SEPmaster-1000

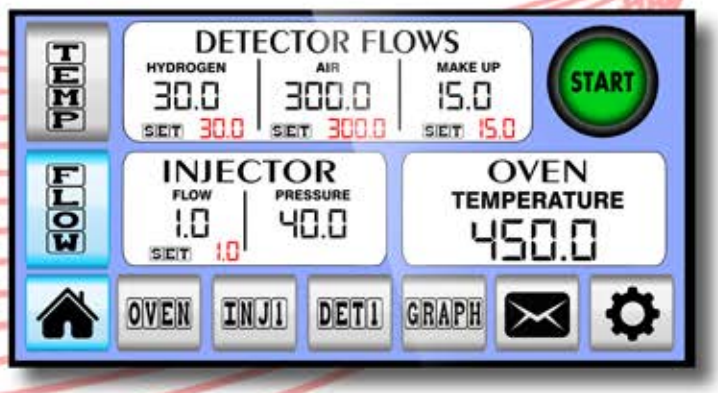
SAKS
EQUIPMENTS Pvt. Ltd
EXPERIMENT THE FUTURE !
ISO 9001:2008 CERTIFIED COMPANY

HIGH RESOLUTION FAST GAS CHROMATOGRAPH

FAST RELIABLE ACCURATE

A Digital Chromatography experiance

There is a global demand for reliable gas chromatograph's. Most of the currently available devices are far more complex than many customer requirements and doesn't fit the budget. SAKS Equipments SEP-master - 1000 series Gas Chromatograph's fit in this gap. Being economical, but offering fully digital models with relaible, accurate and fast perfomance catering the need of variety of industries and applications such as food and beverage, environmental, agriculture, flavor and fragrance, petrochemical, pharmaceuticals etc.



FAST RELIABLE ACCURATE

SEPmaster - 1000 series is highly modular. User can select from number of inlet systems. Split/-Splitless, conventional packed, PTV, valve inlets are developed from a unique purgefree monoblock system provide easy sample introduction. iDPC(inteligent Digital Pneumatic Controller) integrated both pressure and flow sensors with choice of true flow or pressure enable full digital control of all the injector and detector flows with excellent repeatability

Most of the detector systems are available make use of the new age cutting technologies and modern age manufacturing practices. FID, TCD, PID, HID, micro TCD, NPD, FPD and ECD are available. All the detectors undergone and passed quality tests as per ASTM standards.

A latest generation digital PID control accomodating newer generaion ADC's help us to achieve excellent temperature and flow repeatabilities thus a final excellent repeatability of retention times comparable to most renowned manufactures having many decades of experiance.

A 7" big multitouch touchscreen user interface helps to set all the control parameters also featuring a live pinch zoom chromatogram screen first of its kind. GC can be fully controlled via SAKS CRYSTAL Chromatography data station as well, which developed most inexperianced users in mind.

Real time clock that allows auto swith on and off programming. Septum and column change warning, auto diagnostics, column leak check facility, FID flameout detection and re-ignition, Single touch autozero and software autozero, low pressure column flow cut-off and warning, password protected configuration menu are standard. Option for multidimensional GC-GC (heart-cutting), on-line purge and trap, monovial head space, coupling to MS and AS-1000 automatic sample preparation systems.

All the Injection and detection systems are easy o fit at users premises thus upgrading the GC will be very easy in future.

Increased Productivity

In todays most demanding applications a routine analysis laboratory requires shorter run times without loosing perfomance and accuracy. SAKS SEPmaster - 1000 GC proved to increase productivity by shortening analysis time via cutting SEPmaster - 1000 instrumentation. SEPmaster - 1000 GC can go upto 140°C heating rate as well as a typical cooling time of less than 4 minutes thanks to the additional turbo fan cooling.

