

The KONIK 5000B Gas Chromatograph

K

Here I Here

HRGC 5000B

KEINE

The universe of molecules... The world of KONIK

KONIK HRGC 5000 B series



KONIK GC's evolution Since 1978

EVOLUTION? NO!!!



1978 KONIK HRGC 2000 A series



1981 KONIK HRGC 2000 B series



1983 KONIK HRGC 2000 <u>C se</u>ries



1985 KONIK HRGC 3000 A series



1993 KONIK HRGC 3000 <u>C se</u>ries



1997 KONIK HRGC 4000 A series

KONIK HRGC 5000B:

The result of more than 30 years of experience in designing and manufacturing gas chromatographs

KONIK has been designing and continuously improving its GCs since 1978. The specifications and performance of the model KONIK 5000B are second to none. We have improved the pneumatics with a higher accuracy A/D converter and a superb low inertia, fast heating and cooling, high precision oven (+/-0.1 °C displayed). The unique Cold Septum Purgeless Injector, along with a full range of detectors with fast electrometers, remain unchanged. The state-of-the-art electronics, based on FPGAs and micro embedded PCs, that KONIK developed for its KONIK Q12 Mass Spectrometer, have now been also implemented in its range of HRGCs allowing total diagnostics and remote control of the systems via internet and simple TCP/IP protocols.

The KONIK 5000B has been designed for all conventional and special GC applications including Multivalve-Multicolumns Systems (RGA, NGA, PONA, PIANO, TOGA,...), as well as Fast and Multidimensional GC+GC (heart cut) and for multidimensional HPLC+GC (a KONIK patent) and HPLC+GC+GC. All these options can be fitted into the KONIK 5000B at any time, providing a future-proof instrument as more and more applications and methods come into place.

KONIK HRGC 5000B CRASH THROUGHS









3) New pneumatics: EPC with improved pressure resolution and range, specially designed for Fast GC and HPLC-GC

1) New Electronics: It incorporates

FPGA of latest generation and built-in

web server, that allows full remote

control through internet and TCP/IP

2) User Friendly Interface based on Touch Screen TFT with 262144

colours/pixel and interactive pro-

gramming based on menu-driven

4) Unique Cold Septum Purgeless Injection Technology: the guarantee of sample integrity, no discrimination of volatiles and high boilers.





accuracy displayed.

5) Low Thermal Inertia Oven for fast

heating and cooling with +/-0.1°C

6) Maximum versatility: Up to 3 injectors and 3 detectors can be installed and



7) Full range of detectors with excellent sensitivity and linearity ranges: FID, TCD, ECD, NPD, FPD, Dual FID-FPD and MS.



8) Designed for multidimensional Chromatography: LC+GC, LC+GC-MS, GC+GC, GC+GC-MS, LC+GC+GC, LC+GC+GC-MS.



REVOLUTION!!!



2000 KONIK HRGC 4000 **B** series



2006 KONIK HRGC 4000 C series





KONIK PROPIETARY DESIGN OF EPC FOR CAPILLARY INJECTOR Automatic setup of column pressure and split ratio



No discrimination of volatiles

Fast transmission of high boiling compounds to the column head

EPC: Optimal flow and pressure control

5000B Electronic Pneumatic Control has a second-tonone pressure resolution of 0.0015 psi and extended pressure and flow operating ranges

Because we incorporate both flow and pressure sensors in the EPC design, there is a choice of true flow or pressure programming with up to 5 ramps. Improved gas saver functionality

Free selection of carrier gas.

The extended flow and pressure ranges allows FAST GC operation on a standard GC configuration and at the same time reduces analysis time by accelerating solvent removal on the LC+GC patented TOTAD interface.

KONIK TIGHT INJECTOR: The guarantee of sample integrity

The 5000B HRGC incorporates in all the injector devices (Packed, Capillary and PTV) the Konik Unique Cold Septum Purgeless Injection Technology

By using this patented technology we guarantee sample integrity from low boilers to high boilers and at the same time we provide economical advantages for the Konik GC users.

Its design is based on a forced-air-flow concept that maintains the septum holder at a temperature lower than 50°C, regardless of whether higher temperatures are programmed in the injector.

The analytical benefits of this unique design are:

1) Septum bleeding is eliminated so septum purge is not required. The septum remains cold during analysis, preventing thermal degradation of the septum polymer and avoiding column contamination and ghost peaks.



KONIK GC INJECTOR: The guarantee of sample integrity Prevents hydrolisis or oxidation of labile samples



Low thermal inertia Oven

The 5000B has a new low thermal inertia oven design with an expanded temperature range that allows for ultra-fast heating and cooling. It is isolated in a forced-air-circulating chamber for better temperature stability and further electronics protection. It has an upgraded oven flap design for optimal temperature control at near ambient temperature operation.

Temperature resolution: 0.01°C and accuracy displayed: 0.1°C, PID controlled.

Cryogenic option for operation below ambient temperature.

Dual Overheating protection by software and hardware, with programmable temperature limit for column protection.

RAC Ready Active Control allows maximum productivity or maximum accuracy depending on customer needs.

2) As the injector is leak tight, it prevents any leakage and hence discrimination of volatiles with unmatched reproducibility and detection limits. In all other systems, with the septum purged, volatiles are easily lost.

3) At the same time, using a simple straight liner, fast transfer of the high boiling analytes to the column head is optimized, thus extending the range of application to high boilers.

4) There is no possibility of any back diffusion of atmospheric oxygen or water through the septum purge flow, which might oxidise or hydrolise some very labile samples in the hot GC injector. This also extends the GC application range to this kind of compounds.

