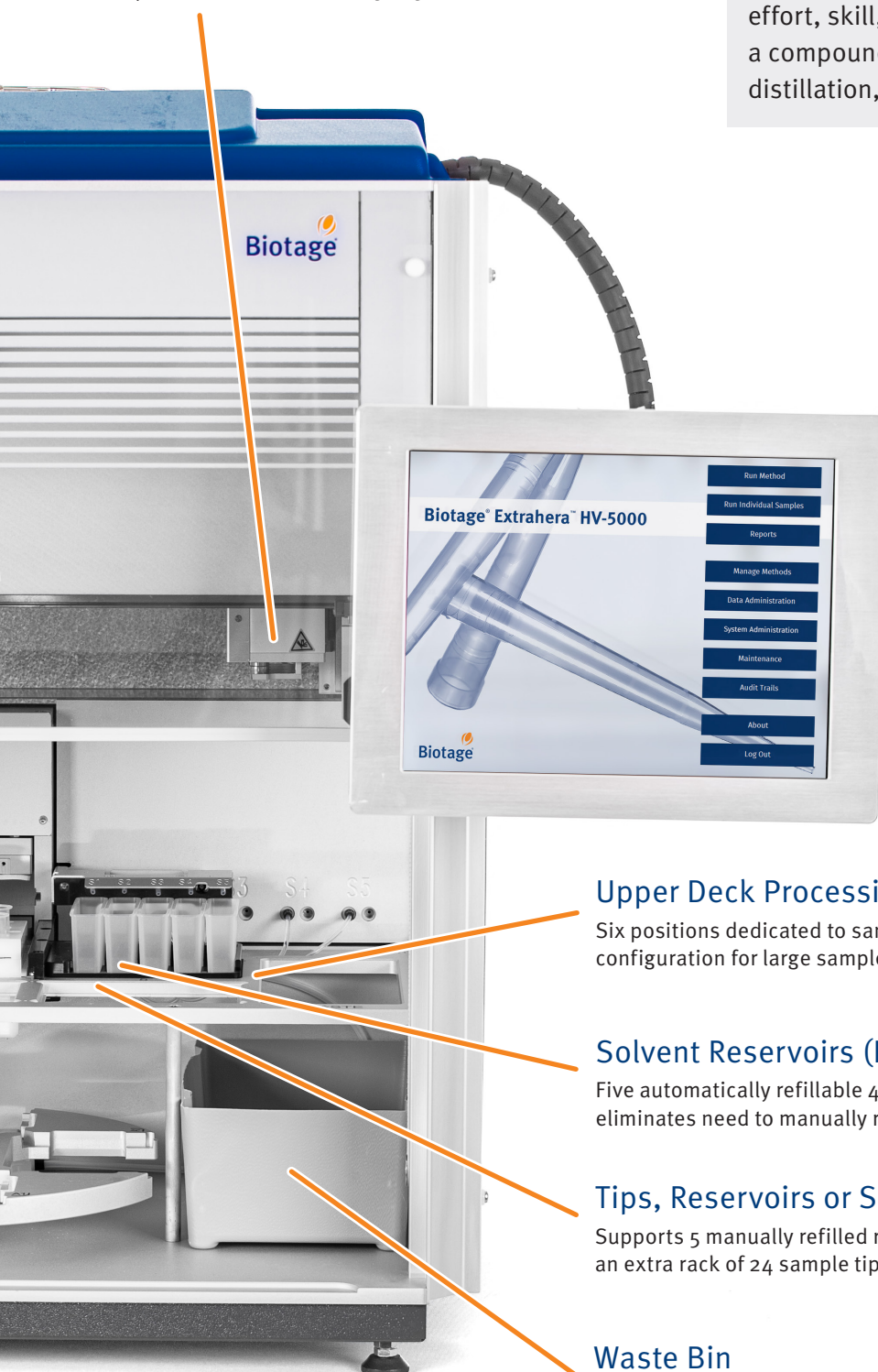
4 Channel Pipetting Head

Reduces processing times by parallel transfer
of samples or solvents from 0.25 to 5 mL.

Extrahera [ik-strə-hï-rə] v. (Swedish).

To get, pull, or draw out, usually with special
effort, skill, or force; to separate or obtain
a compound from a mixture by pressure,
distillation, treatment with solvents, or the like.

Intuitive Touch Screen Interface

Easy method programming
& GLP adherence.

Biotage® Extrahera™ HV-5000

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Upper Deck Processing Shelf

Six positions dedicated to sample prep work flow
configuration for large sample volume applications.

Solvent Reservoirs (Position 5)

Five automatically refillable 40 mL reservoirs
eliminates need to manually refill solvents/buffers.

