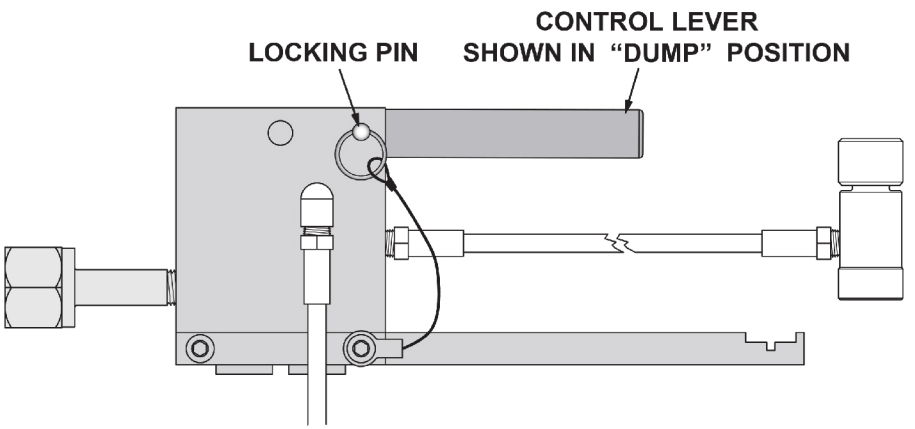
NINJA PAINTBALL

Proudly Made in the USA

M10 CO_2 FILL STATION

SAFETY FIRST!

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



Referenced Documents:

- **ASTMF2856-11 available at 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

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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_2 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_2 from the bottom of the bulk supply tank. YOU WILL NOT BE ABLE TO DISPENSE A COMPLETE FILL FROM A NON DIP TUBE TANK!

▲ ***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!!***

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Prior to removing 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".

To perform fills, the fill station must be attached to the CO_2 supply tank, and the discharge vent hose must be connected. Both of these operations are simple, and require little time.

The fill station is equipped with a standard "CGA 320" fitting on its input side (the side labeled "BULK TANK"). This fitting will connect to any standard CO_2 bulk tank in the United States. Please note that the threads are right-handed, and that a sealing washer is required.

On the side of the fill station you will notice a port labeled "VENT". For safety reasons, a VENT hose should be run from this port to a safe discharge point. Depending on your circumstances, there are several ways of routing your VENT line.

If you are operating outdoors, you really only need enough vent line to direct the exhausting gas away from the operator and bystanders. Care should be taken to secure the end of this line solidly, because a loose hose can "whip" dangerously when high pressure gas is discharged from the vent hose.

If you are operating indoors, where the discharge noise is objectionable, you have two options. The first and most desirable option is to run the VENT hose to a point where it can exhaust outside. The second is to use the accessory muffler unit. The muffler unit sits on the floor, and is connected to the vent port with a five foot hose.

NOTE: *UNDER NO CIRCUMSTANCES SHOULD ANY OF THE SMALL, LOW PRESSURE INDUSTRIAL AIR MUFFLERS BE SUBSTITUTED FOR THE PROPER MUFFLER!! THESE UNITS ARE NOT PRESSURE RATED FOR THIS SERVICE, AND CANNOT TOLERATE THE POSSIBLE ACCUMULATION OF DRY ICE.*

▲ **An important point to consider when setting up your fill station is that high concentrations of CO_2 can pose a serious inhalation hazard; if you are operating and venting indoors, your fill station must be located in an area where there is adequate ventilation.**

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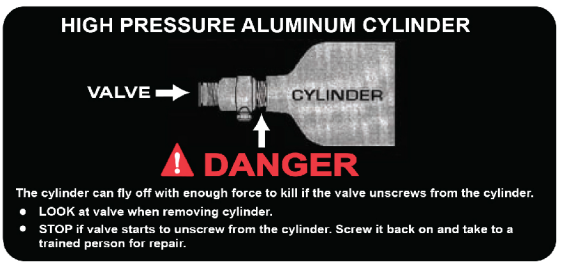
OPERATION 1: CHECKING OUT THE BOTTLE

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.

