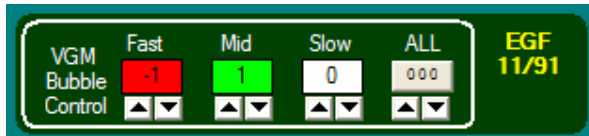


Variable Gradient Model VGM

Release version features 8th October 2008

The Variable Gradient Model (VGM) algorithm is available from October 08 exclusively in the new VRx dive computer. Free download software to complement the product is also available at www.technologyindepth.com/vrx.html



VGM - Decompression philosophy

The VGM algorithm is built on recent practical dive planning and diving techniques as well as the scientific and theoretical understanding over the past 100 years. It combines better theoretical knowledge of bubble physics together with known diving practices that help decompression and well being after and during decompression diving.

VGM also gives the user the ability to change the conservatism to increase or decrease decompression times. Some technical divers find they feel good after a decompression with less in water time than others.

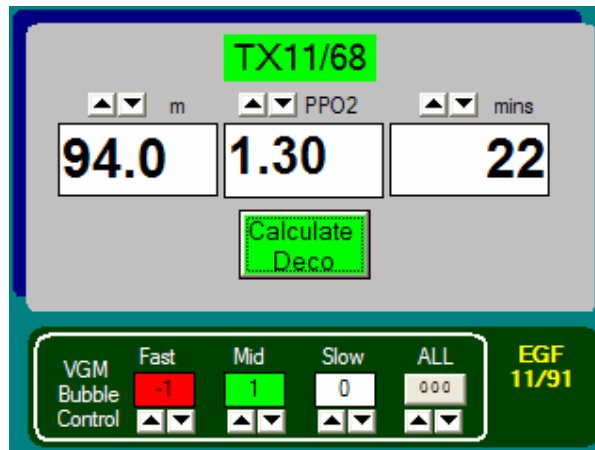
The Equivalent Gradient Factor for the VGM setting is displayed for comparison with other dive planning software and computers.

The default settings have been implemented based on feedback and dive records from many experienced divers, and it is the input of real technical divers in the choice of these settings that has made VR Technology and its team at the forefront of technical diving product design for over 20 years.

Decompression is a physiologically complicated event. There are many factors that affect how well the human body decompresses and how well it is able to withstand pressure exposures. All dive algorithms have been devised to combine the complexity and risk of staying in the water with the risk of decompression sickness after surfacing. Things like hydration before a dive, rest and even oxygen after a dive all help reduce the risk of DCS. So bear in mind that as with all decompression planning there needs to be a balance and understanding of the risk of reducing decompression times and the impact of DCS. Please refer to your training agencies' information and advice on these issues.

WARNING!

Even if your dive computer or PC generated software allows for less conservatism and a reduction in decompression times this should not be arbitrarily undertaken without first researching data available from other divers/agencies, conducting controlled trials and understanding that you may be undertaking a level of experimentation in order to adjust the algorithm for your specific needs.



VGM incorporates 5 main features:

1. Bühlmann decompression model
2. Modification of tissue over pressure tolerances or M values for the faster tissues to create a decompression profile similar to a bubble model like VPM
3. Further modification of over pressure tolerances for deep or long exposure dives, especially in the fast and middle order tissues
4. Automatic adjustment of the above parameters to allow the default settings to give common decompression and No Stop times across the range of diving from 10m to 120m
5. User adjustable parameters so the diver can use his/her experience to further modify the decompression to that which suits him/her. The Equivalent Gradient Factors are displayed for a particular dive for ease of comparison with other dive computers and dive tables, although because this system goes beyond Gradient Factors certain adjustments may only give an estimate of the nearest GF equivalent.

A basic version of VGM PC dive planning software VGM ProPlanner is available free from the web site. This allows a quick way to see what decompression the VRx dive computer will give and allow specific conservatism factors to be tried out on the PC before then choosing the right ones for a dive using the VRx. The PC software also gives print outs and an output in common spreadsheet style format for use in creating back-up tables.