Tips, Reservoirs or Sample Rack (Position 6)

Supports 5 manually refilled reservoirs for 20, 40, or 100 mL,
an extra rack of 24 sample tips or a 12 position sample rack.

Waste Bin

For easy collection and disposal of used tips.

Seamless Workflow

Biotage® Extrahera™ HV-5000 strikes a balance between complexity and speed, and is the perfect partner for high-throughput laboratories looking for a plug-and-play sample prep automation platform without the hassles of advanced training and complicated custom configurations of a liquid handler.
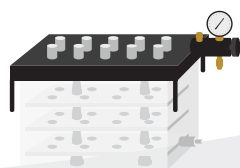
Manual Sample Preparation
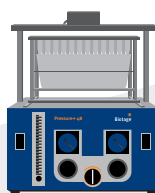
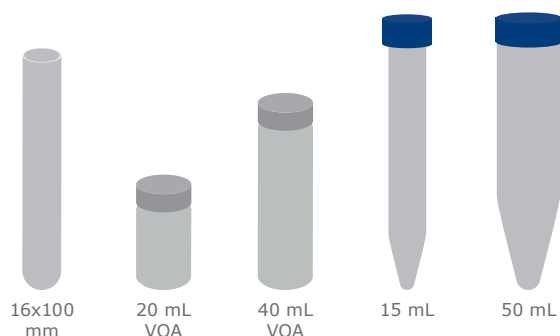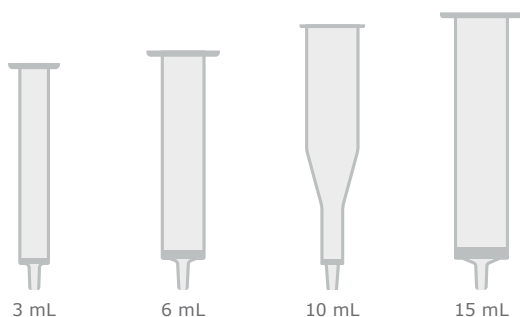**Semi-manual Sample Preparation**
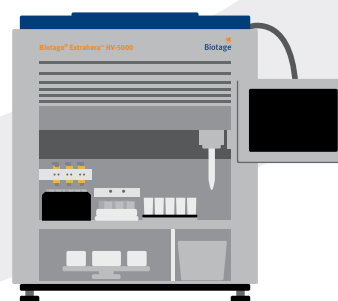
Biotage® Extrahera™ HV-5000

Biotage® Extrahera™ HV-5000 sample configurations

» 48 position column: 3 mL tabless tubes
» 24 position column: 3 & 6 mL tabless tubes
» 12 position columns: 10 and 15 mL tabless tubes

Biotage® Extrahera™ HV-5000 sample tubes

» 48 position: Column, 16 x 100 mm x2
» 24 position: 16 x 100 x 1 or 15 mL x2
» 12 position: 20 or 40 mL VOA x2, or 50 mL x2

| 3 mL | 6 mL | 10 mL | 15 mL |

| 16x100 mm | 20 mL VOA | 40 mL VOA | 15 mL | 50 mL |

Pre-treatment

Biotage® Lysera
Homogenization & grinding kits for micro-organisms, hard and soft tissues, and plant tissue.
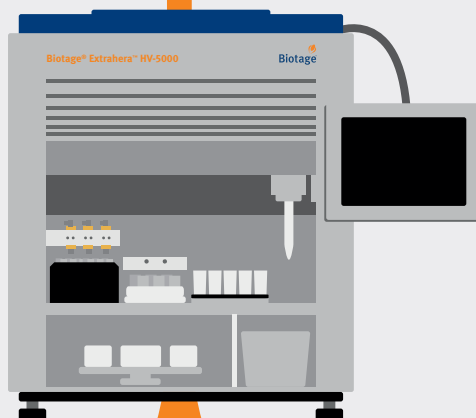
Lysera Tube Carriage Kits

» 24 x 0.5, 1.5, or 2 mL

» 12 x 7 mL

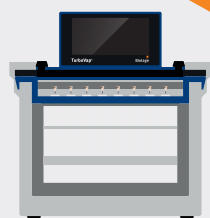» 3 x 15 mL

» 6 x 30 mL

» 3 x 50 mL
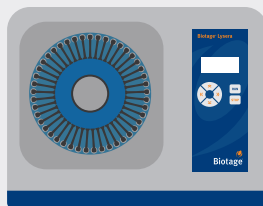
Sample Preparation

Biotage® Extrahera™ HV-5000

» ISOLUTE® SPE columns
  » Non-polar SPE
  » Mixed-mode SPE
  » Ion exchange SPE
  » Specialty phases

» ISOLUTE® SLE+ columns

» EVOLUTE® EXPRESS SPE Columns
  » Polymeric non-polar SPE
  » Polymeric mixed-mode SPE

