

GIBNIK

ANALYTICAL SOLUTIONS

KONIK HPLC 580

RELIABLE. ROBUST. EFFICIENT. MODULAR. EXPANDABLE



Designed for:

**All HPLC ANALYTICAL
AND PREPARATIVE modalities • μ HPLC
ION CHROMATOGRAPHY • GPC**
and above all for Multidimensional
HPLC + GC & HPLC + GC - MS

Manufacturing HPLC's since 1985

The GIBNIK technical team has been developing HPLC's since 1985. The New KONIK 580 HPLC is GIBNIK's answer to today's and future needs. Its tower design and small foot print of 30x50 cm takes little bench space. Its robustness, flexibility and reliability are second to none, converting the HPLC 580 into a laboratory workhorse.

GIBNIK is continuously improving its HPLC programme. Since the introduction of the KONIK HPLC 500 launched in Chemasia 1985 in Singapore, 4 generations of HPLCs have paved the road to this 5th generation where GIBNIK has synthesised all its know how and experience over the years.



While model 600 is being redesigned to 600 B Plus for optimal HPLC+GC-MS, the KONIK 580 HPLC has been purposely updated for fast/high pressure HPLC, in both low pressure 4 solvents gradient formation, or high pressure binary gradients. An upper pressure limit of 60 MPa (600 barr or 8.700 psi), and flow range from 0,01 to 10 ml makes the 580 HPLC suitable for micro and conventional HPLC and a wide range of columns particle sizes (1,5, 3, 5 and 10 microns) including new low backpressure hollow packings.

Isocratic, and preparative versions (40 Mpa and 0,1 to 50 ml/min) of the 580 pump are also available by easy exchange of the pump head.

The 580 design has facilitated improvements on the pump flow control with even lower pulsation than previous models, better accuracy and reproducibility of gradient formation, and a more compact oven for better column temperature control. The 580 oven is now housed in the same modular chassis of the 580 series

The 580 HPLC offers again, like in the previous model 500, four solvent, low pressure mixing gradient formation for utmost flexibility and reproducibility with built in solvent degassing. Column and detector switching, as well as column back flushing are interesting options to increase productivity. The HPLC 580 has been purposely designed for utmost compatibility for Multidimensional HPLC+GC, HPLC+GC-MS and/or HPLC-MS, hence facilitating future expansions while opening new dimensions for critical analysis.

As a direct advantage of the intrinsic modularity of the GIBNIK product programme all options in the KONIK 580 can be fitted at any time in the future. This facilitates coping flexibly with future analytical needs.

The KONIK 580 PUMP

The 580 pump is a multipurpose, multifunctional pump available with three pump heads optimised for:

- Analytical HPLC with flow range from 0,01 to 10 ml and
- Semi preparative, with flow range up to 50 ml and
- Preparative HPLC with flow ranges from 1 to 100 cc/min upon exchange of pump head, and
- **Dedicated preparative KONIK 580 HPLC Pumps** with choice of flow rates of up to 50 , 100, or 300 ml/min..

Can work as

- Isocratic
- Four solvents gradient with low pressure mixing concept, and/or



With flow rate ranging from 0.01 to 10.00 ml/min. and a pressure limit of 40 MPa (400 Bar/5.800psi) this pump is suited for most analytical applications in liquid chromatography. It is designed following the KONIK HPLC 500 Isokinetic Flow Delivery principle we pioneered in 1985. This implies the use of dual pistons working in series to minimize pulsation with an improved pulsation dampening algorithm, while improving solvent mixing in the gradient forming process.

The KONIK 580 Pump facilitates highly reproducible and accurate gradient forming by mixing at low pressure the chosen solvents prior to introducing the mixture in the pump head. This is done by the use of very fast, microelectrosolenoid valves under computer control. User selects the solvents and defines the desired gradient and built in algorithm does the rest (see the KONIK 580 Solvent Manager).



The 580 pump can also be used in isocratic runs by choosing any of the 4 solvents and or producing constant mix of any of the four in any chosen proportions.

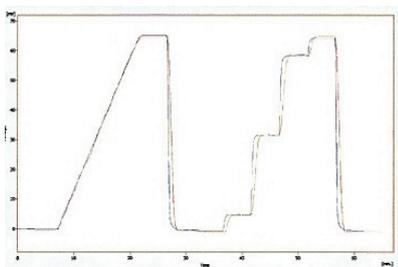
Mechanically the pump offers utmost reliability and robustness, along with accurate and reproducible flows. Easy exchange of pistons, seals and check

When using certain chemically aggressive mobile phases, such as buffered solutions, it is important to be able to rinse, wash and/or flush pistons and seals to properly protect them. A piston/seal backwash option is offered for the KONIK 580HPLC Pump.

