

**ACD** *Advanced Calibration Designs, Inc.*

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**CAL 2000**  
**GAS GENERATOR**  
*RELEASE VI*



**INSTRUCTION MANUAL**

[www.goacd.com](http://www.goacd.com)

# Instruction Manual

## CAL 2000 GAS GENERATOR

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## I. GENERAL DESCRIPTION

The Cal 2000 is a battery-powered, portable electrochemical gas generator designed to calibrate toxic gas sensors. Fast warm-up time allows the instrument to be turned off between remotely located sensors saving battery life and avoiding generation of unwanted gas. A built-in mass flow sensor provides accurate flow control and the ability to measure externally provided sample draw flow rates. The Cal 2000 uses the following components to produce the calibration gas/air mixture:

### **Internal Micro Pump**

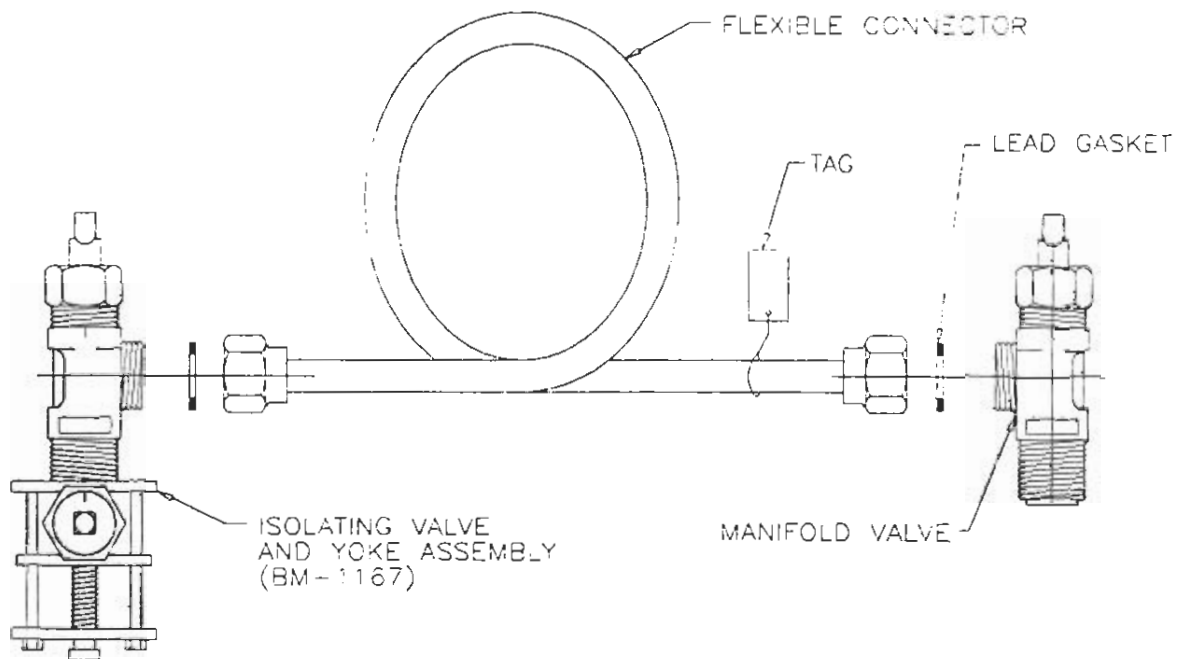
A small, rotary vane, micro air pump draws in ambient air to blend with the generated gas. The pump may be disabled for use in calibrating sample draw instruments.

