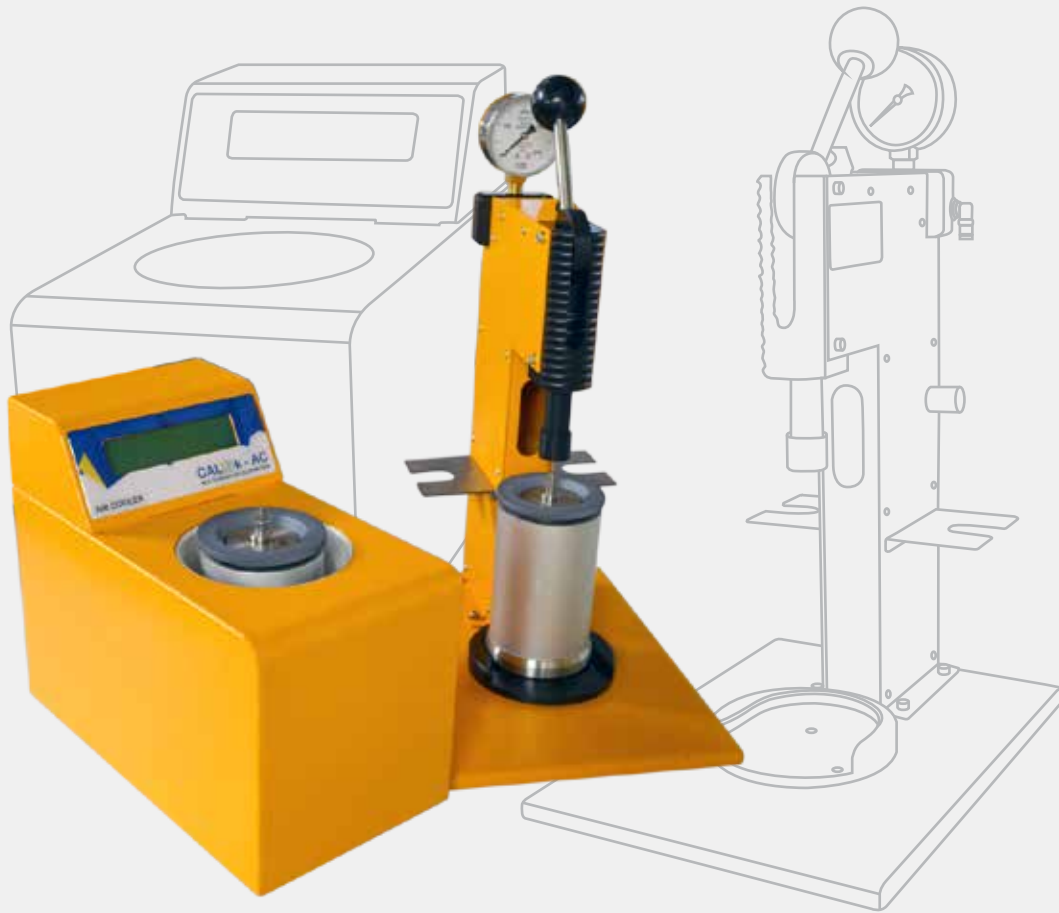




DDS CALORIMETERS

Scientific Analytical Calorimeter Solutions



AIR COOLER & FILLING STATION

CAL3K SYSTEM COMPONENTS

MANUFACTURING SUPERB CALORIMETERS FOR TODAY'S ANALYTICAL NEEDS

www.ddscalorimeters.com

CAL3K AIR COOLER

AIR COOLER OVERVIEW



The new air cooler takes a step towards a greener future. Using less resources, including electricity and water, to reduce your carbon footprint. The CAL3K Air Cooler replaces the traditional (but very fast and expensive) water cooler used with the CAL2K range of calorimeters. The air cooler works best when the vessel is well above the ambient temperature. This is possible because of the CAL3K bayonet vessel, with linear temperature sensing, allowing higher vessel

temperatures. The air cooler can cool a vessel in approximately 6-7 minutes from 44°C to 32°C when the ambient temperature is at 25°C. The air cooler is what it says. It needs no water, piping or other resources. In addition it has a USB interface which allows PC access and the setting of cooling parameters. It can work in two modes : Cooling to a fixed temperature and cooling to an ambient plus a fixed temperature. Both operating modes can be affected (set) via the vessel and the CAL3K. The ambient “plus” mode results in very predictable (constant) cooling times. Because of this, the vessel temperature cycles between 32°C min. and 48°C max. in a production environment, and between 28-38°C for slower users. The air cooler has some intelligence built into it, and indicates the bomb temperature and when the vessel is ready to remove. The cooling performance depends on the ambient temperature. In difference to the older CAL2K cooler: The air cooler is slower than the CAL3K. This can be compensated by the purchase of more coolers.

AIR COOLER FEATURES

Small Footprint

Reduced carbon footprint. No water required. Lower Power Consumption.

