NEW HPLC - LINE 2023

SRI Instruments Europe GmbH

Mode: Intern Status: I Ch
Wavelength Absorption
Ch1:240 nm 0.32000 AU

S4245 UV/VIS DETECTOR

Mode: Intern Status: STOP
Vial: 0 (5 - 6)
Inject: 0 / 1
Time: 0.0/0.0 min

S6250 SAMPLE INJECTOR

Mode: Intern Status: Stop
Flow: Pressure:
1.000 ml/min 0 bar
A:80.0 B:20.0 C:0.0 D:0.0

S9425 GRADIENT PUMP SYSTEM

SRI Instruments Europe GmbH

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HPLC /GPC - SYSTEM

Vacuum Degasser S 8515

Online Vacuum Degasser with High Efficiency

HPLC - Pump System S 9425, S 9430

Isocratic HPLC Pump and Quaternary Gradient Pump

HPLC - Pump System S 9432

Binary High-Pressure Gradient Pump

Autosampler S 6250

Autosampler S 6250 up to 60 Samples

Autosampler S 6300

Autosampler S 6300 up to 120 Samples

HPLC / GPC - Column Oven S 5120

For Analytical HPLC and GPC Columns

UV/Vis - Detector S 4245 and S 4250

PDA - Detector S 4345 and S 4350

Refractive Index Detector S 2020

HPLC / GPC and Other Special Columns

Clarity Chromatography Software

Clarity and GPC Extension Software Module

S R I I n s t r u m e n t s E u r o p e G m b H

S 8515 Vacuum Degasser

The **S 8515 vacuum degasser** is an online degasser system with high efficiency.

Dissolved gases are removed from the solvents by applying vacuum to a semi-permeable membrane.

High Efficiency

The high efficient Teflon-AF® capillary has a much higher efficiency than a normal Teflon capillary of similar size.

This allows the usage of a smaller length of the capillary to reduce the dead volume of the system considerably.

Figure: *S 8515 vacuum degasser*

Operation Modes

The **S 8515 vacuum degasser** can be run either with constant speed or in hysteresis mode, which switches the vacuum pump on or off.

5-Year Membrane Warranty

The **S 8515** vacuum pump uses a membrane for creating the vacuum. This membrane is made of a specific Teflon material specifically designed for fast movements.
SRI Instruments Europe GmbH offers a 5-year warranty on the lifetime of this membrane.

Multi-channel

The **S 8515 vacuum degasser** is available as 1-channel, 2-channel, 3-channel and 4-channel version and also in a PEEK—metal-free version. Each solvent channel can be used for a different solvent or several channels can be used in series to increase the efficiency even more.

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S 8515 Vacuum Degasser
Working Principle

The solvent flows through a short length of Teflon AF® capillary inside a sealed chamber. This chamber (vacuum chamber) is completely sealed to the environment and vacuum is applied with a pump. Due to this vacuum, any dissolved gases in the solvent running through the inner capillary are removed through its semi-permeable membrane wall. The high efficiency of the Teflon AF® material allows the usage of a very short length of capillary inside the vacuum chamber.
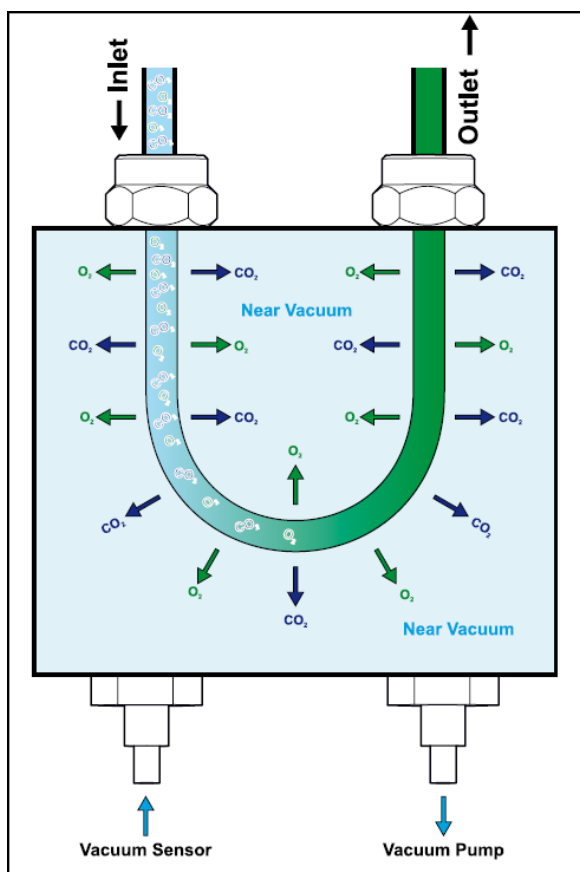
Technical Specifications*

Wetted Materials: Teflon AF®, Teflon, Stainless Steel, Aluminium, EPDM

Degassing Capacity: < 20% dissolved gases remaining in water at 1.0 ml/min

Volume /Channel: < 500 µl

Dimensions: 125 x 167 x 270 mm (W x H x D)

Weight: 3.2 kg

Power Supply: 100 - 250 V (47—63 Hz)

* depending on configuration

Order Information S 8515 vacuum degasser

Part-no.	Description
55-S002235	S 8515 vacuum degasser - 1 Channel
55-S002908	S 8515 vacuum degasser - 2 Channel
55-S007221	S 8515 vacuum degasser - 3 Channel
55-S000435	S 8515 vacuum degasser - 4 Channel
55-S003708	S 8515 vacuum degasser - 1 Channel / PEEK—metal free
55-S000414	S 8515 vacuum degasser - 2 Channel / PEEK—metal free
55-S008211	S 8515 vacuum degasser - 3 Channel / PEEK—metal free
55-S001935	S 8515 vacuum degasser - 4 Channel / PEEK—metal free

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S 9425 and S 9430 Isocratic High-pressure Pump

The SRI Instruments Europe GmbH **Pump HPLC System** is intended for the ambitious analyst. The system configuration is highly variable and several upgrade options make this system suitable for the whole range of analytical applications.

The **HPLC Pump System** is a very flexible and powerful HPLC solvent delivery system.

Its modular setup makes the **HPLC Pump System** one of the most versatile pump systems on the market.

