

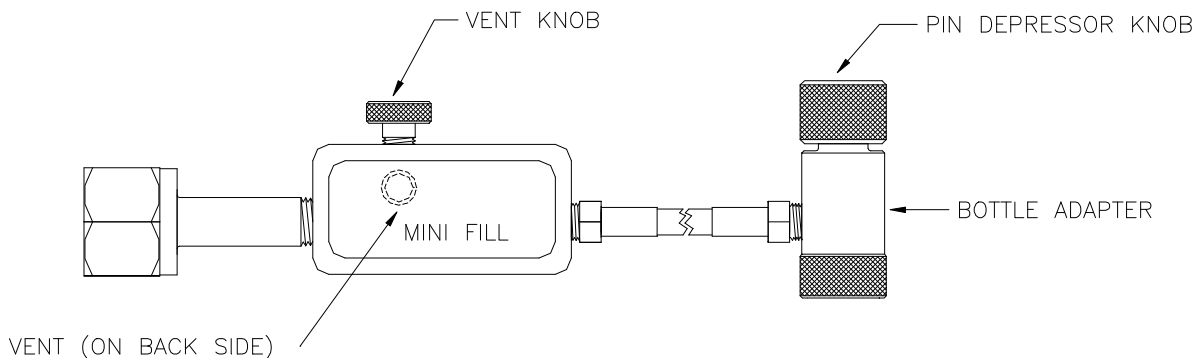
## **QUIK TAP**

Proudly Made in the USA

### **MINI CO<sub>2</sub> FILL STATION** **SAFETY FIRST!**

UNITED STATES PATENT NUMBER 6,263,927,B1

**THESE FILL STATIONS MUST ONLY BE USED IN AREAS WITH ADEQUATE VENTILATION!!**



#### **Referenced Documents:**

- **ASTMF2856-11 available at [WWW.ASTM.ORG](http://WWW.ASTM.ORG)**
- CGA G-6.3, Carbon Dioxide Cylinder Filling and Handling Procedures
- CGA C-6 – 2005 Standards for visual inspection of steel compressed gas cylinders
- CGA C-6.1 – 2006 Standards for visual inspection of high pressure aluminum compressed gas cylinders
- CGA G-6.8 – 2007 transfilling and safe handling of small carbon dioxide cylinders
- CFR 49 Parts 100 to 185
- TB-14 Torque Guidelines for Sealing CGA Valve Outlet Connections

**ALWAYS WEAR HEAVY GLOVES AND EYE PROTECTION WHILE FILLING CYLINDERS.**

**ALWAYS HAVE THE MSDS AT THE LOCATION THAT THE FILLING TAKES PLACE.**

**ALWAYS READ AND UNDERSTAND ALL FILL STATION INSTRUCTIONS. INSURE THAT THERE IS PROPER VENTILATION IN THE FILLING AREA.**

WARNING POSTERS SHOULD BE POSTED NEAR THE FILLING OPERATION

APPROPRIATE WARNING SIGNS SHOULD BE PLACED AT THE ENTRANCE TO  
CONFINED AREAS WHERE HIGH CONCENTRATIONS OF CARBON DIOXIDE  
GAS CAN ACCUMULATE

## **SETTING UP THE FILL STATION**

Before you even remove the safety cap on the bulk cylinder, the bulk cylinder **MUST** be solidly secured to a post or wall bracket. If the cylinder were to be knocked over, the valve could be broken off, and the cylinder “Launched”.

Your fill station is equipped with a standard “CGA 320” fitting on the input side. This fitting will connect to any standard CO<sub>2</sub> bulk tank in the United States. Please note that the threads are right –handed, and that a sealing washer (included) is required.

**The bulk supply tank you connect to must be equipped with an internal “dip tube” because it is necessary to dispense the liquid CO<sub>2</sub> from the bottom of the bulk supply tank. YOU WILL NOT BE ABLE TO DISPENSE A COMPLETE FILL FROM A NON DIP TUBE TANK!**

On the backside of the fill station is a vent port.

- ▲ **For safety reasons, this port must be directed away from the operator and bystanders.**

This port is equipped with 1/8 NPT threads so that if desired, a vent hose or muffler may be attached.

