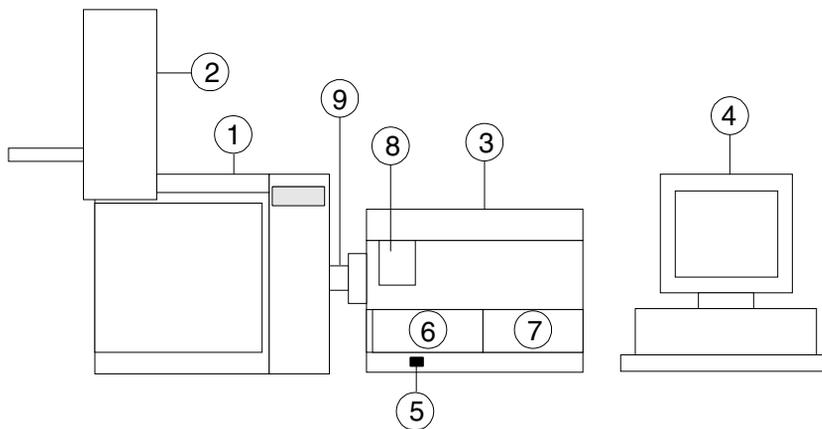

The GC-AED system



- | | |
|----------------|------------------------|
| ① 6890 GC | ⑥ Water Drawer |
| ② Auto Sampler | ⑦ Gas Drawer |
| ③ 2370AA AED | ⑧ Plasma View Window |
| ④ Computer | ⑨ Heated Transfer Line |
| ⑤ Power Switch | |

A typical work station

A typical 2370AA AED installation requires the space, power, gases, and physical support listed in the sections below. If any components are different than those below, make sure that enough resources are allocated for proper GC-AED installation.

A complete 2370AA AED system typically consists of:

- 2370AA AED
- 6890 GC (with split/splitless inlet and GC-AED interface)
- 7683 ALS
- GC-AED ChemStation
- HP DeskJet or LaserJet printer

2370AA AED physical dimensions and power requirements

H × W × D: 41 × 52 × 57 cm (16 × 21 × 23 in.)

Power: 120 Vac at 20 amps circuit, or
100 Vac at 20 amps circuit, or
220 Vac at 15 amps circuit, or
240 Vac at 15 amps circuit
One outlet is required
One or more 10-amp circuits are required for the computer and peripherals.
Consult the GC and ALS documentation for their power requirements.

Heat: 3954 kJ, or 3750 BTU/hr

Weight: 37 kg (80 lbs)

Required clearance:	Above:	41 cm (16 in.)
	Right:	25 cm (10 in.)
	Left:	5 cm (2 in.)
	Behind:	29 cm (11 in.)

The clearances listed above for the 2370AA AED ensure adequate ventilation. Refer to the GC, ChemStation, and Autosampler manuals for physical dimensions, space requirements, and power requirements for these instruments.

Note that the 2370AA AED is designed to operate at a specific voltage. Make sure your 2370AA AED's voltage setting is appropriate for your lab. Refer to Uncrating your AED in the 2370AA AED Service Manual on the 2370A AED hardware information CD-ROM. Connect the 2370A AED to a dedicated power receptacle.

Overall GC-AED space requirements

The overall bench requirements of the complete GC-AED system are as follows:

Space: 1 m high \times 3.4 m wide \times 87 cm deep (37 in. \times 11 ft \times 34 in.)

Weight capacity: 123.3 kg (271.3 lbs) plus computer and keyboard.

Other space requirements: The 2370AA AED requires the use of four to six gas cylinders for the makeup and reagent gases, as well as space for a nitrogen purge supply (dewar or generator) and a helium getter.

2370AA AED fuses

Fuses are used on both the 2370AA AED main board and on the AC board. Do not attempt to replace the fuses in this instrument.

Fuse designation	Rating and type
Main board fuses	
F500, F501	5A/250V, IEC Type F (non-time delay, glass body)
AC board fuses	
F1, F2, F5	7A/250V, Glass/Slow-Blo, time-delay, glass body
F3, F4	5A/250V, non-time delay, glass body

Gas sources

The 2370AA AED requires the pure gases listed below:

Gas	Function	Purity (%)
Helium	GC carrier gas and 2370AA AED plasma	99.9999
Hydrogen	2370AA AED reagent gas	99.997
Oxygen	2370AA AED reagent gas	99.997
Nitrogen	Spectrometer purge	99.99
Auxiliary Gas (10% ± 1% CH ₄ , 90% N ₂)	2370AA AED reagent gas	99.99*
Methane	2370AA AED reagent gas	99.99

*Purity requirement is on original gases for the reagent gas.

Joint analytical systems requires **99.9999% (six 9's) gas for helium**. An optional method of obtaining that level of purity is to use 99.999% (five 9's) gas and a helium getter. A helium getter is recommended to help ensure helium gas purity. **Do not** use filters on the helium line.

For nitrogen (spectrometer purge), the user is advised to provide a moisture trap (Part No. 5060-9084) and a hydrocarbon trap (Part No. 5060-9096).

The 2370AA AED can only be plumbed for three reagent gases. The user must decide whether to plumb for 10%CH₄/90%N₂ (to detect oxygen 171) or for methane (to detect nitrogen 388 and nitrogen -15 isotope). The performance verification checkout procedure described in this manual requires 10% CH₄/90% N₂.

Note! To plumb the AED for the reagent gases use 1/8" SWAGELOK - fittings!

Electrical requirements

Caution

A proper earth ground is required for 2370AA AED operations.

To protect users, the metal instrument panels and cabinet are grounded through the three-conductor power line cord, in compliance with IEC requirements, when it is plugged into a properly grounded receptacle. A properly grounded receptacle is one connected to a suitable earth ground. Proper receptacle grounding **should be verified**.

WARNING

Any interruption of the grounding conductor or disconnection of the power cord could result in a shock personal injury.

Environmental conditions

The 2370AA AED is capable of operating under the following environmental conditions:

Condition	Operating range
Temperature	10°C to 40°C (Recommended ambient temperature is 15°C to 35°C)
Relative humidity	80% maximum for temperatures up to 31°C, decreasing linearly to 50% at 40°C
Altitude	up to 2000 m
Mains voltage fluctuations	not to exceed $\pm 10\%$ of the nominal voltage

For optimum instrument performance and maximum instrument lifetime, the temperature and humidity levels should be as constant as possible.

2370AA AED connections

The 2370AA AED has four external electrical connections:

Connector type	Location	Function
3-conductor power, standardized by country	Rear, lower right	Mains voltage and suitable earth ground
GP-IB connector, female, (Agilent proprietary)	Rear, upper left	GP-IB communications with the ChemStation computer
9-pin female, (Agilent proprietary)	Rear, upper left	Communications for GC remote start
4-pin female	Left side panel	AC power from the 2370AA AED to the transfer line heater

Configuring a GC for the 2370A AED

When plumbing a GC for use with the 2370AA AED, use the following equipment:

- Clean stainless steel or copper (never use Teflon®) tubing for plumbing.
- Vespel or graphite Vespel ferrules in all **Swagelok** unions and fittings. (Pure Vespel ferrules are used on the connections at the cavity.)
- Matheson chrome-plated stainless steel diaphragm regulators.

To avoid leaks and carbon contamination in the gas system, remove all flow measuring devices. Use a getter to purify the helium supply gas, but avoid other traps in the system. Use stainless steel ferrules on the getter.