The Pumps **S 9425** and **S 9430** are available as **Isocratic High-Pressure Pump** and **Quaternary Low-Pressure Gradient Pump.**
The **S 9425** and **S 9430 Isocratic High-Pressure Pump** is available with Micro, Analytical, or Preparative pump head in Stainless Steel or PEEK.

The **S 9425 Isocratic High-Pressure Pump** is delivered in small housing.
The **S 9430 Isocratic High-Pressure Pump** is delivered in a slightly larger housing (see technical specifications).

The size of the pump housing is adapted to the two different autosamplers (60 vials or 120 vials).

Stepper Motor

The **S 9425** and **S 9430 Isocratic High-Pressure Pump** are driven by high-power stepper motors.

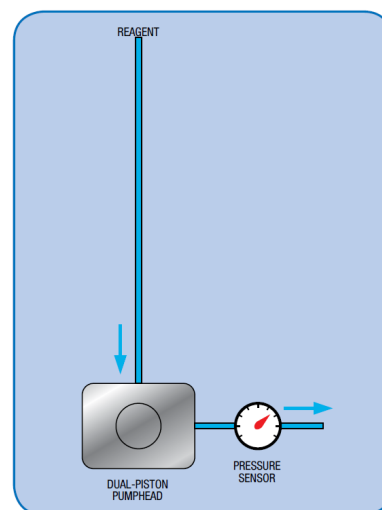The stepper motor has a much better resolution in the low-flow range than a conventional DC motor.

Fig.: S 9425 / S 9430 Isocratic

Lubrication
The **S 9425** and **S 9430 Isocratic High-Pressure Pump** camshafts are constantly lubricated within a sealed chamber to guarantee a long lifetime and low maintenance.

Dual-Piston Pump head

The **S 9425** and **S 9430 Isocratic High-pressure Pumps** use a dual-piston pump head for low pulsation. Together with electronic pressure compensation the pumps are suitable for all analytical tasks in HPLC and GPC.

Optional: Piston Back Flushing

The **S 9425** and **S 9430 Isocratic High-pressure Pump** heads incorporates an optional active piston back flushing system; this system is interchangeable with old Schambeck SFD GmbH pumps and does not require an additional motor.

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S 9425 and S 9430 Isocratic High-pressure Pump

Stepper Motor

The HPLC pumps are driven by a high-power stepper motor.

The stepper motor has a much better resolution in the low-flow range than a conventional DC motor.

Lubrication

The HPLC pumps camshaft is constantly lubricated within a sealed chamber to guarantee a long lifetime and low maintenance.
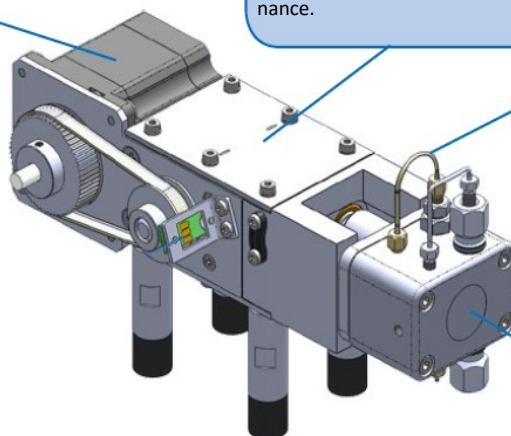
Optional:
Active Piston Back flushing

The HPLC pump head incorporates an automatic piston back flushing system. This system is interchangeable with older Schambeck SFD GmbH pumps and does not require an additional motor.

Dual-Piston Pump head

The HPLC pumps use a dual-piston Pump head for low pulsation.
Together with electronic pressure compensation, the HPLC pumps are suitable for all analytical tasks in HPLC and GPC.

Technical Specifications*

Wetted Materials:	Stainless Steel / PEEK*, Teflon AF®, PVDF, Ceramics, Sapphire, Ruby
Flow Rate:	Programmable
	Micro: 0.001 - 2.000 ml/min.
	Analytical: 0.001 - 10.000 ml/min.
	Semi-Preparative: 0.100 - 40.000 ml/min.
Flow Accuracy:	± 1.0 % 1.000 ml/min.
Flow Precision:	± 0.1 % RSD 1.000 ml/min.
Pressure Range:	0 – 40 MPa (0 – 6000 PSI)
Pressure Pulsation:	typical < 0.1 MPa or < 1.0 %
Compressibility Compensation:	user-adjustable for different solvents
Dimensions (W x H x D):	**S 9425** 310 x 165 x 478 mm (W x H x D) (small housing)
	S 9430 396 x 165 x 478 mm (W x H x D) (larger housing)
	The size of the pump housing is adapted to the two different autosamplers (60 vials or 120 vials).
Power Supply:	100 - 250 ~V (47 - 63 Hz)

* depending on configuration

Order Information S 9425 Isocratic High-pressure Pump (small housing)

Part-No.:	Description:		
55-S000038	S 9425 Isocratic High-pressure Pump	– Stainless Steel	– Micro
55-S000041	S 9425 Isocratic High-pressure Pump	– PEEK	– Micro
55-S000037	S 9425 Isocratic High-pressure Pump	– Stainless Steel	– Analytical
55-S000040	S 9425 Isocratic High-pressure Pump	– PEEK	– Analytical
55-S000039	S 9425 Isocratic High-pressure Pump	– Stainless Steel	– Semi-preparative
55-S000042	S 9425 Isocratic High-pressure Pump	– PEEK	– Semi-preparative
55-S000043	Option: Integrated Active Piston Back Flushing System		

Order Information S 9430 Isocratic High-pressure Pump (large housing)

Part-No.:	Description:		
55-S000052	S 9430 Isocratic High-pressure Pump	– Stainless Steel	– Micro
55-S000055	S 9430 Isocratic High-pressure Pump	– PEEK	– Micro
55-S000051	S 9430 Isocratic High-pressure Pump	– Stainless Steel	– Analytical
55-S000054	S 9430 Isocratic High-pressure Pump	– PEEK	– Analytical
55-S000053	S 9430 Isocratic High-pressure Pump	– Stainless Steel	– Semi-preparative
55-S000056	S 9430 Isocratic High-pressure Pump	– PEEK	– Semi-preparative
55-S000043	Option: Integrated Active Piston Back Flushing System		

Order Information Spare Parts S 9425 and S 9430 Isocratic Pump

Part-No.:	Description:	
55-S000102	Ceramic Piston	- micro
55-S000098	Primary Piston Seal	- micro, grey
55-S000099	Secondary Piston Seal	- micro, white
55-S000100	Ceramic Piston	- analytical
55-S000093	Primary Piston Seal	- analytical, grey
55-S000094	Secondary Piston Seal	- analytical, white
55-S000101	Ceramic Piston	- semi-preparative
55-S000096	Primary Piston Seal	- semi-preparative, grey
55-S000097	Secondary Piston Seal	- semi-preparative, white

Order Information Solvent bottle rack

Part-No.:	Description:
55-S000072	Solvent bottle rack include 4 x 1000 ml glass bottles

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S 9425 and S 9430 Quaternary Low-Pressure Gradient Pump

The SRI Instruments Europe GmbH **Pump HPLC System** is intended for the ambitious analyst. The system configuration is highly variable and several upgrade options make this system suitable for the whole range of analytical applications.

