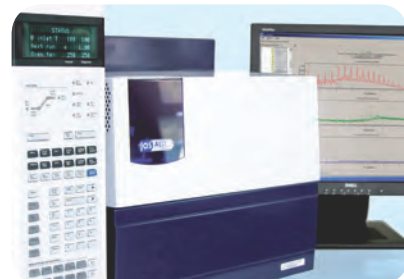
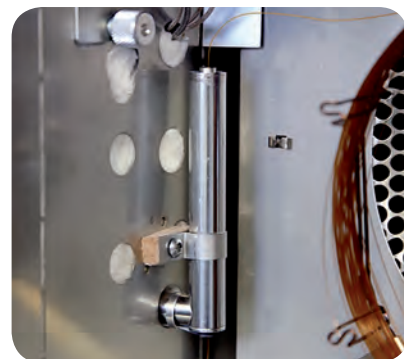
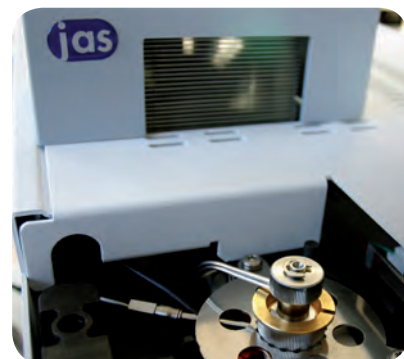
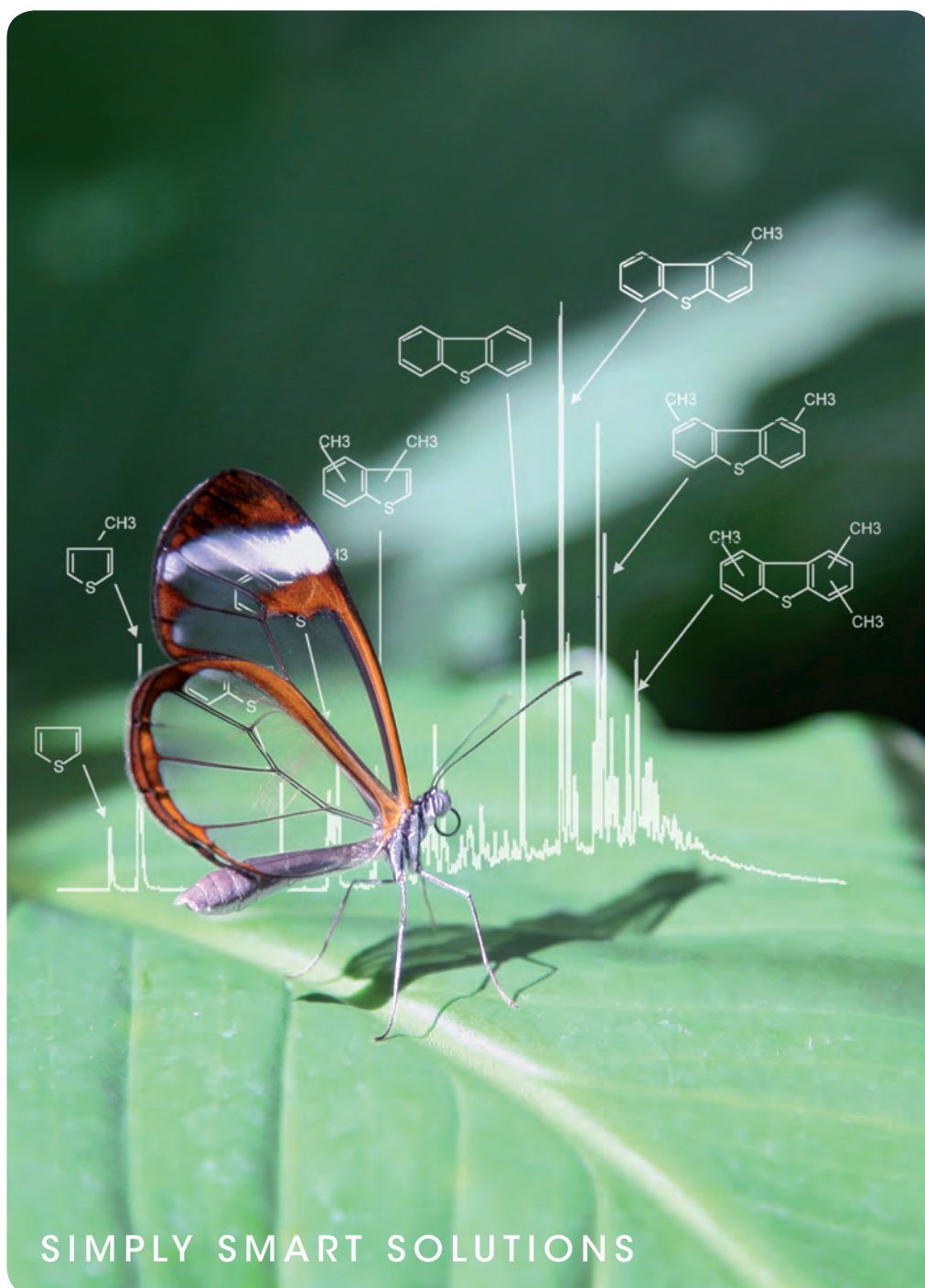


## 2013



joint analytical systems



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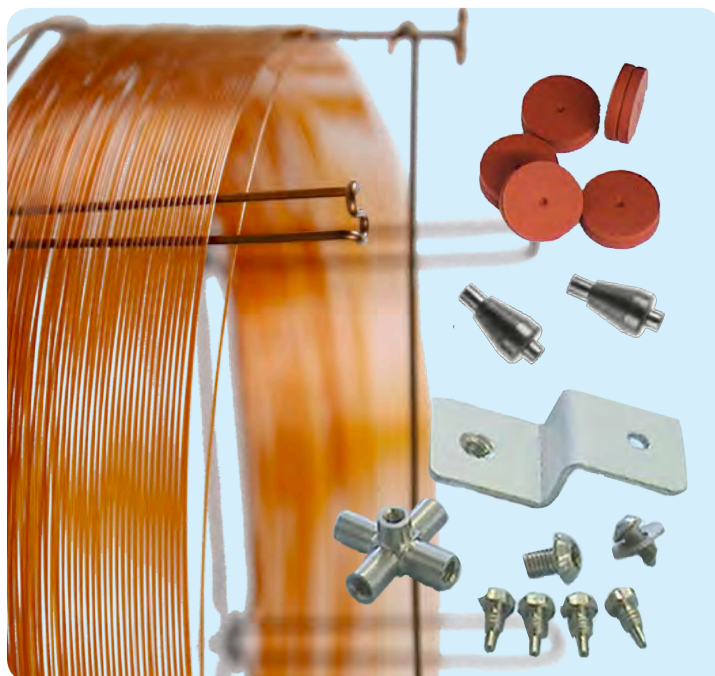
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Internet: [www.jas.de](http://www.jas.de)



# Consumables

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SIMPLY SMART SOLUTIONS

# UNiversal Injection System

## Product Brief



**jas UNIS**

The JAS UNIS system is a unique all-in-one inlet system that allows the end-user to benefit several injection techniques in only one system, e.g. S/SL, (HT) PTV, LVI, CoC, HCTI, and other.

It is designed to properly fit and to be easily installed into the 7890 and 6890/6850 GC models from Agilent Technologies.

The JAS UNIS System is:

- Totally embedded into the Agilent ChemStation – no additional SW or external controller is needed.
- All UNIS models include an Agilent Electronic Pressure Control (EPC) for high reproducibility.
- All UNIS liner fit into all three UNIS inlets. Liner exchange and column installation can be done easily and quickly without any tools.