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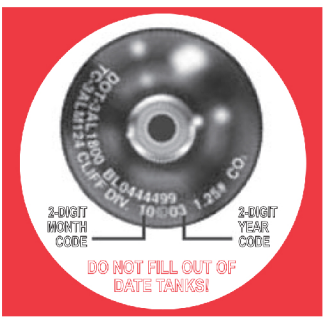
VISUALLY INSPECT THE CYLINDER CONDITION BEFORE EACH FILL.

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_2 capacity. If no stamping is present or stamping has been altered or non legible, do not use the cylinder.

Re-qualification period for CO_2 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_2 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_2 – The amount of CO_2 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.

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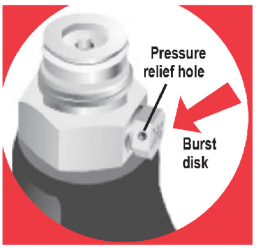
Cylinders having valves without a rupture disk or pressure relief mechanism must not be filled.

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



Cylinders must have correct rupture disk; 3AL-1800 CO2 cylinders require a 3000 psi (3K) rupture disc.

The valve and external threading must not be damaged, and must be free of foreign material. The valve o-ring must be in good condition in order to fill. Damaged valves or omponents must be cleaned or repaired by the manufacturer or its authorized representative, prior to filling the cylinder.

▲ ***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 2: HOOKING UP!

Once you have all your information, the physical procedure is quite simple. The procedure is illustrated graphically on the following page.

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!!

Step one: ATTACHMENT. Screw the bottle into the adapter on the end of the fill hose. Once the bottle is attached, turning the knob on the adapter clockwise will depress the pin in the bottle to open the bottle valve.

Step two: PURGING. Purge off the residual CO_2 in the customer's bottle. It is necessary to do this because you must decrease the pressure in the customer's bottle for the transfer from the bulk tank to take place. You do this by inverting the bottle so that the valve is at the bottom, and pushing the control handle all the way to the "DUMP" side and holding it there until gas ceases to be exhausted. The "Inverted Dump" is used because it minimizes the chilling of the bottle, and the subsequent dry ice formation.

Step three: WEIGHING. When there is no residual CO_2 in the bottle, hang or place the bottle on the scale and zero out the scale.

▲ 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_2 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.

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Step four: FILLING. Push the control lever to the "FILL" side to allow the CO_2 to flow from the bulk tank to the bottle you're filling. Watch the scale to make sure you don't over fill the bottle.

Step five: DISCONNECTING. Turn the knob on the fill hose adapter counterclockwise to allow the pin valve in the bottle to close. Push the control lever all the way over to "DUMP" to vent any CO_2 that may be trapped in the hose. Unscrew the bottle from the fill adapter.

Step six: DOUBLE CHECK. Re-weigh the bottle to make sure the weight is correct. Remember, the fill hose and adapter may have affected your first reading slightly, and a second weighing is essential.

THIS IS THE MOST IMPORTANT STEP IN THE WHOLE OPERATION!
DO NOT OMIT IT!!!

Step seven: FINAL STEP. Close the valve on the bulk tank.

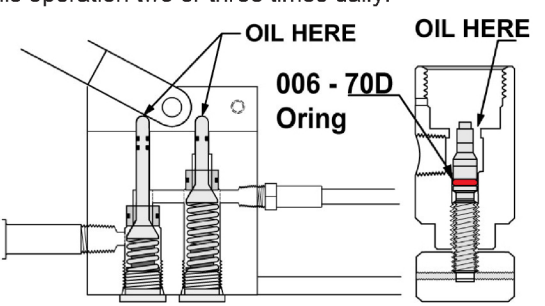
Move the control handle to the dump position and replace locking pin.