Increased Accuracy, Precision and Repeatability

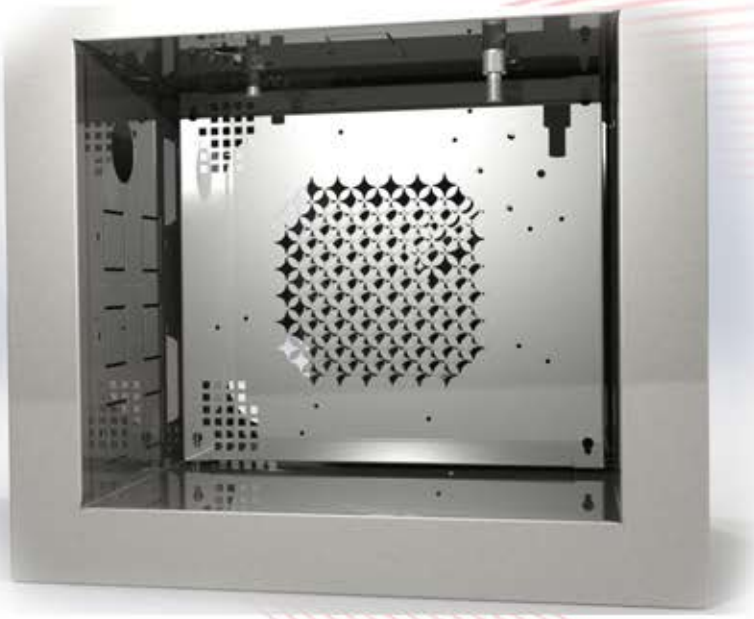
Precision, accuracy and repeatability are guranteed in SEPmaster - 1000 GC thanks to latest generation electronics and technologies. Our iDPC(inteligent Digital Pneumatic Controller) provides accurate gas flows with automatic calibraiton, automatic atmospheric temperature compensation, pressure compensation etc thus provides long run repeatability. All types of carrier gas flow modes supported by the SEPmaster - 1000 with the help of iDPC.

A 24 bit ADC used for the temperature control provides an unsurpassed temperature repeatability crucial for the GC perfomance. The same helps to achieve repeatability and accuracy even if the analytical conditions vary to the specified extreme limits.

Performance Specifications

Typical retention time repeatability: <0.0008 min
Typical peak area repeatability: <0.5 % RSD

Oven



A low thermal inertia oven helps to heat and cool fast with an addition of Intelligently placed oven flaps with additional cooling fans for better temperature control and minimum cooling time.

- Column oven (H × W × D): 28 × 28 × 20 cm; 15.6 L
- Operating temperature range: ambient +3 °C to 450 °C
- Cryogenic option minimum temperature: -100 °C with liquid nitrogen; -50 with liquid CO2
- Temperature set point resolution: 0.1 °C
- Number of ramps/plateaus: 24/25
- Maximum heating rate: 140 °C/min
- Oven cool-down (22 °C ambient): 450 °C to 50 °C in less than 4 minutes

Gas Control

iDPC(inteligent Digital Pneumatic Controller) : Integrated both pressure and flow sensors with choice of true flow or pressure for carrier gas. Up to 24 channels for injection and detection systems or auxiliary gases. Gas selection(helium, hydrogen, nitrogen, argon-methane) for carrier and detectors make up gases.

User has the option to select either constant flow or constant pressure or consant velocity through touch interface or through SAKS Crystal software and both simultaneously displayed for each device. Up to 7 pressure and/or flow ramps can be programmed for injectors.

Pressure can be adjusted up to 145 psi in 0.01 psi steps. Inbuilt Atmospheric pressure variation compensation. Optimized gas saver mode allows user to put the instrument in standby thus save valuable resources.

- Up to 24 channels of integrated electronic gas control
- Split ratio: Up to 12500:1
- Pressure range: 0–1000 kPa (0–145 psi)
- Modes: Constant and programmed pressures and flows with gas saver function

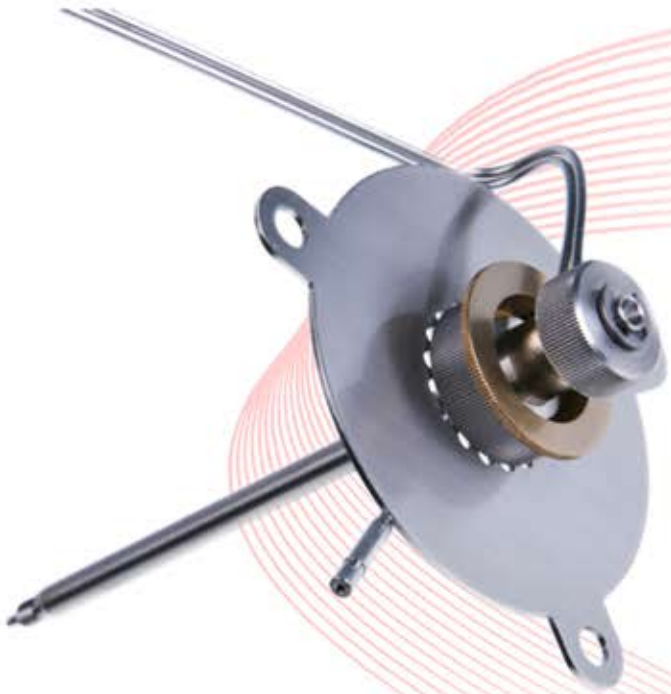
split flow can be OFF or from 10 to 1250 mL/min