The JAS UNIS family consists of the following three different models:

### UNIS 500 – S/SL

This is the basic model of the UNIS family for isothermal vaporization with a maximum temperature of 450°C. It can be used for Split, Splitless as well as Pulsed Split, Pulsed Splitless Injection. Upgrading to UNIS 2100 is possible.

### UNIS 2100 - PTV

The UNIS 2100 is designed for programmable temperature vaporization (PTV). Due to its special heating device, temperature ramps from 1-720°C with 1°C increments are possible. The PTV injector is controlled via Agilent ChemStation and GC keypad. The UNIS 2100 allows comprehensive PTV as well as S/SL injection modes. It supports Large Volume Injection/Solvent Vent and other sample inlet techniques.

The UNIS 2100 has an extended range of different cooling options:

Pressurized Air, LCO<sub>2</sub>, LN<sub>2</sub> and Peltier Element. This gives the end-user excellent PTV capabilities down to the cryo temperature range.

The Peltier cooling element is a cost effective alternative to common cooling options as no coolant is required.

### UNIS 3100 – HT

This UNIS inlet is designed for special high temperature applications like SimDis up to C100 or brominated flame retardants (BFRs). The special design with its low thermal mass is based on the UNIS 2100 and can reach a maximum temperature of 500°C. The UNIS 3100 provides both S/SL and PTV modes.

Please request the respective product brochures for detailed information.

# UNIS

## Consumables & Supplies

Liner for the Models 500 (S/SL), 2100 (PTV), and 3100 (HT)



### Description

$T_{max}$

$V_{max}$

Part No.

Qty.

Figure

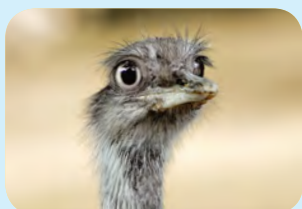
### Liner, Borosilicate - for Liquid Injection

<b>Borosilicate, for S/SL, LVI</b> 4 ring restrictions, „Large Volume“ applications, e.g. for PAH	400°C	~700 µl	JAS 90321 L	5	Ship kit 
<b>Borosilicate, for Split</b> 1 ring restriction, filling by customer	400°C	~750 µl	JAS 90322 L	5	Ship kit 
<b>Borosilicate, for S/SL, LVI</b> 1 ring restriction, filled with deactivated borosilicate wool	400°C	~750 µl	JAS 90323 L	5	Ship kit 
<b>Borosilicate, for S/SL, LVI</b> 4 ring restrictions, <b>deactivated surface</b> , e.g. for pesticides	280°C	~700 µl	JAS 90326 L	5	
<b>Borosilicate, for S/SL</b> 1 baffle, filled with deactivated borosilicate wool	400°C	~750 µl	JAS 90303 L	10	
<b>Borosilicate, for S/SL, LVI</b> 5 ring restrictions, filled with deactivated borosilicate wool, for „Large Volume“-, „SimDis“-applications	400°C	~700 µl	JAS 90333 L	1	
<b>Borosilicate, for TD, HSS, P+T</b> 1 ring restriction, TENAX 60-80 (or 100-120) filling	250°C	~420 µl	JAS 90331 L	1	

### Liner, Quartz - for Liquid Injection

<b>Quartz, for S/SL, LVI</b> 5 ring restrictions, „Large Volume“-, „SimDis“-applications	500°C	~800 µl	JAS 90307 L	1	
<b>Quartz, for Split</b> 1 ring restriction, filling by customer	500°C	~850 µl	JAS 90308 L	1	
<b>Quartz, for S/SL, LVI</b> 5 ring restrictions, „Large Volume“-, „SimDis“-applications	500°C	~800 µl	JAS 90309 L	1	

### Sample Injection Techniques



S - Split

SL - Splitless

LVI - Large Volume Injection/Solvent Vent

PTV - Programmable Temperature Vaporization

TD - Thermal Desorption

HSS - Headspace Sampler

P+T - Purge & Trap

HT - High Temperature



Description	T <sub>max</sub>	V <sub>max</sub>	Part No.	Qty.	Figure
<b>Liner, Borosilicate - for Liquid Injection</b>					
<b>Borosilicate, for S/SL, LVI</b> 1 baffle + 1 ring restriction, filled with borosilicate wool	400°C	~700 µl	JAS 90329 L	5	
<b>Borosilicate, for Split</b> 8 baffles	400°C	~650 µl	JAS 90301 L	10	
<b>Borosilicate, for Split</b> 1 baffle, filling by customer	400°C	~750 µl	JAS 90302 L	10	
<b>Borosilicate, for S/SL, LVI</b> 1 base ring + 4 ring restrictions	400°C	~700 µl	JAS 90327 L	2	
<b>Borosilicate, for TD, HSS, P+T</b> 1 ring restriction, 2 frits, TENAX filling by customer	250°C	~750 µl	JAS 90330 L	1	
<b>Borosilicate, for Split</b> 1 baffle, filled with borosilicate wool	400°C	~700 µl	JAS 90341 L	10	
<b>Borosilicate, for S, LVI</b> 1 ring restriction, filled with deactivated borosilicate wool, for H53 applications (TPH)	400°C	~650 µl	JAS 90421 L	5	
<b>Borosilicate, for TD, HSS, P+T</b> 1 ring restriction, TENAX TA 60-80 filling, analyte accumulation out of aqueous samples	250°C	~650 µl	JAS 90320 L	1	
<b>Borosilicate, for Split</b> 1 ring restriction, <b>deactivated</b> , filling by customer	280°C	~750 µl	JAS 90328 L	5	
<b>Borosilicate, for S/SL, LVI</b> 4 ring restrictions, Silonite® coating inside/outside (Entech)	400°C	~700 µl	JAS 90315 L	5	
<b>Borosilicate, for S/SL, LVI</b> 4 ring restrictions, Siltek® coating (Restek)	350°C	~700 µl	JAS 90316 L	5	
<b>Borosilicate, for TD, P+T, gas sampling</b> 1 ring restriction, filled with deactivated borosilicate wool and Carbosiv	250°C	~650 µl	JAS 90335 L	1	

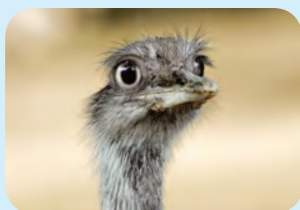
# UNIS

## Consumables & Supplies

Liner for the Models 500 (S/SL), 2100 (PTV), and 3100 (HT)



Description	T <sub>max</sub>	V <sub>max</sub>	Part No.	Qty.	Figure
<b>Liner, Borosilicate - for Liquid Injection</b>					
Borosilicate, for TD, P+T, gas sampling 1 ring restriction, filled with deactivated borosilicate wool, TENAX and Carbosiv	250°C	~650 µl	JAS 90336 L	1	
Borosilicate, for S, HT, SimDis 8 ring restrictions	400°C	~650 µl	JAS 90324 L	2	
Borosilicate, for S, HT 10 ring restrictions	400°C	~620 µl	JAS 90325 L	2	
<b>Liner, Glass &amp; Stainless Steel - for Gas Sampling and SPME</b>					
Glass, for SPME-applications and gas sampling	400°C	~100 µl	JAS 90342 L	5	
Stainless steel, for gas sampling Silonite® coating inside/outside	400°C	~950 µl	JAS 90304 L	2	
Stainless steel, for SPME applications and gas sampling Silonite® coating inside/outside	400°C	~100 µl	JAS 90332 L	1	



- All liner fit into all three UNIS models,
- Various liner for special applications, like TD, SPME, HSS, etc.,
- Big liner volume up to 950 µl,
- Various liner can be cleaned/reused (after baking out),
- Customized liner available on request.

