

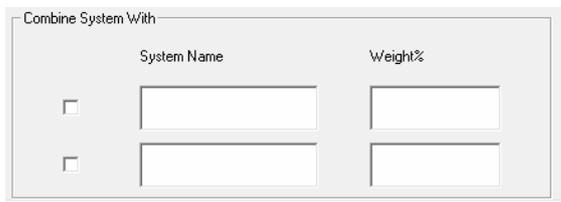
## Addendum for FastBreak Pro Beta Version 6.8

### Release Notes for V6.8

**Note: We decided to put all the changes in Beta Version 6.8 and didn't post the intermediate Beta Version 6.7. The changes for Beta Version 6.8 only affect FastBreak Pro.**

### Bug Fix

On the Buy Filter Tab the **Combine System With** option doesn't automatically load a value in the Weight% text box, i.e.:



If the user tries to save a DFT file without entering a value you can get a “Run-time error 13: Type mismatch” error.

We have now put a default value of 0 in the Weight% when FastBreak is launched to prevent this problem.

### Improving the Genetic Algorithm Optimizer

This update adds two new options for the genetic algorithm (GA) that may improve optimization to generate better strategies, and a third internal change to the optimizer should significantly improve when optimizing for MDD. We also made an improvement to the optimizer when optimizing for MDD.

The GA options are strictly optional. If you don't use them the optimizer works as before. Both options have been added to the Genetic Algorithm screen.

Randomize Mating of Genes

### Randomize Mating of Genes

On the Genetic Algorithm screen, a new checkbox has been added. Without getting into the mathematical details, this option often does better in the way strategies are combined to find better solutions.

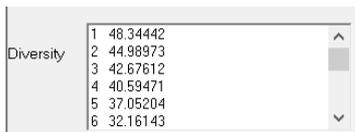
### Set Minimum Diversity

Set Minimum Diversity

20

A second checkbox and associated input text box has been added at the bottom of the Genetic Algorithm screen. Sometimes the optimizer too quickly begins to find strategies that are very similar to each other. This lack of diversity in strategies may preclude finding strategies that are even better. If the Set Minimum Diversity box is checked then the optimizer will begin to “encourage” diversity in the strategies when the population diversity drops below the value placed in the text box, i.e., 20 in the default above. Without going into how diversity is calculated simply know that large values indicate there the strategies in each generation are very different from each other. Low values of diversity indicate the strategies are beginning to resemble each other. That is not necessarily bad, but if the diversity drops too quickly then the optimizer may be converging too rapidly.

Of course the question is “What is a good choice for the minimum diversity?” A good place to begin is 20. To help determine a better option we have added a Diversity text box at the bottom of the Best Results screen. This box will display the diversity of the latest generation at the end of each generation. For example, here is a example of the diversity values for the first six generations in a typical run:



Generation	Diversity
1	48.34442
2	44.98973
3	42.67612
4	40.59471
5	37.05204
6	32.16143

Diversity is very high for the initial generations, and as optimization continues the strategies begin to resemble each other and the diversity decreases. By setting the Minimum Diversity to a specific value, e.g., 20, that doesn't prevent the diversity from falling below that value. It will simply tend to begin giving more attention to strategies that are more different from other strategies in the population.

One way to better select a minimum diversity is to make an optimization run without the selecting the minimum diversity option. Look at the Out of Sample Results screen and see in which generation the optimization may have begun to “stall” or which generation the Out of Sample the results are falling off. Then look at the diversity for that generation. So let's say the optimizer may have started to struggle at generation 12 and the diversity was 25. Try making a second run with the Minimum Diversity set to 25. This means it will begin to take effect around generation 12 and try to improve diversity, and possibly find better strategies.

The two new options can be used independent of each other or together. The options often improve strategies, but not always. We encourage experimentation.

### **Optimizing for minimum Maximum Draw Down (MDD)**

In the process of improving the GA we made a change that should improve finding strategies when optimizing for a minimum MDD.