The **HPLC Pump System** is a very flexible and powerful HPLC solvent delivery system.

Its modular setup makes the **HPLC Pump System** one of the most versatile pump systems on the market.

The Pumps **S 9425** and **S 9430** are available as **Quaternary Low-pressure Gradient Pump** and also as **Isocratic High-pressure Pump.**

The **S 9425** and **S 9430 Quaternary Low-pressure Gradient Pump** is available with Micro, Analytical or Semi-preparative pump head in Stainless Steel or PEEK.
The **S 9425 Quaternary Low-pressure Gradient Pump** is delivered in small housing. The **S 9430 Quaternary Low-pressure Gradient Pump** is delivered in a slightly larger housing (see technical specifications).
The size of the pump housing is adapted to the two different autosamplers (60 vials or 120 vials).

Mixer-Synchronization

Inside the **Quaternary Gradient Pump S 9425** and **S 9430,** a low-pressure gradient mixer is synchronized with the piston stroke to achieve highly precise and accurate gradient results.

Stepper Motor

The **S 9425** and **S 9430 Quaternary Low-pressure Gradient Pumps** are driven by high-power stepper motors. The stepper motor has a much better resolution in the low-flow range than a conventional DC motor.

Lubrication

The **S 9425** and **S 9430 Quaternary Low-pressure Gradient Pump** camshafts are constantly lubricated within a sealed chamber to guarantee a long lifetime and low maintenance.

Dual-Piston Pump head

The **S 9425** and **S 9430 Quaternary Low-pressure Gradient Pump** use a dual-piston pump head for low pulsation. Together with electronic pressure compensation, the pumps are suitable for all analytical tasks in HPLC and GPC.

Optional: Piston Back Flushing

The **S 9425** and **S 9430 Quaternary Low-pressure Gradient Pump** heads incorporate an optional active piston back flushing system; this system is interchangeable with old Schambeck SFD GmbH pumps and does not require an additional motor.
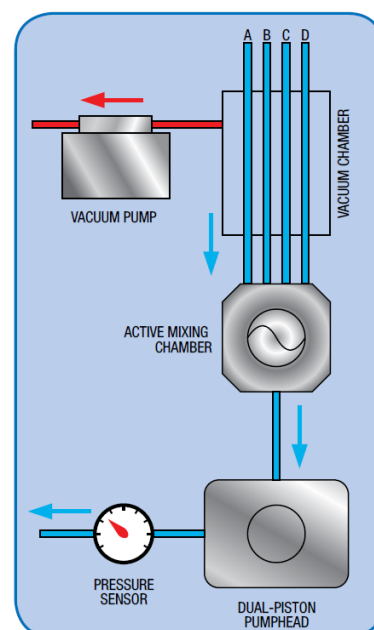
Figure: S 9425 and S 9430 Quaternary Gradient Modul

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S 9425 and S 9430 Quaternary Low-Pressure Gradient Pump

Vacuum Pump

The Quaternary Gradient Module Features an integrated vacuum pump for online degassing.
The advanced Teflon membrane guarantees a long lifetime and maximum chemical compatibility.
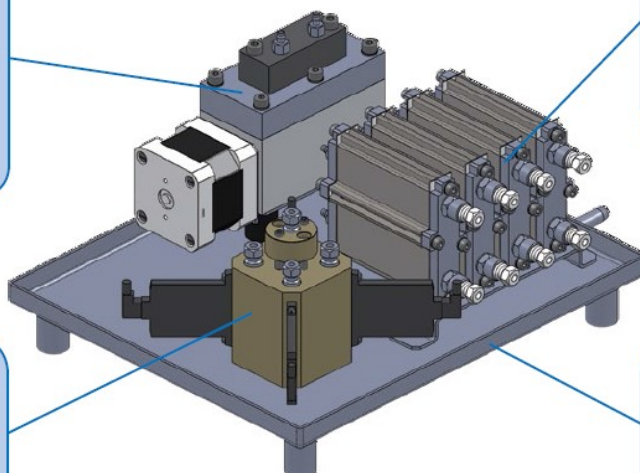
Vacuum Chamber

The Quaternary Gradient Module's 4 vacuum chambers are fitted with high-efficiency Teflon AF® tubing for low volume and increased degassing efficiency.

Active Mixer

The Quaternary Gradient Module incorporates an active mixer with adjustable volume for optimized gradient mixing.

Secure Assembly

The Quaternary Gradient Module is assembled on a stainless steel tray with a separate drain to protect the instrument in case of leakages.

Technical Specifications*

Wetted Materials:	Stainless Steel / PEEK*, Teflon AF®, PVDF, Ceramics, Sapphire, Ruby
Flow Rate:	Programmable

	Micro:	0.001 - 2.000 ml/min.
	Analytical:	0.001 - 10.000 ml/min.
	Semi-preparative:	0.100 - 40.000 ml/min.

Mixer Volume:	Adjustable from 10 – 500 µl
Flow Accuracy:	± 1.0 % 1.000 ml/min.
Flow Precision:	± 0.1 % RSD 1.000 ml/min.
Pressure Range:	0 – 40 MPa (0 – 6000 PSI)
Pressure Pulsation:	typical < 0.1 MPa or < 1.0 %
Compressibility Compensation:	user-adjustable for different solvents

Dimensions (W x H x D):	**S 9425**	310 x 165 x 478 mm (W x H x D) (small housing)
	S 9430	396 x 165 x 478 mm (W x H x D) (large housing)

The size of the pump housing is adapted to the two different autosamplers (60 vials or 120 vials).

