

DUAL HANDLE FILL STATION

Fill stations are designed to fill your constant air (C.A.) bottles (3½oz., 7oz., 10oz. and 20oz. bottles) with liquid carbon dioxide (CO₂). Please note that the CO₂ is liquid; the bottles are designed to hold the designated amount in liquid form.

If you do not use a bulk tank with a siphon tube, you will probably transfer gas CO₂, and this will change the weight of the tank. The bottles are designed to accommodate approximately 65% of their volume in liquid CO₂. The remaining space is unfilled, allowing for the expansion of the CO₂ as temperature convert into gas.

The following equipment is absolutely necessary for safely filling a C.A. bottle:

1. SCALE

It is impossible to determine the volume of gas without a scale.

DO NOT TRY TO FILL A C.A. BOTTLE WITHOUT A SCALE!

The scale will indicate the volume by weight of the liquid CO₂ tank to your C.A. bottle. A hanging scale is preferable, because you can hang the bottle as you fill it. If the bottle starts to tip, you may overfill the bottle. Be sure to guard against doing so, as the bottle will present a danger to all in the vicinity.

2. BULK CO₂ TANK WITH SIPHON TUBE INSTALLED

DO NOT USE A BULK CO₂ TANK WITHOUT A SIPHON TUBE!

The siphon tube is necessary for transferring the liquid CO₂. If you do not use a siphon tube in your bulk tank, you will be transferring gas and liquid. You will, therefore, not get the proper number of shots.

Secure your bulk tank with a chain or cable (bicycle security cable, for example) to a post away from heaters or sunlight. Remember that rising temperatures causes the gas to expand and creates a hazard.

The bulk tank must be tied down so it can't fall or be shaken; an earthquake or a fall could cause the valves to break, so that the tank becomes a missile.

The following equipment is absolutely necessary for safely filling a C.A. bottle:

3. FILL STATION

This connects your bulk CO₂ tank to your C.A. bottle. A fill station is equipped with a drain valve and a manifold which should have a small shutoff valve in case of emergency. The manifold also includes a fill adapter. A fill adapter is used to open the valve (by depressing the pin) in the C.A. bottle to allow the liquid CO₂ to enter.

DO NOT USE A C.A. BOTTLE WITHOUT A SAFETY VALVE THAT INCLUDES A BURST DISC. Please note: if a burst disc has been activated due to excessive pressure, safety requires the new burst disc to be installed with a new washer, since these items work in unison. They must be installed only by a person qualified in the handling of high-pressure equipment, an airsmith or a person experienced with welding supplies.

PROCEDURES TO FILL YOUR C.A. BOTTLES

Hang your scale close to your bulk supply tank, making sure no objects interfere with the free hanging tank and hose. Add the plastic washer/seal between the tank/fill station and use a wrench to tighten them. Make sure both handles on the fill station are in the OFF position. Screw your C.A. bottle to the fill adapter all the way in. Turn the knob on the fill adapter until it depresses the pin on the valve. Turn the bottle side handle of the fill station on and drain any leftover CO₂ gas from the bottle. Turn the bottle side handle to the OFF position. Now, turn the main ON/OFF on the bulk tank to the ON position. Then turn the bulk tank side handle to the ON position to start filling the bottle. Turn the bulk tank side handle OFF when the correct weight (additional 3½oz., 7oz. or 10oz. of liquid CO₂) are reached. **DO NOT OVERFILL THE BOTTLE.**

Loosen the knob of the fill adapter to allow the bottle pin to shut off the valve. Open the drain valve again to release the excess CO₂ contained in the fill adapter hose and then unscrew the C.A. bottle from the fill adapter.

ONLY to be used by authorized and trained personnel in accordance with CGA, DOT and ASTM international guidelines.

WARNING:

1. Always use a scale to transfer the correct volume of CO₂. Without a scale, it's like closing your eyes while driving a car and trying to determine how fast you're going.
2. DO NOT overfill your C.A. bottle to try for a few more shots. You will probably activate the safety burst disk, losing more than you ever gained.
3. Secure your bulk tank so it will not fall or bump into other objects.
4. Don't leave C.A. bottles in a closed car. The buildup of heat can activate the burst disc or cause ruptures if burst disc is not properly installed.