### **Electrochemical Generating Cell**

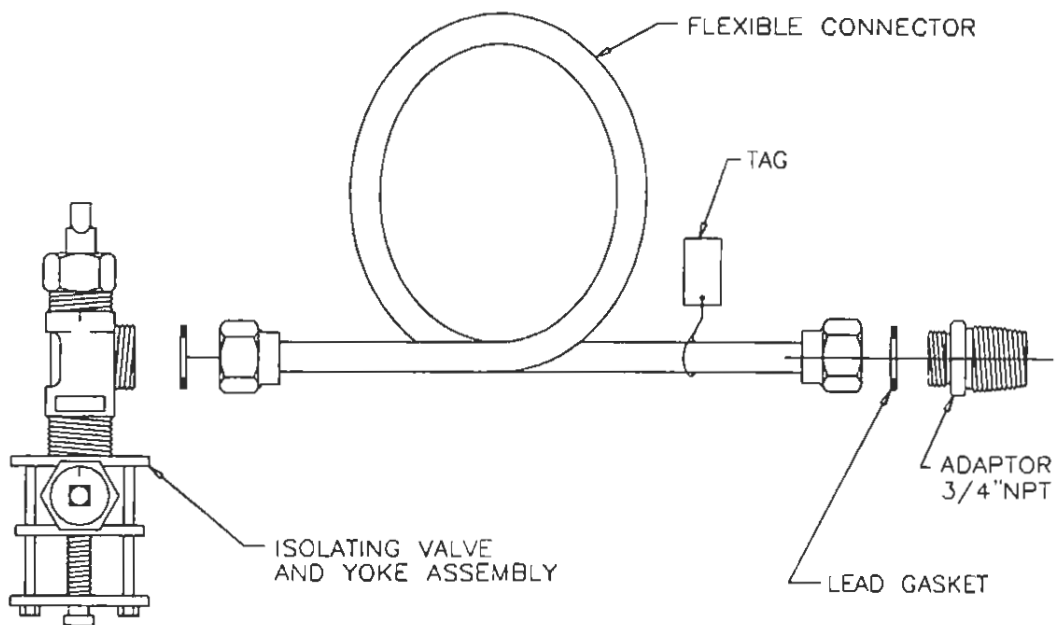
The electrochemical generating cell contains an electrolyte solution and either inert or consumable electrodes, depending upon the gas being generated. A precise concentration of gas is produced when a known amount of current and a known amount of air is supplied continuously to the cell. Each cell has a built-in memory chip that tells the Cal 2000 instrument what type and range of gas can be generated and how much cell life is remaining. The electronics board mounted to the cell should never be removed from the cell. Removal of this board will void warranty and destroy the cell. Due to the design characterization of the cell, the unit must be oriented flat (on the units feet) for correct concentration output.



**Flexible Connector Arrangements For Chlorine or Sulfur Dioxide**  
**Flexible Connector with Manifold and Isolating Valves**



**Flexible Connector with Male Adaptor and Isolating Valves**



**Note: Tag on the flexible connector reads: "CONNECTOR NUTS FOR USE ON PERMANENT OR SEMI-PERMANENT CONNECTIONS ONLY. THE CHLORINE INSTITUTE REQUIRES YOKE CLAMP CONNECTIONS TO ALL CONTAINER VALVES."**

Refer to bulletin 120.3020 for Container Isolating Valve Assembly

# CAPITAL CONTROLS

## ADVANCE<sup>®</sup> Gas Feeder Series 200

Severn Trent Services developed the all-vacuum gas feeders which has become the worldwide standard. ADVANCE<sup>®</sup> Series 200 gas feeders are designed for manual or semi-automatic gas regulation. Automatic is a simple addition.

Easy to install, for indoor or outdoor installation, each 200 Series feeder is factory tested and needs no field adjustment prior to start-up. Ten different flowmeter capacities provide versatility in meeting gas flow requirements. Feeders mount directly on the gas valve of a cylinder, ton container or manifold utilizing a lead gasketed positive yoke clamp. Diaphragm ejectors are standard with a choice of diffuser outlets. As an option, a variety of different ejectors are available to meet your application needs.

A 200 Series gas feeder consists of a vacuum regulator, ejector or chemical induction unit and vacuum and vent tubing to make a complete system.

If multiple feed points are required, remote meter panels and additional ejectors are provided. A switchover module is offered to provide for uninterrupted service.



- Safe and reliable all-vacuum operation
- Lifetime warranty on diaphragm and springs
- Worldwide standard for gas feeder technology
- Superior materials of construction for wet or dry gas service
- 3-year warranty
- Safe integral venting system
- Capacities up to 500 PPD (10 kg/h)
- Solid silver rate and inlet valves
- Accurate gas metering of:
  - Chlorine
  - Ammonia
  - Sulfur Dioxide
  - Carbon Dioxide
- Versatile mounting: direct cylinder, manifold or ton container
- Switchover capability with automatic reset for uninterrupted service