Power Supply:	100 - 250 ~V (47 - 63 Hz)

* depending on configuration

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Order Information S 9425 Quaternary Low Pressure Gradient Pump (small housing)

Part-No.:	Description:
55-S000045	S 9425 Quaternary Low Pressure Gradient Pump – Stainless Steel – Micro
55-S000048	S 9425 Quaternary Low Pressure Gradient Pump – PEEK – Micro
55-S000044	S 9425 Quaternary Low Pressure Gradient Pump – Stainless Steel – Analytical
55-S000047	S 9425 Quaternary Low Pressure Gradient Pump – PEEK – Analytical
55-S000046	S 9425 Quaternary Low Pressure Gradient Pump – Stainless Steel – Semi-prep.
55-S000049	S 9425 Quaternary Low Pressure Gradient Pump – PEEK – Semi-prep.
55-S000050	Option: Integrated 4 Channel Vacuum Degasser for S 9425 and S 9430 (only for micro and analytical pump head)
55-S000043	Option: Integrated Active Piston Back Flushing System

Order Information S 9430 Quaternary Low Pressure Gradient Pump (large housing)

Part-No.:	Description:
55-S000058	S 9430 Quaternary Low Pressure Gradient Pump – Stainless Steel – Micro
55-S000061	S 9430 Quaternary Low Pressure Gradient Pump – PEEK – Micro
55-S000057	S 9430 Quaternary Low Pressure Gradient Pump – Stainless Steel – Analytical
55-S000060	S 9430 Quaternary Low Pressure Gradient Pump – PEEK – Analytical
55-S000059	S 9430 Quaternary Low Pressure Gradient Pump – Stainless Steel – Semi-prep.
55-S000062	S 9430 Quaternary Low Pressure Gradient Pump – PEEK – Semi-prep.
55-S000043	Option: Integrated Active Piston Back Flushing System

Order Information Spare Parts S 9425 and S 9430 Quaternary Pump

Part-No.:	Description:	
55-S000102	Ceramic Piston	- micro
55-S000098	Primary Piston Seal	- micro, grey
55-S000099	Secondary Piston Seal	- micro, white
55-S000100	Ceramic Piston	- analytical
55-S000093	Primary Piston Seal	- analytical, grey
55-S000094	Secondary Piston Seal	- analytical, white
55-S000101	Ceramic Piston	- semi-preparative
55-S000096	Primary Piston Seal	- semi-preparative, grey
55-S000097	Secondary Piston Seal	- semi-preparative, white

Order Information Solvent bottle rack

Part-No.:	Description:
55-S000072	Solvent bottle rack include 4 x 1000 ml glass bottles

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S 9432 Binary High-pressure Gradient Pump

The SRI Instruments Europe GmbH **Pump HPLC System** is intended for the ambitious analyst. The system configuration is highly variable and several upgrade options make this system suitable for the whole range of analytical applications.

The **HPLC Pump System** is a very flexible and powerful HPLC solvent delivery system. Its modular setup makes the **HPLC Pump System** one of the most versatile pump systems on the market.

The **S 9432 Binary - High Pressure Gradient Pump** incorporates two pump systems with an optional Active High Pressure Mixer with adjustable chamber volume.

An optional integrated vacuum degasser removes dissolved gases in the eluents and prevents air bubbles in the system. The system is available with Micro, Analytical or Semi-preparative pump head in Stainless Steel or PEEK.

The **S 9432 Binary - High Pressure Gradient Pump** is delivered in a slightly larger housing than HPLC Pump S 9425 (see technical specifications). The size of the pump housing is adapted to the two different autosampler (60 vials or 120 vials).

Stepper Motor

The **S 9432 Binary - High Pressure Gradient Pump** is driven by high - power stepper motors. The stepper motor has a much better resolution in the low - flow range than a conventional DC motor.
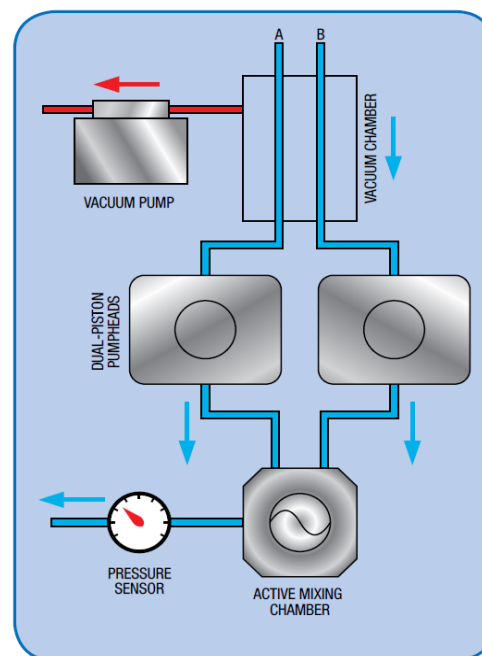

Figure: Flow chart S 9432

Dual-Piston Pump head

The **S 9432 Binary - High Pressure Gradient Pump** use a dual-piston pump head for low pulsation. Together with electronic pressure compensation the pumps are suitable for all analytical tasks in HPLC and GPC.

Optional: Active High Pressure Mixer

Inside the **S 9432 Binary - High Pressure Gradient Pump** is (Option: only for micro and analytical pump head) an integrated Active High Pressure Mixer to achieve highly precise and accurate gradient.

Optional: Integrated 2 Channel Vacuum Degasser

Inside the **S 9432 Binary - High Pressure Gradient Pump** is (Option: only for micro and analytical pump head)) an integrated 2 Channel Vacuum Degasser to remove dissolved gases in the eluents and prevents air bubbles in the system.

Optional: Active Piston Back flushing

The **S 9432 Binary - High Pressure Gradient Pump** heads incorporates an optional active piston back flushing system; this system is interchangeable with old Schambeck SFD GmbH pumps and does not require an additional motor

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S 9432 Binary High-pressure Gradient Pump

Lubrication

The HPLC pumps camshaft is constantly lubricated within a sealed chamber to guarantee long lifetime and low maintenance.