You have now filled a CO_2 bottle safely. Remember: follow the procedures, take **no** shortcuts, and assume nothing. Your safety and that of your customer depend on it.

A LITTLE CARE (and OIL) GO A LONG WAY!

Your M10 CO2 Fill Station has been designed for years of reliable service, and it will require only the simplest routine maintenance. On a daily basis, you should apply a couple of drops of air tool or airgun oil to the tops of the valves, right where the Control Lever presses on them. Oil applied here will not only lube the lever contact point, but it will run down the valve stem, and keep your valve seals happy.

The other 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 CO2 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 815-477-0007 www.ninjapaintball.com

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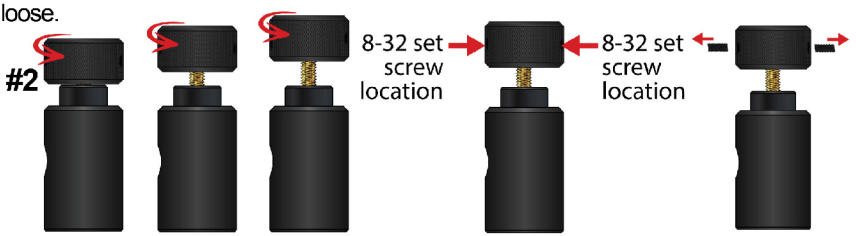
NINJA Universal Fill Adapter Rebuild

Should you ever need to replace the 006-70D O-ring inside the UFA follow the following instructions:

BEFORE PROCEEDING MAKE SURE THERE IS NO COMPRESSED AIR OR CO2 GOING TO THE UNIVERSAL FILL ADAPTER AND THAT THE UNIVERSAL FILL ADAPTER IS DISCONNECTED FROM THE FILL SOURCE!

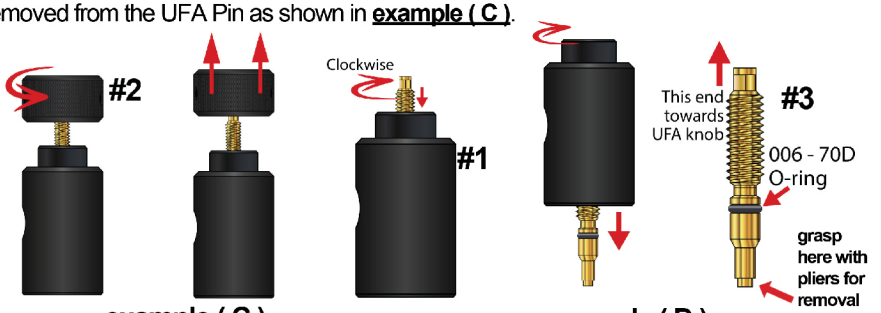
1. Once the Universal Fill Adapter (UFA) has been disconnected from the fill station you will turn the UFA Knob **(part #2)** counter clockwise towards to "closed" position until the knob stops as shown in **example (A)**

2. When the UFA Knob **(part #2)** is in the full "closed" position use a 5-64 allen tool to loosen the (2) 8-32 set screws as shown in **example (B)** 8-32 screws do not need to be removed, only loose.



example (A) **example (B)**

3. To remove the UFA knob ensure the 8-32 set screws are loosened and turn the UFA knob **(part #2)** counter clockwise towards the "closed" position until the UFA knob is fully removed from the UFA Pin as shown in **example (C)**.



example (C) **example (D)**

4.To remove the UFA pin **(part #3)** from the UFA body **(part #1)** screw the UFA pin **CLOCKWISE INTO** the UFA body from the top portion of the UFA until the UFA pin comes out of the bottom of the UFA body as shown in **example (D)**.

HELPFUL HINT: Use long nose pliers to assist in removing the UFA pin from the bottom of the UFA body by grasping onto the end of the pin with the pliers from inside the UFA body and rotating the pin COUNTERCLOCKWISE.