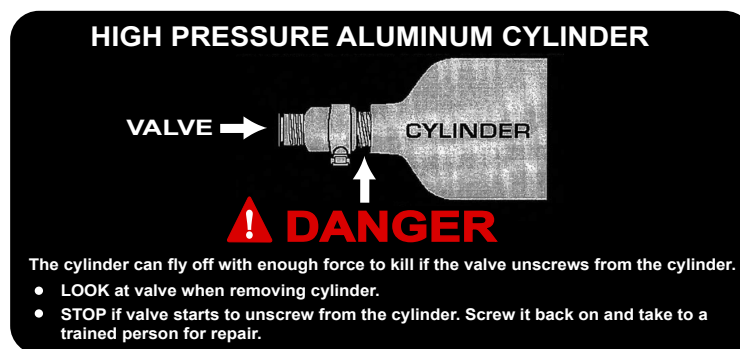
Do not over tighten the vent knob as this may damage the seal. Only turn the knob enough to stop the release of gas.

- ▲ **ALL HOSE, FITTINGS, AND MUFFLERS MUST HAVE A MINIMUM WORKING PRESSURE OF 3000 PSI. Do not use a bronze sintered muffler!!**
- ▲ **Never operate the Fill Station unless a bottle is attached to the fill adapter on the end of the fill hose. Operating the Fill Station without a bottle attached will cause the fill hose to “whip”. Injury may result!!**

## **OPERATION 1: CHECKING OUT THE BOTTLE**

Conduct a valve twist test to determine if the valve is securely attached to the cylinder. Any cylinders which have valves that can be twisted by hand, or which show signs of the valve having been partially removed, must not be filled. The owners of such cylinders should be warned to have the valve repaired by the manufacturer or its authorized representative, prior to using the cylinder or attaching it to a marker.

Valve twist test, n – a test done by hand where as the user grasp the valve with one hand and the bottle with the other and attempts to turn the valve by hand in a counter- clockwise direction( left). If the valve does move, the valve and bottle should not be filled and should be repaired and /or serviced by the manufacturer or its authorized representative. If the valve does not move then the valve passes the test and may be filled provided it passes all other



Look for a rotation indication mark between tank and bottle. Ensure line matches between two pieces. **IF THE LINE DOES NOT MATCH DO NOT FILL THE CYLINDER.**



If no line is present place a non removable, non etching marking between the valve and bottle for future checks. A paint pen is a good item to use to apply the rotation indication mark.

**VISUALLY INSPECT THE CYLINDER CONDITION BEFORE EACH FILL.**

Cylinders must be stamped on the shoulder with a DOT (Department of Transportation) and potentially a TC (Transport Canada) mark, working pressure, manufacturer's code or name, serial number, hydrostatic test date and rated CO<sub>2</sub> capacity. If no stamping is present or stamping has been altered or non legible, do not use the cylinder.

Re-qualification period for CO<sub>2</sub> cylinders used in paintball is five (5) years for 3AL aluminum and 3A and 3AA steel bottles. There is no maximum life for a 3AL, 3A, and 3AA cylinders as long as the cylinder passes visual and hydrostatic inspections.



DOT – 3AL 1800 M4625 04^03 8 oz CO<sub>2</sub> A051391

**This cylinder lay line of data breaks down like this:**

- DOT – Department of Transportation (a Federal Agency)
- 3AL – the specification standard the cylinder conforms to
- 1800 – the working pressure rating of the cylinder
- M4625 – the manufacturer of the cylinder
- 04^03 – The hydrostatic test date of the cylinder
- The first two digits are the month
- The ^ is the testing agency mark
- The last two digits are the year
- The above date would be valid to use until April 1, 2008
- 8oz CO<sub>2</sub> – The amount of CO<sub>2</sub> the cylinder is rated to hold
- A051391 – The serial number of the tank

The pressure rating stamped on the cylinder must be at least 1800 psi. Cylinders should be in good condition: free of stickers, dents, scrapes, bulges, obvious corrosion, pits, evidence of fire damage and leaks.

Cylinders having valves without a rupture disk or pressure relief mechanism must not be filled.

Pressure relief or rupture disk assembly should be tight, and all pressure relief passages should be clear of obstructions.



## **OPERATION 2: HOOKING UP!**

**▲ Never operate the Fill Station unless a bottle is attached to the fill adapter on the end of the fill hose. Operating the Fill Station without a bottle attached will cause the fill hose to “whip”. Injury may result!!**

**REFER TO THE INSTRUCTION CHART ON PAGE 8**

### **Step one: Attachment.**

- Put the sealing washer (supplied) into the CGA fitting and attach the fill station to the bulk tank, secure with a wrench. **LEAVE THE BULK TANK OFF.**
- Turn the vent knob on the fill station clockwise to the off position.
- Turn the knob on the bottle fill adapter counterclockwise, off position, until it stops.
- Screw the bottle into the bottle fill adapter.
- Turn the knob on the bottle fill adapter clockwise, on position, to depress the pin in the bottle to open the bottle valve.

