DIVEX CAUTION NOTICE

Caution Notice No. DVX001/2009

SLS Diving Sets Unauthorised Assembly



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In supporting a Client field requirement Divex have become aware of a possible problem with the way Divex SLS Diving Sets are being assembled, serviced and maintained onboard Dive Support Vessels (DSV).

Diving operations had to be suspended due to concerns about the way sets were behaving. Upon investigation by Divex Technical Services mobilized to the DSV it was established that some unauthorized assembly had been made by the Client Maintenance Technicians.

It was also discovered that the Divex Operations Manual displayed the set in a manner that showed two views conflicting with each other. This has been rectified within a revision to the Divex Operations Manual by stating the side of the set from a Divers point of view and is included for advice in this Divex Caution Notice.

To assist all Clients associated with Divex SLS sets this Caution Notice provides guidance on how the SLS sets needs to be maintained, the Divex position in relation to unauthorized modifications and some guidance on training and refresher training requirements.

All users of Divex SLS systems are advised as a matter of urgency to check these items. Please check SLS sets which are in service and those in maintenance. Please also check all spares that are held.

The Divex recommended method of checking is as follows:

Hold the hose, grip the crimp with fingers and try to twist the hose and crimp firmly in opposite directions. If the crimp "rotates" then the hoses <u>must</u> be returned to Divex for rework.

If users find any which require replacement:

- a) Please contact Divex and quote this Caution Notice ref#;
- b) Advise Divex how many parts detailed in this Divex Caution Notice you have found faulty;
- c) Divex will advise you of an RGA number to use for the return;
- d) Replacement hoses will be sent to you from Divex by return.

Please address any queries to:

Commercial Product Manager: M Cattanach - mcattanach@divex.co.uk

This notice has only been sent to customers who have, within the past 12 months, purchased this item as a spare or have purchased an SLS system within the same period.

Signed:

Date: 14th August 2009

Malcolm Cattanach Commercial Projects & Products Manager

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1. Orientation & Installation of Counterlung Reaction Brackets

Divex would like to provide guidance on the orientation and installation of the following components within the SLS MkIV set :-

- D323 Reaction Bracket (Divers Left Counterlung)
- D325 Reaction Bracket (Divers Right Counterlung)

The above components are handed according to the divers left/right.

- Figures 1 & 3 show the incorrect fitting of the Reaction Bracket
- Figures 2 & 4 show the correct fitting of the Reaction Bracket



Figure 1 Left Hand Reaction Bracket fitted **incorrectly** on Right Hand Counterlung



Figure 2 Right Hand Reaction Bracket fitted **correctly** on Right Hand Counterlung

When fitted correctly the flat edge of the folded section of the reaction plate must be facing forward (as per Figure 2).

When the reaction plates are fitted correctly the actuation cable will transition smoothly from the conduit to the row of lung Teflon loops as per Figure 4.



Figure 3 Left Hand Reaction Bracket fitted incorrectly on Right Hand Counterlung



Figure 4 Right Hand Reaction Bracket fitted correctly on Right Hand Counterlung



Failure to install these components correctly will potentially render the set difficult to activate.

2. Storage of SLS Backpack Assemblies

Following storage and prior to entering any SLS set in to service, Divex recommend a test activation of the SLS Backpack Assembly. The SLS should be charged to 2 psi by using a 10 bar supply to the Single Stage Regulator and a Breathing Hose used to link the two SLS gas ducts.



Backpack 2psi positive showing Green Rotowink



Breathing Hose connected to both SLS Gas Ducts





This test should be carried out in the worn position as shown above rather than on the bench, and is to ensure free movement and release of the actuation cables. There is no need for the cylinders to be pressurized or the set to be charged during this test activation

2. Storage of SLS Backpack Assemblies

Divex does not recommend storing the set under positive pressure for extended periods of time, as this could lead to a kinking of the actuation cables.

Following this test and inspection, the set should be repacked in accordance with the SLS Operation & Maintenance manual.

3. SLS Counterlung Guide Plug

Attention should be paid during routine maintenance procedures, as well as prior to any dive, to ensure that the SLS Counterlung Guide Plugs (Divex Part number D45550) are fitted at all times.

This Teflon plug helps prevent grit and silt from entering the stainless conduits, and aids smooth running of the actuation cables during activation.



Failure to fit the Teflon guides could lead to snagging of the cables on the actuation block making it difficult for the diver to activate the set should he pull the handle at an angle to the harness.

NOTE

There is no Teflon plug fitted to the centre hole on the actuation block. This is to allow clearance for the bullet on the two stage regulator actuation cable when clearing the conduit.

4. Fitting of SLS Harness Assembly

The correct procedure for fitting the SLS MkIV Harness Assembly (order code C35650) is detailed below the following captions :

a) Pass the webbing strap under the backpack lower support pin and through the reinforced webbing loop as per Figure A.



Figure A

b) Take the webbing strap and pass it under the first half of the reinforced loop at the top of the harness as per Figure B.



Figure B

c) Take the webbing strap and pass it under the support pin at the top of the backpack, and then through the second half of the reinforced loop at the top of the harness as per Figure C.



Figure C

d) Pass the webbing through top buckle as per Figure D.



Figure D

e) Take the remaining portion of webbing and loop it back through the top buckle to prevent slippage and tidy the loose end.



Figure E

Incorrect fitting of the harness will lead to excessive movement of the backpack potentially causing discomfort to the diver as well as premature wear and failure of the webbing straps.

5. Demand Regulator Protection Cap Assembly

Divex would like to point out that the Demand Regulator Protection Cap Assembly (Order Code D313) must be fitted at all times to the SLS Backpack. This Protection Cap prevents debris ingress within the demand regulator and eliminates build up of grit and silt between the top of the regulator diaphragm and the regulator top cover.





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6. Hot Water Supply to the Backpack

The hot water supply to the SLS Backpack must be maintained at <u>all times</u> regardless of diving depth. This supply provides hot water to the water jacket that surrounds the CO2 Scrubber Housing, keeping the chemical absorbent warm and ready to start work when the set is activated. With the CO2 Scrubber pre-heated, the carbon dioxide absorption will start immediately upon system actuation.



Hot Water Splitter Block & Backpack Supply Hose

The outlet from the backpack hot water jacket is positioned at the top of the backpack and from here can be connected to the hot water shroud on the helmet to provide heating to the helmet side block and demand regulator which pre-warms the gas.





Should gas heating not be required then the discharge from the set to the helmet shroud can be redirected elsewhere. This outlet must not be blocked otherwise the water jacket will over pressurize and may seriously damage the backpack.

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7. Two Stage Regulator Restraining Tie

The Two Stage Regulator Restraining Tie must be fitted at all times.



This prevents the regulator moving back and contacting the SLS back cover, which may activate the set when the diver is in the water.

The cable tie is secured around the cylinder manifold and the Two Stage Regulator Cap, and pulled "snugly" with just enough tension to stop the Regulator moving back. Too much tension will place excess pressure on the associated components.

8. Awareness & Training

It is essential that personnel both operating and maintaining the SLS System are completely familiar with all operational and maintenance procedures.

Divers should have attended a Familiarisation Course and be totally comfortable and competent in the operation of the equipment, while technicians should have completed the Divex 3 day SLS Maintainers Training Course.

It is extremely important that the level of diver to technician competence is maintained and achieved to a high level through regular use or experience.

Courses available on request include:

- 3 day Technicians Servicing & Maintainer Training Course
- 1 day Technicians Refresher Training Course
- 1 day Diver Familiarisation Training Course

If in doubt of the individual's competency, the person should undergo re-training.

