

SDVL



OWNER'S MANUAL

OCEANREEF®
connecting divers

SHIELD DISPLAY & VISOR LIGHT

SDVL MANUAL CONTENTS

-WARNINGS.....	4
-WHAT IS THE SDVL.....	5
-COMPONENTS.....	8
-BEFORE DIVING.....	12
-FUNCTIONING	14
-TROUBLESHOOTING.....	17

WARNINGS, CAUTIONS, NOTES

Pay special attention when accompanied by these symbols:



A **WARNING** indicates a procedure or situation that, if not avoided, could result in serious injury or death to the user.



A **CAUTION** indicates any situation or technique that could cause damage to the product, and could subsequently result in injury to the user.



A **NOTE** is used to emphasize important points, tips, and reminders.

WHAT IS THE SDVL

The Shield Display is an automatic analogical depth and air pressure display for the SPACE masks.



When checking important data while diving (depth and air pressure), a diver usually has to look at their wrist or console display instruments to do so. When a diver's hands are occupied, or when visibility is low, keeping track of one's gauges may be difficult. With the SDVL the depth and pressure data are comfortably displayed on the right and left sides of the Neptune Space visor. These two displays are accompanied with visor lights installed in the top of the visor.

The depth and pressure displays are activated the moment the diver enters the water.

The visor light (made of 6 in-line LEDs) is easily activated by a switch on the right side of the mask incorporated in the surface air valve.

The Visor Light is especially useful as a secondary light or for divers who need to work with both hands.



SDVL is an accessory that can be installed in the OCEAN REEF Space, Raptor and Predator masks.

- Integrated system

SDVL combines two important instruments for underwater safety into a unique instrument powered by the same powerful rechargeable battery.

Both display and lighting LEDs are installed inside the mask, only the battery is fixed to the tank belt.

The SDVL is composed of:

A **main unit** with removable rechargeable battery fit with a tank belt handle, low pressure and high pressure sensors, and wet switch contacts.

A **high pressure hose** to be connected to your first stage.

A **wire** connecting the main back unit to the mask, which includes 2 waterproof multi-pin connectors for quick connection and removal.

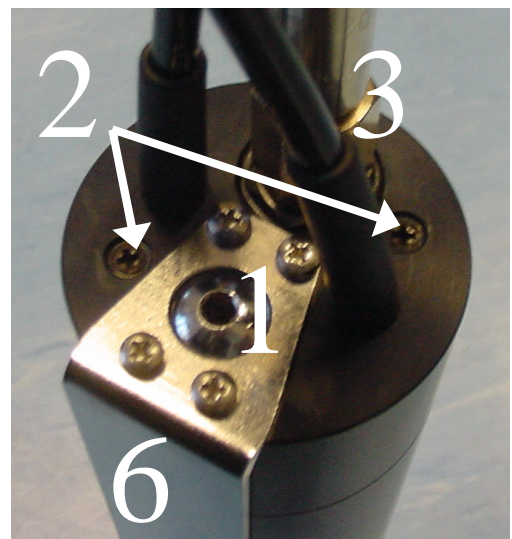
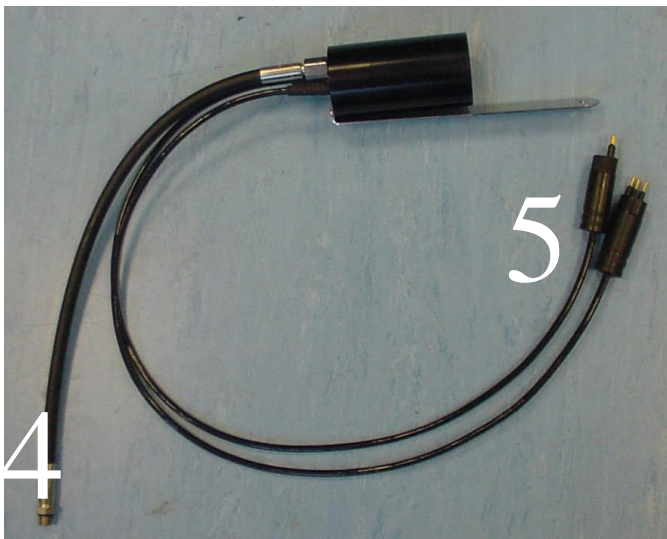
A **double button** to control the on/off of the visor light (6 bright LEDs on the top of the visor), the brightness of the display LEDs, and the on/off of the depth and pressure display LEDs (if not exceeding the present safety limits shown later).