Evaporation

TurboVap® Family Members for Evaporation & Concentration
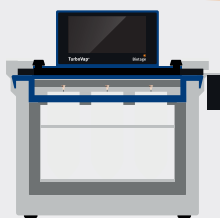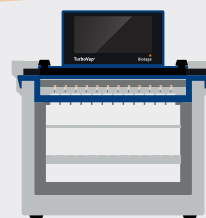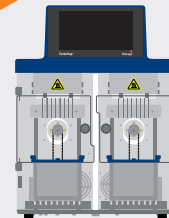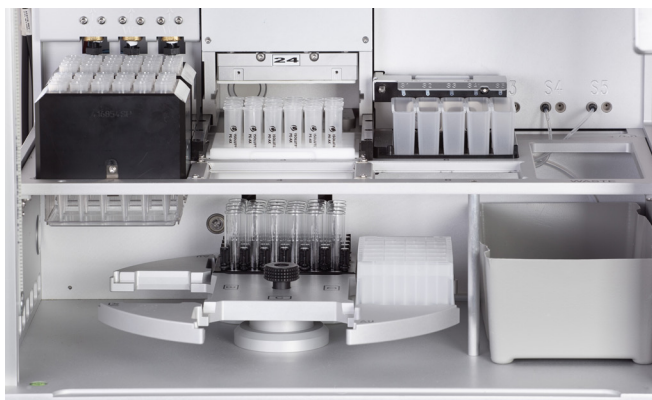
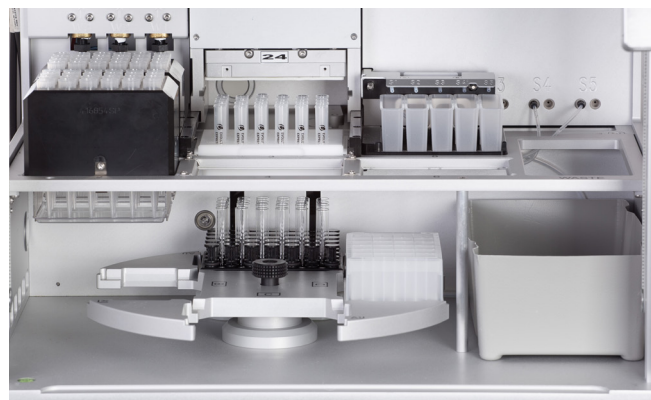TurboVap® LV   TurboVap® II   TurboVap® EH   TurboVap® P+   TurboVap® 96 Dual
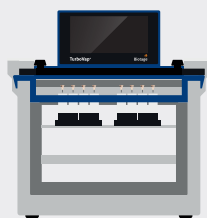
Configurations

The Biotage® Extrahera™ HV-5000 can process columns under a variety of configurations offering the versatility needed to adapt to different column formats and sample throughput.
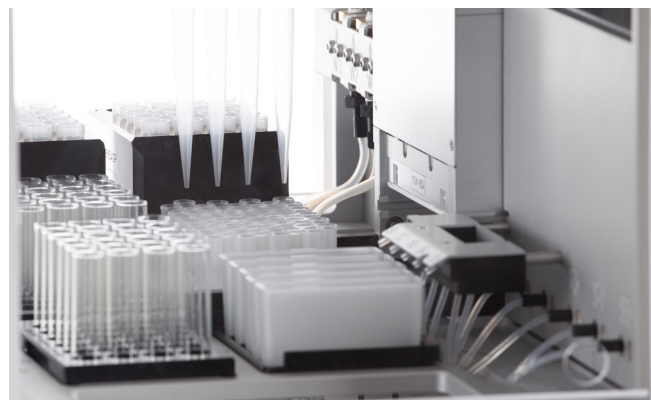

Regular Format, 24-position configuration,
6 mL Tabless Columns

Regular Format, 24-position configuration,
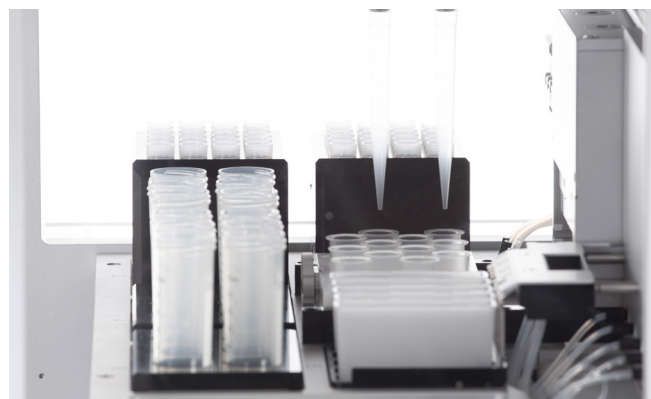3 mL Columns

Regular Format, 12-position configuration,
10/15 mL columns

Mixed Format, 48-position configuration,
3 mL Tabless Columns

Extra sample tips in position 6

Mixed format, 12-position configuration,
10/15 mL Columns

Accessories

We know your sample intake can vary over time and with it, your choice of column format. That's why the Biotage® Extrahera™ HV-5000 lets you process standard 3 and 6 mL columns in a 24 position configuration or 10 and 15 mL columns in a 12 position configuration all with the same kit. Need to increase your throughput? Batch process 48 samples with 3 mL tabless columns using the 48 position kit.

