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Memory & Graphics

QuickSilver ReTouch uses the GDI (Graphic Device Interface) functions of the Windows environment to display images. Therefore it is subject to the limitations of this programming environment.

Windows Memory Management

A special limitation of the Memory Management under Windows is due to the processor architecture: it is not possible to keep more than 16MB memory **in one piece**, although considerably more virtual memory may be available in the system. The memory requirement for ReTouch strongly depends on the resolution and color depth of the loaded image. ReTouch attempts to use the available memory economically and to avoid redundant data storage. Nevertheless it can happen that the 16MB limit will be exceeded for certain graphic operations. Allocating all virtual memory first becomes available for 32Bit native applications under WinNT to manage high resolution images like PhotoCD pictures.

Display Drivers

In the end all display functions make use of the Display Driver. A deficient implementation of the employed driver could lead to further limitations of the representation capacity of ReTouch. By pictures with a resolution of more than 1600x1280 it could possibly result in defective or missing picture representation (particularly in connection with the ['Zoom' function](#) and the ['Fit to Window' function](#)).

Image Transformation

The use of a graphic operation on the [active image](#) creates a new (transformed) image. For certain graphic operations, [TrueColor](#) representation of the result is often unavoidable. For example the result of a combination of palette based pictures must inevitably be a [TrueColor](#) picture, in order to represent all colors of both pictures at the same time. By raising the color depth, memory requirements of the resulting image also increase greatly.

Internal Image Storage

For internal representation of loaded images, the 'Device Independent Bitmap' (DIB) format was chosen. An image with 256 colors (8Bit color depth) only needs one third of the memory requirements of a [TrueColor](#) image. [HiColor](#) pictures will be treated like [TrueColor](#) images because the DIB-format does not support 16Bit color depth directly. To represent an image of 24Bit color depth on a monitor with only 256 colors, a dithered copy of the image in 8Bit color depth will be created to compensate the [Deficiencies of the GDI](#).



Working with ReTouch

QuickSilver ReTouch allows working with many images in one session. Then every picture will be shown in a separate window or as a symbol. Working with ReTouch is described by following topics:

[Active \(Program-\) Settings](#)

[Active \(Image-\) Window](#)

[Display in different Resolution](#)

[Loading an Image File](#)

[Saving the active Window as a File](#)

[Using the ReTouch Functions](#)

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Active (Program-) Settings

The active program settings act as default settings for many processing functions of ReTouch. The actual values will be stored upon leaving the program in the file 'ReTouch.Ini' in your Windows System Directory.

Note:

The menu option [View|Settings...] opens the [Preferences Dialog](#), in which the current settings are shown and can be changed.

Active (Image-) Window

An Image Window can have three conditions:

- The full picture mode
In this mode the image window uses the entire screen and the ReTouch main menu is available only by using the [Accelerator keys](#).
- Symbol representation
Here the image is shown as a symbol. The representation depends on the visible part and the setting 'draw Picture Symbols' of the [Preferences Dialog](#). On a picture-symbol, no graphic operations can be used.
- Normal display mode
In the normal mode, the window is exactly the same size as the displayed image. Should the image be larger than the available client area, then the window will automatically insert scroll bars.

Focused Image

When more images are loaded in normal display mode, only **one** of them can have the focus (be active). The active image is recognized by its highlighted title. In addition, in the Window menu, the name of the image in the window list will have a check mark. Every graphic operation will always be performed on the active image. Therefore some menu functions are not available when no active image is present.

'Undo' Functionality

Most programs offer an 'undo' function in the editing menu. With this function the original image will be copied into memory before an operation, allowing a later restoration. ReTouch simply implements this functionality by placing the image, which has been newly created by an operation, exactly over the original window. To undo the graphic operation, the new window only needs to be closed and the original window will again show up (see also: 'delete Transformation Source Image' in the [Preferences Dialog](#)).

Shifting the visible part of an Image

The most common way to shift the visible part of a larger image is to use the vertical and horizontal scroll bars. A scroll bar consists of four elements:

- The two arrows at the end of the bar
A single click with the left mouse button on one of the arrows causes the image to be shifted by one pixel in the arrow direction. Holding down the mouse key, the shifting will be successively repeated.
- The Slider
By pulling the Slider, the image will be shifted accordingly.
- The Scroll Box
By clicking on the strip of the scroll bar, the image will be shifted by the visible section. Hereby it depends on which side of the slider the strip was clicked on.

In contrast to the scroll bar that allow shifting only in vertical or horizontal direction, there is another possibility to shift in **both** directions simultaneously. To do so, click with the left mouse button on a point inside the window and move, with depressed button, outside of the window. The moving direction is at the same time the desired direction of shift. The further the mouse is moved outside the window, the larger becomes the corresponding shift.

Another method in conjunction with the [ToolBox Window](#) could be very helpful with very large images having a comparatively small visible part. In the display of the ToolBox window, the entire picture will be shown in reduced form. A double click with the left mouse button on a desired point shifts the visible part of the image into this display area.

Accelerator Keys provide execution of menu options by pressing special key combinations. These key combinations are presented in the menu entry. For example: In order to save a window you first have to open the menu selection [File] and thereafter click [Save]. The shortcut alternative is to use the key combination 'Ctrl + S'.