The economical benefits are:

- 1) Carrier Gas saving (purge flow is not needed).
- 2) Extended column life.
- 3) High temperature septa are not required.

What really matters for an optimum reproducibility on GC retention time is an optimum control of the carrier gas pneumatics and column temperature. For that reason KONIK has focused its efforts on designing the right tools to better control those parameters.



Forced Air Flow in the KONIK HRGC 5000B (Patent applied for)

And this is the result:



Perfect Overlaping of 10 chromatograms with simultaneous Temperature and Pressure ramping





8

Automation and Chromatography Data System

Full GC Control at your fingertips

You may control all GC parameters using a menu-driven Touch Screen User Interface or from the computer through the KONIKROM[®] PLUS SOFTWARE. Which ever way you choose you will have a user friendly interface, that will help you take the maximum benefit from its unique features, with almost no training required.

KONIKROM® PLUS SOFTWARE provides you with full automation as it also controls the ROBOKROM® Multimode Autosampler, allowing the generation of any kind of injection sequences. It allows you to control all other KONIK instruments: HPLC, K2 and MSQ12 and also provides you with a simple tool for data acquisition, processing and report generation.

It meets all GLP/GMP requirements: Acquisition, integration, calibration and reporting under a 21 CFR Part 11 environment.



Retted Setup (CD, text	Example Konikror 5000B TH	s of n Plus an -T screen:
Select SC Select Science Stress Version Version	(F) Ford Hills (F) Ford (F) Fo	
Column A	Capita Henora	Figs SC
Colom Lange (m) 55 Colom Daneter (m) 6.45 Color Parmare (m) 147 Split Prov Gal Sover 6	Res Side Res skinin 1 0	
Pressee Petersee 7	Soliteurine: 000 50" (2011)	009448

IserConf Inc. Fig. ALC: NO. Carrier Gas Injector Type Septun + He ... None Node Cryo Gas Injection Device standby • • Air Packed 1 EPC B Control EPC A Control tenper. . Pressure. 1 Flow R Tenperature 1 01 Alazh • Tenperature Flow B • 01 Alarn OF Alarn • Pressure B Pressure A 01 Alarn

USERCONT H	stduste Oven	PID	
T_Pack	Flaps		
P +8.23	P +0.0		
1 +0.0	1 +0.0		
D +0.0	D +0.0		
Counter:	Counter:		
+0.0	+0.0		
Cours			
P +0.0	-		
1 40.0	-		
0.0	-		
Counterl			
+0.0			

HGRC5000B (Configuration
Inj. Ualve At Yas	Inj. A: Hone
Inj. Ualve B: No	Inj.B: Hone
Inj. Valve C: No	Inj.C: Hone
Headerspacet Yes	Det. At Hune
KUKSI No	Det. B: None
Language:	Det. C: Hone
English	Progr. Devices
(B)Service	Digital 1/0
OUser	Sensor Outputs
۲	



pplications



KONIK K2 Q12

Passion for innovation

The power of automatic sample preparation, multidimensional chromatography and mass spectrometry with universal absolute quantification option (KONIK QUANTITATOR[®]) in a single and unique system

MODULE BY MODULE BUILD YOUR DREAM!

The KONIK HRGC 5000B is the first building block of your K2Q12 system. The intrinsic modular design of our systems allows continuous and unmatched upgradeability and updatability. The new HRGC 5000B can be attached to our HPLC 560/600 and/or to our KONIK MS at any time creating a dream for any analyst in the organic chemistry field, as it opens a new dimension in analytical chemistry in multidimensional chromatography and sample preparation simplification & automation.

K2 MULTIDIMENSIONAL HPLC+GC



K2 Q12 MULTIDIMENSIONAL HPLC+GC-MS

KONIK ALSO PROVIDES OTHER PERIPHERALS FOR GAS CHROMATOGRAPHY SUCH AS GAS GENERATORS, PYROLYZERS, METHANIZERS, MONOVIAL STATIC HEADSPACE, ON-LINE PURGE & TRAP AND A FULL RANGE OF CONSUMABLES, ACCESSORIES AND SPARES





The universe of molecules... The world of KONIK

Headquarters:

EUROPE, Barcelona: T (+34) 93 590 28 40 F (+34) 93 590 28 44

Av. Cerdanyola, 73 08172 Sant Cugat, Barcelona, Spain

Sales: sales@konik-group.com Marketing: marketing@konik-group.com Technical Service: sat@konik-group.com Applications: applications.lab@konik-group.com

USA, Miami: T (+1) 305 252 05 06 F (+1) 305 252 08 09

12221 SW, 129th Ct. Miami, Florida 33186, USA e-mail: miami@konik-group.com

Contact other KONIK Marketing Regional offices at:

madrid@konik-group.com argentina@konik-group.com kcaribe@konik-group.com india@konik-group.com china@konik-group.com

> Designed and manufactured by KONIXBERT HI-TECH, S.A. (KONIK-TECH) a KONIK GROUP Company integrating KONIK INSTRUMENTS INC, KONIK NANOBIOTECH, KONIK ENGINEERING, KONIK DIAGNOSTIKA and IKAI (INSTITUT OF ANALYTICAL INSTRUMENTATION).



Factory trained distributors worldwide

For more information about our products and services, please visit our website at:

www.konik-group.com

Applications. Technical Information. Analytical Links. Specialized Analytical Services. Customer Training Programs. Career Opportunities.

KONIK-TECH is an ISO 9001 Certified Company



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

Technical information in this publication is for reference purposes only and it is subject to change without notice

02/2010 5000B_CAT_2E





Innovation, Design & Manufacturing