The **battery** may be easily unscrewed and recharged or replaced. It is protected by a black anodized anticorrosional housing, with an overpressure valve to prevent explosions in the case of a battery malfunctioning. There are two o-rings on the battery body that ensure an even seal in case of an incidental partial unscrewing. A 110/220 volt battery charger is supplied with the SDVL.

Two **LEDs display** the tank pressure status and the diver's depth. The LEDs work by a reference bar and 10 LEDs showing the present data. It is an analogical/comparative display that gives the diver an immediate reminder of tank consumption as well as where the diver is in correlation to a 50 meter/164 foot water depth.

COMPONENTS

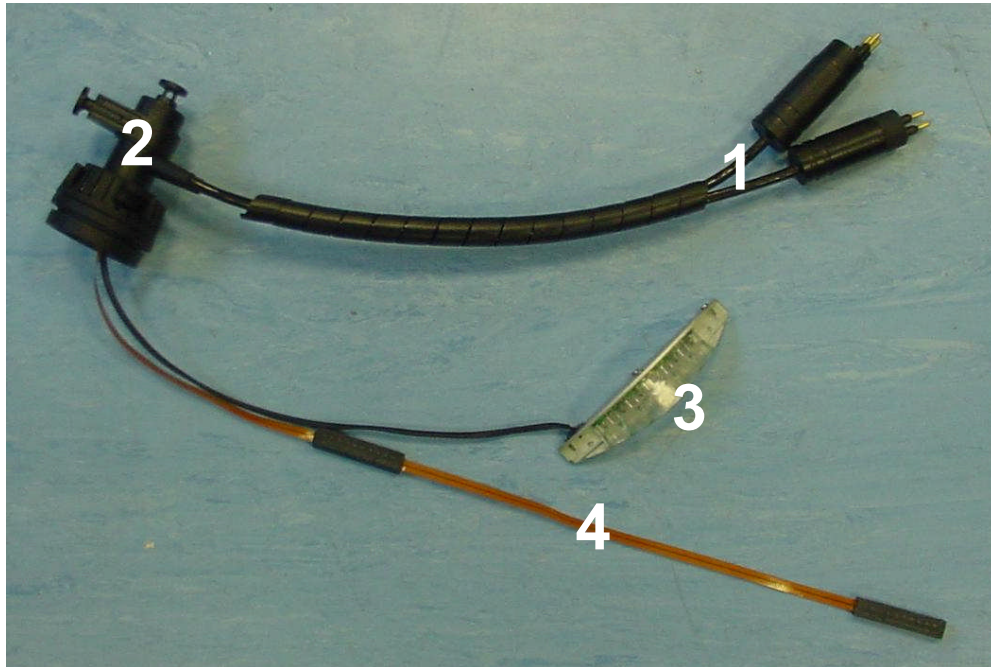
- Main unit



The main unit is made of black anodized anticorodal.
The top portion of the main unit is equipped with the following components:

1. LP depth sensor with protection cap
2. Wet contacts
3. HP tank pressure sensor with hose thread
4. HP hose
5. Connecting cables with protection and connectors
6. Tank clamping handle

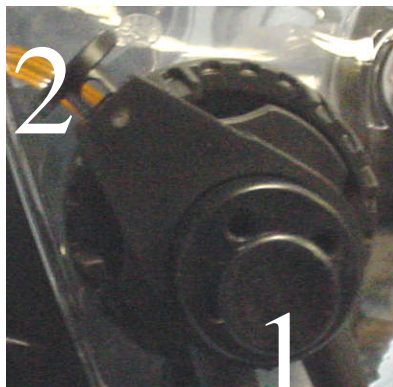
- Control unit with display and lighting LEDs



Comprised of the following parts:

1. Connecting cables with connectors, 4 and 6 pin, and protection
2. On/off and control buttons
3. Visor Light with wires, darkening tape
4. Display LEDs with wires and double sided tape for fixing to the mask

Button one, perpendicular to the mask visor, is used to turn the Visor Light on and off. Button two is used to control the Shield Display (see page 10)



- HP hose



HP hose must be screwed on one side to the HP sensor, and on the other side to the HP port of the first stage.

- Battery



Batteries are protected by a black anodized anticorodal housing, with an overpressure valve to prevent explosions in case of battery malfunctioning.

There are 8 rechargeable ni/mh batteries, total 9.6 volt 4 A/h.
The jack connector that connects the battery to the main unit is designed to let you screw the two parts together without any other operation.

There are two o-rings on the battery body that ensure the sealing even in case of an incidental partial unscrewing.

A 110/220 volt battery charger is supplied with the Shield Display/Visor Light. It automatically turns off when the battery is charged, keeps it charged and informs about possible battery malfunctioning.

