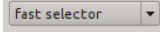





# Manual for the GasBlender Program

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Here are the fast instructions on how to use the GasBlender. In the upper part of the program you have two containers. On the left you have **initial mixture** properties: **P** – pressure, **O2** – oxygen fraction, **He** – helium fraction, which you can all change and adjust. Obviously the nitrogen fraction is  $N_2 = 1 - O_2 - He$ . Additionally you have here a **fast selector**  drop menu to easily select the standard nitrox and trimix mixtures. On the right you have all things in the analogue way for the final mixture. Downstairs you have two tabs **Mixing** and **Best Mix**. On mixing you do the normal mixing, the program calculates how much of each gas to add to get the final mixture. You can choose between ideal and real gas model, for the real gas the additional parameter the **temperature** have to be put in. For calculating with the real gas model you also have to decide in which order you will fill up the gases. If you check the  checkbox then you will fill up He first, then O2 and at the end top-off gas. If you uncheck it then you will have O2 first and then He and top-off. The next thing you can adjust is the O2/N2 top-off gas, which is by default set to air (21 % O2, 79 % N2) (the top-off mixture is the mixture with which you finish up the filling). Then comes the miracle button **calculate**  that does the job for you. After clicking the calculate button the results appear: **Initial P** (initial pressure, which colors red if you need to reduce the initial pressure to get the final mixture), **Final P** (your selected final pressure), **P(He)** (pressure of He to add), **P(O2)** (pressure of O2 to add), **P(O2/N2 mix)** (pressure of top-off mixture to add). Then you have also there the **Costs**  button after clicking on it the cost dialog opens. There you put in the prices of all gases and the tank volume and you get the price you need to pay for the mixture. This is what GasBlender offers for the normal mixing regime. The other thing you can use is the **Best Mix** mode. Here you can calculate the best composition of He/O2/N2 gas to create the final mixture. This is the composition with which you fill up the tank to the final P value.

This is it. Have fun with using the program if you are a human. If you are a fish you won't need it but you can still check how humans breathe underwater.

PS: If you are asking yourself how the hell does the program work, you can get insight in the algorithms in the document **Brain** of the GasBlender Program, which is reachable on [www.neki.com](http://www.neki.com).