

## Draeger Full Face Mask

### Operational Guidance

23.02.06

#### General

The Draeger full face mask (FF mask) is approved to EN250. The Ouroboros rebreather (RB) is approved to EN14143. The mask is CE approved to work with the Rebreather in it's unmodified form.

People wishing to use both systems together should be mindful of the following issues.

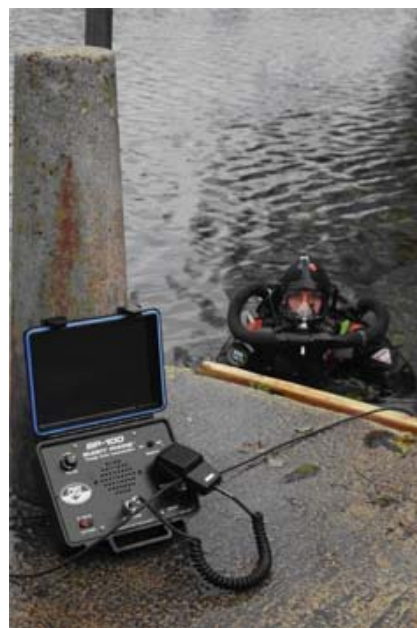
1. The FF mask has three ports for connecting devices using the 'Draeger port' system. This is a snap fit connection with an O ring. This O ring should be checked regularly along with the security of the fitting.
2. The mask fits over the head and is tightened by 5 straps. Mask leakage must be minimised by either sealing to the face or a 'skin' hood seal.
3. In order to work as a 'bailout' rebreather mask a second stage has to be fitted into one of the ports.
4. For communications the mask shown can have an OTS Buddy phone connected.
5. For rebreather use, the mask must be the normal bite style and in order to prevent build up of CO2 this should be used as much as possible.
6. A simple 'dial a breath' regulator such as the Apeks TX100 system may be suitable as the bailout second stage.

#### Use

1. Connect the bailout regulator to one port and supply it from a breathable diluent for the depth of the dive. The 'Draeger ready' TX100 has a special port for attaching to the mask. When trimix diving (and in a bailout scenario) a second gas may be needed in open circuit. Therefore a second regulator should be available for use in the same way and snap into the mask port where the (no removed) rebreather mouthpiece was.

If the exhale on the bailout regulator is to light, one option is to blank the 2<sup>nd</sup> stage exhale diaphragm in the regulator and use the mask exhale port. This also enables water to be drained easily from the mask. This may however create an excessive exhale resistance as the dump valve in the mask is spring loaded. It may be possible to obtain alternative springs or modify the existing spring by removing the perforated cover. However, this is a modification to a CE approved product and should not be undertaken by non-qualified personnel, testing should also be done in accordance with EN250 to confirm the modifications suitability. If the inhale is too easy the 2<sup>nd</sup> stage can be desensitized. On the TX100, unscrew the LP hose and put a flat blade screw driver into the valve you can screw it in which moves the tilt arm down and further away from the inhale diaphragm, this adjustment should only be carried out by APEKS Service Technicians and the adjustment compared against the regulators performance guidelines before use.

2. The RB is connected via a new custom mouthpiece outer available from Closed Circuit Research Ltd. This snaps into the front port on the mask. The HUD may need to be moved to the left to see all 4 lights.
3. The comms unit is connected into the third port.



### **The HUD**

The HUD bracket is not tall enough to use with the FFM. Alternative fixing points can be looked at. A FFM HUD bracket will be available 1<sup>st</sup> quarter 2006.

### **Changing to open circuit**

1. Simply close the RB mouthpiece and either breathe through your nose or mouth.

### **Switching open circuit regulators (gases) while bailing out**

1. Having already closed the RB mouthpiece and having started breathing off the OC regulator, to use a second gas source/regulator, simply remove the RB mouthpiece and plug in the second regulator. Now isolate the first OC regulator at the cylinder and breathe from the second regulator.

### **To add diluent to the breathing loop.**

1. Either use the ADV or manual bypass on the RB **or if the O/C bailout gas is the same as the diluent**, simply breathe in through the nose.

### **To purge water from the mask.**

1. Tilt your head to get any water into the regulator second stage area or use the exhaust in the base of the FFM. Breathe out through your nose.

### **To vent the RB loop during a closed circuit ascent**

1. Breathe in off the loop and breathe out through your nose.

### **To vent the loop during an open circuit (bailout) ascent**

1. Allow the counter lung overpressure valve to vent (tilt forward if required to lower the pressure on the overpressure valve)
2. OR with the mouth bite in place, remove the RB mouthpiece (do not inhale) and vent the loop by quickly opening and closing the mouthpiece. Refit the RB mouthpiece. **Throughout this exercise, breathe through the nose.**

### **Using communications**

1. To talk, push the rubber mouth bite aside, allow the gas pressure to equalise in the mask and talk. Refit the mouth bite as soon as possible.

### **Gas sharing**

1. If the bailout second stage attached into the side port is removed underwater the mask will flood. To gas share your bailout with another diver, one way is to carry a second, second stage on your bailout cylinder, preferably on a long hose with the correct adapter port fitted.