The battery autonomy is 48 hours when using the complete system

- Battery charger



BEFORE DIVING

- Connecting the cables and the battery

To connect the main unit to the battery it is only necessary to screw one to the other.

Pay attention to screw them together all the way to the end.

Always keep the o-ring lubricated.

To be sure of the correct positioning before screwing the two parts together, let them face one to the other and push them together, turning counter clockwise until you feel a gentle step that means they are now ready to be screwed together.



To connect the main unit to the control unit plug the 4 and 6 pins connectors.



Be sure to push to the end of both connectors.



Do not attempt to connect the connectors in a different way from the one shown in the picture.



- Attaching the main unit to the tank belt

The stainless steel handle on the top part of the main unit is designed to attach to the tank belt. Slightly loosen the tank belt, insert the handle and close the belt again.



Screw the HP hose to the HP sensor on the main unit and to the HP port on the first stage.

Electric cables can be positioned wherever the diver wants, over or under the shoulder depending on diver comfort.



Make sure the high pressure swivel is in place when connecting the hose.

FUNCTIONING

HOW THE SHIELD DISPLAY WORKS DURING A DIVE

Shield Display automatically turns on as the diver enters the water and the unit gets wet.

During the dive, the two LED bars display tank pressure and depth (see attached chart).

SETTING LEDS INTENSITY

LED's brightness can be adjusted with the control button to adapt to environmental conditions (day or night diving, cave diving...). To do that it is only necessary to keep the Shield Display control button pressed until the desired intensity is reached.

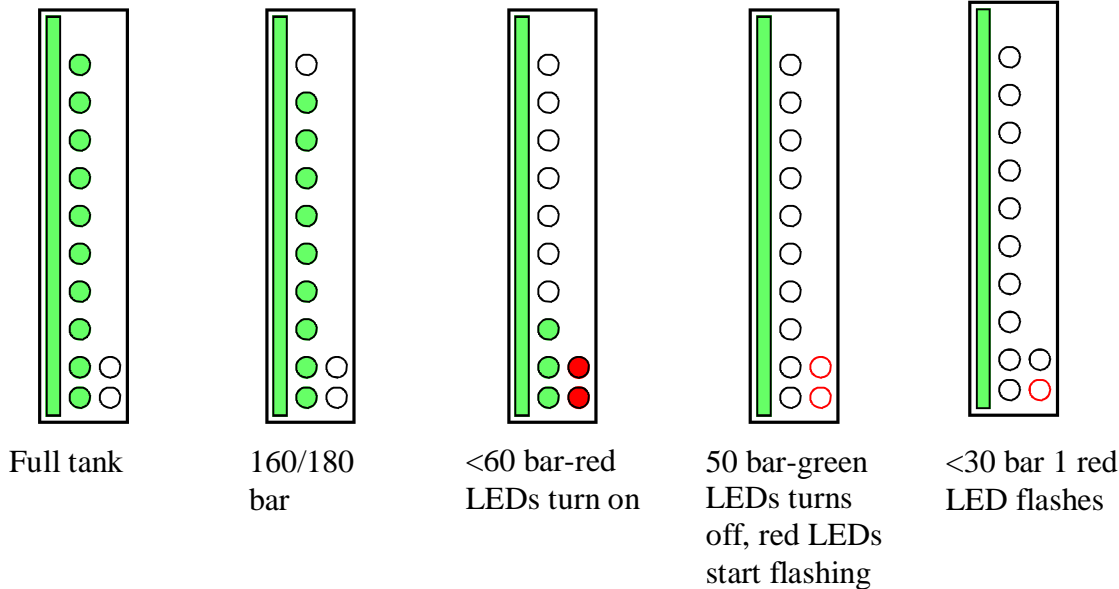
TURNING UNIT ON AND OFF

By quickly pushing the control button during the dive the LED bars can be switched off and on. For safety reasons the two bars will turn on automatically if the tank pressure gets down to 50 bar or if you dive deeper than 40 meters.