**We are happy to assist you in choosing the right liner  
for your specific application.**

# UNIS

## Consumables & Supplies

Liner for the Models 500 (S/SL), 2100 (PTV), and 3100 (HT)




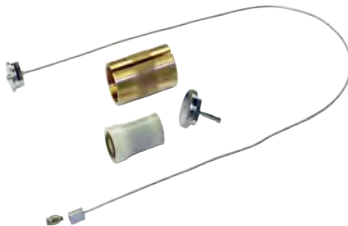



Description	Part No.	Qty.	Figure
<b>O-Rings for Liner</b>			
For standard applications up to 350°C	JAS 90201 UN	10	
For high temperature applications up to 450°C	JAS 90202 UN	1	
<b>Septa &amp; Septum Nut</b>			
High temperature septum, pre-cut, low bleeding, for S/SL and PTV, up to 400°C, Ø 11mm	JAS 93000-S	10	
Septum long-life, pre-cut, lifetime up to 400 injections, for S/SL and PTV, up to 350°C, Ø 11mm	JAS 93003-S	10	
UNIS septum nut, for high temperature + long-life septum	JAS 79002 UN	1	
Septum Merlin Microseal™ (requires the appropriate Merlin septum nut JAS 79001 UN)	JAS 93002-S	1	
Septum nut for Merlin Microseal™	JAS 79001 UN	1	
<b>Ferrules &amp; Column Nut</b>			
Pro-Cap™ ferrule blind plug for columns ID 0.1-0.25 mm for columns ID 0.32 mm for columns ID 0.53 mm	JAS 91111-00U JAS 91111-25U JAS 91111-32U JAS 91111-53U	10 10 10 10	
JAS-Tight Nut for UNIS 500 and 2100	JAS 93250 U	1	
UNICAP™ hex nut for UNIS 3100 HT (column nut), 5mm for UNIS 3100 HT (column nut), 1/4"	JAS 90251 U JAS 90252 U	1 1	

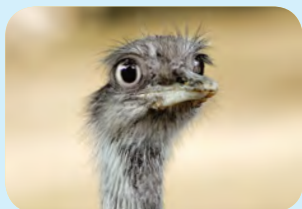
# UNIS

## Consumables & Supplies

Liner for the Models 500 (S/SL), 2100 (PTV), and 3100 (HT)



Description	Part No.	Qty.	Figure
<b>Filter Assembly</b>			
Filter cartridge	JAS 79061 UN	1	
UNIS split vent filter kit (for 6890/6850 GC)	JAS 79060 UN	1	
<b>Two Column Interface Assembly</b>			
Two column interface option for UNIS 500 and 2100 Kit consists of JAS 79280 UN and JAS 79281 UN or JAS 79381 UN, for 7890 GC for 6890 / 6850 GC	JAS 75380 UN JAS 75280 UN	1 1	
Two column interface body for UNIS 500 and 2100 UNIS injector body with thread to adapt the two column interface, for 7890 GC for 6890 / 6850 GC	JAS 79381 UN JAS 79281 UN	1 1	
Two column interface for UNIS 500 and 2100 includes 2 UNICAP™ hexagon nuts	JAS 79280 UN	1	



**UNICAP™ (UNiversal Column Adaption Program)** enables the end-user to exchange columns simply within seconds. By using slotted knurled nuts, combined with the **ProCap™ (Protective Capsulated)** ferrules, these procedures can be done manually without special tools.

# UNIS

## Consumables & Supplies

Liner for the Models 500 (S/SL), 2100 (PTV), and 3100 (HT)



### Description

### Part No.

### Qty.

### Figure

## UNICAP™ Upgrade for Injector / Detector

### Injector adapter

Adapts UNICAP™ to S/SL and PTV injector of Agilent GC 7890 / 6890 / 6850 / 5890, includes seal washer and UNICAP™ knurled nut

JAS 93000 U

1



### Detector and CoC adapter

Adapts UNICAP™ to FID, NPD, ECD and CoC injector of Agilent GC 7890 / 6890 / 6850 / 5890, includes seal washer and UNICAP™ knurled nut

JAS 92500 U

1



### TCD adapter

Adapts UNICAP™ to the TCD of Agilent GC 7890 / 6890 / 6850 / 5890, includes 1/8" fitting and UNICAP™ knurled nut

JAS 92525 U

1



### Injector effluent splitter

Connects 2 GC columns to S/SL and PTV injector of Agilent GC 7890 / 6890 / 6850, includes seal washer and 2 UNICAP™ hexagon nuts

\* Injector seal is changed to special gasket!

JAS 92255 U

1



### Seal washer

Seal washers for injector and detector adapters

JAS 92001 U

5



## UNICAP™ Interface for MSD

### MSD Column Interface Adapter

Connects columns to an Agilent MSD 5971/ 72/ 73/ 75 transfer line, includes UNICAP™ knurled nut

JAS 92400 U

1



### MSD Two Column Interface (EI and CI)

Connects two columns to an Agilent MSD 5971/ 72/ 73/ 75 transfer line, includes 2 UNICAP™ hexagon nuts (JAS 92260U)

Adaptation only by JAS in Moers, Germany

\* The figure shows the TCI CI-Source!

JAS 66994 U  
(EI-source)

1

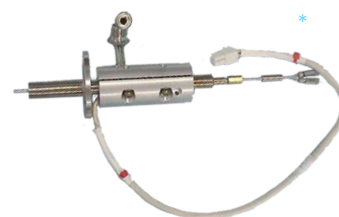
JAS 66995 U  
(5973 CI-source)

1

JAS 66996 U  
(5975 CI-source)

1

JAS 66997 U  
(customer-source)



# UNIS

## Consumables & Supplies

Liner for the Models 500 (S/SL), 2100 (PTV), and 3100 (HT)



Description	Part No.	Qty.	Figure
<b>Valco</b>			
<b>Valco-UNICAP™ adapter</b> Manifold: Valco 1/16" fitting to UNICAP™, includes 1/16" Valco ferrule and UNICAP™ knurled nut	JAS 92325 U	1	
<b>UNICAP™</b>			
<b>JAS-Tight Nut</b> (finger-tight) * - JAS 93250 U replaces JAS 90250 U	JAS 93250 U *	1	
<b>UNICAP™ hex nut</b> for UNICAP™ 1:1 connector and UNIS HT (column nut), 5mm UNICAP™ 1:1 connector and UNIS HT (column nut), 1/4"	JAS 90251 U	1	
	JAS 90252 U	1	
<b>UNICAP™ hexagon nut for 2 column interface, 4mm</b> For: JAS 92255 U, JAS 66994 UN, JAS 66995 UN, JAS 79280 UN	JAS 92260 U	2	
<b>Pro-Cap™ ferrule</b> blind plug for columns ID 0.1-0.25 mm for columns ID 0.32 mm for columns ID 0.53 mm	JAS 91111-00U	10	
	JAS 91111-25U	10	
	JAS 91111-32U	10	
	JAS 91111-53U	10	
<b>UNICAP™ 1:1 connector finger-tight</b> Manifold for two GC columns, external thread, includes 2 UNICAP™ knurled nuts (finger-tight) (standard: JAS 90250 U). For column IDs 0.53 mm	JAS 93650-53U	1	
<b>UNICAP™ 1:1 connector</b> Manifold for two GC columns, external thread, includes 2 UNICAP™ hex nuts (standard: JAS 90251 U), low thermal mass. For column IDs 0.53 mm	JAS 93651-53U	1	

# UNIS

## Consumables & Supplies

Liner for the Models 500 (S/SL), 2100 (PTV), and 3100 (HT)