5.Once you have the UFA pin removed you can clean, inspect for damage and lubricate the **006-70D O-ring** with air tool or airgun oil. If needed you can replace that O-ring with a new **006-70D O-ring** available from Ninja Paintball or your local paintball equipment store.

6.To reassemble the UFA, screw the UFA pin **(part #3) CLOCKWISE INTO** the **BOTTOM** of the UFA body **(part #1)** until the UFA pin comes out of the top of the UFA body.

7.Once the UFA pin is fully screwed into the UFA body screw the UFA knob **(part #2) CLOCKWISE** onto the UFA pin and reinstall the 8-32 set screws using the 5-64 allen tool. Securely tighten down the set screws for a snug fit, **do not overtighten!**

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DANGER!

IF YOU ARE USING A REFILLABLE CO_2 CYLINDER TO POWER YOUR PAINTBALL MARKER YOU MAY BE AT RISK OF CAUSING SERIOUS INJURY OR DEATH TO YOURSELF OR OTHERS!

If your valve has been removed, replaced or if any of the following have occurred:

- The valve unit was replaced or altered after purchase
- An anti-siphon device was installed
- The valve unit was removed from the cylinder for any reason
- Any modification was done to your Refillable CO_2 Cylinder!

YOU ARE AT RISK REGARDLESS IF YOU PURCHASED A NEW OR USED REFILLABLE CO_2 CYLINDER!

The valve is intended to be permanently attached to the CO_2 cylinder. However, there have been numerous reported incidents causing serious injuries or death that were caused by a player unknowingly unscrewing the valve from the CO_2 cylinder. This actually occurs when the player thinks the entire cylinder is being unscrewed from the paintball marker.

DON'T TAKE A CHANCE!

IMMEDIATELY BRING YOUR REFILLABLE CO_2 CYLINDER TO A "C5" ***CERTIFIED AIRSMITH*** FOR INSPECTION OR CONTACT THE MANUFACTURER FOR A LOCATION WHERE THIS INSPECTION CAN BE COMPLETED.

Ninja Paintball Made in USA Ultimate Air Power

1-815-477-0007

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ALWAYS BE SAFE!

NEVER OVERFILL CO_2 TANKS!

ALWAYS CHECK THE TEST DATE OF ANY CO_2 TANK

- CO_2 tanks must be **RETESTED** every five years.
- **NEVER** refill an out-of-date CO_2 tank.
- Filling out of date tanks may result in government fines, severe injury, or death.

ALWAYS HAVE A QUALIFIED INDIVIDUAL CHECK OR REPLACE YOUR SAFETY PLUG

- Check that each burst disk has at least **ONE PRESSURE RELIEF HOLE** in the side or top of burst disk,
- The burst disk is a precision pressure sensitive device.
- **NEVER TAMPER** with the **BURST DISK**. It can alter the safety release operation of the device.

ALWAYS USE A SCALE TO VERIFY FILLING WEIGHT OF ANY CO_2 TANK

- Always use an accurate **SCALE** when filling a CO_2 tank.
- **NEVER** overfill a CO_2 tank.
- It's safer to **UNDERFILL** than to **OVERFILL**.

BE SAFE!

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815 - 477 - 0007

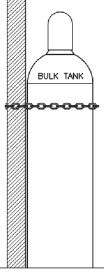
CO2 REFILL OPERATIONS

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 atached will cause the fill hose to "whip". Injury may result!!