AIR PRESSURE

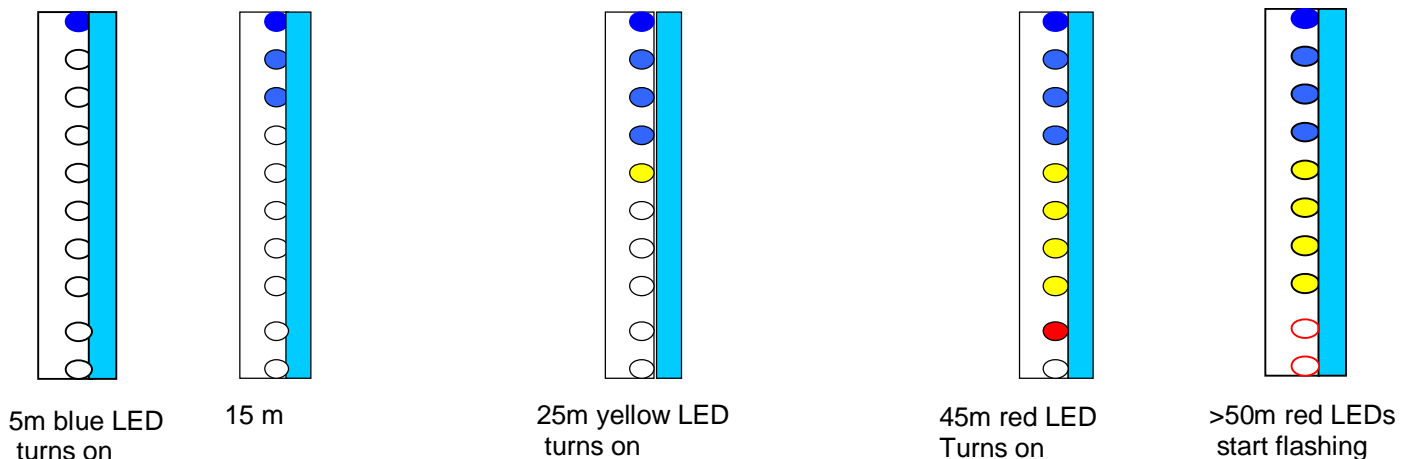
The air pressure display has two sets of LEDs. One is the reference line, with various coloured LEDs (see attached schemes) that show the tank pressure level. No digital information is given. Referring to the reference line the diver always has an idea of the remaining air in his tank. Red flashing LEDs advise the diver that the tank is low in air.

AIR PRESSURE



DEPTH

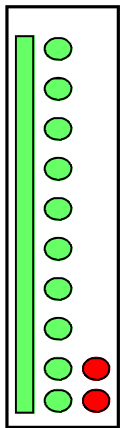
At the beginning of the dive, only the reference bar turns on to indicate the unit is working and displays a depth of 50 meters / 164 feet. As the diver descends past 5 meters/ 15 feet the LED lights as the diver descends past the corresponding depth. At 45 meters/ 148 feet the LED turns red. At 50 meters/ 164 feet the red LEDs flash.





It is important to remember that the SHIELD DISPLAY is a support system and is NOT an alternative to the conventional pressure and depth gauges, or computers. The SHIELD DISPLAY provides, at a glance, information allowing the diver to quickly evaluate the relative conditions (air supply and depth) of his dive.

PRESSURE



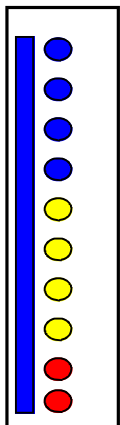
GREEN LEDs

>201 bar
181-200 bar
161-180 bar
141-160 bar
121-140 bar
101-120 bar
81-100 bar
60-80 bar
>50 bar
>50 bar

RED LEDs

30-60 bar (30-50 bar flashes)
<60 bar (<50 bar flashes)

DEPTH



BLUE LEDs

3→5m
6→10m
15m
20m

YELLOW LEDs

25m
30m
35m
40m

RED LEDs

45m
50m

TROUBLESHOOTING

Problem	Probable cause	What to do
The unit doesn't turn on	Low battery	Charge the battery
	Not connected properly	Connect it properly
	Battery malfunction	Contact OCEAN REEF customer service
LEDs malfunction	Not connected properly	Connect it properly
	Low battery	Charge the battery
LEDs do not change intensity or power off	System in alarm mode	Repressurize the system to exit alarm mode
Air leak at HP hose connection	Swivel not in place	Check swivel
Battery doesn't charge	Defective battery and/or defective charger	Contact OCEAN REEF customer service

MESTEL SAFETY S.r.l.
Via Arvigo 2, 16010 Genova (Italia)
Phone +39 010 6598 611 Fax +39 010 6598 622
e-mail ocean.reef@oceanreefgroup.com

OCEAN REEF, Inc.
1699 La Costa Meadows Dr. Suite 101 San Marcos, CA 92078
Phone +1 760 744 9430 Fax +1 760 744 9525
Toll free phone 1-800-922-1764

OCEAN REEF on the Internet
<http://www.oceanreefgroup.com>

© OCEAN REEF 2008

OCEANREEF[®]
connecting divers