Description	Part No.	Qty.	Figure
<b>T-Cap™</b>			
<b>T-Cap™ 1:1 connector zero dead volume</b> Manifold for two GC columns, appropriate for column IDs 0.1 - 0.53 mm, internal thread, includes 2 T-Cap™ screws	JAS 92600-25U JAS 92600-32U JAS 92600-53U	1 1 1	
<b>T-Cap™ cross piece</b> Cross piece with appropriate drill for column IDs 0.1 - 0.53 mm. Contains: cross piece, mounting angle, 2 screws, washer, 4 T-Cap™ screws	JAS 92700-25U JAS 92700-32U JAS 92700-53U	1 1 1	
<b>T-Cap™ screws, 4mm</b> Column adaption to the T-Cap™ cross piece	JAS 92701 UN	1	
<b>T-Cap™ ferrule</b> blind plug for columns ID 0.1-0.25 mm for columns ID 0.32 mm for columns ID 0.53 mm	JAS 91112-00U JAS 91112-25U JAS 91112-32U JAS 91112-53U	10 10 10 10	
<b>Special Tools</b>			
<b>Column installation tool</b> to easily and quickly measure and install a GC column	JAS 92100 U	1	
<b>Quick connectors</b> 1 hex-wrench included to tighten the connectors (for 6890/6850 GC)	JAS 79014 UN	1	
<b>Quick connector nipper</b> to easily loosen tubes from quick connectors (for 6890/6850 GC)	JAS 79051 UN	1	
<b>Open-end wrench (4mm)</b> <b>Open-end wrench (5mm)</b> <b>Open-end wrench (1/4")</b>	JAS 01004 K JAS 01005 K JAS 01014 K	1 1 1	

# VALVE Systems

## Product Brief



**jas VALVES**

**joint analytical systems GmbH (JAS) offers many Simply Smart Solutions for the wide field of gas analytics.**

JAS maintains a long standing and close business relationship with Valco Instruments Company Inc. (VICI), which is our sole provider for the high quality valves we integrate into our gas analyzers.

JAS not only offers VICI valves, but their complete product portfolio, including GC detectors, columns (e.g. HayeSep) and accessories.

We provide Gas Sampling Valves (GSV), Liquid Gas Sampling Valves (LGSV) and Multi Positioning Valves (MPV) in different fitting sizes, port diameters, number of positions, pressures and temperatures to fit your specific analytical needs.

Different VICI valve actuators are available:

- Microelectric actuators for automatic valve alignment, high-speed switching, and compact size,
- Standard electric actuators at lower cost than the microelectric, dependable, and economic,
- Air actuators, useful in situations where any spark could be disastrous, where heat could compromise an electric actuator, or where electricity is not available,
- Manual actuation for simplicity and low cost are the main advantages.

JAS valve GC configurations will allow you to analyze:

- Permanent Gases ( $H_2$ ,  $O_2$ ,  $N_2$ , CO,  $CO_2$ ) with TCD Detector, HID Detector or NiCat / FID combinations (only for CO and  $CO_2$ ),
- Hydrocarbons (C1 – C6+) with FID Detector,
- Sulfur components ( $H_2S$ , COS, THT, etc.) with detectors TCD, AED, SCD, FPD, PFPD.

For certain JAS gas analyzers we may recommend the JAS Thermal Conductivity Detector (TCD) for Agilent 7890 and 6890/6850 GCs. It is a double filament detector with either NiFe filaments for standard analyses or WRe filaments for aggressive compounds, where single filaments can be exchanged separately. It is completely embedded into EZChrom Software, respectively communicates via the AIB board with the Agilent GC ChemStation Software.

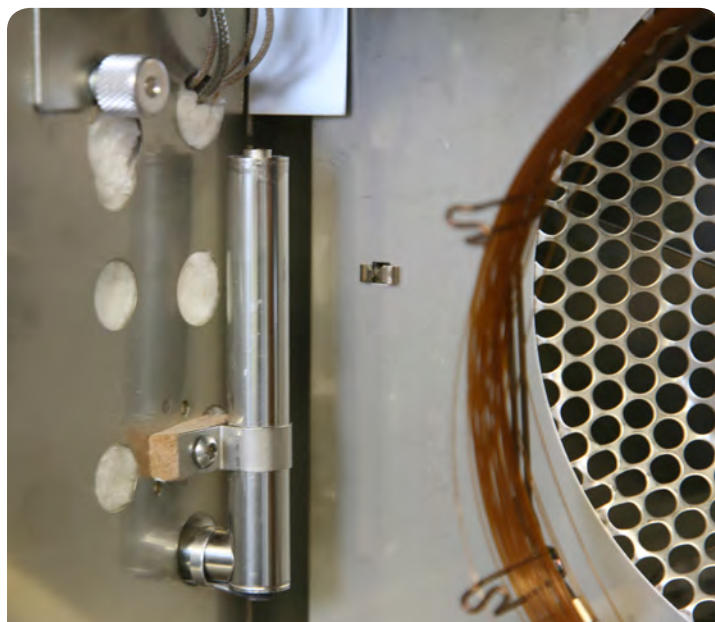
A unique feature of the JAS gas analyzers is our Calorific Value Calculation (BTU) Software tool. It works according to DIN 51857 / ISO 6976 and is completely embedded into the Agilent GC ChemStation Software and EZChrom Software.

**Please request your personal hardcopy or electronic version of the VICI catalog for detailed information about the VICI product portfolio.**



# CryoTrap

## Product Brief



**jas CryoTrap**

**Bad peak shapes and interferences of low boiling compounds are often observed in case of sample introduction other than liquid injection, like headspace or thermal desorption.**

In order to improve peak shape and peak resolution in the chromatogram it is required to refocus high volatile components. Otherwise incorrect peak identification and peak integration may occur.

The **JAS CryoTrap** works with the Agilent GC models 7890/6890/6850 GC. It is designed to efficiently trap volatile compounds before chromatographic separation.

Due to a rapid but controlled heating (720°C/min) the trapped components are re-vaporized and quickly transferred to the separation column – replacing high speed liquid injection.

**Flexibility:** The **JAS CryoTrap** can be installed at various positions. Additionally, three different cooling options (liquid N<sub>2</sub>, liquid CO<sub>2</sub> and pressurized air) provide complete flexibility to guarantee the most effective analytical conditions.

**Economy:** By means of the double chamber design the **JAS CryoTrap** features an effective insulation reducing the coolant consumption to a minimum.

**Efficiency:** Dedicated and optimized alignment of tuning parameters provides excellent performance at any oven temperature.

**Easy to Use:** The **JAS CryoTrap** is controlled either by Agilent ChemStation software or by GC keypad. The use of the trap is easy to learn and can be embedded into every GC method.

The **JAS CryoTrap** is a fully integrated product of high quality combining the latest advances in CryoTrap technology. This includes low thermal mass, efficient insulation and maximum heating power - features that ensure a fast heating and an economical cooling.

The device can be installed at two positions inside the GC oven. In case of Multi Dimensional GC application the **JAS CryoTrap** is positioned outside the oven to trap components eluting from the first separation column.