The KONIK 580 SOLVENT MANAGER

This module is used with the KONIK 580 Pump for gradient formation of up to 4 solvents mixed at low pressure. It is made up of four way microsolenoid valves controlled by the KONIK 580 Pump.

The 580 SOLVENT MANAGER includes a highly effective, fast response and low internal volume, 4 channel solvent degasser with advanced gas permeation membrane technology. Solvent degassing is important to prevent bubble formation upon low pressure solvent mixing and it is much more economical than He degassing as we used in older model 500. The Solvent Manager tray fits up to 6 solvent bottles. An additional solvent selection valve can be optionally fitted.



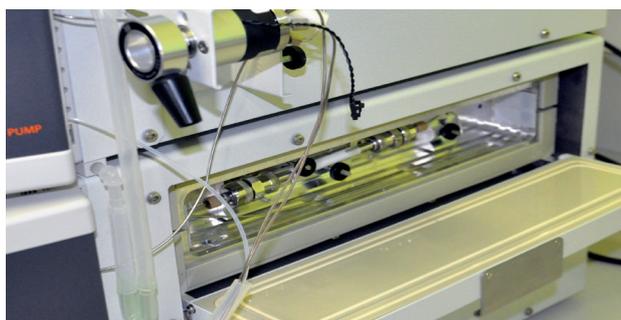
Accurate gradient formation is a very important feature when the HPLC is coupled to the GC for Multidimensional HPLC+GC or HPLC+GC-MS. In fact the HPLC fraction or fractions are introduced into the patented HPLC+GC interface by switching a valve located at the column outlet. This is done on a time bases in relation to retention volumes of the particular method and gradient chosen. Accuracy and reproducibility of the gradient formed is key to integrity of the fraction(s) introduced and hence reproducibility and reliability of results.

A PREPARATIVE KONIK 580 SOLVENT MANAGER also equipped with a four way gradient forming, fast action, four way electrovalve is optionally available for the specific control of the full range of the KONIK 580 Preparative Pumps options.

The KONIK 580 COLUMN OVEN



Retention volumes (retention time of the analytes) reproducibility is enhanced by temperature control of the columns. Also, as Partition Coefficients between mobile and stationary phases are a function of temperature the ability to adjust the temperature might contribute to shorten analysis time



The KONIK 580 Column Oven has a temperature range of +5°C to 99 °C with an accuracy of +/-0,2°C and fits up to 3 columns of up to 25 cm length. It is controlled by the KONIKROM Data System computer (via RS232 or Eternet) or by its own keypad. For intrinsic safety it is fitted with a leak detection alarm.

HPLC DETECTORS



KONIK 580 UV-Vis: The 580 UV-Vis covers the range 190 to 800 nm continuously with spectral band width of 6nm. Has high sensitivity and low noise of $\pm 3 \cdot 10^{-6}$ AU and drift. Several detector flow cells are available, easily interchangeable, for analytical, semi-preparative or flash chromatography.

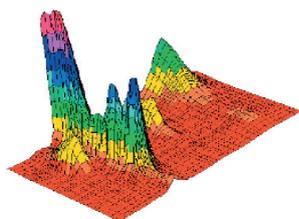


The 580 UV-Vis is fitted with one high intensity long life Deuterium discharge lamp for the UV range and Tungsten lamps for the visible region. Two, Reference and Sample, measuring channels allow easy detector diagnostics as well as registration of operational hours. Wavelength Calibration to ± 1 nm is automatically performed every time the lamp is switched on. Digital and analogue outputs are included.

The 580 UV-Vis is controlled by the KONIKROM Data System



KONIK 580 DAD: The 580 UV-Vis Diode Array Detector is designed to facilitate full spectrum (190 to 840 nm) or simultaneous four wavelength measurements. Control of peak purity is performed by an optional KONIKROM module. Lamp life control, calibration, etc is similar to the 580 UV-Vis.



Three options of Preparative KONIK 580 DAD are available for different wavelength ranges, namely from 200 to 400, 200 to 600, and 190 to 840 nm and choice of flow cells 45, 55 and 70 microliters with adjustable optical path.



KONIK 580 RI: Is used for detection of null or low UV absorption compounds such as sugars, polymers, ... in isocratic runs. It is rather universal but sensitivity is somewhat limited compared to other detectors. The 580 RI has low drift, noise, accurate flow control and fast equilibration times for optimal performance.