Pressure Head Kits

Choose between a 24 or 48 position Dual Flow pressure head and flow through plate

Configuration Kit 24 Positions Dual Flow - HV (417610)

The configuration Kit 48 Positions Dual Flow - HV (418374)

Pipette Tips

The 5000 µL tips are used for pipetting both sample and solvent.

Pipette Tips, Clear 5000 uL (417007)

Solvent Rack & Reservoirs Kits

Some methods are more complex than others so having a few more solvents is a must. In addition to the 5 automatically filled 40 mL reservoirs, you can add an extra solvent rack: choose between a rack of five 25, 40, or even 100 mL manually filled reservoirs.

Solvent Rack, 25 mL (413991SP)

Triple Waste Segregation

We know how important it can be to separate specific liquid or bio-hazardous waste. With the HV-5000, you can segregate your solvent and sample wastes using our new triple waste segregation feature. Using the triple waste splitter kit, you can opt to add up to two additional waste reservoirs. Simply designate the waste channel within your method and let the HV-5000 do the rest.
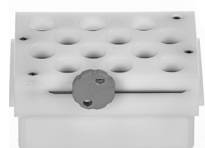
Triple Waste Splitter Kit (416977SP)

Waste Reservoir 5 L

Solvent Rack, 40 mL (417315SP)

Sample & Column Racks

With options for 12, 24 or 48 samples and 3, 6, 10, and 15 mL columns, you can adapt the Extrahera™ HV-5000 to your lab's needs.

Column Rack 12 x 10 & 15 mL (416848SP)

Sample Rack, 6 Positions (417283SP)

Key Plate, 12 positions (attached to 414254SP)

Solvent Rack, 100 mL (415560SP)

Technical Specifications

Liquid Handling

Pipette Pump Capacity	250-5000 µL	
Pipetting specifications	For the 5000 µL pipette tip (P/N 417007): At 250 µL: ± 2.0% accuracy and 3.0% CV At 500 µL: ±1.5% accuracy and 2.0% CV At 1000 µL: ±1.0% accuracy and 1.5% CV At 5000 µL: ±0.5% accuracy and 1.0% CV	
Solvent capacity	5 solvent pumps with automatic feed in from external reservoirs, with additional capacity for an extra 5 manually filled solvent reservoirs (5 x 20 mL, 5 x 40 mL, or 5 x 100 mL)	
Pressure unit	Positive Pressure Unit: Processing: 0-5 Bar (0.1 Bar Increments) Plate Dry: 5 Bar at 600 mL/min	
Waste Outlet	Three waste valves, for solvent segregation into either three 5-liter or 10-liter reservoirs Individual waste valve access is designated within the method.	

Sample Processor

Format	48-position extraction racks for 3 mL (tabless) columns (DB format (tabless)) » 24-position extraction racks for 3 and 6 mL (tabless) columns (B and DC format) » 12-position extraction racks for 10 mL columns (G and H format) » 12-position extraction racks for 15 mL columns (DG format)	
Plate positions	6 position upper deck used for sample, extraction plates, pipette tips and solvents. 4 positions on lower deck carousel for multiple elution and waste.	
Disposable tips	Disposable Solvent Tips (Position 1): 5000 µL clear tips Disposable Sample Tips (Position 2): 5000 µL clear tips Disposable Solvent Tips (Position 6): 5000 µL clear tips	

System Requirements

Temperature	Operating Temperature: 18 °C to 32 °C Storage and transportation temperature: -25 °C to 60 °C	
Humidity	10% to 90% RH	
Electrical supply	100 to 240 V~, 50/60 Hz	
Fuses	T4A at the power inlet (2 required)	