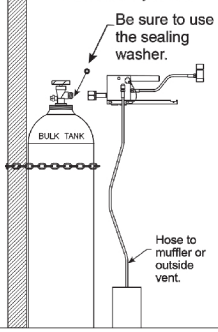
Safety Considerations

- ALWAYS WEAR EYE PROTECTION WHEN WORKING WITH COMPRESSED AIR.
- VENTING GAS CAN AND WILL ACCELERATE PARTICLES OF DIRT, ICE AND DEBRIS TO HIGH VELOCITIES.
- KEEP ALL PERSONS WITHOUT EYE PROTECTION OUT OF THE IMMEDIATE AREA.
- ALWAYS WEAR GLOVES TO PROTECT YOUR HANDS FROM EXTREME COLD.
- ALWAYS INSPECT TANK FOR DAMAGE AND RUPTURE PLUG FOR BLEED HOLES BEFORE ATTEMPTING ANY FILL.
- **LOOK** AT VALVE WHEN REMOVING CYLINDER, SEE STEP 4. **STOP** IF VALVE STARTS TO UNSCREW FROM THE CYLINDER. SCREW IT BACK ON AND TAKE TO A TRAINED PERSON FOR REPAIR.

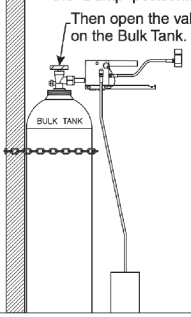
1. Secure the Bulk CO2 cylinder to a pillar or wall before removing the protective safety cap!!!



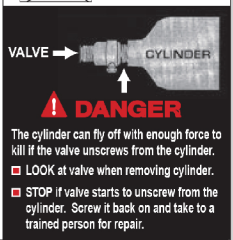
2. Attach the Fill Station to the Bulk Cylinder.



3. Make sure the control lever is still locked in the "Dump" position...

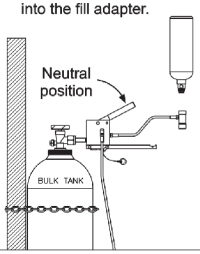


4. Inspect the bottle to be filled for visible damage, and check the bottle date!



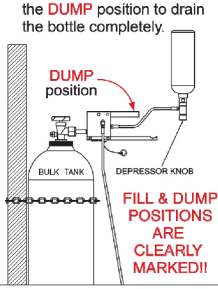
5. Remove the Control Lever Locking Pin, and allow the Control Lever to move into its neutral position.

   Turn the bottle to be filled upside down, and screw it into the fill adapter.

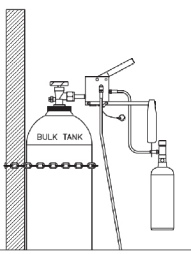


6. Turn the depressor knob on the fill adapter clockwise until it stops.

   Push the control lever to the DUMP position to drain the bottle completely.

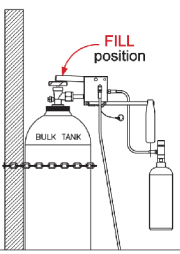


7. Hang the empty bottle from the Digital Scale, and then reset the scale to zero.

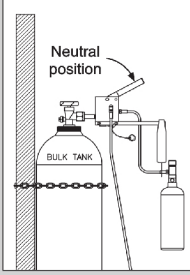


8. Move the control lever to the FILL position and watch the scale.

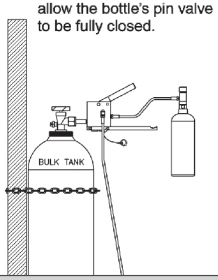
   Do not fill beyond the bottle's rated capacity!!!



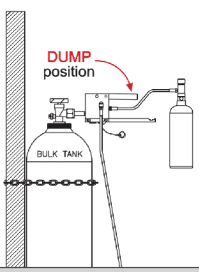
9. Move the control lever to its neutral position.



10. Unhook the bottle & hose from the scale and turn ther Depressor Knob counterclockwise at least 2 full turns. This should allow the bottle's pin valve to be fully closed.



11. Move the control lever to the DUMP position to drain any residual CO2 from the hose.



12. Unscrew the bottle from the fill adapter. Move Control Lever to the "Dump" position, and replace locking pin, close bulk tank valve.

RE-WEIGH THE BOTTLE TO MAKE SURE YOU HAVE NOT OVER-FILLED!

This is the most important step!! DO NOT SKIP IT !!!

Revised March, 2007

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