KONIK 580 FL: More than 80% of organic compounds are fluorescence when excited with the proper wavelength. Fluorescence might encompass high sensitivity with selectivity. The 580 FL offers a wide range of excitation and emission, from 200 to 700 nm (900 nm optionally), and signal to noise ratio better than 350:1. It includes a rapid scan feature, of both excitation and emission, quite suitable for method optimization.



KONIK 580 ELSD: Evaporative light scattering is an interesting universal detector that complements RI detection when gradient elution is necessary. It is particularly suitable for non-volatile substances soluble in normal HPLC solvents .

A series of six nebulizers are available to optimise different applications.

KONIK Q4 HPLC-MS: This is by far the detector of choice in HPLC as offers the best of all worlds: selectivity, low detection limits, unequivocal total mass spectrum information ... The main handicap has been its high cost compared to the other as well as its technical complexity.



The new KONIK Q4 offers mass range to 2000, hence suitable for proteomics (trypsin digest) and all main ionization modes ESI/APCI/APPC. It is described in detail in the GIBNIK MS brochure.

The **CONDUCTIVITY AND ELECTROCONDUCTIVITY DETECTORS** are described in the new GIBNIK ION CHROMATOGRAPHY brochure describing the new KONIK 590 IC Plus for Anion, Cation, and Organic Ion Analysis.

HPLC AUTOSAMPLERS, PERIPHERALS AND ACCESSORIES

ROBOKROM HPLC, LOW COST AUTOSAMPLER AND FRACTION COLLECTOR



The ROBOKROM HPLC is the optimised Multimode-Multifunction Auto Sampler for HPLC applications. The X-Y-Z version offers 3 tray options of 32 vials of 6, 10 or 20 ml, 105 vials of 2ml, or 171 vials of 1ml. A lower cost two axes, X-Y, is available with a tray holding 15 vials of 2ml basically sufficient for a full day job (15 sample runs of average 30 minutes for an 8 hour journey).

KONIK 580 AS HPLC ADVANCED PLUS, HIGH PERFORMANCE, AUTOSAMPLER

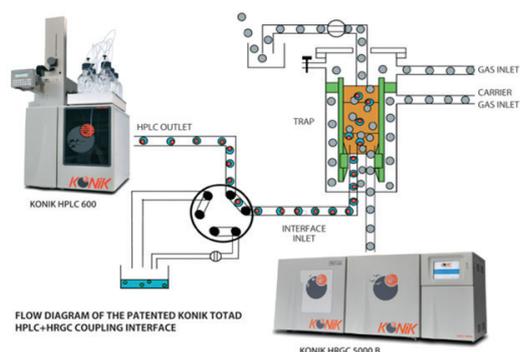


With this new HPLC and HPLC-MS Auto Sampler we have added the following new features and options not available in the ROBOKROM HPLC such as: a. Faster injections, b. faster and more efficient wash cycles, c. more convenient multi-solvent needle wash for "zero carryover", d. sample cooling option to 4°C, e. UHPLC option at high pressure, f. allows use of 24, 10ml vials (open or closed), or stackable micro-plates, and g. "watchdog" function for proper safety, all with utmost reliability, precision and total injection cycle of less than 60 seconds.

FRACTION COLLECTOR'S

In addition to the ROBOKROM in Fraction Collector Mode we offer the Fract R1 that accommodates a 13mm tube rack ideally suited for high volume preparative HPLC, protein and peptide purification with flow rates of up to 100ml/min.

HPLC+GC COUPLING INTERFACE FOR MULTIDIMENSIONAL HPLC+GC and/or HPLC+GC-MS



This is a unique, patented, interface that opens a new dimension for both HPLC and GC analysis offering the best of both worlds. HPLC is not only a very powerful analytical technique but also offers extraordinary fractionation and clean up power. This is especially interesting to facilitate GC sample handling and preparation. The KONIK 580 and 600 HPLCs have purposely designed to enhance the benefits of this new technology. The GIBNIK Multidimensional Platforms are described in detail in specific brochures.

PRE AND/OR POST COLUMN and HPLC+GC ON-LINE DERIVATIZATION OPTIONS

GIBNIK offers Pre and Post column derivatization options for the two models of Auto Samplers. Derivatization is needed in HPLC to increase selectivity or improve detection limits. This is also valid for GC. GIBNIK offers a unique, patented, "on-line post column derivatization" option based on GIBNIK HPLC+GC unique Coupling Interface described above to stretch the application limits of the novel HPLC+GC technique to non volatile substances. New applications are being also currently explored such as to perform solid phase C-C reactions "on line" (Suzuki and similar) with the HPLC+GC and HPLC+GC-MS GIBNIK systems. Please inquire about recent developments.