Stepper Motor

The HPLC pumps are driven by a high power stepper motor. The stepper motor has a much better resolution in the low - flow range than a conventional DC motor.
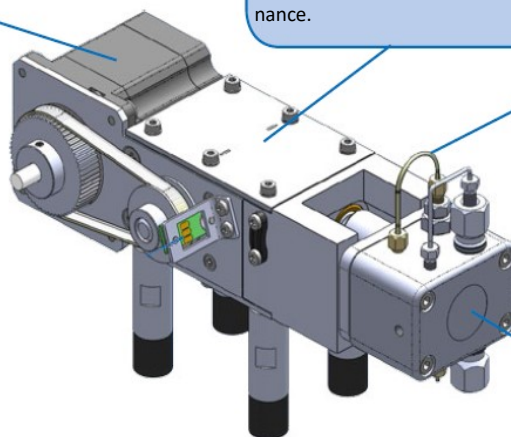
Optional:
Active Piston Back flushing

The HPLC pump head incorporates an automatic piston back flushing system. This system is interchangeable with older Schambeck SFD GmbH pumps and does not require an additional motor.

Dual-Piston Pump head

The HPLC pumps use a dual-piston Pump head for low pulsation.
Together with electronic pressure compensation the HPLC pumps are suitable for all analytical tasks in HPLC and GPC.

Technical Specifications*

Wetted Materials:	Stainless Steel / PEEK*, Teflon AF®, PVDF, Ceramics, Sapphire, Ruby
Flow Rate:	Programmable
	Micro: 0.001 - 2.000 ml/min.
	Analytical: 0.001 - 10.000 ml/min.
	Semi-preparative: 0.100 - 40.000 ml/min.
Mixer Volumen:	Adjustable from 10 – 500 µl
Flow Accuracy:	± 1.0 % 1.000 ml/min.
Flow Precision:	± 0.1 % RSD 1.000 ml/min.
Pressure Range:	0 – 40 MPa (0 – 6000 PSI)
Pressure Pulsation:	typical < 0.1 MPa or < 1.0 %
Compressibility Compensation:	user-adjustable for different solvents
Dimensions (W x H x D):	**S 9432** 396 x 165 x 478 mm (W x H x D) (larger housing)
Power Supply:	100 - 250 ~V (47 - 63 Hz)

* depending on configuration

S 9432 Binary High-pressure Gradient Pump

Order Information S 9432 Binary High-pressure Gradient Pump

Part-No.:	Description:		
55-S000064	S 9432 Binary High-pressure Gradient Pump	– Stainless Steel	– Micro
55-S000067	S 9432 Binary High-pressure Gradient Pump	– PEEK	– Micro
55-S000063	S 9432 Binary High-pressure Gradient Pump	– Stainless Steel	– Analytical
55-S000066	S 9432 Binary High-pressure Gradient Pump	– PEEK	– Analytical
55-S000065	S 9432 Binary High-pressure Gradient Pump	– Stainless Steel	– Semi-prep.
55-S000068	S 9432 Binary High-pressure Gradient Pump	– PEEK	– Semi-prep.
55-S000069	Option: Integrated 2 Channel Vacuum Degasser (only for micro and analytical pump head)		
55-S000070	Option: Integrated Active High Pressure Mixer (only for micro and analytical pump head)		
55-S000043	Option: Integrated Active Piston Back Flushing System		

Order Information Spare Parts Pump S 9432

Part-No.:	Description:	
55-S000102	Ceramic Piston	- Micro
55-S000098	Primary Piston Seal	- Micro, grey
55-S000099	Secondary Piston Seal	- Micro, white
55-S000100	Ceramic Piston	- Analytical
55-S000093	Primary Piston Seal	- Analytical, grey
55-S000094	Secondary Piston Seal	- Analytical, white
55-S000101	Ceramic Piston	- Semi-preparative
55-S000096	Primary Piston Seal	- Semi-preparative, grey
55-S000097	Secondary Piston Seal	- Semi-preparative, white

Order Information Solvent bottle rack

Part-No.:	Description:
55-S000072	Solvent bottle rack include 4 x 1000 ml glass bottles

S 6250, S 6300 autosamplers

The **S 6250** and **S 6300 autosamplers** are very flexible and powerful HPLC and GPC/SEC autosamplers with excellent reproducibility and linearity properties.

Variable vial racks and adaptors for microtiter plates as well as a multitude of firmware options make this system highly adaptable and suitable for any analytical application.

Autosampler S 6250 (60 samples) is in a small housing and the autosampler S 6300 (120 samples) is in a slightly larger housing (see technical specifications).

Robust design

Durable X/Y/Z-sampling

The **S 6250** and **S 6300 autosamplers** feature a mechanically durable X / Y / Z - sampling-mechanic designed for long-life operation. The self-lubricating bearings keep the routine maintenance at a minimum and avoid troubles caused by dusty environments. High precision stepper motors drive the X/Y axis for accurate positioning. Micro stepping mode enables a high resolution for the syringe dosing and vial positioning.

Dual-Needle Design

The dual-needle design of the **S 6250** and **S 6300 autosamplers** avoids system blockages due to septum particles injected into the system.

The ventilation needle pierces the septum before the injection needle moves into the sample vial *(see figure on the right)*. As the more fragile injection needle does not need to pierce the vial septum, stronger vial caps or plastic vials can be used without problems.
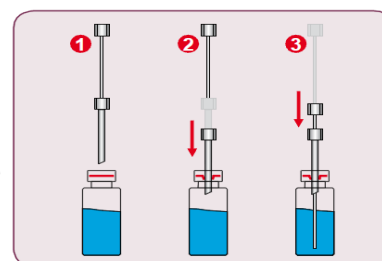
Figure: Dual -Needle injection

Accessibility

The injection valve with sample loop and injection port can be accessed directly from the instrument front without removing any protective covers. The dosing syringe can be accessed from the side of the instrument through a hinged glass panel. The exchange of the syringe can be done without the requirement of any tools.
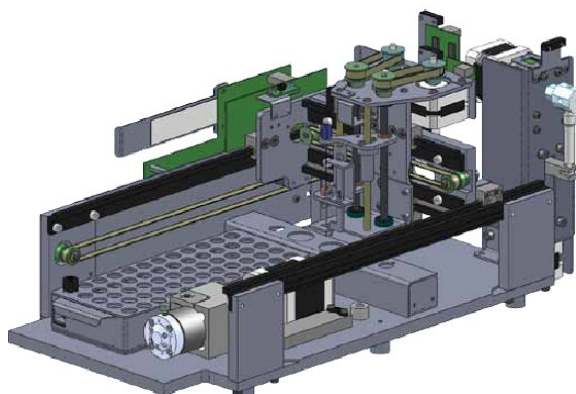
Figure: mechanic design

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S 6250, S 6300 autosamplers
Precision & modularity

Performance

The *S 6250* and *S 6300 autosamplers* offer multiple injection modes depending on application and sample needs. Besides fixed loop overfilling and variable volume injection the instrument offers a *Zero-Waste* injection mode for injecting very small sample amounts by moving the sample into the middle of the sample loop. Linearity and injection precision can be optimized for any volume by different sample loops and syringe sizes.

