

Gas Regulator

Ecotechnics Gas Regulator information sheet.

Congratulations on purchasing the Ecotechnics Gas Regulator.

Before you use any part of the system, please make sure you get the most from the Regulator by taking a minute to read this important information.



Electrical Safety Advice

---- ALWAYS OBSERVE THE FOLLOWING ----

When connecting / disconnecting all cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.

Do not excessively twist or bend the power cord, or place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!

In households with small children, an adult should provide supervision which is essential for the safe operation of any electrical appliances in the home. All cords and cables should be placed so they are out of the reach of children.

Try to prevent cords and cables from becoming entangled.

Before moving the unit, disconnect the power cable from the mains supply and any cords coming from external devices.

Never handle a AC adaptor or electrical plugs with wet hands when plugging into, or unplugging from, an outlet or this unit.

Before cleaning the unit, turn off the power and unplug the AC adaptor from the outlet.

Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.

Protect the unit from strong impact. (Do not drop it!)

Before using the unit in a foreign country, consult with your retailer or an authorized distributor.

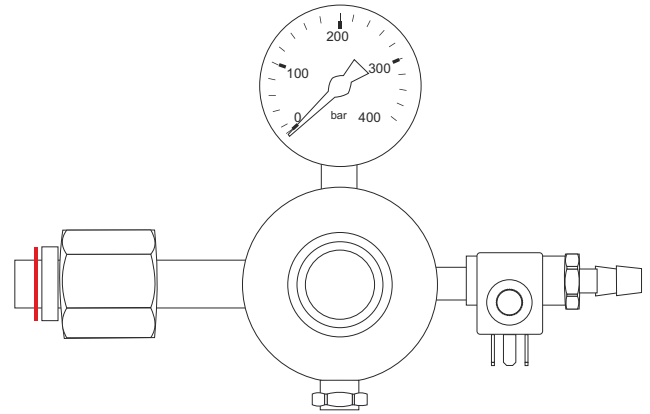
Whenever you suspect the possibility of lightning in your area, disconnect the unit from the power outlet.

Do not attempt to repair the unit, or replace parts within it. Refer all servicing to your retailer or an authorized distributor.

When moved from one location to another where the temperature and/or humidity is very different, water droplets (condensation) may form inside the unit. Damage or malfunction may result if you attempt to use the unit in this condition. Therefore, before using the unit, you must allow it to stand for several hours, until the condensation has completely evaporated.

Guarantee

In the unlikely event that you find fault with this product, please contact your supplier. All Ecotechnic's regulators carry a one year guarantee (terms & conditions apply), excluding faulty fuses and tampering.



Gas Regulator Safety Advice

Only experienced and properly trained persons should handle compressed gases, they should be conversant with relative safety instructions including the current British compressed Gases Association code of practice CP7 and the gas safety instructions from the gas supplier.

Markings

The regulator is marked with the following:-

- Maximum inlet pressure (pressure service)
- Rated outlet pressure
- Gas (only use for gas shown)

Fitting to the cylinder

Before fitting the regulator, ensure both the cylinder outlet valve and the regulator inlet are clean and free from contaminants including dirt, oil and water. If fitted, fully release the regulator adjusting knob by winding anticlockwise prior to fitting to the cylinder. Right hand thread is employed for oxygen and permanent gases and left hand thread is used for fuel gases. Use only the correct size spanner and finally tighten by applying 2 blows to the end of the spanner with the heel of the hand.

Operating

After fitting of the downstream equipment, open the cylinder valve slowly, this is a critical operation and must be done slowly to be safe. If fitted, adjust the regulator knob to the required outlet pressure and purge hoses, make the final adjustment when gasses are flowing. It is vital to ensure that any audible vibration or freezing of the regulator is avoided during operation. Check for leaks at all joints with a leak detection spray. On completion of use, close the cylinder valve and exhaust gas from lines.

If fitted, fully release regulator pressure adjusting knob.

Safety points

Carefully inspect the regulator for oil, grease and damaged or dirty parts. Oxygen vigorously supports combustion, never use the regulator if oil, grease or damaged parts are detected.

Never:

- Never use a regulator showing any signs of damage
- Never allow cylinders to become heated
- Never use pressure gauges that are damaged, not smooth in operation or not zeroing
- Never remove or change any component parts of a regulator.

Always:

- Always check the whole system for damage and leaks at frequent intervals
- Always work to BCGA codes of practice (to purchase copies, telephone 01491 825533)
- Always fit a flashback arrestor to the outlet of an oxygen or fuel gas cylinder.

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Carbon Dioxide Safety Advice

Ordinary outside air normally contains CO₂ at a concentration of about 300 ppm (300 parts of CO₂ gas per million parts of air.) Indoors, however, whether we're at home, office, or traveling in a confined space like a plane, the CO₂ content can vary considerably. Usually in a home, the CO₂ levels can vary as much as 300 - 2000 ppm. Several studies have indicated that CO₂ does not seriously impact human health until levels reach approximately 15,000 ppm. This level is more than 40 times greater than the normal concentration of atmospheric CO₂. At extremely high levels, i.e., 30,000 ppm, (these concentrations are usually never reached in a standard home) the symptoms can include nausea, dizziness, mental depression, shaking, visual disturbances and vomiting. At extremely high levels, loss of consciousness may occur. The seriousness of the symptoms is dependent on the concentration of carbon dioxide and the length of time the individual is exposed.