KONIK HPLC 580 PREPARATIVE SYSTEMS

The combination of any choice of the **Preparative KONIK 580 Pumps** (50, 100 or 300 ml/min) as described in the pump section, the KONIK 580 **Preparative SOLVENT MANAGER**, and the choice of the dedicated **Preparative 580 DAD** with the right choice of wavelength range and flow cell, optimised multichannel potcolumn diverter valve, all under automatic control of the **Preparative version of the KONIKROM Data system Software**, facilitates automatic injection and collection of any fractions of any compounds in any matrix. GIBNIK offers specialised support to scale up from analytical to preparative for optimal performance and productivity. Fraction purity check and impurities determination can be made with the KONIK HPLC-MS Q4 and/or the Multidimensional KONIK K2Q2 HPLC+GC-MS systems. GIBNIK offers Dedicated, Purposely Engineered, "Turn Key", cost effective Preparative Solution Packages with "GIBNIK Zero Risk Policy".

HPLC CONSUMABLES

HPLC COLUMNS AND PRECOLUMNS



At the heart of any HPLC System: the column. GIBNIK offers the widest range of Analytical, Microbore, Ultrafast, and Preparative Columns. The GIBNIK technical team pioneered, along the model 500 HPLC back in 1985, the spherical silica particles of 5 and 10 μ . We currently offer a wide range of well accepted packings (Extrasil, Hyperpack, Nucleosil, Lichrosphere, Supersphere, Partisil, ...) as well as GIBNIK's proprietary packings purposely tested to cope with unique demands such as pH stability.

SAMPLE FILTERS



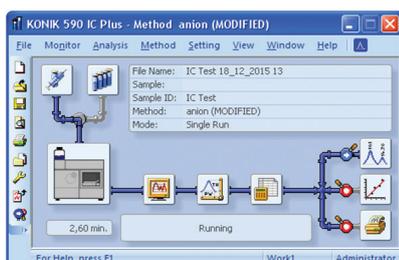
Sample filtration is a must in HPLC to prevent clogging of the columns. GIBNIK offers the complete range of sample filters in Nylon, PTFE, PES, MCE,... of different pore sizes (0,22, 0,45 μ ...) and diameters (25mm ...) for the different solvents and samples. Sterilized or not. Likewise eliminating smaller particles from solvents helps to extend column life. Even though most commercial solvents are "clean" routine use of on line filters of 0,2 μ prevent the risk.

HPLC AUTOSAMPLER VIALS



In addition to the typical 2, 5, 10 and 20 cc capped or open sample vials GIBNIK offers a wide selection of autosampler vials compatible with GIBNIK line of autosamplers as well as most other autosamplers from all main brands.

KONIKROM DATA SYSTEM



Compatible with most other HPLCs offers full HPLC control for KONIK and most other brands, all integration, calibration and recalibration functions, and reports. It is capable of data acquisition of several detectors simultaneously. Konikrom is offered in several languages and is easy and straightforward to use.

HPLC AND HPLC MS INTENSIVE TRAINING COURSES

GIBNIK offers tailor made specialization and training courses to GIBNIK end users. They include all aspects of HPLC and HPLC-MS technologies. They are regularly announced in the web: www.gibnik.com

GIBNIK

ANALYTICAL SOLUTIONS... AIMING TO MAKE THE WORLD A BETTER PLACE FOR ALL!



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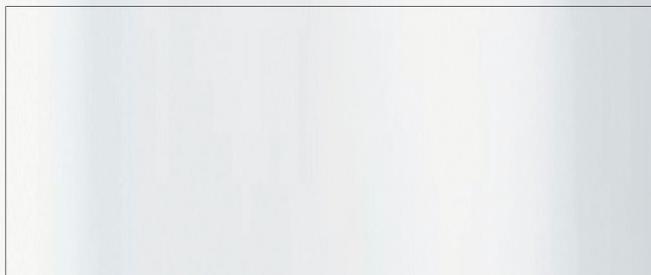


GIBNIK meets most quality standards

Design, manufacturing and commercialization of analytical instruments, laboratory equipment, consumables and accessories.



Local Distributor



For more information on our products and services, please visit our website at:
www.gibnik.com or contact: **sales@gibnik.com**

SOME CUSTOMER REFERENCES

