

Pinos Altos Volunteer Fire/Rescue - Standard Operating Guidelines

Category: Operations Section: Incident Operations Subject: Cascade & SCBA Refilling Draft: 4/12/11 Revised: 10/17/11	S.O.G. # 4-5 Title: Cascade & SCBA Refill
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4.5.1 These guidelines apply the operation of the Compressor, the refilling of the SCBA Cascade Tanks and the SCBA Bottles. To the extent possible, the care and maintenance of the Compressor, Cascade System and SCBA bottles come under Structure Fire Training and Maintenance for all department personnel.

4.5.2 The General care of the Compressor, and the three bottles of the Cascade System, is as follows: The Compressor system should be operated on a monthly basis to insure the active operation of the system and the compression fitting seals.

4.5.3 - Operating the Compressor:

The Compressor is operated by turning the system on using the On/Off push button on the upper panel left side. Once active, it can be operated to fill the Cascade System bottles as needed, in the process described in Section 2.2.4.

The Compressor can be operated for 1-3 minutes to insure general operation, and then end the cycle by pressing the same On/Off push button on the console. It will take two to three minutes to 'purge' the system and then automatically shut down.

The Compressor Shut-off Switch is an emergency shut-off, and should be used as such.

4.5.4 - Checking the Cascade Tanks:

In order to check/fill the Cascade tanks, each tank should be checked separately.

1st: Disconnect any SCBA Personal Bottles from the system.

2nd: Insure that ALL valves on the three Cascade tanks and SCBA Feed Hose are closed. **(All Valves are closed when turned clockwise, and are open when counter-clockwise.)**

3rd: Open the top valve on the left most Cascade Tank #1 to the fully open position, and note the level of air pressure on the first pressure gauge on the line coming from the three tanks. If this is less than 4,500 PSI, note the PSI. If it is already near 4,500 PSI, close tank #1 valve completely, and open the valve to the middle Cascade tank # 2, and repeat the observation for 4,500 PSI at the gauge. If at near 4,500 PSI is observed, completely close the top valve on the middle tank, and open the top valve to tank #3 at the far right, and repeat the PSI observation.

Once the PSI levels of the tanks are completed and noted, you can begin adding air to the sub-4,500 PSI Cascade Tanks using the procedure in Section 2.2.5 below.

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4.5.5 - Filling the Cascade Tanks:

To fill a Cascade Tank, follow the procedure above to isolate the tank by closing all the valves on the system. Be sure all toxic fumes in the vehicle Bay areas have dissipated, and then Do Not operate any of the vehicles while the Cascade System Compressor is running. Then open the valve on ONE Cascade tank that need filling, note the PSI reading at the gauge, and start the Compressor. The compressor can be turned on using the On/Off push button on the upper panel right side.

(If the PSI level is 3,500 lbs or more, it may take 2-3 minutes per 100 PSI to fill each tank.)

As the tank reaches its 4,500 PSI capacity, you can close the top valve on the Cascade tank you just filled. If another tank requires filling, that tank valve can be opened now, and the PSI level can be monitored for a 4,500 PSI reading.

Once all of the Cascade tanks are at their proper level of 4,500 PSI, the system is ready for storage, operation or for SCBA Personal Bottle refilling.

The system compressor can be turned off pressing the same On/Off push button on the console. It may take a minute or two to 'purge' the system and then to fully shut down.

4.5.6 - Filling SCBA Personal Bottles:

Before filling SCBA Personal Bottles, check to verify the status of the Cascades three tank system by referring to Sections 2.2.4 and 2.4.5 to check and fill the system.

Using the Cascade tanks to refill a SCBA Personal Bottle...

1st: Place the SCBA Bottle in the right cage area and uncap the refill port.

2nd: Take the Refill Hose and securely affix the screw nozzle to the refill port.

3rd: Close all Valves on the system and SCBA Bottle (The newer style SCBA Personal Bottles do not require the local valve to be opened in order to refill the Personal Bottle)

4th: Open the ***Right*** most Cascade tank #3 valve fully, and then open the large Refill valve near the end of the Refill hose to fill the Personal Bottle.

5th: Once the air PSI in the SCBA Personal Bottle is normalized, one of two conditions exists. Either the bottle is full (4,500 PSI) and you are done, or you need to top it off.

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4.5.7 - Topping off SCBA Personal Bottles:

If you need to top off a SCBA Personal Bottle, close the Cascade Tank you now have open, and *open* the next Cascade Tank to the Left (#2) and continue filling. One of two conditions now exists. Either the bottle is full (4,500 PSI) and you are done, or your need to top it off.

If you still need to top off the SCBA Personal Bottle, close the valve on the Cascade Tank you now have open in the middle (#2), and *open* the last Cascade Tank to the Left, and continue filling.

One of two conditions now exists. Either the bottle is full (4,500 PSI) and you are done, or your need to check/refill the Cascade System tanks. Refer to Section 2.2.4 and 2.2.5

4.5.8 - Removing SCBA Personal Bottles:

You have finished refilling your SCBA Personal Bottle and need to remove it.

- 1st: Close the SCBA Personal Bottle main valve
- 2nd: Close the Refill valve on the end of the Refill Hose.
- 3rd: Open the small Bleeder valve on the end of the Refill Hose.
- 4th: Unscrew the Refill Hose assembly.
- 5th: Secure the Refill Cap back onto the SCBA Personal Bottle.

4.5.9 - Completed the Refilling of SCBA Personal Bottles:

Close any open valves on the Cascade Tanks and on the Refill Hose. **DONE!**