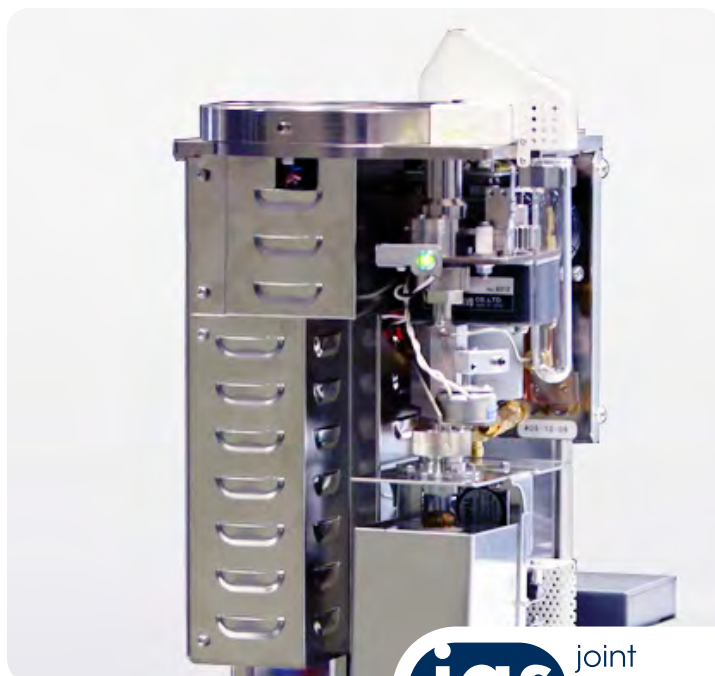
Using liquid nitrogen as cooling agent a dewar vessel with a dip tube is required (minimum 1 bar head pressure for full performance mandatory). In case of using liquid carbon dioxide as cooling agent a cylinder with a dip tube and a variable restriction is required.

**Please request the respective product brochures for detailed information.**



# Frontier Multi-Functional Pyrolysis System

## Product Brief



**jas** joint  
analytical  
systems

**The Multi-Functional Pyrolyser is a powerful tool to analyze virtually any liquid and solid sample without previous sample preparation.**

The sample is filled into a specially deactivated cup and dropped into the furnace. Due to temperature increase, sample substituents are desorbed from the matrix depending on their boiling points, subsequently the compounds are separated chromatographically and detected. The unique combination of thermal desorption and pyrolysis on one sample enables a complete characterization even of complex materials.

### Different thermal techniques are available:

- EGA (Evolved Gas Analysis)
- Single-Shot (Flash Pyrolysis)
- Thermal Desorption
- Double-Shot (Thermal Desorption & Pyrolysis)
- Multi-Shot (Heart Cutting Analysis)
- Reactive Pyrolysis

The Auto-shot sampler for a maximum of 48 sample cups in combination with the Multi-Functional Pyrolyser provides guaranteed reproducibility in all operating modes. Samples may be analyzed in sequence or at random.

A number of accessories have been developed to extend the capability and flexibility of the system: Carrier Gas Selector, Selective Sampler, MicroJet Cryo-Trap and Vent-Free Adapter.

This makes the Multi-Functional Pyrolyser the most versatile gas chromatographic inlet system available.

The system is based on a patented vertical micro-furnace and the sample cup is introduced by gravitational free fall. The samples are heated from ambient to temperatures  $> 500^{\circ}\text{C}$  within a short period of time ( $< 20$  msec). The Frontier Multi-Functional Pyrolyser is the only pyrolysis system commercially available that guarantees precision, inertness and accuracy.

### Applications:

- Plastic Industry
- Forensic Science, Pathology
- Paint and Varnish
- Food, Environmental Science
- Wood Science, Paper Pulp
- Petrochemistry

Frontier's F-Search Software utilizes a patented search algorithm to identify components of unknown samples rapidly and unambiguously. Obtained data are compared with data sets compiled in three available libraries: Polymers-Library, Additives-Library, EGA-Thermograms Library.

**Please request the respective product brochures for detailed information.**

# Pyrolyser

Consumables & Supplies  
For Agilent Technologies GC Systems







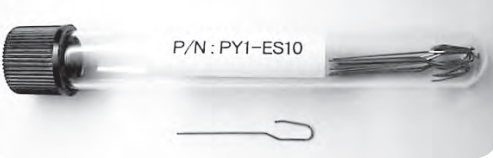
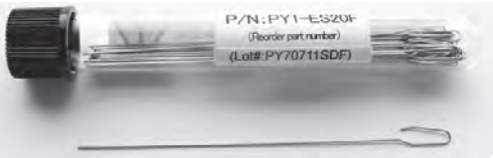


Description	Part No.	Qty.	Figure
<b>GC Related Parts</b>			
Absorption trap set for split vent	FR PY1-2218	1	
Absorption trap tube for Pyrolysis tube sealing	FR PY1-2216	3	
Inlet/Outlet septum for connecting tubes, with hole	FR PY1-2028	20	
<b>Vent-Free (VF) GC/MS Adapter</b>			
VF metal ferrule	FR MS402185	5	
VF nut A	FR MS402186	5	
VF tube	FR MS402157	2	
Graphite vespel ferrule	FR PY1-7971	10	
Column nut	FR MS604534	1	
VF gold ferrule	FR MS402165	10	
Allen wrench 1.5mm	FR MS402144	1	
File for capillary tubes	FR UP1-7001	1	

# Pyrolyser

Consumables & Supplies  
For Agilent Technologies GC Systems








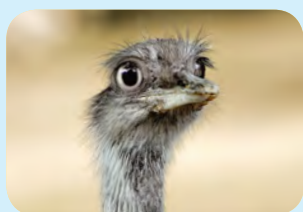
Description	Part No.	Qty.	Figure
<b>Sample Cups, Holder and Sticks</b>			
Eco-Cup SH, 50µl, tiny hole on the bottom	FR PY1-EC50HF	20	
Disposable Eco-Cup SF, 50µl	FR PY1-EC50F	100	
Eco-Cup LH, 80µl	FR PY1-EC80HF	20	
Disposable Eco-Cup LF, 80µl	FR PY1-EC80F	100	
Eco-Stand, stand for Eco-Cup	FR PY1-EH10	1	
Eco Pic-Up for Eco-Cup recovery	FR PY1-EP50	1	
Eco-Cup holder	FR PY1-3711	1	
Eco-Stick S 30mm, for Singe-Shot	FR PY1-ES10F	50	
Eco-Stick DF, 80mm, for Double-Shot	FR PY1-ES20F	50	

# Pyrolyser

Consumables & Supplies  
For Agilent Technologies GC Systems



Description	Part No.	Qty.	Figure
<b>Magic Chemisorber</b>			
<b>Magic Chemisorber S,</b> 6mm, 100% dimethylpolysiloxane, use with FR PY1-EC80H or FR PY1-EC80	FR PY1-MC01S	10	
<b>Magic Chemisorber L,</b> 30mm, 100% dimethylpolysiloxane, use with FR PY1-MCP01	FR PY1-MC01L	5	
<b>Protective tube,</b> deactivated stainless steel	FR PY1-MCP01	3	
<b>Magic Chemisorber kit,</b> Magic chemisorber L, 3Pcs, Eco-Stick D, 2pcs, MC holder L, 2 pcs	FR PY1-MC01L-K	1	
<b>Magic Chemisorber kit,</b> Magic chemisorber S, 3Pcs, Eco-Stick D 2pcs, Flow Through Eco-Cup LH, 2pcs	FR PY1-MC01S-K	1	



Sampling volume should be 50% or less than the cup volume.

In case of powdered or low mass samples the cup should be covered with some baked quartz wool in order to prevent scattering of the sample and/or residues.

Eco cups can be cleaned using a butane flame or a suitable organic solvent for reuse.