Split Splitless Injector

Mono block purge-free injector with intelligent Digital Pneumatic Controller(iDPC). Split/Splitless time adujustable with 0.1 ml increments through touch screen interface or through SAKS CRYSTSL software . Allows digital programming and control of column
head pressure from 0.01psi up to 145 psi with pressure resolution of 0.003psi,
programming of split ratio from 10 to 1250 with 0-200ml/min total flow for N2 and up to 1250 ml/min for H2/He.
Different operation modes: split, splitless, split/-splitless, pulsed split/splitless, large volume injections (LVI), packed column simulation. Also compatible with Head Space and On-line Purge & Trap.
Can work at constant flow or constant pressure and allows programming up to 7 ramps of flow and/or pressure, independent of the column size and carrier gas.
Compatible with 1/8" packed columns, 0.53 mm I.D. semicapillary and capillary columns upto 0.1mm I.D.
Maximum temperature programming up to 450 °C

Packed 1/8" Injector with iDPC

Packed 1/8" Mono block purge-free injector with intelligent Digital Pneumatic Controller(iDPC). Allows digital programming and control of column head pressure from 0.01psi up to 145 psi with pressure resolution of 0.003psi,. Can work at constant flow or constant pressure and allows programming up to 7 ramps of flow and/or pressure, independent of the column size and carrier gas.
Compatible with 1/8" packed columns as well as 0.53 mm I.D. semicapillary columns
Maximum temperature programming up to 450 °C



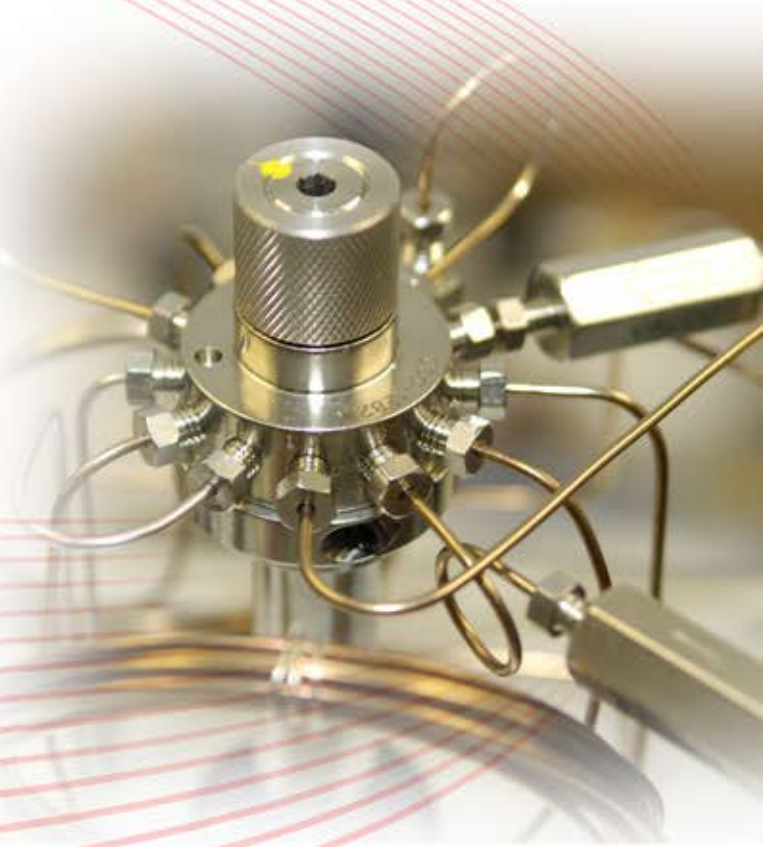
Programmable Temperature vaporizer(PTV) Injector with iDPC

Allows the injection of a large sample volume without concentration. Time savings. Temperature programming from –50 °C up to 450 °C at a heating rate up to 10 °C/sec. Injection volume up to 5 ml. Different packing liners are available. Allows splitless time and cooling time programming. iDPC for carrier gas. Purge-free injector.

6 ports automatic gas sampling Injection Valves with iDPC

Automatic, temperature controlled 6-port Gas Sampling Valve. Includes a 316 stainless steel body and graphite rotor. Maximum working temperature: 350□C. 1/16 in Connections. Exchangeable external loops of different volumes: 0.1, 0.2, 0.5, 1.0 or 2.0 ml. Allows control and temperature programming of the injection valve through the touchscreen and/or software. It makes the injection valve cycles automatic and controls the injection time through the GC microprocessor and/or software.

Includes a standard iDPC pneumatic control that allows to use the GSV without a Standard or a Capillary Injector.