⚡	**Maximum power consumed**	300 VA
	Pressurized air supply	>5 L/min (0.18 cubic feet/min), 6 ± 0.2 bar (0.6 ± 0.02 MPa; 87 ± 3 psi)
	Inert gas supply	AIR port requirements: >5 L/min (0.18 cubic feet/min), 6 ± 0.2 bar (0.6 ± 0.02 MPa; 87 ± 3 psi) N2 port requirements: 1 L/min (0.04 cubic feet/min) during processing and 70 L/min (2.5 cubic feet/min) during plate dry, 6 ± 0.2 bar (0.6 ± 0.02 MPa, 87 ± 3 psi)
	Vacuum supply	Partial pressure range: < 500 mbar (50 kPa; 7 psi) Flow rate: ≥ 8.3 L/min (0.29 cubic feet/min)
	Weight	80 kg (176 lbs)
	Dimensions (WxDxH)	Without touch screen: 610 x 510 x 790 mm (24.0" x 22.1" x 31.1") With touch screen: 860 x 570 x 790 mm (33.8" x 22.4" x 31.1")
	Max sound level	65 dB(A)

Interfaces

	Touch screen	12" Capacitive Touch
	Ethernet LAN	Complies with IEEE 802.3 (ANSI 8802-3)
	USB	USB 2.0

Other

GLP	**GLP Sofware Ready**	
	Certifications	CE, CSA certified

More Power to your System

High Quality Consumables for Optimum Performance

In automated sample prep, high quality consumables are essential to maximize throughput and productivity, avoiding the need for time consuming reruns.

ISOLUTE® and **EVOLUTE®** products are manufactured to high cleanliness standards, so they won't contaminate extracts.

Tightly controlled particle size media prevent column blockage and eliminate particulate breakthrough.

Excellent batch to batch reproducibility means that data is reliable every time.

Forensic Toxicology Applications

Covering a diverse range of matrices including urine, whole blood and hair, Biotage sample prep consumables are ideal for automated extraction of DOA panels, Opiates, THC, Amphetamines, Pain management drugs and more

» ISOLUTE® SLE+ for fast, simple sample prep

» ISOLUTE® HCX and HAX columns, classic silica based SPE for the cleanest extracts

» EVOLUTE® EXPRESS ABN and CX, ideal for large analyte panels and low matrix effects in LCMS

Doping Applications

Robust, reliable methods and consumables combined with automated procedures for fast turnaround and accurate results.

Large particle media for improved flow of viscous samples:
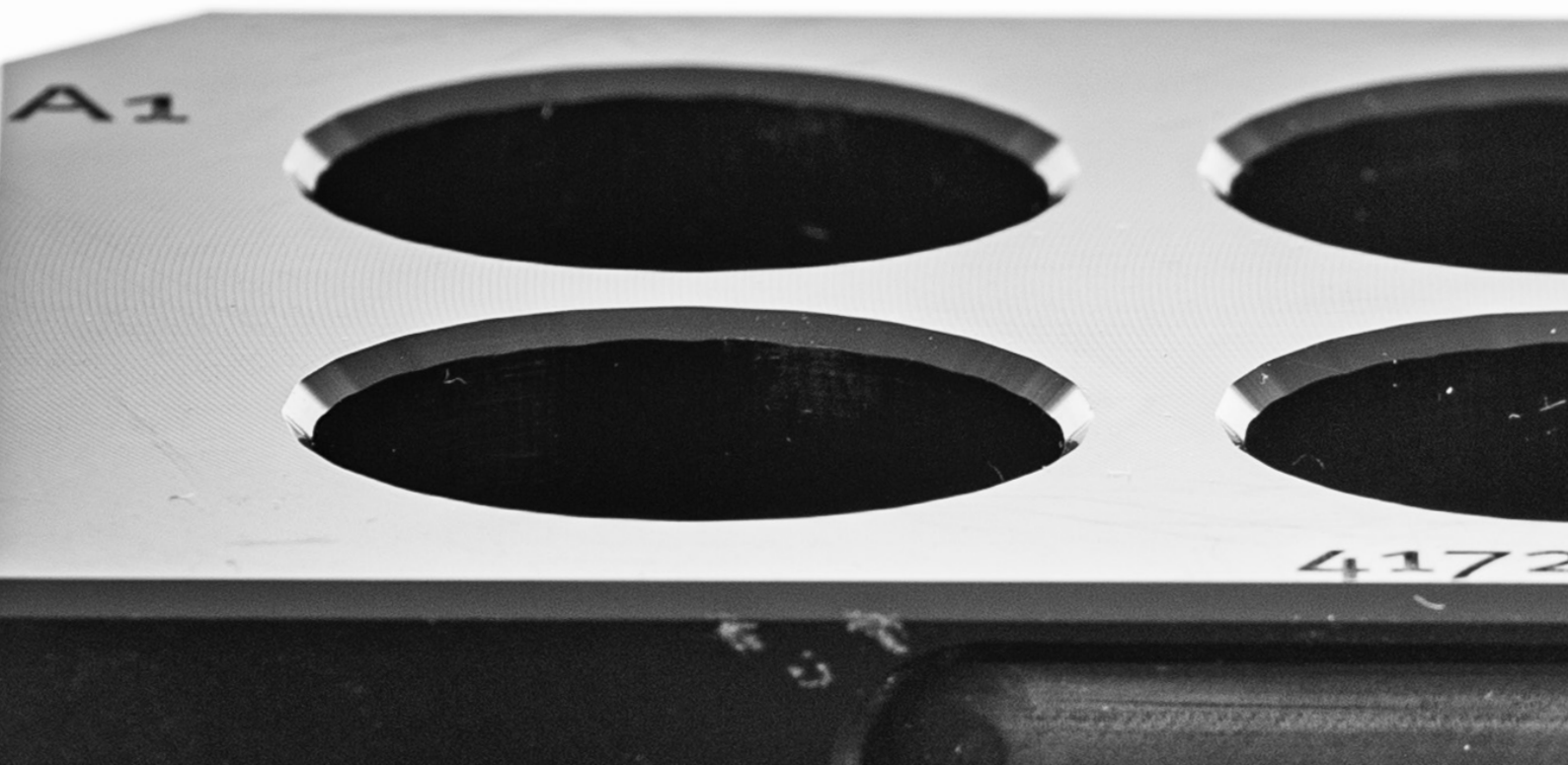
» ISOLUTE® LPC18