# Pyrolyser

Consumables & Supplies  
For Agilent Technologies GC Systems



Description	Part No.	Qty.	Figure
<b>Harris Micro-Puncher</b>			
Harris Micro-Puncher 050, 0.50mm ID, blue	FR HMP-0.50D	10	
Harris Micro-Puncher 075, 0.75mm ID, green	FR HMP-0.75D	10	
Harris Micro-Puncher 125, 1.25mm ID, red	FR HMP-1.25D	10	
Harris Micro-Puncher 200, 2.00mm ID, black	FR HMP-2.00D	10	
Harris Cutting Mat, 65x75mm, green	FR HCM-6575	5	
Harris 01 Kit, Each 3 pcs HMP-0.5D, 0.75D, 1.25D, 2.00D, sheets of Harris Cutting Mats	FR HMP-01kit	1	    

# Pyrolyser

Consumables & Supplies  
For Agilent Technologies GC Systems



Column	Stationary Phase	Code	Polarity	Application	T <sub>max</sub> (Prog)	Replacement
<b>Ultra ALLOY® Capillary Columns, Inner Diameter (Outer Diameter): 0.25 (0.47) / 0.53 (0.75) mm, Material: SUS 316</b>						
<b>Premier Grade</b>	dimethyl polysiloxane	FR UA-1 (MS/HT)	None	High boiling species, general purpose (low bleed)	450 (420°C: 0.5µm)	DB1-MS/HT
	dimethyl polysiloxane	FR UA*-1 (HT)	None	High boiling species, general purpose	420	DB1-HT
	5% diphenyldimethyl polysiloxane	FR UA-5 (MS/HT)	Ext.low	High boiling species, general purpose (low bleed)	430 (420°C: 0.5µm)	DB5-MS/HT
	carborane-siloxane (Dexsil 300)	FR UA-DX30	Ext.low	High boiling species, general purpose	450	-
<b>Regular Grade</b>	dimethyl polysiloxane	FR UA*-1	None	General purpose	380 (*1)	DB-1ms
	5% diphenyldimethyl polysiloxane	FR UA*-5	Ext.low	General purpose	380 (*1)	DB-5ms
	65% diphenyldimethyl polysiloxane	FR UA*-65	High	Triglycerides, pharmaceuticals, agricultural chemicals	380	-
	polyethyleneglycol 20M (PEG20M)	FR UA-CW	High	Polar species, general purpose, solvents	260 (*1)	DB-WAX
	dimethyl polysiloxane	FR UA-PY3	None	Pyrolysis GC, additives, high boiling species	420	-
<b>Application Specific</b>	dimethyl polysiloxane	FR UA-PBDE	None	Brominated flame retardants, PBDE	380	-
	dimethyl polysiloxane	FR UA-SIMDIS(HT)	None	Simulated distillation, high boiling species, wax	450	-
	6% cyanopropylphenyl polysiloxane	FR UA-624	Medium	VOC analysis (purge & trap)	270	DB-624
	dimethyl polysiloxane	FR UA*1(S)	None	Trace analysis, agricultural chemicals	370	-

(\*1): For films thicker than 1µm layer are normally temperatures 20-50°C lower.



# Ultra ALLOY® Capillary Column

## Specifications



Column	Stationary Phase	Code	Polarity	Application	T <sub>max</sub> (Prog)	Replacement
<b>Ultra ALLOY® Capillary Columns, Inner Diameter (Outer Diameter): 0.25 (0.47) / 0.53 (0.75) mm, Material: SUS 316</b>						
<b>Application Specific</b>	dimethyl polysiloxane	FR UA-PY1	None	Pyrolysis GC (medium to high boiling species)	390	-
	dimethyl polysiloxane	FR UA-PY2	None	Pyrolysis GC (low to high boiling species)	380	-
	5% diphenyldimethyl polysiloxane	FR UA-5(P)	Ext. low	Phenol (endocrine disrupting chemicals)	380	-
	50% diphenyldimethyl polysiloxane	FR UA*-17	Medium	Pharmaceuticals, agricultural chemicals, steroids	390	DB-17
	14% cyanopropylphenyl polysiloxane	FR UA*-1701	Medium	Solvents, Alcohol, agricultural chemicals, sugars	320	DB-1701
	cyanopropylphenyl polysiloxane	FR UA-502	Medium	Tap water analysis, VOC analysis (purge & trap)	270	-
	cyanopropyl (Silar 10C)	FR UA-Sil10C	Medium	Aliphatic acids	280	-
	PEG20M: nitro-TPA ester	FR UA-FFAP	High	Aliphatic acids, aldehydes, ketons	260 (*1)	DB-FFAP
	PEG20M (KOH treatment)	FR UA-CW(KOH)	High	Trace amount of amines	260	-
	65% diphenyldimethyl polysiloxane	FR UA-TRG	High	Triglycerides	380	-
	di-isodecylphthalate	FR UA-DIDP	High	Phenol isomers	150	-
<b>Special Purpose</b>	dimethyl polysiloxane (deactivation)	FR UADTM	None	Interfaces	450	

(\*1): For films thicker than 1µm layer are normally temperatures 20-50°C lower.



# Ultra ALLOY® Capillary Column

## Ordering Guideline

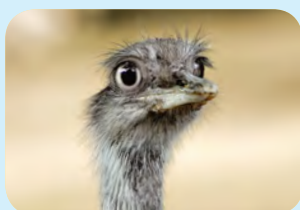


Column	Film Thickness (µm)		Length (m)				
	M - ID 0.25 mm	W - ID 0.53 mm	5	10	15	30	60

### Inner Diameter, Film Thickness and Length

Premier Grade	FR UA-1(MS/HT)	0.10 / 0.25 / 0.50	-	○	○	●	●	○
	FR UA*-1(HT)	-	0.10 / 0.15 / 0.25	○	○	●	●	○
	FR UA-5(MS/HT)	0.10 / 0.25 / 0.50	-	○	○	●	●	○
	FR UA-DX30	0.15	0.15	○	○	●	●	●
Application Specific	FR UA-PBDE	0.05	-	○	○	●	○	○
	FR UA-SimDis(HT)	-	0.10	●	●	○	○	○
	FR UA-624	1.00	3.00	○	○	○		●
Regular Grade	FR UA*-1	0.25 / 0.50 / 1.00	0.25 / 0.50 / 1.50 / 5.00	○	●	●	●	●
	FR UA*-5	0.25 / 0.50 / 1.00	0.25 / 0.50 / 1.50 / 5.00	○	○	●	●	●
	FR UA+-65	0.10	0.10	○	○	●	●	●
	FR UA-CW	0.25	1.00	○	○	●	●	●
	FR UA-PY3	0.10	-	●	○	○	○	○
Products by Order (*2)	FR UA*-1(S)	0.25 / 0.40	0.25	○	○	●	●	○
	FR UA-PY1	0.25	-	○	○	○	●	○
	FR UA-PY2	0.50	-	○	○	○	●	○
	FR UA-5(P)	0.25	-	○	○	●	●	○
	FR UA*-1701	0.25 / 0.50 / 1.00	0.25 / 0.50 / 1.00	○	○	●	●	●
	FR UA*-17	0.10 / 0.25 / 0.5 / 1.00	0.25 / 0.50 / 1.00	○	○	○	●	●
	FR UA-502	1.00	3.00	○	○	●	●	●
	FR UA-Sil10C	0.20	-	○	○	●	●	●
	FR UA-FFAP	0.25	0.50 / 1.00	○	○	●	●	●
	FR UA-CW	-	0.50	○	○	●	●	●
	FR UA-CW(KOH)	0.25	0.50 / 1.00	○	○	●	●	●
	FR UA-TRG	0.10	-	○	○	●	●	○
	FR UA-DIDP	0.40	-	○	○	○	●	●

(\*2): Contact us for details.



### Part number nomenclature for column ordering:

"FR " + "stationary phase code" + "-length" + "-ID code" + "-film thickness" + "F"

FR UA-5(MS/HT) -15 W -0.25 F

Column part number: FR UA-5(MS/HT)-15W-0.25F

Please contact our competent sales team to determine your best choice.