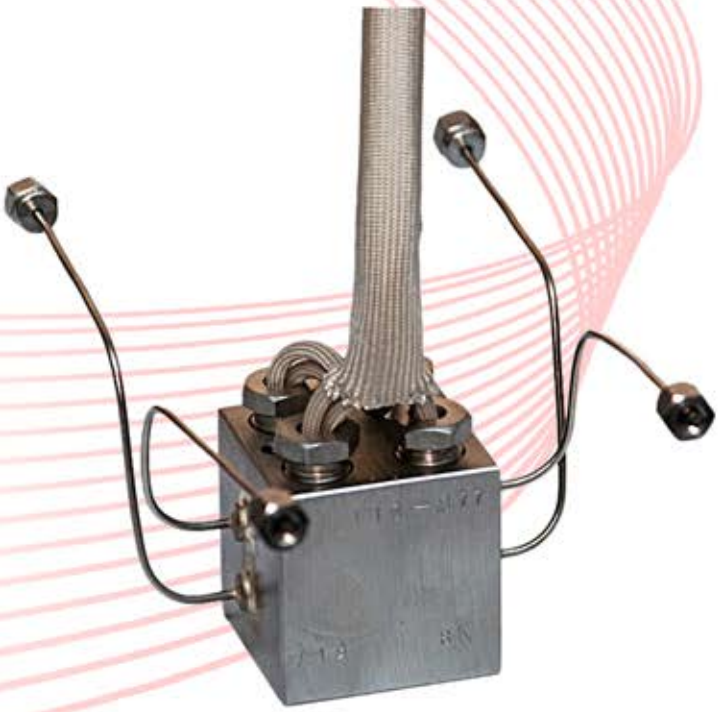
Flame Ionization Detector with iDPC

Flame Ionization Detector system with quartz jet and intelligent Digital Pneumatic Control (iDPC) for all gases with excellent response to most organic compounds. Compatible with packed and capillary columns. High sensitivity, high linearity and wide dynamic linear range. Allows digital programming and control for make up and flame gases through the touch-screen and/or software. Automatic flame switch on. Flameout detection and automatic re-ignition. High stability and excellent linear range digital electrometer amplifier. Four working ranges and ten attenuation settings. Autozero. Allows automatic flame switch on from touchscreen and /or software as well as automatic shut off of flame gases if flow stops. Tested as per ASTM E594 − 96.
Minimum detectable level: <1.4 C/s(Tride-cane)
Linear Dynamic range: 10^7
Max flow rate of H2: 100mL/min
Max flow rate of Air:1000 mL/min

Thermal Conductivity Detector TCD detector with iDPC

Thermal Conductivity Detector with intelligent Digital Pneumatic Controller (iDPC). High sensitivity hot wire, with four filaments Re/W detection technique. Compatible with other filaments and/or high sensitivity thermistors.
It allows connection of two columns.

High stability continuous intensity source , Digital electrometer/amplifier. In case flow stopes, the TCD will shutoff automaticallyt to protect filament. Autozero. Filament current 0-300 mA. Tested as per ASTM E516 − 95a



SAKS CRYSTAL CHROMATOGRAPHY SOFTWARE

SAKS Crystal is a dual channel 21 CFR compliant chromatography data system which developed by SAKS Equipments on the basis of numerous customer feedbacks, which fit to SAKS GC's as well as almost all chromatography instruments of different vendors.

SAKS Crystal software can control all GC parameters and display all actual values realtime on the software. Unlimited methods can be securely stored password protected and retrived easily and conveniently.

SAKS Crystal communicates to GC via fast USB interface. The two channels can be independently connected two separate GC's. Maximum of 8 number of GC's can be connected and shown in single window. This ensures convenient data management for clients.

Powerful securty features with multilevel user management ensure the data safety on the Multi-user operating platform.

SST Function
Comprehensive SST function provide users to choose for real-time system monitor and ensure the method reliability.

Data record and audit trail
Ensure the reliability of the analysis results and traceability.

Group analysis
Process group data effectively and automatically, including method application, data acquisition, process of spectra and data, print report and others.

User-defined report
User-defined template helps users to get the report more easily.

Specification

Input channel count	2
Input voltage range	-2.5V~+2.5V
Integral sensitivity	1 uVs
Input impedance	10 M Ω
Maximum peak number	> 1000
Smallest signal resolution	1 uVs
Dynamic range	10^7
Minimum time resolution	0.01 min
Linear degrees	±0.1%
Minimum peak width	0.1 s

Peak processing parameters

Automatic time program;
Manual integral function;
Automatic identification of complex peak form and accurate division;
Automatic tracking and correct baseline;
Negative influence peak eliminates;
Accordance with GMP regulations;
Identify methods of spectrum peak qualitative:
Keep time method;
Component identification method

Integral parameters

Peak area or peak high;
Quantitative calculation method:
Normalization method;
Internal standard method;
Dividing group method;
Internal standard method;
External standard method.