Fast, simple extraction for steroids and related analytes:

» ISOLUTE® SLE+

For large analyte panels, peptides, and low matrix effects in LC-MS/MS applications.

» EVOLUTE® EXPRESS ABN and CX

Food Applications

Acrylamide extraction from multiple matrices:

» ISOLUTE® ENV+ and ISOLUTE Multimode for EN16618 based methodology

» ISOLUTE® SLE+ for a fast, easy to automate alternative method

Mycotoxin extraction for LC-MS/MS analysis. Use a single column for multiple mycotoxins in a variety of matrices. Methods meeting EU and FDA regulations are included in our application notes:

» ISOLUTE® Myco

Environmental Applications

Clean column components and media that wont contaminate your extracts are so important in trace analysis applications. Biotage sample prep consumables match the requirements of the toughest applications.

Simple column clean-ups to remove matrix interferences and improve analytical sensitivity:

» ISOLUTE® FL

» ISOLUTE® Aluminas

» ISOLUTE® Si

Reliable fractionation for EPH samples - every batch is QC tested to ensure clean aromatic and aliphatic fractions:

» ISOLUTE® EPH

Technical Expertise and Support

When developing and implementing new methods on the HV-5000 system, Biotage's team of expert applications chemists are on hand to support you.

Highly experienced in using both the system and sample prep consumables, they understand your needs, and can match you with the most appropriate consumables for your application, and help you implement and optimize your automated methods for best results.
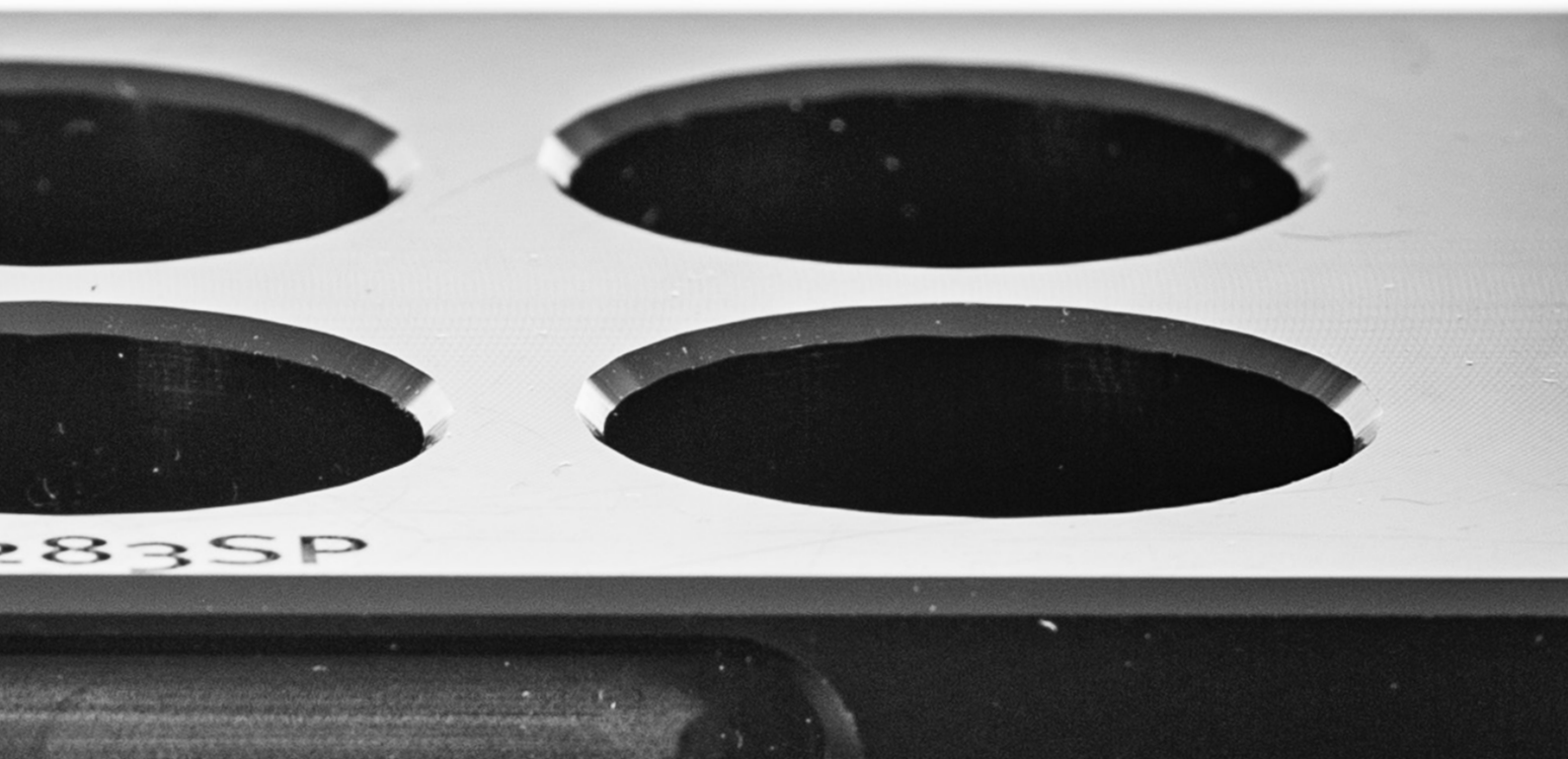
Ordering Information