CO₂ - Denser Than Air

Gaseous carbon dioxide is 1.5 times denser than air. Therefore, it will be found in greater concentrations at low levels. high concentrations of CO₂ can displace oxygen, and can subsequently cause death especially if allowed to accumulate in open pits and other areas below ground. Carbon Dioxide acts upon our vital bodily functions in a number of ways, including stimulating respiration, regulation of blood circulation, and the acidity of body fluids. Common complaints from increases in CO₂ levels include difficulty in breathing, increase in the breathing rate and/or pulse rate, headaches, sweating, shortness of breath, abnormal fatigue and a feeling of "stiffness". Introduction of fresh air can assist in eliminating these problems. Finally, CO₂ is an asphyxiate, a condition in which an extreme decrease in the amount of oxygen in the body, accompanied by an increase of carbon dioxide, leads to loss of consciousness or death. Concentrations of 100,000 ppm or more of CO₂ can produce unconsciousness or death

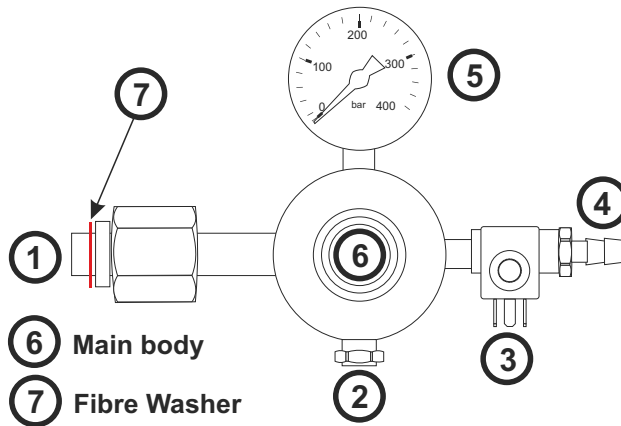
STANDARDS AND RECOMMENDATIONS FOR CO₂ EXPOSURE

The Occupational Safety and Health Administration (OSHA) has set a standard for the maximum allowable concentration of carbon dioxide in the air of 0.5% (5000 ppm) for eight continuous hours of exposure. The maximum time weighted average exposure to carbon dioxide in the air is set at 1.0% (10,000 PPM) for a ten hour shift in a 40 hour week.

CO₂ Regulator Diagrams

Gas Regulator

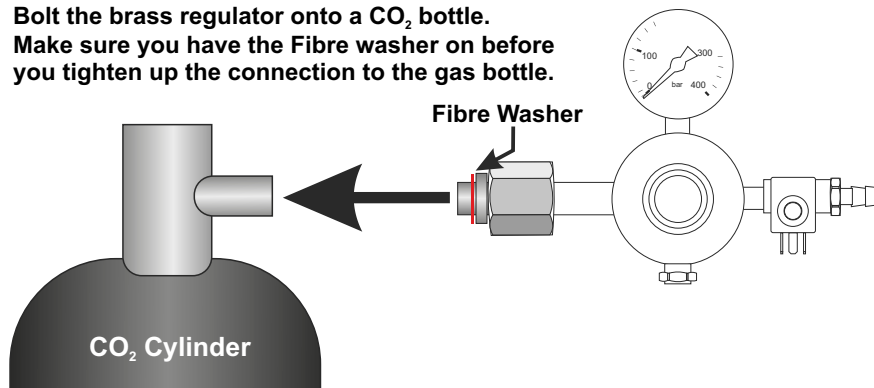
- ① To Gas Bottle
- ② Safety Valve
- ③ Solenoid Valve
- ④ Output
- ⑤ Pressure Gauge



- ⑥ Main body
- ⑦ Fibre Washer

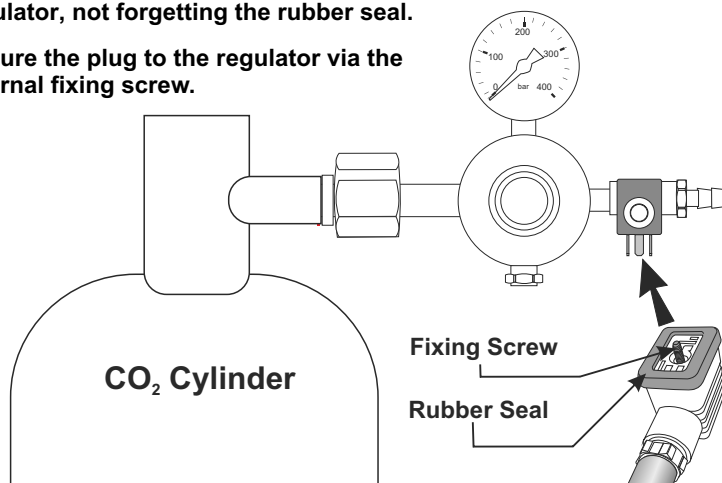
Connecting up the CO₂ Gas Regulator

- ① Bolt the brass regulator onto a CO₂ bottle. Make sure you have the Fibre washer on before you tighten up the connection to the gas bottle.



- ② Plug the Unis/Evolution CO2 Controller flying lead into the regulator, not forgetting the rubber seal.

- ③ Secure the plug to the regulator via the internal fixing screw.



Wire connection diagram for angled plug on Regulator

- Brown: Live
- Blue: Neutral
- Green/Yellow: Earth