No Water Required

The air cooler uses air, which means no water and no spillage.

Near Silent Operation

Reduced noise makes the air cooler near silent.

Low Power Consumption

Low energy consumption, approximately 10W while cooling.

Checks Statistics

Checks vessel statistics and operation.

Bayonet Vessel

Accepts the CAL3K Oxygen Bayonet Vessel - Automatic Filling Vessel and Manual Filling Vessel.

Monitoring

Monitors the cooling operation.

Prompts User

Indicates when the vessel is ready for the next determination.

*The Air Cooler can be used with any of the CAL3K Oxygen Bomb Calorimeter Systems, including the : CAL3K-A, CAL3K-AP, CAL3K-U and CAL3K-F Systems.

CAL3K FILLING STATION

FILLING STATION INSTALLATION

Prior to installation please make sure you have a suitable oxygen high pressure regulator. The regulator should be a high pressure regulator capable of filling a vessel to a pressure of 3000Kpa.

The Filling Station is shipped in its own box along with the other components and vessels, which are in their own plastic bag.

The type of oxygen to be used is normal industrial oxygen (used for welding). A purity of 99.5% is suitable. The oxygen bottle should be firmly secured to a wall or pillar for safety.

Using the pressure pipe and connectors supplied, connect the Filling Station to the oxygen bottle. Slowly increase the pressure and check all connections for any possible leaks. If a connection is leaking, turn the oxygen off and disassemble the connection to ensure that the ferrule is sealing.

Once the Filling Station is installed and ready to use, place the vessel on the base and lower the arm, ensuring that the Filling Station nozzle fits directly and cleanly over the vessel's valve. Once the arm is fully down it will latch in this position and the vessel will then fill, unattended. When the vessel reaches the required pressure the arm can be lifted and the vessel removed.

FILLING STATION MAINTENANCE

During operation the Filling Station requires very little maintenance. However it is suggested that the ex-center and piston be lightly silicone greased (NOT oiled) so as to minimize wear. The o-ring in the nozzle should be lightly smeared with silicone grease daily to avoid the vessel from sticking to the nozzle when filling. The filling station has two holders on either side- one can be used for holding the defiller cap, while the other is to hold the vessel's lid assembly.

FILLING STATION OVERVIEW

The manual oxygen filling station is manufactured completely in house, which saves on costs and results in a reduced final price to our complete systems. It is a light weight components, making it a lot easier to handle and transport from place to place if needed. It is a lot easier to handle and safer to use. Being manufactured with different materials to those used before, makes it kinder to the environment.

The manual filling station brings a fresh new look to the CAL3K Oxygen Bomb Calorimeter Systems and future systems that will require the manual oxygen filling station to fill the vessel for analysis.

The Filling Station & High Pressure Oxygen Regulator are used in combination with the manual oxygen bayonet bomb vessel.

The filling station is used to fill the manual bayonet oxygen bomb vessel before every determination.

INSTALLATION KIT

The CAL3K Filling Station Installation Kit includes :
2 x Flow Adjuster O-Rings (3K-3-FR), 5 x Nozzle O-Rings (3K-3-NR), 1 x High Pressure Pipe 4mm (2m, clear)(3K-3-OP), 1 x Oxygen Regulator Connection (3K-3-RC) and 1 x Defiller Cap (3K-4-DC).



DDS CALORIMETERS

COMPANY HISTORY

Digital Data Systems (DDS has more than 40 years of experience in calorimetry.

In 1972, DDS produced their first calorimeter, the AMPC (Automatic Micro Processor Calorimeter). The AMPC was a dual water isothermal unit controlled by a microprocessor.

In 1980 work began on a new revolutionary design of vessel, namely the DRY vessel or CP510, which meant that there was no surrounding water jacket. A copper sleeve pressed over the vessel replaced the water jacket and the temperature sensors were placed inside the vessel resulting in the heat transfer being extremely fast. Determination time was significantly reduced, increasing the unit efficiency by 4 times. With the processing power of the microprocessors available at the time, the CP500 Calorimeter was born. The striking "buttercup yellow" colour gave a splash of brightness to the then drab laboratories.

In 2002 work began on the CAL2K. The tried and tested DRY system was retained and only the very latest electronic technology was used, including the surface mount devices.

In 2005, DDS came to realize the need for smaller, low volume, inexpensive calorimeter systems, with the same accuracy and reliability of the CAL2K. The ECO was then created as an alternative system to the CAL2K. The ECO is suitable for the following markets: Universities, Research Facilities, Brick Manufacturers, Animal Feed Industries, Food Quality, and Food Production.

In 2007 the new E2K system was developed. Should you require more information on our superb range of bomb calorimeters please contact your nearest dealer or visit our website.

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dds

**DDS Calorimeters are proudly manufactured by :
Digital Data Systems (Pty) Ltd.**

For more information about any of our products visit our website at www.ddscalorimeters.com.

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