

199CD-60 Radiator Flowmeter Regulator for CO₂

Operation Manual



CO₂ Properties

There is liquid CO₂ in the bottom of a CO₂ cylinder and gas above the liquid until the cylinder pressure is below the CO₂ vapor pressure, which varies depending on temperature. When the CO₂ in the cylinder is below the vapor pressure, the CO₂ in the cylinder is gas phase.

When you start flowing or withdrawing gas from above the liquid, a CO₂ fog will form above the liquid and flow CO₂ gas. This fog is sometimes called latent heat because the small liquid CO₂ particles need to absorb heat to change to CO₂ gas. This heat will be absorbed readily from the metal cylinder walls, metal of the regulator, the metal or rubber regulator diaphragm causing anything else it touches to get cold quickly. A low flow CO₂ regulator will not have problem freezing. However, the Gentec high flow **199CD rated CO₂ regulator has built-in heat exchanging fins to help prevent freezing**. For even higher and prolonged flow rates the Gentec 198CD regulator has an electric heater to prevent freezing.

Pressure

The regulator is preset to deliver 50 psi into the flowmeter.

Flow

The flow indicator provides a means of indication at lowest cost for non-corrosive flow applications. The tapered metering tube is integrally machined in the acrylic plastic body. A standard direct reading scale engraved on the body affords maximum simplicity of installation and operation. The maximum flow is 60 scfh.

Materials of Construction

Flow Meter Body & Tube: Chrome Plated Forged Brass with Clear acrylic plastic
Regulator Body: Anodized Aluminum
Floats: Glass or 316 Stainless Steel

Installation

A CGA 320 connection is located on the rear side of the heat exchanger fins. Install the CGA connection to the gas cylinder. Follow instructions as outlined in the manual. Please ensure the provided CO₂ washer is placed inside the CGA adapter before connection to the cylinder valve. The Flowmeter knob, located at the bottom of the flowmeter, should be in the fully clockwise position or closed, prior to attaching the regulator/flowmeter to the cylinder. Connect tubing or barb hose to the bottom.

Operation

Once the Regulator/Flowmeter combo is attached to the CO₂ cylinder, the gauge will record the cylinders pressure. A full CO₂ cylinder will record about 830 psig of gas at STP. Turn to the flowmeter knob slowly in a counterclockwise position to open or increase flow. The ball float will start to rise and align with the scale range from 0-60 scfh or as required by the user. The top of the ball should be read to get the most accurate reading.