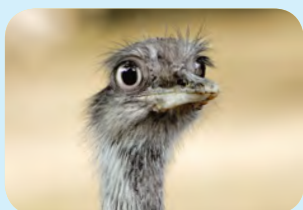
Ultra ALLOY®

# Capillary Deactivated Tubes

## Specifications



ID x OD (mm)	Polarity	P/N 5m	P/N 10m	Specification
0.15 x 0.47	None	FR UADTM-5N	FR UADTM-10N	<p><b>[Material]</b> SUS 316</p> <p><b>[Film Thickness]</b> less than 0.01 µm</p> <p><b>[Deactivation]</b> dimethylpolysiloxane</p> <p><b>[Min-Max Temp]</b> -60°C to 450°C</p>
0.25 x 0.47	None	FR UADTM-5MN	FR UADTM-10MN	
0.25 x 0.47	None	FR UADTM-5M	FR UADTM-10M	
0.25 x 1.58 (1/16")	None	FR UADTM-5M16	FR UADTM-10M16	
0.53 x 0.75	None	FR UADTM-5W	FR UADTM-10W	
0.53 x 1.58 (1/16")	None	FR UADTM-5W16	FR UADTM-10W16	
0.80 x 1.15	None	FR UADTM-5G	FR UADTM-10G	
0.80 x 1.58 (1/16")	None	FR UADTM-5G16	FR UADTM-10G16	
1.20 x 1.58 (1/16")	None	FR UADTM-5E16	FR UADTM-10E16	



The inner surface of these columns has been modified with a proprietary surface technology of Frontier Laboratories. The unique inner surface structure and composition cause excellent thermal resistance and inertness, because of high temperature baking process after coating of stationary phase. As a result of high temperature treatment the columns are low bleeding.

	Ultra Alloy®	Fused Silica (FS)
Inertness	Excellent	Excellent (absorption of amines in trace region)
Maximum Temperature (Dimethylpolysiloxane)	420°C	320°C (susceptible to breakage above this)
Contamination Resistance	4 times higher than FS (difference in inner surface area)	
Mechanical Strength	High (Metal)	Susceptible to outer wall breakage

# Atomic Emission Detector

## Product Brief



**jas AED**

**The JAS Atomic Emission Detector (AED) is the only commercially available AED for gas chromatography (GC).**

The **JAS AED** is a high sensitive element selective detector. It universally detects all GC separated compounds (except plasma/carrier gas), where eluents are introduced into a microwave induced helium plasma, which excites the atoms and reveals their characteristic emission spectra.

These element specific emitted wavelengths are diffracted by a rotating grating within the spectrometer and detected by a Photodiode Array (PDA).

Based on the element specific emission spectra, multiple elements, like S, C, Se and N<sub>2</sub> can be analyzed simultaneously.

### The JAS AED is:

- Matrix independent,
- Factor FIVE more sensitive than GC-FID for Carbon,
- Factor FIVE more sensitive, with greater linearity than GC-FPD for Sulfur,
- Typically more sensitive than GC-MS in SCAN mode,
- Typically more selective than GC-NPD and GC-ECD in complex sample matrices,
- Much more versatile than GC-SCD.

JAS developed a High Temperature (HT) version of the GC-AED system to enable analysis of higher boiling compounds. This capability significantly improves e.g. the process of Multi Element Simulated Distillation (SimDis), which is of particular interest for the Hydrocarbon Processing Industry.

Based on the broad product portfolio JAS offers, the AED can be provided with dedicated inlet systems, valve sampling systems or it can be integrated into your process environment to supervise impurities in sample streams.

Please request the respective product brochures for detailed information.

# Atomic Emission Detector

## Consumables & Supplies




Description	Part No. G2350A	Part No. JAS AED	Qty.	Figure
<b>O-Rings</b>				
Emission source, o-ring GC-side water chamber	0905-1159	JAS 2350-50800	1	
Emission source, o-ring optical-side water chamber	0905-1160	JAS 2350-50801	1	
Front assembly, o-ring (three needed)	0905-1162	JAS 2350-10102	3	
Spectrometer assembly, o-ring lens mount bottom	0905-1435	JAS 0905-1435	1	
Spectrometer assembly, o-ring lens mount liner	0905-1451	obsolete - please order JAS 2370-22230 and JAS 2370-50803	1	
Lens mount assembly, o-ring lens mount liner (revised)	N.A.	JAS 2370-50803	1	
Lens mount assembly, o-ring lens keeper	0905-1099	JAS 2350-50804	1	
Lens mount assembly, o-ring, lens	0905-1293	JAS 2350-50811	1	
Sparker board assembly, o-ring sparker (one needed)	0905-0353	JAS 2350-50808	1	
<b>Ferrules, Nuts &amp; Blind Plugs</b>				
Lens mount assembly lens mount liner	G2350-22230	obsolete - please order JAS 2370-22230 and JAS 2370-50803	1	
Both parts differ in the size of the o-ring groove. Use P/N G2350-22230 with o-ring P/N 0905-1451 only. Use P/N JAS 2370-22230 with o-ring P/N JAS 2370-50803.				
Lens mount assembly lens mount liner (revised)	N.A.	JAS 2370-22230	1	

# Atomic Emission Detector

## Consumables & Supplies












Description	Part No. G2350A	Part No. JAS AED	Qty.	Figure
<b>Ferrules, Nuts &amp; Blind Plugs</b>				
Lens mount assembly, lens keeper	G2350-22240	JAS 2350-22240	1	
Lens mount assembly, lens	G2350-80360	JAS 2350-80360	1	
Lens mount assembly, ferrule, lens mount liner (for 1/8" PTFE tubing)	0100-1504	obsolete - please order JAS 2370-0255	1	
Lens mount assembly, RP-ferrule, lens mount liner (for 1/8" PTFE tubing), (PK. of 8)	N.A.	JAS 2370-0255	8	
Heated transfer line, 1/16" graphite ferrules (PK. of 10)	0100-1326	JAS 2350-50200	10	
Lens mount assembly & gas drawer, fitting nut (bushing)	0100-1505	JAS 2350-50816	1	
Gas drawer, 1/8" Vespel ferrules (PK. of 10)	N.A.	JAS 2350-50201	10	
Gas drawer, 1/8" Vespel/graphite ferrule (PK. of 10)	N.A.	JAS 2370-0245	10	
Gas drawer, 1/16" Vespel ferrules (PK. of 10)	N.A.	JAS 2370-0250	10	
Heated transfer line, 1/16" gas union SS tubing nut	0100-0053	JAS 2350-50101	1	
Heated transfer line, 1/16" gas union SS swagelok blind cap	N.A.	JAS 2350-50100	1	
Water drawer, blind plug for quick fitting, 6 mm	N.A.	JAS 2370-0210	2	
Water drawer, blind plug for quick fitting, 8 mm	N.A.	JAS 2370-0215	2	

# Atomic Emission Detector

## Consumables & Supplies



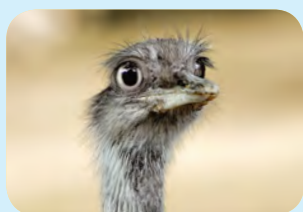
Description	Part No. G2350A	Part No. JAS AED	Qty.	Figure
<b>Ferrules, Nuts &amp; Blind Plugs</b>				
Column ferrules, 0.5 mm graphite ferrules (PK. of 10)	N.A.	JAS 2350-50230	10	
Column nut (PK. of 2) AED transfer line (GC Side)	N.A.	JAS 2350-50641	2	
<b>Discharge Tube &amp; Filters</b>				
Discharge tube kit (contains tube, ferrule and o-ring)	G2350-61090	JAS 2350-61090	1	
Fly ash filter tube	3150-0417	JAS 2350-50500	1	
In-line water filter, 8 µm	JAS 2350-80301	JAS 2370-80300	1	
<b>Tubings</b>				
Water drawer, JAS AED, PTFE tubing, 8 mm OD (pump inlet side), 30 cm	N.A.	JAS 2370-0220	1	
Water drawer, JAS AED, PTFE tubing, 6 mm OD	N.A.	JAS 2370-0225	1	
Water drawer, G2350A, silicone rubber tubing	JAS 0890-2104	N.A.	1	
Water drawer, G2350A, silicone rubber tubing	JAS 0890-1831	N.A.	1	
Gas drawer, PTFE tubing, 1/8" OD	JAS 0890-0746	JAS 0890-0746	1	

