

# SP-3400

## Gas Chromatograph



### APPLICATIONS

SP-3400 Gas Chromatograph, made according to international standards, its technical feature and index are in the world high level. The key components are imported from world famous suppliers. It is widely used for petrol-chemistry, environmental protection, epidemic prevention, pharmacology, scientific research, etc.

### FEATURES

#### ◆ Self-diagnostic function:

1) Core tests; 2) Automatic tests; 3) Extended tests; 4) Basic tests;

Monitor the status of GC continuously. Once finding faults, it'll display the information and show the wrong zone and the settling method.

#### ◆ Self-protective function:

1) Overrun temperature protection; 2) Short circuit

hint; 3) TCD filament protection; 4) FID flameout hint; 5) PFD exposed-light protection; 6) Keyboard locking with password; etc., ensuring normal running.

#### ◆ Simple operation, powerful automation:

1) All parameters can be entered through keyboard with prompt function;

2) 4 sets of complete chromatography analysis methods can be stored and recalled automatically;

3) An autosampler can be connected;

4) Parameters can be modified instantly while the GC is running;

5) Chromatography analysis method can be activated for 99 times repeatedly at the same time. It's especially suitable for unattended operation.

#### ◆ More choices of injectors:

1) On-Column Injector for Packed Column; 2) Flash Vaporization Injector for Packed Column

3) Automatic or manual gas inject valve; 4)

Headspace sampler;5) Thermal desorption system  
6) Split/Splitless Capillary Injector; Three Injectors or two Split/Splitless Capillary Injectors can be fixed on GC.

◆ **More choices of detectors:**

1) TCD; 2) FID; 3) ECD; 4) FPD; 5) TSD

Maximum of two TCDs or three different kinds of detectors can be installed.

◆ **Reactor:** 1) Internal; 2) external

◆ **Time programming of detectors:**

Each of detectors has 5-ramp programmable time control. Output-signal, attenuation range, and polarity can be set automatically.

◆ **Time programming of external events:**

Providing 4 external events with 20-ramp programmable time control. The optional GC relays may be used to automate valves, operate split/splitless capillary injectors, drive auxiliary devices, or switch signals between detector A and detector B in a run.

◆ **Many kind of special-purpose GC can be provided according to user's request.**

## SPECIFICATIONS

◆ **Column oven:**

Operating temperature range: ambient temperature to 420°C;

Dual opening-door at the back of column oven;

Cooling time: 250°C to 50°C in 5 min;

Programmable oven with 4-ramp temperature control;

Temperature programming rate: 0.1~50°C/min

◆ **Injector system:**

Operating temperature range: ambient temperature to 420°C

◆ **Thermal conductivity detector -TCD:**

Maximum temperature: 420°C

Sensitivity:  $\geq 12000 \text{mv} \cdot \text{mL/mg}$  (for butane)

Linear range:  $10^5$

Current range: 50 to 400mA

◆ **Filament protection:**

If He or H<sub>2</sub> carrier gas flow in the detector cell is cut off for 4 minutes, filament power will be shut off automatically.

◆ **Flame ionization detector-FID:**

Maximum temperature: 420°C

Minimum detectivity:  $\leq 1.3 \times 10^{-12} \text{g/s}$  (n-C<sub>16</sub>)

Linear range:  $10^7$

Flameout hint: monitoring the status of GC continuously after being turned on.

◆ **Electron capture detector-ECD:**

Maximum temperature: 420°C

Minimum detectivity:  $\leq 0.1 \text{pg/mL}$  ( $\gamma$ -666)

Linear range:  $10^4$

Emission source: <sup>11mC</sup>63Ni

◆ **Flame photometric detector-FPD:**

Maximum temperature: 420°C

Minimum detectivity:

[P]  $\leq 1 \times 10^{-12} \text{g/s}$  (tributyl phosphate)

[S]  $\leq 1 \times 10^{-10} \text{g/s}$  (p-methylsulfurphosoharous)

Linear range: [P]:  $10^5$  [S]:  $10^3$

Two air-hydrogen flames: For large volume injection or trace sample injection analyses;

Single air-hydrogen flame: sulfur sensitivity can be increased;

Direct output: for phosphorus or sulfur analyses;

Square-root output: for sulfur analyses;

Exposed-light protection:

When exposed-light current is more than 12 $\mu$ A, high voltage will be cut off automatically.

◆ **Nitrogen-phosphorus detector-TSD:**

Maximum temperature: 420°C

Minimum detectivity:

[N]  $\leq 1 \times 10^{-13} \text{g/s}$  (azobenzene)

[P]  $\leq 5 \times 10^{-14} \text{g/s}$  (malathion)

Linear range: [N]:  $10^5$  [P]:  $10^4$