Part Number	Item Description	Qty
System & Software		
417002	Biotage® Extrahera™ HV-5000	1
417631SP	HV-5000 GLP Package, On Site Activation	1
Accessories for Positions 1 & 2		
417007	Pipette Tips, Clear, 5000 µL (5pks x 200/pk)	1000
414307	SP Retaining Clip for Tip Holder	1
Accessories for Position 3		
417610	Configuration Kit 24 Positions Dual Flow - HV	1
418374	Configuration Kit 48 Positions Dual Flow - HV	1
415604SP	Pressure Head Seal, Self Adhesive, 96 Positions	1
415603SP	Pressure Head Seal, Self Adhesive, 24 Positions	1
415556SP	Column Rack 48 x 3 mL (Tabless)	1
414174SP	Column Rack 24 x 3 mL	1
413640SP	Column Rack 24 x 6 mL (Tabless)	1
416848SP	Column Rack 12 x 10 & 15 mL	1
416128SP	Retaining Clip Kit, 4 Weak and 4 Strong	1
Accessories for Position 4		
414254SP	Sample Rack 16 x 100 mm 24 Positions	1
417283SP	Sample Rack, 6 Positions	1
417282SP	Key Plate, 12 Positions (for 414254SP)	1
C40708	16 x 100 mm Test Tube	1000
160-0008-02	20 mL VOA Vial	72
160-0008	40 mL VOA Vial	72
04-2001	50 mL Polypropylene Conical Tubes Plus Rack/Tray	25
04-2002	15 mL Polypropylene Conical Tubes Plus Rack/Tray	50
Accessories for Position 6		
413991SP	Solvent Rack, 25 mL	1
414045SP	Solvent Reservoirs, 25 mL	25
417315SP	Solvent Rack, 40 mL	1
417324SP	Solvent Reservoirs, 40 mL	25
415560SP	Solvent Rack, 100 mL	1
414214SP	Solvent Reservoirs, 100 mL	5
416854SP	Tip Holder, 5000 µL	1