# Atomic Emission Detector

## Consumables & Supplies



Description	Part No. G2350A	Part No. JAS AED	Qty.	Figure
<b>Special Tools</b>				
Column installation tool, Tool to easily and quickly measure and install a GC column		JAS 92100 U	1	
Quick connector nipper, easily loosen tubes from quick connectors		JAS 79051 UN	1	
Wrench 1/4" & 5/16"		JAS 2350-50642	1	
Wrench 1/2" & 9/16"		JAS 2350-50643	1	
Wrench 5/16" & 3/8"		JAS 2350-50644	1	
Brush small cavity		JAS 2350-50646	1	
Brush large cavity		JAS 2350-50647	1	
Nut driver 5.5mm		JAS 2350-60648	1	
Wrench 1/2" & 3/8"		JAS 2350-50645	1	
Hex key 2.5mm		JAS 2350-50649	1	
Disconnecting tool		JAS 2370-0160	1	



All JAS AED spare parts and consumables with part numbers  
JAS 2350-xxxxx are compatible with Agilent G2350A AEDs.

# Olfactory Detectors

## Product Brief



**jas** Olfactory Detectors

The JAS product portfolio includes two solutions for identifying olfactory events (e.g. odors or fragrances), the Olfactometer and the SniffPort.

The operating mode of both detectors is the same. After leaving the column the effluent is split and simultaneously guided to a nose piece in which it is mixed with a humidified air stream. This allows the operator to use its nose to identify individual components as they elute from the column.

Another detector, e.g. a mass spectrometer can be connected. The olfactory events are marked with the help of a pusher button and named in the ChemStation. With its humidification and heating device there are ideal conditions for detecting and identifying compounds of interest in complex sample matrices.

The JAS Olfactory Detectors are:

- Easy to install,
- Compatible with Agilent 7890/6890 GCs,
- Have a comfortable operating position due to a height adjustable nose piece (Olfactometer).

### Olfactometer

Due to the convenient working position we recommend the Olfactometer for routine use.



Installed at the right GC side panel. An EPC is included.

### SniffPort

Usually the SniffPort is used for occasional smelling.






Installed on top of the GC.

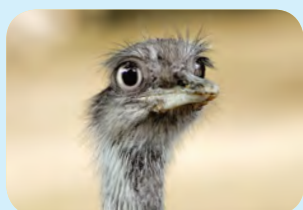
Please request the respective product brochures for detailed information.

# Olfactory Detectors

## Consumables & Supplies



Description	Part No.	Qty.	Figure	
Olfactometer - Ferrules				
<b>Pro-Cap™ ferrule</b> blind plug for columns ID 0.1-0.25 mm for columns ID 0.32 mm for columns ID 0.53 mm	JAS 91111-00U JAS 91111-25U JAS 91111-32U JAS 91111-53U	10 10 10 10		
<b>JAS Tight Nut</b> (finger-tight)	JAS 93250 U	1		
<b>T-Cap™ ferrule</b> (for sealing the connection between capillary, T-Cap™ screw and T-Cap™ cross piece) blind plug for columns ID 0.1-0.25 mm for columns ID 0.32 mm for columns ID 0.53 mm	JAS 91112-00U JAS 91112-25U JAS 91112-32U JAS 91112-53U	10 10 10 10		
Olfactometer - Columns & Capillaries				
<b>Column</b> customer-specific, only limited to ID 250, 320, or 530 µm	N/A	1		
<b>Restriction capillary</b> e.g. fused silica, deactivated 0.1mm ID x 1m 0.1mm ID x 10m	160-2635-1 160-2635-10	1 1		



We also provide you the full range of columns, consumables and supplies.

# EzPrep

## Product Brief



**jas EzPrep**

**JAS offers a Preparative Fraction Collector (EzPrep) for Gas Chromatography for sample collection and purification.**

The **JAS EzPrep** is designed for easy and tool free operation and supports the Agilent GC model 7890 and the 6890 Series. The principle of operation is as simple as effective: via restrictions the biggest portion of the injection volume is directed to the fraction collector, whereas only a relatively small percentage is needed at the detector (FID or TCD) to generate a chromatogram, based on which the peaks of interest can be marked in the GC ChemStation software.

In subsequent runs and via a JAS distribution valve, these marked peaks are separately trapped into up to eight sample traps. Anything inside the sample matrix which is not of interest is lead to the waste trap. When required, JAS optionally offers a cooling and/or heating device for the traps for volatile compounds or higher boiling substances.

**The JAS Preparative Fraction Collector for GC is a proven instrument for:**

- Enrichment of large volumes,
- Enrichment of trace components,
- Purification of sample compounds,
- Separation of complex sample matrices,
- Analysis of food & flavor ingredients,
- Pharmaceutical chemical synthesis,
- Isolation of individual analytes,
- Direct trapping into NMR tubes.

EzPrep users are free to choose between capillary columns, megabore columns and packed columns. It is totally embedded into the Agilent GC ChemStation and can optionally be controlled via the GC keypad.

Please request the respective product brochures for detailed information.

# EzPrep

## Consumables



Description	Part No.	Qty.	Figure
<b>Traps</b>			
Sample & waste trap	JAS 79813	1	
Blind plugs for traps (PK. of 5)	JAS 79857	5	
Silicone connectors (PK. of 5)	JAS 79858	5	
<b>Capillary Connections</b>			
Restriction capillary, fused silica deactivated, ID 0.1mm (1 piece of 1m)	JAS 79851	1	
deactivated, ID 0.2mm (1 piece of 5m)	JAS 79852	1	
deactivated, ID 0.25mm (1 piece of 5m)	JAS 79853	1	
Transfer line, 1/16" Silicosteel® (1 piece of 0.5m)	JAS 79854	1	
Distribution capillary 1/32" Silicosteel® (1 piece of 263mm)	JAS 79855	1	
<b>Ferrules</b>			
1/16" ferrule, blind plug for cross piece	JAS 79860	1	
1/32" ferrule for column OD 0.25-0.40mm	JAS 79861	5	
1/32" ferrule for column OD 0.40-0.50mm	JAS 79862	5	
1/16" ferrule for column OD 0.35-0.40mm	JAS 79863	5	
1/16" ferrule for column OD 0.40-0.50mm	JAS 79864	5	
1/16" ferrule for column OD 0.50-0.80mm	JAS 79865	5	
T-CAP™ ferrule blind plug for column ID 0.1 - 0.25mm	JAS 91112-00U	10	
for column ID 0.32mm	JAS 91112-25U	10	
for column ID 0.32mm	JAS 91112-32U	10	
for column ID 0.53mm	JAS 91112-53U	10	
Pro-Cap™ ferrule blind plug for column ID 0.1 - 0.25mm	JAS 91111-00U	10	
for column ID 0.32mm	JAS 91111-25U	10	
for column ID 0.32mm	JAS 91111-32U	10	
for column ID 0.53mm	JAS 91111-53U	10	







## About joint analytical systems

Since 1995 JAS has been a Premier Solution Partner and Value Added Reseller of Agilent Technologies. We are an innovative-driven organization that offers customized solutions for GC, GCxGC,  $\mu$ GC, GC-AED, GC-MS, GC-QQQ, LC, LC-MS, LC-QQQ and Q-TOF LC-MS applications.

## JAS serves key industries such as

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- Environmental
- Food and Flavor
- Forensic
- Clinical
- Petrochemical
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## JAS Products for GC

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- Olfactometer
- UNIS Inlets

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