Modular options

The modular nature of the **S 6250** and **S 6300 autosamplers** offers the possibility to "just buy what you need". Modular options include sample heating/cooling (only for S 6300, Range +4°C (RT-20°C) up to 60°C) for any sensitive sample material and derivatization for automatized pre-column derivatization tasks from reagent derivatization to automatic sample dilution.

Technical specifications*

Wetted Materials:	Stainless Steel / PEEK*, PPS, PVDF
Sample capacity:	**S 6250** 60/90 vials (1.5 ml), 96 (microtiter plates)
	S 6300 120 vials (1.5 ml), 192 (microtiter plates)
Injection Volume:	Programmable 0.1 - 999.9 µl
Injection Precision:	< 0.5 % Variable Volume Injection (10 µl; typically ~0.25 %)
Linearity:	Correlation Factor > 0.999 (10 µl injection volume, 500 µl Syringe)
Carryover:	< 0.05 % with wash program
Dimensions:	**S 6250** 310 x 210 x 478 mm (W x H x D)
	S 6300 396 x 210 x 478 mm (W x H x D)
Weight:	*TBA*
Power Supply:	100 - 250 V~(47—63 Hz)

* depending on configuration

Order information S 6250 and S 6300 autosampler

Part-no.	Description
55-S000076	S 6250 autosampler , 60 vials (1,5ml) fix injection volume
55-S000082	S 6300 autosampler , 120 vials (1,5ml) fix injection volume, stainless steel
55-S003330	S 6300 autosampler , 120 vials (1,5ml) fix injection volume, PEEK
55-S000083	Upgrade variable injection volume for autosampler S 6250 and S 6300
55-S000177	Upgrade cooling/heating for autosampler S6300 (around 4°C (RT-20°C) up to 60°C)
55-S000161	Upgrade derivatization autosampler S 6250 and S 6300

HPLC/ SEC S 5120 Column Oven

The **S 5120** is a contact heat transfer oven for high-temperature stability and accuracy. Up to three 350 mm columns can be mounted at the same time.

The **S 5120 Column Oven** (only heating) has a temperature range base from (ambient +5°C) up to + 150 °C.

S 5120 Column Oven with Heating/Cooling allows to cool down to 4.0 °C (ambient - 15 °C) and up to 100 °C.
The temperature is regulated by Peltier elements.

Option for **S 5120 Column Oven**: Temperature/time program.
This option for **S 5120 Column Oven** allows a temperature/time program. So you can use a temperature gradient for HPLC/SEC - columns. The temperature gradient can be freely programmed.

Technical specifications *

Wetted Materials:	Stainless Steel / PEEK*, PTFE, PPS
Temperature Range Base:	(ambient +5°C) up to + 150 °C
Heat/Cool:	(ambient - 15 °C) up to + 100 °C
Temperature Accuracy:	± 0.1 °C
Safety Features:	Temperature fuse, Gas sensor
Time Program:	Programmable, 10 steps (optional)
External Control:	RS232
Dimensions:	183 x 562 x 271 mm (W x H x D)
Weight:	7.0 kg
Power Supply:	100 – 250 V, 47 – 63 Hz

*depending on material option

Operational Conditions:

Ambient Temperature :	+10 °C to +35 °C
Ambient Relative Humidity:	20 to 80 % RH (non-condensing)

Storage Conditions

Ambient Temperature:	-20 °C to +60 °C
Ambient Relative Humidity:	20 to 80 % RH (non-condensing)

Order Information S 5120 Column Oven

Part-No.:	Description:
55-S000084	HPLC / SEC - Column oven S 5120 (only heating)
55-S000103	HPLC / SEC - Column oven S 5120 with Heating/Cooling

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S 4245, S 4250 UV/Vis detector

The **S 4245** and **S 4250 UV/Vis detectors** are variable wavelength UV/Vis detectors for routine analysis and sophisticated research. The dual-lamp design offers a wavelength range of 190 – 900 nm with a low baseline noise. The front-accessible flow cell can easily be exchanged, as can be the lamps which are accessible through a side panel in the instrument housing.

Integrated wavelength program

The **S 4245** and **S 4250 UV/Vis detector** features a wavelength program to change the selected wavelength over time. With this feature, the optimum wavelength can be selected for each analyzed substance according to its retention time.

Integrated peak detector

The integrated peak detector works as a basic fraction collector. The peak detection level can be freely programmed for peak start and peak end to enhance the collection purity. An integrated 24V output for switching a solenoid valve is used for the fraction collection, which is automatically operated with a selectable time delay.

Optional - dual - wavelength

The **S 4245** and **S 4250 UV/Vis detector** is available with an optional second wavelength. This feature enhances the Wavelength Program feature that you can measure 2 different wavelengths at the same time. A second D/A converter output comes with this option to keep the system flexible to be used with any data acquisition software available.

Optional - online - scan

Another option for the **S 4245** and **S 4250 UV/Vis detector** is the online scan. With the online scan, whole spectrum of information can be gathered at a certain time. This scan information is stored internally and can be accessed at any time. The Online Scan is a good alternative to a full UV PDA detector.
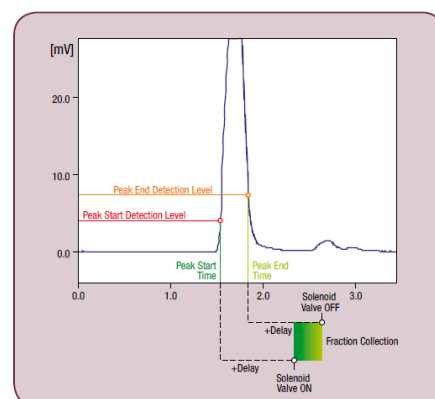
Figure: S 4245 / S4250 Peak detection