Part Number	Item Description	Qty
Accessories for Carousel		
416868SP	DFE Carousel Riser	1
414203SP	Flow-Through Plate 24	1
414516SP	Flow-Through Plate 48	1
415555SP	Sample/Collection Rack 12 x 75 mm, 48 Positions	1
415491	Sample/Collection Rack 12 x 75 mm, 24 Positions	1
415585	Sample/Collection Rack 16 x 75 mm, 24 Positions	1
415492	Sample/Collection Rack 18 x 75 mm, 24 Positions	1
414511SP	Collection Rack 12 x 75 mm, 24 Positions	1
414512SP	Collection Rack 18 x 75 mm, 24 Positions	1
C44651	12 x 75 mm Test Tube	1000
413282	16 x 75 mm Test Tube	1000
414574	18 x 75 mm Test Tube	304
121-5208	Collection Plate, 24 Positions, 10 mL	25
414578SP	Inserts for 12x32 mm vials for collection rack (414511SP)	1
Accessories for Solvent Delivery & Waste Collection		
356330SP	Vacuum Pump ME1C, 100 to 230 VAC 50/60Hz	1
356604SP	Accessory Kit, Vacuum pump ME1C (Extrahera & Alstra)	1
414579	Solvent Safety Kit (inc. GL45 Caps, Filters & Bottles, Qty 5)	1
414330	Kit, Solvent Inlet Lines (S1-S5)	5
414272SP	Waste Kit incl. Waste Reservoir 5 L and Tubing	1
414218SP	Pipette Tip Waste Bin	1
415985SP	Extraction Waste Collector for Lifter	1
416977SP	Triple Waste Splitter Kit	1
Miscellaneous Accessories		
415149	Handheld Barcode Scanner	1
411916SP	Fuse, 4A/250VAC, 5x20mm	5
C67361	Mains Cord-Set (EU)	1
C65902	Mains Cord-Set (US/CA)	1
C128195	Mains Cord-Set (UK)	1
416440SP	Filter Unit	1
416441SP	Air Dryer	1
416492SP	Replacement Filters for Filter Unit	1

Position 1	Position 3	Position 5	
Solvent Tips	12/24/48 Column Configuration	Solvent Reservoirs S1–S5	Tip Waste
1	3	5	
Position 2	**Position 4**	**Position 6**	
Sample Tips	6/12/24/48 Sample Configuration	6/12/24 Samples or 24 tips	
2	4	6	WASTE

Carousel C — Collection
Carousel D — Waste
Carousel B — Collection
Carousel A — Collection
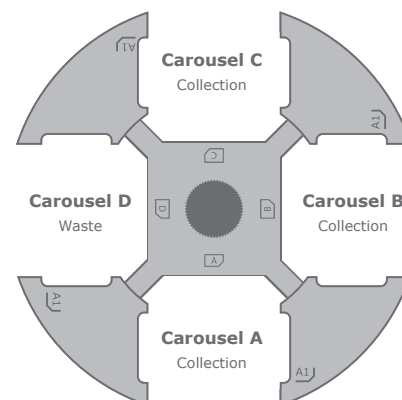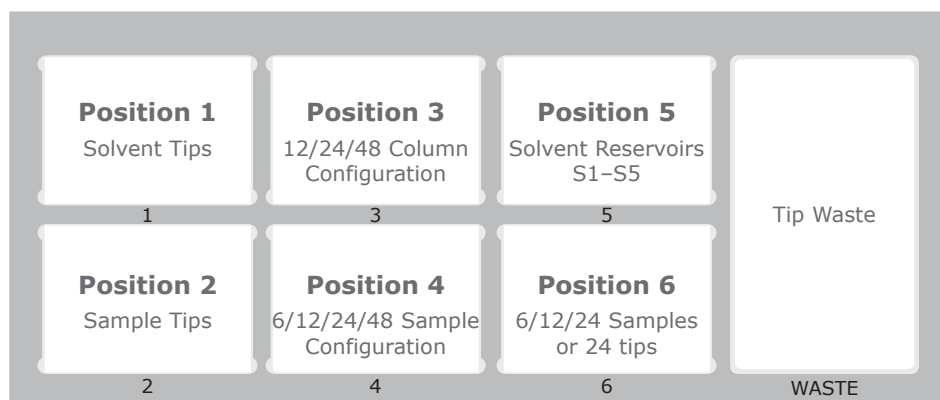
Dedicated Support
Biotage Global Service Packages

First Year Maintenance Plan

First year coverage package that includes installation and familiarization, preventive maintenance and a 3-day response time.

Part number: SER-EX-FYMP

First Year Maintenance Plan with Qualification

This is a first-year coverage package that includes installation with qualification and familiarization, preventative maintenance, and a 3-day response time.

Part number: SER-EX-FYMP-Q

Qualification (IQ/OQ)

This is an add-on compliance package for the system.

Part number: SER-EX-IQOQ

Qualification for GLP (IQ/OQ)

This is an add-on compliance package for the Software that is highly desirable for CRO and Pharm industries and is specific for system with the GLP license activated. It is not the same as the SER-EX-IQOQ.

Part number: SER-EX-GLP-IQOQ

Biotage® 1-Point Support™

biotage.com/service

Your Complete Partner for Effective Chemistry

Biotage is a worldwide supplier of instruments and accessories designed to facilitate the work of scientists in life sciences. With our deep knowledge of the industry, academic contacts and in-house R&D teams, we can deliver the best solutions to your challenges. We take great pride in our flexibility and ability to meet our customer's individual needs. With strong foundations in analytical, organic, process, and biomolecule chemistry, we can offer the widest range of solutions available on the market.

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