

These flashes summarise key safety matters and incidents, allowing wider dissemination of lessons learned from them. The information below has been provided in good faith by members and should be reviewed individually by recipients, who will determine its relevance to their own operations.

The effectiveness of the IMCA safety flash system depends on receiving reports from members in order to pass on information and avoid repeat incidents. Please consider adding the IMCA secretariat ([imca@imca-int.com](mailto:imca@imca-int.com)) to your internal distribution list for safety alerts and/or manually submitting information on specific incidents you consider may be relevant. All information will be anonymised or sanitised, as appropriate.

A number of other organisations issue safety flashes and similar documents which may be of interest to IMCA members. Where these are particularly relevant, these may be summarised or highlighted here. Links to known relevant websites are provided at [www.imca-int.com/links](http://www.imca-int.com/links). Additional links should be submitted to [webmaster@imca-int.com](mailto:webmaster@imca-int.com)

## I Faulty Directional Flow Arrow on Valve

Keywords: Umbilical

A member has reported the following safety issue concerning incorrectly machined valves.

During general maintenance on a diver's emergency gas manifold which was fitted in an air diving basket, a technician discovered that three valves were apparently fitted such that the flow through the valve body was in the reverse direction to the correct path. On close inspection, the technician identified that the valves had been incorrectly machined, in that the directional arrow on the outside of the valve body was in the wrong orientation to the correct porting arrangement

The valves concerned, which were all similar, were designed to be directional and were marked with an arrow on the side of the valve body. The arrow was intended to ensure that gas or fluid entered the inlet port and exited through the outlet port. The ports themselves were not marked, but the inlet should have had an entry hole at the bottom of the valve body and the outlet should have a hole at the top of the valve body. This orientation would have ensured that the gas/fluid flow correctly pressurised the valve seal, which was controlled by the spindle. The three faulty valves had been machined incorrectly with reference to the external arrow direction, resulting in incorrect gas/fluid flow through the valve. This could potentially have caused the seat on the valve stem to have become detached, so that it could enter the gas or fluid system. In this case, it could have caused the valve seat to enter a diver's umbilical, with very serious consequences.

The valve in question is a commonly used type with 3/8" female ports. The company involved had used dozens of these valves for some years at one base and has undertaken checks throughout its locations. It is working with its supplier, which is in turn liaising with the manufacturer to try to identify whether other faulty valves have been supplied to the industry at large and to ensure that checks in the manufacturing process prevent a similar fault from occurring in the future. The supplier (Hydrasun) has also issued a notice to its customers on this subject, which is attached.

The member has issued its own internal company notice which advises as follows:

- ◆ It is essential that the checks be carried out immediately on all systems fitted with such valves. Priority should be given to valves contained in breathing or diving systems;
- ◆ Checks should make sure that the porting matches the arrow direction;
- ◆ Checks should also ensure that the inlet hole is machined on the bottom of the inlet port and that the outlet hole is machined on the top of the outlet port. This can be done either by removing the valve completely or by removing the valve stem and checking the position of the ports through the seat cavity. Where the valve is not removed completely, it should be double checked and confirmed by a second technician;
- ◆ Any valves used in such situations which do not have any directional arrow should be withdrawn from service;
- ◆ Checks should be carried out to ensure that valves are appropriate for their purpose. Single-directional valves should not be used in bi-directional systems, particularly where high pressure gas or fluid is required to flow in both directions

Members will want to review the above and the attached notice and consider their own company action and recommendations. For further details on the Hydrasun notice, please visit [www.hydrasun.com](http://www.hydrasun.com) for contact information.

## 2 Incident Involving a McKissick N419 Snatch Block

Keywords:

IMCA recently received notification of an incident involving a particular type of snatch block, which could be knocked apart if the bolt and hairpin were removed and the block left open in an unloaded condition. In the incident described to IMCA, a component part had been knocked free and dropped from a height.

Correspondence between IMCA and the manufacturer showed that blocks produced prior to 1991 allowed removal of the head fitting, albeit after removal of the hairpin and bolt and rotation of the head fitting to an extreme position. Blocks produced since 1991 have a feature that requires a deliberate component removal to allow the head fitting to be removed when the block is open. There is a possibility that old, pre-1991 versions of the block are still in use.

We have subsequently received a third-party notice which gives the following additional information and guidance for its own operations which members may find of use:



*The N419 "Old Style" was designed to allow interchangeable fittings as can be seen in the above photograph. The design utilised a "triangle" shaped spool that allowed the head fitting to be rotated to an extreme position and removed after the side plate has been opened.*



*The head fitting on the current N419 McKissick Snatch Block is secured to the block with a threaded round nut that is staked to the spool. This feature prevents the head fitting from being removed from the block, regardless of the position.*

The company involved has banned the use at its worksites of the McKissick N419 Snatch block in figure A, whose design allowed for interchangeable head fittings as depicted in figure A.

The Crosby Group Inc. (manufacturer of the McKissick N419) has since 1991 added features to retain the head fitting regardless of the position of the block (Figure B). Both snatch blocks carry the same name, but production of the snatch block in figure A was discontinued in 1991.

As a result the company will not use the 'old style' snatch block (figure A) in its operations.

The company instigated the following actions for all of its installations:

- ◆ Check all snatch blocks on installations, and remove from service the 'old style' McKissick N419 snatch block;
- ◆ For applications where this type of device is required, ensure that the current McKissick N419 snatch block is used (Figure B);
- ◆ Make sure that all inventory lists of loose lifting appliances are updated with necessary information

## 3 Incorrect Pressure-Rated Manifold Fitted to Diver's Bail-Out

A member has reported an incident in which a manifold rated to 232 bar was fitted to a twin cylinder 300 bar bail-out.

The manifold in question had no pressure rating markings, as shown in the first picture below. The correct manifold is easily identifiable as it has its pressure rating marked clearly about the DIN female connection, as shown in the second picture.



*Pressure rating of 300bar marked on manifold*



*No pressure rating marked*

The company has reminded its personnel that the fitting of correct pressure items is crucial in ensuring that a system conforms to safe design criteria and has instigated the following actions:

- ◆ All bail-out assemblies are to be checked by dive technicians to ensure correctly rated manifolds are fitted;
- ◆ Vessel-held stocks of bail-out manifolds are to be checked to ensure that only correctly rated and marked manifolds are in stock. Any unmarked manifolds which are identified are to be quarantined and sent back to the company's equipment department