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Technical Specifications*

Wetted Materials:	Stainless Steel / PEEK*
Baseline Noise:	$\pm$ 1 x 10-5 AU (@240 nm, 1 sec. Rise time)
Baseline Drift:	2 x 10-4 AU/h
Wavelength Range:	190 – 900 nm
Wavelength Accuracy:	$\pm$ 2 nm
Linearity	> 2.0 AU
Light source:	Deuterium Lamp, Tungsten Lamp
Flow cell volume:	Micro 0,6 µl, 3,0mm flow path
	Analytical 7,9 µl, 10,0mm flow path
	Semi-preparative 2,7 µl, 1,5mm flow path
Wavelength Program:	Programmable, 10 Steps
Analog Output:	1 x 1 V (optional: 2 x 1V)
Control Features:	Internal Peak Detector with +24 V solenoid switching output
Dimensions:	**S 4245** 310 x 165 x 478 mm (W x H x D)
	S 4250 396 x 165 x 478 mm (W x H x D)
Power Supply:	100 - 250 V (47—63 Hz)

 * depending on configuration

Order Information UV/Vis - Detector S 4245 and S 4250

Part-No.:	Description:
55-S000171	UV/Vis Detector S 4245, 1 Channel
55-S000206	UV/Vis Detector S 4245, 2 Channels
55-S000197	UV/Vis Detector S 4245, 1 Channels with SCAN Option
55-S000172	UV/Vis Detector S 4250, 1 Channel
55-S000193	UV/Vis Detector S 4250, 2 Channel
55-S000196	UV/Vis Detector S 4250, 1 Channels with SCAN Option
55-S000173	S 4245 / S 4250 Flow cell, analytical, stainless Steel
55-S00 203	S 4245 / S 4250 Flow cell, analytical, PEEK
55-S001741	S 4245 / S 4250 Flow cell, micro, stainless Steel
55-S000205	S 4245 / S 4250 Flow cell, semi-preparative, stainless Steel
55-S000204	S 4250 / S 4250 Flow cell, semi-preparative, PEEK

Order Information Spare Parts UV/Vis - Detector S 4245 and S 4250

Part-No.:	Description:
55-S000280	Tungsten Lamp for S 4245 / S 4250, preadjusted
55-S000279	Deuterium Lamp for S 4245 / S 4250, preadjusted

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S 4345 / S 4350 PDA - Detector

The **S 4345 and S 4350 PDA - Detectors** are photodi-ode array (PDA) detectors for routine analysis and sophisticated research. The dual-lamp design offers a wave length range of 190 – 720 nm (with 256 Diodes) or from 190 - 1015nm (with 1024 diodes) with a low baseline noise. The front-accessible flow cell can easily be exchanged, as can be the lamps which are accessible through a side panel in the instrument housing.

4-Channel UV/Vis - Detector

The **S 4345 / S 4350 PDA - Detector** features 4-Wavelength channels to measure chromatograms at 4 different wavelengths at the same time. With this feature, the optimum wavelength can be selected for each analyzed substance.

Integrated Peak Detector

The integrated Peak Detector works as a basic fraction collector. The peak detection level can be freely programmed for peak start and peak end to enhance the collection purity. An integrated 24V output for switching a solenoid valve is used for the fraction collection, which is automatically operated with a selectable time delay.

Optional - Analog Output

The **S 4345 / S 4350 PDA - Detectors** are available with an optional 4-Channel Analog output.
This D/A converter output option is offered to keep the system flexible to be used with any data acquisition software available.
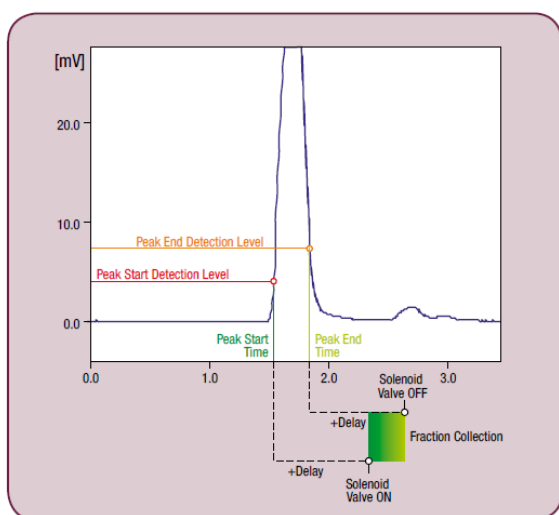
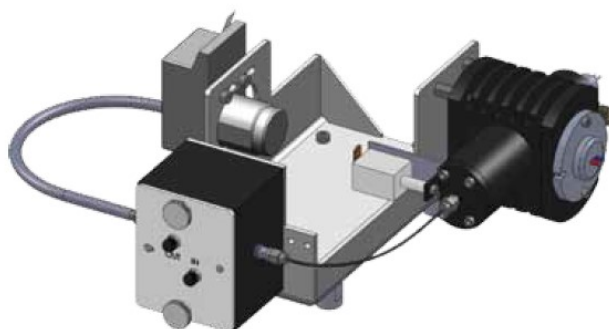**Figure: S 4345 / S 4350 Peak detection**

Figure: Optical module S 4345 (256 diodes)

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Technical Specifications*

Wetted Materials:	Stainless Steel / PEEK*, Teflon, Glass
Baseline Noise:	± 1 x 10 - 5 AU (@240 nm, 1 sec. Rise time)
Baseline Drift:	< 3 x 10 - 4 AU/h
Number of diodes:	256 or 1024
Wavelength Range:	190 – 720 nm
Wavelength Accuracy:	0,5 nm (256 Diodes), 0,3 nm (1024 Diodes)
Mean Pixel Pitch:	2,2 nm (256 Diodes), 0,8 nm (1024 Diodes)
Resolution (λ FWHM):	7 nm (256 Diodes), 3 nm (1024 Diodes)
Linearity	> 2.0 AU
Light source:	Deuterium Lamp, Tungsten Lamp
Wavelength Program:	Programmable, 10 Steps
Analog Output:	- (optional: 4 x 1V)
Data Rate:	1 - 100 Hz
Control Features:	Internal Peak Detector with +24 V solenoid switching output
Dimensions:	**S 4345** 310 x 165 x 478 mm (B x H x T)
	S 4350 396 x 165 x 478 mm (B x H x T)
Power Supply:	100 - 250 V (47—63 Hz)

