

# DIVEX HSE ALERT



HSE Alert No. HSE001-2007

**Valve Seat Retainer**

**Part No: D1998**

**Divex Ltd.**

Enterprise Drive  
Westhill, Aberdeen  
AB32 6TQ, United Kingdom

Telephone +44 (0)1224 740145  
Facsimile +44 (0)1224 740172  
e-mail info@divex.co.uk

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| <b>DATE</b> | 21/02/07 | <b>COUNTRY:</b> |  | <b>LOCATION:</b> |  |
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Divex has been advised of some problems which customers have experienced when using Ultraflow "balanced demand valve helmets" at the top end of the acceptable supply pressure range i.e 15-20 bar.

Symptoms reported include :-

- 1) technicians experiencing difficulty in setting up the regulators correctly,
- 2) the valve stem entering too far into the seat / seat retainer and sticking,
- 3) a reduction in flow from the regulator as the supply pressure was increased.

We have investigated the cause and have concluded that a batch of seat material which was at the bottom end of the acceptable hardness range is responsible for symptom 2.

It was found that a less than perfect glue joint was allowing supply gas behind the seat and causing the seat material to part company with the retainer adjacent to the bore. The seat then pushed the valve stem forward causing the roller lever to drop while maintaining a gas tight seal and is responsible for symptom 3.

Divex recommend that all valve seat retainers are tested as a matter of urgency as described below:-

- 1) Remove the regulator cover and diaphragm,
- 2) Connect a variable pressure breathing gas supply,
- 3) Adjust the supply pressure gradually from zero to 10 bar and note the amount of free play at the roller end of the roller lever.
- 4) Increase the supply pressure gradually to 20 bar and monitor the free play. An increase in the free play of up to 2mm indicates that the seat retainer is acceptable. If the increase is greater than 2mm then the seat retainer should be replaced with a new unit.

If, for operational reasons, it is not possible to conduct the above tests immediately then Divex recommends that the maximum supply pressure is limited to 12 bar until tests are completed.

