Compression

Compression works by reducing the gain of louder parts of a signal by a certain amount in order to reduce the difference between the loud parts and soft parts of a signal, thereby “compressing” the dynamic range.

Detailed Instructions for setting up a DBX 166XL:

There are multiple parameters to adjust on the compression section of the DBX 166XL. Most of them are generally left at the same settings for all vocal applications, and are only adjusted when different material is run through the compressor. These parameters are as follows:

Threshold: Adjusts the level at which the compressor begins to compress the signal
Ratio: Adjusts the amount that the compressor reduces gain by beyond the threshold. The ratio is the input level to the output level, thus a “4:1” ratio means that, beyond the set threshold, for every 4 decibel increase on the input, there is only a 1 decibel increase on the output.
Attack: the amount of time it takes for the compressor to begin reducing gain once the input signal has passed the threshold
Release: the amount of time it takes for the compressor to cease reducing gain once the input signal has passed the threshold
Output Gain: also called “makeup gain”, this parameter “adds” gain back to the signal, as compressing the signal reduces overall output level

How to set up the compressor for vocals:

The “**attack**” knob should be set to the 9 o-clock position for all vocal settings.
The “**release**” knob should be set between the 12 o-clock position and the fully-clockwise position, depending on the source. Single vocalists should be more towards the 12 o-clock position, groups should be more towards fully-clockwise.

The “**ratio**” should be set according to the vocalist. A more “dynamic” vocalist (i.e. one with a lot of differences in volume) should have a higher ratio, between 3:1 and 7:1, while a smoother vocalist, or a group of vocalists should have a lower ratio, between 2:1 and 4:1

The “**threshold**” should be set WHILE the vocalist/group is performing. It should be set so that the quietest point is being compressed 1-2 dB, and the loudest point is being compressed about 12-15 dB, or about halfway down the “gain reduction” meter.

The “**Output Gain**” should be set between +5 and +10 dB.

There is also an “expander/gate” section, which does not get used in any of the ways that PRHS uses this unit. Leave both knobs fully counter-clockwise.