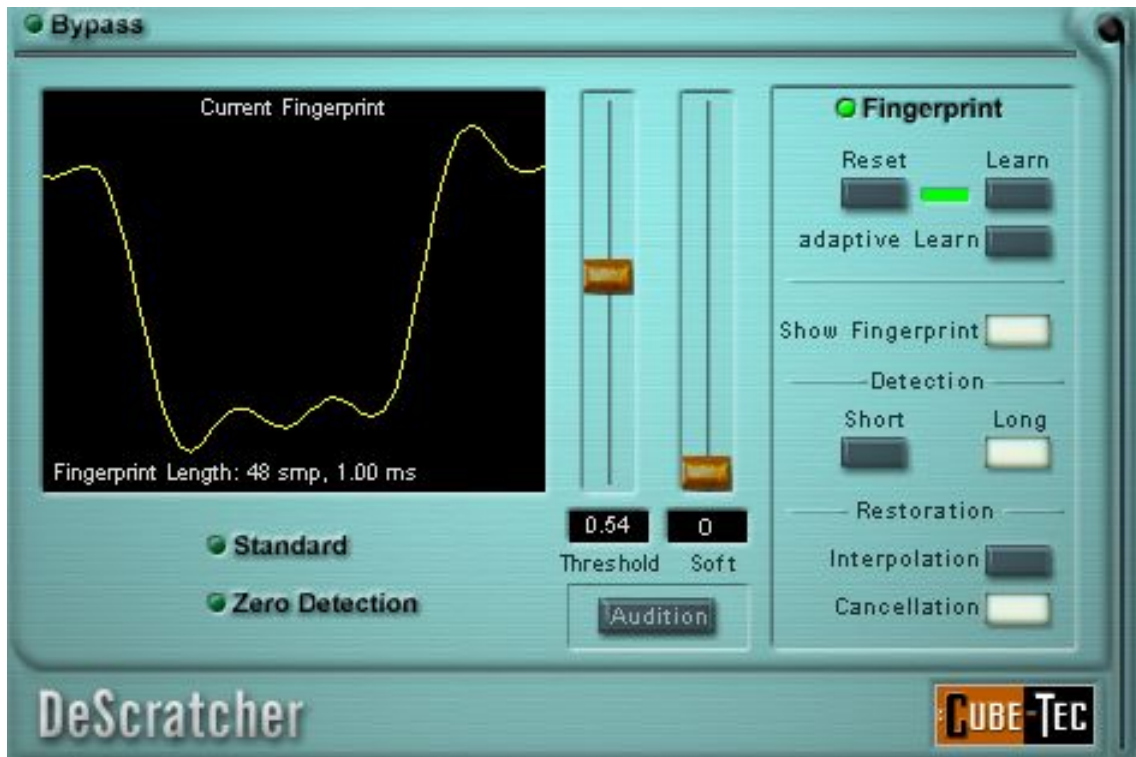


## QUICK-START – Cube-Tec DeScratcher for Pro Tools™



**DeScratcher** is used to resolve large scratches up to 1000 samples in width. Transient disturbances with a length of more than 30 samples demand different audio algorithms than short crackles. DeScratcher is optimized to carefully remove large scratches without destroying the audio program. The algorithm adapts automatically to the signal.

There are three operating modes in DeScratcher: **Standard**, **Zero Detection** and **Fingerprint**. **Standard** is the typical operating mode, providing accurate real-time detection and interpolation of clicks as long as 1700 samples!

The level at which the removal of clicks begins can be adjusted with the **Threshold** control. The **Soft** control enlarges the detected range that should be interpolated by the algorithm, and therefore the amount of new audio synthesized. In order to help set the parameters correctly, a real-time display shows the detected scratches over a moving time line. More importantly, the **Audition** function permits the operator to 'solo' the removed disturbances in real time, while changing the various parameters.

The **DeScratcher's** click detection algorithm is very discriminating. It is rare that it will be "fooled" into interpolating some other transient that is not a real click. When you use the audition mode, you can hear the removal of only large clicks -- or silence. If the signature of the click has a gentler slope, DeScratcher might miss the click -- as in the example of an optical film pop. **DeScratcher** has other modes to remove difficult click signatures.

When **DeScratcher** cannot use its auto-detect functionality (because the transient portion is simply not pronounced enough – or perhaps not even existing), there are two additional modes that might be employed.

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**DeScratcher's Fingerprint** Mode can be used when it is possible to “learn” a short, non-transient, repeating noise signature. The signature has to be less than 1000 samples and each instance must be reasonably similar. (Example: a non-transient “pop” or thump.) This mechanism replaces the standard auto-detect feature -instead of “looking” for a click, **DeScratcher** simply “looks” for what it *learns*. Once a signature is learned, and a “match” is made, during real-time playback, **DeScratcher's** interpolation mechanism goes to work and inserts new program into the audio stream.

One very nice feature is that learned fingerprints are stored in **Presets**. This means that they can easily be recalled at any time, on other files, TV shows, film reels, etc. The fingerprint does not have to contain a transient type signature that might be what the DeScratcher is natively used for. As long as the pattern is “distinct” and distinguishable from the general program -- it can be *anything*. Finally, the learned pattern does not have to be an exact representation of each instance present in your sound file. As long as the signature is in the ballpark, it should make a proper match.

It is also possible to interpolate disturbances that are *not* repeating (ie: signatures that are too different from one to the next.) **Zero Detection** mode performs “real-time” interpolation of *manually* selected areas. (i.e.: detection is actually performed by the operator, rather than automatically using a transients’ threshold or learning a pattern.) Perhaps the disturbance is not obvious, or it is not a click at all – a large thump, a tone, etc. Activating this mode will remove the sliders, since they’re not needed.

Simply select the disturbance in the waveform display window of your editor, and set this selection to digital zero (i.e.: turn that area into silence. **Note:** don’t cut the area out or you’ll lose sync!) Repeat this process for all other disturbances – set them to digital zero/black or silence.

Next, begin playback of the audio file. Any digital silence detected by **DeScratcher** triggers the interpolation mechanism and restores the original area with small parts of the surrounding area.

**Zero Detection** mode won’t touch any digital zero passages that are shorter than 5 samples or greater than 1700 samples.

For record restoration, **DeScratcher** is often used in conjunction with **DeCrackler**. **DeScratcher** was actually developed to operate with **DeCrackler**, in order to operate on a wide range of click widths. **DeScratcher** should always be inserted before the **DeCrackler**. In general, use the **DeScratcher** to remove the large transient clicks and before inserting other tools. One exception: if your program also has significant hum problems, you should remove it with **DeBuzz** or a notch/high-pass filter first.

**Questions: [vpi-support@Cube-Tec.com](mailto:vpi-support@Cube-Tec.com)**



International

Cube-Tec International GmbH  
Anne-Conway-Str. 1  
28359 Bremen, Germany  
eMail: [info@Cube-Tec.com](mailto:info@Cube-Tec.com)  
Tel: + 49 (0) 421 / 20 144 0



North America

Sascom Marketing Group Inc.  
34 Nelson Street, Oakville  
Ontario, Canada L6L 3H6  
eMail: [c.smith@Sascom.com](mailto:c.smith@Sascom.com)  
Tel: 905.469.8080