



## ADVISORY NOTICE

### Background

A client reported water ingress to the COBRA scrubber. Their own investigations discovered the cause to be excessive hot water pressure due to an incorrectly set relief valve in the COBRA hot water system.



### ISSUE

#### Water ingress to COBRA scrubber

A client reported water ingress to the scrubber on a COBRA set. JFD initially replaced the Hot Water Housing (as it was thought the fault occurred in this component) but the clients own investigations revealed an incorrectly set hot water PRV. The incorrectly set PRV failed to protect the COBRA set from excessive hot water pressure and this caused the inner liner of the hot water housing to deform and lose contact with the sealing o-ring. As a result hot water leaked into the scrubber housing.



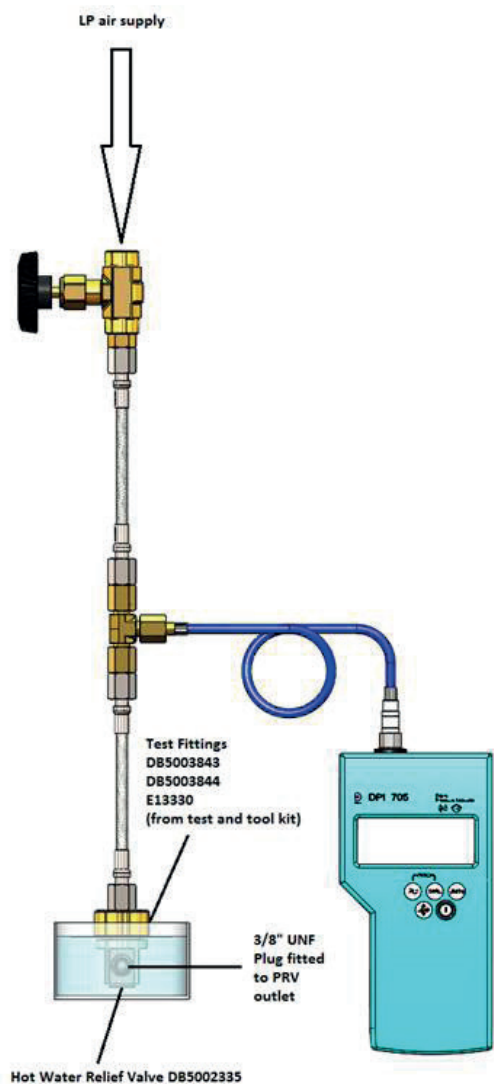
### SOLUTION

Following a thorough review and investigation of the hot water PRV, JFD recommend resetting the relief valve to open at 3 psi (rather than 4 psi as previously advised in the manual) and checking the setting fortnightly thereafter.

Please see following pages for procedure.



## Procedure to set Hot Water PRV



**Figure 1 - Test equipment**

See figure 1.

Fit the test plug (DB5003843), test nut (DB5003844) and o-ring (E13330) to the hot water relief valve DB5002335 as shown in figure 1. These items are contained in the COBRA Tool and Test Kit. Fit a 3/8" UNF plug to the outlet of the relief valve.

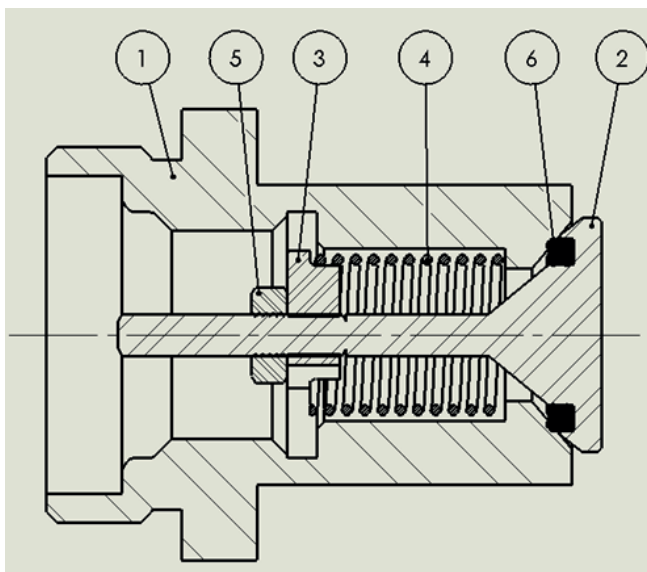
Connect an LP air supply and a calibrated LP gauge. Care should be taken when applying the pressure if a very low range gauge is used until it is confirmed that the PRV will vent correctly.

**NOTE:** Ensure that the 3/8" plug does not interfere with the spring inside the PRV. It may be preferable to fit the Hot Water Inlet Hose from the COBRA set (which has a specially shortened 3/8" fitting) and fit a 9/16" UNF blank to the other end of this hose.

Immerse the hot water relief valve in water (minimum depth to cover relief outlet).

Gently apply air pressure to the relief valve inlet and note the pressure reading when bubbles start to form in the water

**NOTE:** The reading is taken when the first bubbles begin to form. Any appreciable flow through the PRV will cause a higher reading on the gauge due to the port size on the test fitting.



**Figure 2 - Cross section of Hot Water Relief Valve**

See figure 2.

Slacken the locknut (item 5), hold the stem (item 2) and turn the adjuster (item 3) clockwise to increase the set pressure or anticlockwise to decrease the set pressure, then retest.

When 3psi +/- 0.2 psi has been achieved, tighten the locknut (item 5) against the adjuster, ensuring components are locked together.

Confirm set pressure has not changed.

Remove test equipment and re-fit relief valve to set.



## ADDITIONAL

JFD recommend that the scrubber canister is removed and inspected at the end of every dive, irrespective of whether it is intended to change the sodalime at that time. Any moisture detected should be investigated. This ensures that the set is serviceable for the next diver.



## ONGOING WORK

JFD are currently undertaking work to improve the flow capacity of the relief valve. This will ensure that the COBRA set is protected from overpressure, even if the COBRA set hot water outlet is totally blocked for any reason. A further guidance note and replacement parts will be issued in the near future to allow clients to carry out this modification.