Order Information S 4345 and S 4350 PDA - Detector

Part-No.:	Description:
55-S000162	S4350 PDA - Detector - 256 Diodes
55-S000163	S4350 PDA - Detector - 1024 Diodes
55-S000164	S4345 PDA - Detector - 256 Diodes
55-S000165	S4345 PDA - Detector - 1024 Diodes
55-S000169	S 4345 / S 4350 Flow cell, analytical, stainless Steel
55-S000517	S 4345 / S 4350 Flow cell, analytical, PEEK
55-S002021	S 4345 / S 4350 Flow cell, preparative, stainless Steel

Order Information Spare Parts S 4345 and S 4350 PDA - Detector

Part-No.:	Description:
55-S000280	Tungsten Lamp for S 4345 / S 4350, preadjusted
55-S000279	Deuterium Lamp for S 4345 / S 4350, preadjusted

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S 2020 Refractive index detector

The **Refractive Index Detector S 2020** series provides a consistent enhancement of the already successfully established RID models RI2000 and RI2000-F. The RID S 2020 series offers users 3 times higher sensitivity, (compared to RI2000) stability, and reproducibility required for optimal RI detection in HPLC / GPC. By consistently revising the electronic components, it has been possible to significantly improve drift and noise.

The optical system is now better insulated against temperature changes and with programmable temperature settings, ensures a stable baseline and an optimal signal/noise–ratio.

The auto zero, purge, polarity, temperature, and the frequency for data output are externally controllable by USB or RS232 Port. RID system status - information such as temperature and total voltage can be externally retrieved by RS232 or USB. The **Refractive Index Detector S 2020** offers a communication interface to acquire data directly with Clarity Chromatography Software without using any external signal interface.

The **Refractive Index Detector S 2020** includes - **micro**, - **analytical,** and - **semi-preparative** refractive index detectors.

Technical Specifications*

	S 2020M, micro	S 2020A, analytical	S 2020P, semi preparativ
Detection Method:	Deflection	Deflection	Deflection
Refractive Index Range:	1.00 to 1.75	1.00 to 1.75	1.00 to 1.75
Flow Rate:	0,2 – 3,0ml/min	0,2 – 3,0ml/min	5 – 50ml/min
Flow Cell Volume	4 µl, 45° angle	9 µl, 45° angle	13 µl, 5° angle
Flow Cell Pressure	6 kg/cm2	6kg /cm2	6kg/cm2
Dead Volume Into cell	6 µl	24 µl	88 or 314 µl *
Linearity Range:	0 - 500 µRIU	0 - 1000 µRIU	0 - 20000 µRIU
Noise Level:	10 x 10-9 RIU	5 x 10-9 RIU	10 x 10-8 RIU
Autozero Range:	Full Range	Full Range	Full Range
Drift with 1ml H2O/min.	< 1mV/hour	< 1mV/hour	1mV/ hour
Purge Valve	yes	yes	yes / no (depends on flow)

Integrator Output:	+/- 1 Volt +/- 1 Volt +/- 1 Volt
Recorder Output:	+/- 10mV / 100mV / 1Volt
Recorder Offset:	0 mV/10mV/ 100mV
Recorder Range:	8 steps (1:8) - (16:1)
Marker:	Yes / No
Digital Interface:	RS232 / USB bidirectional
Control of:	Purge, Autozero, Start, Stop, Heater, Data output rate, Polarity
Current output of:	Temperature optical bench, Optical balance, sum voltage, difference voltage, Alarm (Signal too high/low, A/D out of range, No temp. sensor)
Data Output Rate:	1 Hz, 2 Hz, 5 Hz, 10 Hz, Lock
Digital Output TTL:	Intensity Alarm
Digital Input TTL:	Purge, Autozero, Start, Marker
Temperature Setting:	Ambient, 35°C to 55°C in 1°C steps, Thermal Fuse 70°C
Time Constant:	RAW (0,0sec), Fast (0,4sec), Medium (0,8sec), Slow (1,6sec)
Weigth:	9,6 kg
Dimensions:	300 x 175 x 440 mm (W x H x D)
Power Source:	AC 100-120/220-240V, 50/60 Hz, 50VA

* depending on configuration

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S 2020 Refractive index detector

Order Information Refractive index detector S 2020

Part-No.:	Description:
55-S010362	Refractive index detector S 2020M, micro
55-S010361	Refractive index detector S 2020A, analytical
55-S010363	Refractive index detector S 2020P, semi preparative

Order Information Spare Parts Refractive index detector S 2020

Part-No.:	Description:
S2020-030	Flow cell, S 2020, micro
S2020-001	Flow cell, S 2020, analytical
S2020-031	Flow cell, S 2020, semi preparativ
S2020-012	Lamp S 2020
S2020-024	Seal kit for flow cell S 2020
S2020-006	Purge valve S 2020

HPLC / GPC Column

We distribute HPLC and GPC / SEC - Separation columns by Concise Separations and Jordi Labs.

Concise Separations specializes in the synthesis of polymeric beads, latexes, linear polymers, as well as functionalization of beads in unique ways for the manufacture of HPLC columns in the Biofuels, Food and Beverage, Water Analysis and Pharmaceutical Manufacturing markets. Founded in 1984, the Company has operated for over 30 years at a single facility located in the heart of Silicon Valley (San Jose, CA). Concise Separations is a leading provider of specialty chromatography resins and HPLC columns for research and quality control analysis. Concise Separations' resins and columns are preferred by customers globally due to consistent, high resolution separation with long usable life. Concise Separations is uniquely qualified to develop customized resins and columns for individual needs, helping hundreds of labs to optimize their daily workflows.

Concise Separations offer columns for:

Bio Fuels	Carbohydrate Analysis
DNA	Reversed Phase Analysis
Amino Acids	Ion Chromatography
Sample prepration	Organic Acid

Jordi Labs manufactures a complete line of polymer-based high pressure liquid chromatography (HPLC) columns for normal and reverse phase chromatography, size exclusion chromatography, and ion exchange chromatography. All Jordi columns are made from our proprietary chemistries to maximize column life. Each Jordi column is put through a rigorous quality control process and shipped with a quality assurance chromatogram. We back up our quality pledge with a 90 day warranty.

Jordi Labs offer:

Jordi - Columns for aqueous GPC

Jordi - GPC/SEC Separation columns for organic solvents

Jordi - Guard Columns

Jordi - Normal Phase Columns

Jordi - Reversed Phase Columns

To consult our chemist specialist about column selection, please email us from our contact page.

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HPLC - Systems

GPC/SEC - Systems

Chromatographie - Software

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