

AEROTrap 6000

User Manual

Read This First!

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1.1 Overview

This section describes the AEROTrap 6000, defines its basic functions and system configurations, provides technical specifications, and outlines safety considerations for its use.

1.2 Product Description

The AEROTrap 6000 (Figure 1-1) is a concentrator that allows automatic processing of air samples for analysis by gas chromatography.

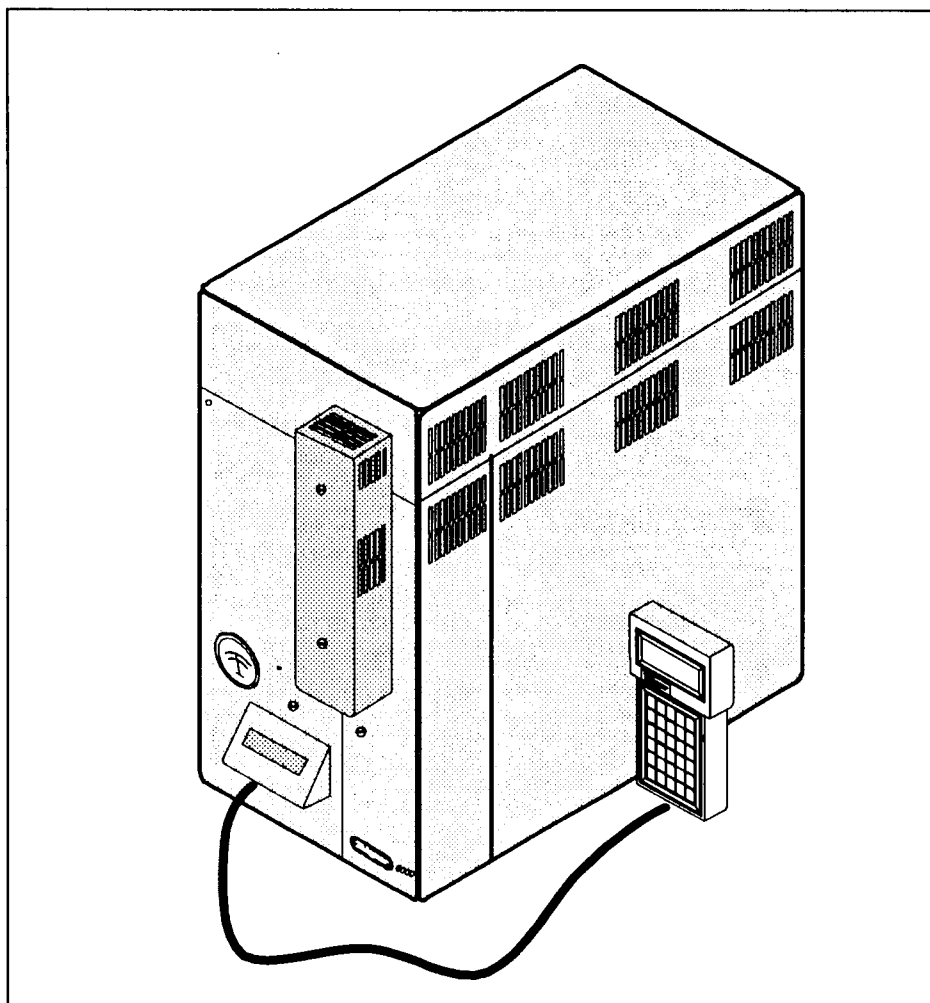


Figure 1-1. AEROTrap 6000

The basic unit is equipped with a single sample tube-and-heater assembly and a hand-held terminal (purchased separately). It can be set up in several different configurations to run up to 32 samples, as described in Section 1.4 System Configurations.

You can also program the 6000 to run different sample sequences. Please refer to Section 6.0 Programming the 6000 for information about customizing operating sequences.

1.3 Concentrator Functions

The AEROTrap 6000 desorbs volatile organic compounds from sorbent-packed sample tubes or canisters. Then it concentrates them for delivery to a gas chromatograph. Figure 1-2 illustrates the steps in the process:

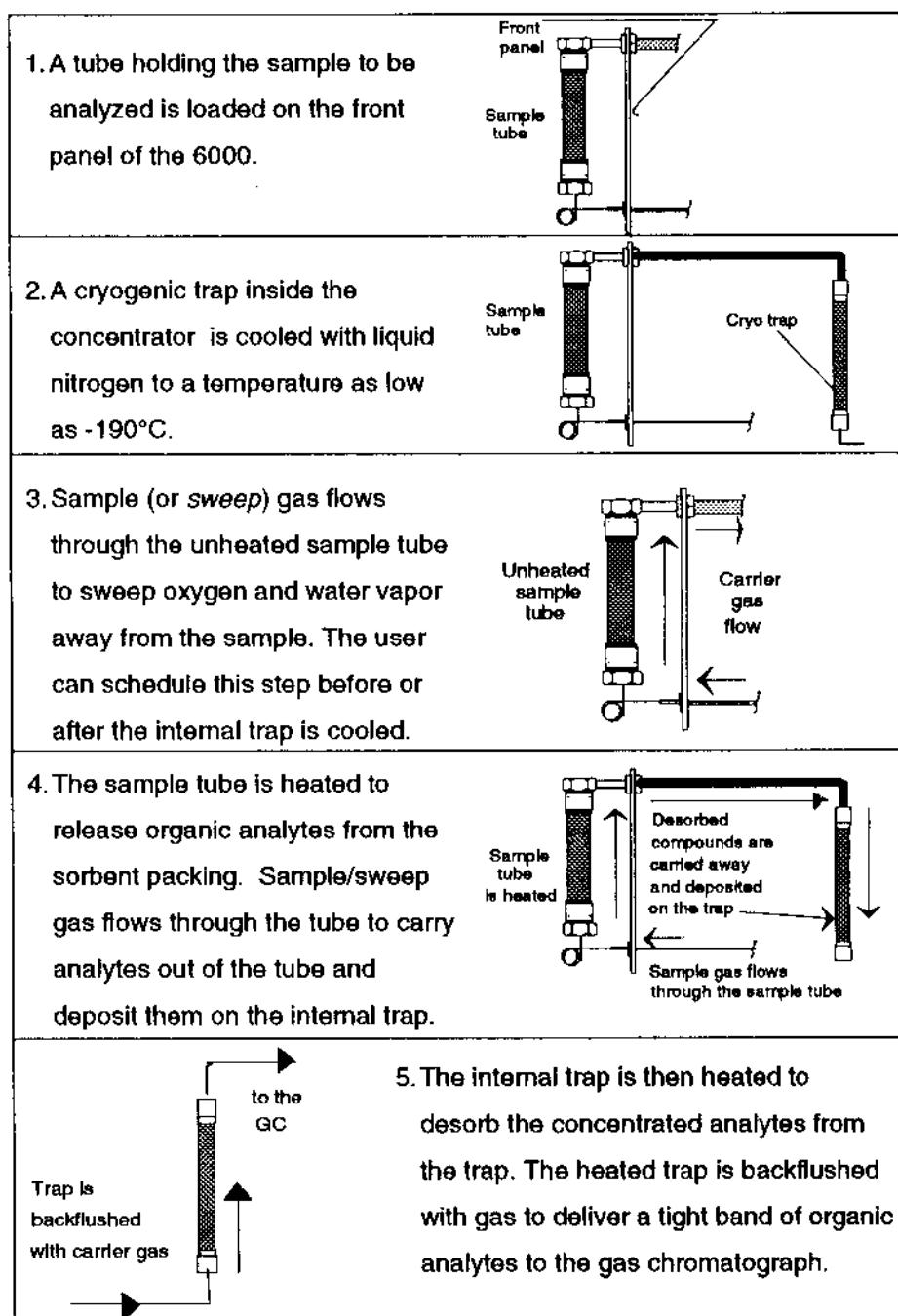


Figure 1-2. 6000 Functions

1.4 System Configurations

1.4.1 AEROTrap 6000 with AEROTrap Autosamplers

The basic unit processes a single sample (according to protocols based on USEPA TO-1 or TO-2) and delivers the resulting analytes to a gas chromatograph. You may also purchase other Tekmar accessories which can extend and enhance 6000 functions.

AEROTrap 6016/6032 Autosamplers make it possible for the 6000 to process up to 32 samples automatically using the configuration shown in Figure 1-3.

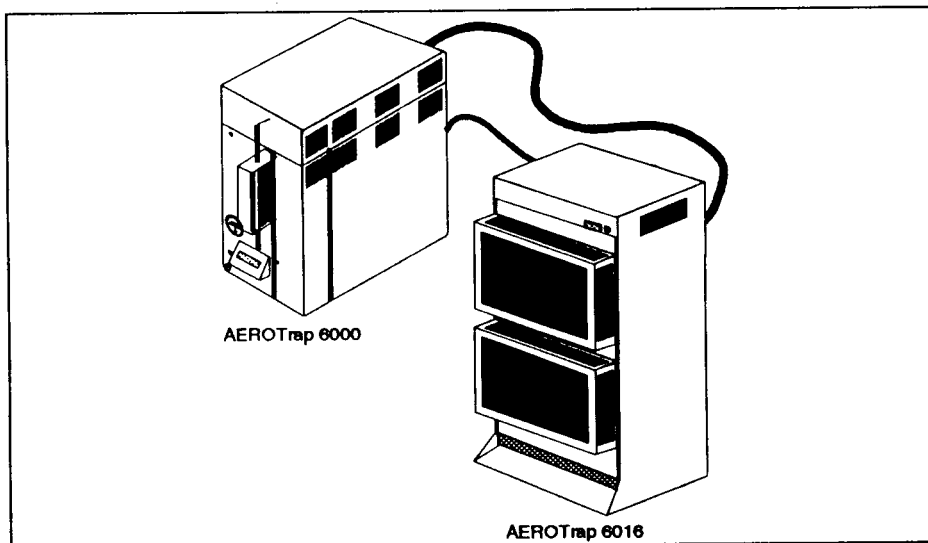


Figure 1-3. AEROTrap 6000 with an Autosampler

Connected to AEROTrap autosamplers, the 6000 can desorb samples from up to 16 tubes (with the AEROTrap 6016) or up to 32 tubes (with the AEROTrap 6016 and 6032). The autosamplers also process samples according to protocols based on USEPA TO-1 and TO-2.

1.4.2 AEROTrap 6000 with Cryofocusing Module

Most air applications require analysis on narrow-bore capillary columns (0.32 mm I.D. or less). For better component resolution on a narrow-bore column, Tekmar recommends that you use the AEROTrap 6000 with a *Cryofocusing Module*.

- Highly volatile components desorbed from the internal trap of the 6000 are refocused and condensed in the trapping area of the Cryofocusing Module as carrier gas passes through the module to the GC.
- The Cryofocusing Module freezes the condensed components in a narrow, *cryofocused* band on the column.
- Then the Cryofocusing Module is heated and flushed with carrier gas to release the analytes already on the GC column.

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1.4.3 Other Configurations

The 6000 can also be set up to measure:

- VOCs in ambient air, using a canister collector according to USEPA TO-14 protocol.
- VOCs in ambient air according to modified USEPA TO-1, TO-2, and TO-14 methods.