

## **16. Cascade System**

### **16.1 Requirements for Operation of the Cascade System**

16.1.1 Only firefighters which have been properly trained will use the house cascade and compressor system. The house cascade system will be located in the Atlantic Avenue fire station.

16.1.2 The cascade system will only be used to fill up SCBA bottles that have current Hydro-Static test dates imprinted on the bottles. It is the operator's responsibility to assure that the bottles are checked prior to placing them in the filling station.

### **16.2 Operating the Compressor and Fill Station**

16.2.1 Prior to beginning cascade operations, the operator will open the front door on the compressor cabinet and remove the cascade log. The operator will then check the oil level, using the glass observation window on the compressor motor. The operator will then write in the proper information in the log.

16.2.2 If the operator observes that the level of oil is lower than the line on the glass window, the operator will open one of the side doors, using the allen wrench located in the compressor cabinet, remove the fill plug for the motor and add the appropriate amount of cascade motor oil. Cascade motor oil will be located with the cascade compressor. At NO times are any other oil products approved to be used in the compressor motor.

16.2.3 Once the operator has entered the appropriate information in the log, he/she shall check the area around the compressor and assure that there are no foreign objects which may be drawn up into the compressor fan. The WHITE "Power On" button can now be pushed to activated the compressor motor.

16.2.4 Once the compressor motor has been activated, the operator will open a "Bank", by turning the valve labeled "TO BANK" which has the least amount of air in it's reserve. This will allow that Bank to be filled as the operator is using the fill station. The compressor will automatically shut off when it reaches 6000 psi. There is no manual override for this function.

16.2.5 The operator will now prepare the fill station for operations by opening the fill station door. Once opened, the operator may install three SCBA bottles. Once the hydro test dates have been checked on the empty SCBA bottles, they may be placed in each of the fill station sleeves. You must check the bleeder valves in the fill station to determine that they are closed. The hoses will then be attached to the bottles. The bottles will then be turned on. The operator must then turn on each SCBA fill station by turning the black knob next to the bleeder valve. The fill station door will then be closed. The fill station will not allow the bottles to be filled if the door is not completely closed.

16.2.6 The operator will then check the gauge labeled "BOTTLE PRESSURE". To begin filling operations the operator will open a valve labeled "FROM BANK". (If all the banks have the same air pressure, it does not matter which bank is used to fill the empty bottles. Once the air supplies in each bank begin to deplete, and vary in their amount, the operator will first use the bank which has the least amount of air and work their way through the banks as the SCBA bottles begin to fill.) The operator will then confirm that the outlet pressure gauge is set to the maximum pressure of the bottle (South Wall Fire Rescue bottles are rated at 4500psi). The operator will then open the valve labeled "FILL VALVE".

16.2.7 Once the bottles in the fill station are full, the operator will shut all valves and open the fill station. The valves of the SCBA bottles will then be closed. The bleeder valves will then be opened, releasing the remaining pressure in the fill station. The fill station valves can then be removed from the SCBA bottles and the bottles can be removed from the fill station.

### **16.3 Operating the Auxiliary Fill System**

16.3.1 An auxiliary fill line has been attached to the fill station to accommodate the breathing air bottles for Truck 3-91. This line can be used to fill other fire company breathing air bottles if they possess the proper adapters and equipment to attach to our system. Our system will not be changed to facilitate any other Fire Companies equipment.

16.3.2 To use the auxiliary line, the operator will retrieve the amount of hose needed to reach the air inlet of T391. The reel that the hose is mounted on is spring loaded. He/She will then attach the end of the hose to the air inlet, on T391. Once the hose is attached, the valves on the breathing air tanks must be opened. Once the breathing air tanks are opened, the valve at the end of the fill line must be opened.

16.3.3 The operator will return to the cascade fill station. This cascade system can fill the bottles, using the auxiliary line with either the air stored in the banks or the air provided directly from the compressor.

16.3.4 To fill from the stored banks, the operator will open a valve labeled "FROM BANK". (The operator will use the first bank which has the least amount of air and work their way up.) The operator will then confirm that the outlet pressure gauge is set to the maximum pressure of the bottle (T391 bottles are rated at 6000psi). The operator will then open the valve labeled "AUXILIARY FILL".

16.3.5 To use the auxiliary line by using the compressor. The operator will turn the knob labeled "BYPASS". Once that valve is open, the compressor can be turned on, using the steps above. The operator will then confirm that the outlet pressure gauge is set to the maximum pressure of the bottle (T391 bottles are rated at 6000psi).

## **16.4 Maintenance**

16.4.1 Maintenance will only be performed by Air Power International. In the absence of Air Power International, another maintenance company will be assigned by the Board of Fire Commissioners, Wall Fire District #3.

16.4.2 Air quality will be checked, by a recognized company, on a regular basis.

16.4.3 Once a month, the cascade compressor will be exercised. This will consist of emptying the moisture reservoir, checking the oil, and running the compressor for one half (½) hour or more. This check will be completed by the Fire Chief or his designee.

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