### **Step two: Purging/ Venting the bottle.**

- Purge off the residual CO<sub>2</sub> in the bottle. It is necessary to do this because you must decrease the pressure in the bottle for the transfer from the bulk tank to take place. Invert (turn the bottle upside down) the bottle so that the valve is at the bottom.
- Turn the knob on the bottle fill adapter clockwise to depress the valve pin.
- Turn on the vent knob open (counterclockwise) and vent until gas ceases to be exhausted.
- Close the vent knob.

**NOTE: If your bottle is new, or warm to the touch, you need to add 1-2 ounces of CO<sub>2</sub> to the bottle prior to step 2. Go to step 4 and follow this step and add only 1-2 ounces of CO<sub>2</sub>. Now go to step two to continue.**

### **Step three: Weighing.**

▲ CO<sub>2</sub> should only be filled by weight, never pressure.

Use an accurate scale; never guess the weight of a cylinder. It is recommended the scale have an accuracy of 2 ounces or less, a tare function is helpful.

- If using a hanging scale hang the bottle from the scale (If your scale has a tare weight function use that function now).

#### **If not using a hanging scale.**

- Turn the knob on the bottle fill adapter counterclockwise.
- Remove the bottle from the bottle fill adapter.
- Weigh the bottle to get its tare weight, make a note of the bottles empty (tare) weight. (If your scale has a tare weight function use that function now)

▲ The label on the bottle or neck of the bottle will indicate the bottles contents capacity usually in ounces.

This is the amount of CO<sub>2</sub> the bottle is rated to be filled. **DO NOT EXCEED THE BOTTLES RATED CAPACITY!** If you are using a scale without a tare function you need to add the bottles contents capacity to the tare (empty) weight. Example after purging the bottle weighs 16 ounces and the bottles capacity is 20 ounces you will fill to 36 ounces. If your scale has a tare function fill to 20 ounces.

### **Step four: Filling.**

- If necessary screw the bottle back into the bottle fill adapter.
- Turn the knob on the bottle fill adapter clockwise to open the pin valve.
- Turn the knob counter clockwise on the bulk tank slowly and stop turning when you hear the flow of CO<sub>2</sub> starting to fill the bottle.
- If using a hanging scale fill to bottles rated capacity.

### **Step five: Disconnecting.**

- Turn the knob on the bottle fill adapter counterclockwise to allow the pin valve in the bottle to close
- Vent any CO<sub>2</sub> that may be trapped in the hose by turning the vent knob counterclockwise to the open position.

**Step six: Final weighing.**

- ▲ CO<sub>2</sub> should only be filled by weight, never pressure.
- ▲ The label on the bottle or neck of the bottle will indicate the bottles contents capacity usually in ounces.  
This is the amount of CO<sub>2</sub> the bottle is rated to be filled. **DO NOT EXCEED THE BOTTLES RATED CAPACITY!**

Use an accurate scale; never guess the weight of a cylinder. It is recommended that the scale have an accuracy of 2 ounces or less. A TARE FUNCTION is helpful.

- Re-weigh the bottle to make sure the weight is correct and **NEVER** overfill a cylinder.
- If the bottle is overfilled re-attach the cylinder to the bottle adaptor and vent off some CO<sub>2</sub>. Vent for approximately 3-5 seconds.
- **WEIGH THE BOTTLE AGAIN.**
  - ▲ ***THIS IS THE MOST IMPORTANT STEP IN THE WHOLE OPERATION! DO NOT OMIT IT!!!***
- Follow step five to remove and re-weigh the bottle.
- Unscrew the bottle from the bottle fill adapter.

▲ **Never operate the Fill Station unless a bottle is attached to the fill adapter on the end of the fill hose. Operating the Fill Station without a bottle attached will cause the fill hose to “whip”. Injury may result!!**

**Maintenance**

An item that wants occasional lubing is the “O” Ring in the Universal Fill Adapter. On at least a daily basis, apply a couple of drops of oil to the depressor pin in the UFA, in order to keep this “O” Ring lubricated. Liquid CO<sub>2</sub> behaves like a solvent, and tends to wash away oils, so if you fill a large number of bottles per day, you may want to perform this operation two or three times daily.

Periodically check the fill adapter and fill hose for thread integrity, cracks or other wear replace any suspect part immediately call 877-646-5287  
www.ninjaball.com

April 2011