Display in different Resolution

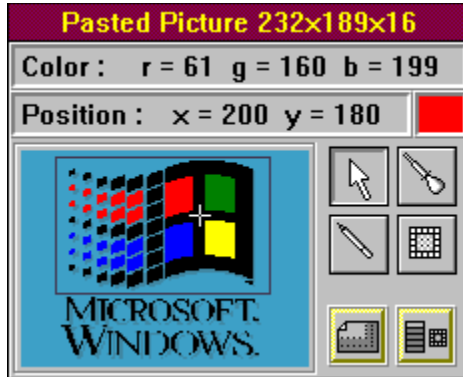
To be able to display the active window in different resolutions, there are two functions implemented in ReTouch.

- The Zoom Function
With |View|Zoom...|, the display representation of a picture can be enlarged or reduced. In the ZoomFactor Dialog, the scaling can be tuned very fine. With this scaling the aspect ratio of the image is preserved (enlarged pixels are always quadratic).
- 'Fit to window' Funktion
With the function |View|Fit to Window|, the display of the [Active Image](#) will be fit into the size of the window's frame through compression or expansion. If you change the geometry of the window, the aspect ratio of the 'fit-in' picture changes accordingly. Remember that the fitting applies only to the representation, not to the image itself.

Hint:

The functions to [mark](#), [combine](#), and [change](#) the image continue to be available when displaying in different resolutions. This renders a very exact usage of the graphic operations in enlarged represented image windows.

ToolBox Window



The ToolBox window combines informative elements and tools to change the active image.

The display area of the ToolBox window illustrates the entire [Active Image](#) in a firm format. By very large pictures, the illustration process can delay some time. The frame marks the visible part of the picture in the image window. The cross wires stand for the zoom point, the point to zoom in upon enlargement.

Note:

The illustration contains sensitive areas, that stand for the particular elements of the ToolBox window. For further explanation, with the left mouse button click on the desired area.

The title of the ToolBox window corresponds to the title line of the active image.

Color Information Box

In this information box of the ToolBox, the component values of the primary colors red, green and blue will be displayed. The values correspond to the pixel, over which the mouse pointer is moved in the [active image](#).

See also:

[ToolBox Window](#)

Position Information Box

In this information box of the ToolBox, the X- and Y-values of the distance from the image origin (left upper corner) will be shown. The values correspond to the pixel, over which the mouse pointer is moved in the [active image](#).

See also:

[ToolBox Window](#)

Current Drawing Color

The current drawing color corresponds to the color with which a pixel of the [active window](#) will be colored when clicked upon with the [Pen Tool](#). The drawing color can be chosen with the [Picker Tool](#). When drawing in a palette based picture, it can happen that the drawing color is not included in the color palette of the image. In this case, the pixel will be colored with the palette color that mostly resembles the drawing color.

See also:

[ToolBox Window](#)

Arrow Tool



The arrow (or pointer) tool corresponds to the standard tool of ReTouch. The mouse pointer of the ReTouch windows is in the form of an arrow. With this tool the [image window](#) of a desired picture can be activated with a mouse click and functions of the main menu are executed.

See also:

[ToolBox Window](#)

Color Picker Tool



The picker tool serves to choose the [current drawing color](#). The mouse pointer of the ReTouch windows has the form of a pipette. To choose a color, click with the left mouse button on a pixel of an [image window](#). When 'drop Picker after Selection' is marked in the [Preferences Dialog](#), the picker tool automatically changes into the [Pen Tool](#) after you successfully select the new drawing color.

See also:

[ToolBox Window](#)

Pen Tool



The drawing pen tool serves to color a pixel with the [current drawing color](#). The mouse pointer of the ReTouch windows has the form of a drawing pen. To color some pixel, with the left mouse button click on the pixel of a picture window. When the [active image](#) is shown enlarged, every pixel can be changed very easily and exactly. Bear in mind however, that changes to the original image are permanent and therefore cannot be reversed.

See also:

[ToolBox Window](#)

FilterCursor Tool



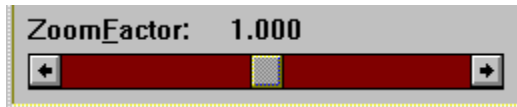
Using the FilterCursor tool, individual areas of an image can undergo the [image filter](#) operation. The mouse pointer of the ReTouch windows has the form of a filter symbol. However, only TrueColor images can be filtered; on pictures with little color depth, the mouse pointer does not change to the filter symbol. At anytime you can convert a picture into a TrueColor image by using the function [Color|Increase Color Depth]. The size of the area to be filtered can be changed in the [Preferences Dialog](#) with the checkbox 'Size of FilterCursor' within certain limits.

See also:

[ToolBox Window](#)

ZoomFactor Adjustment Dialog

The ZoomFactor means the value of enlargement (factor > 1) or reduction (factor < 1) for the representation of a loaded image. Using this dialog box you can set the value of the ZoomFactor in a wide range. Under certain circumstances, by enlargement of this factor, the active image won't be correctly displayed or won't be represented at all. This is attributed to deficiencies of the GDI or the display driver. In this case you should choose smaller values for the ZoomFactor.



By using the ZoomFactor scroll bar, you set the value of the ZoomFactor. The values range from 1/50 to 50.



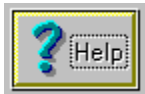
To easily go back to the original size (factor = 1), click on the checkbox 'Zoom Normal'.



The *OK* button has the same meaning as the Enter key and is used to confirm a choice.



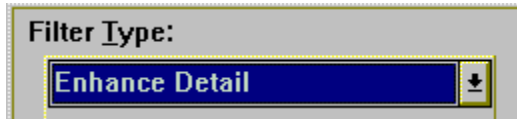
The *Cancel* button cancels all entries and has the same meaning as the Escape key.



You have pressed the *Help* button, if you reached this Help page directly.

ImageFilter Selection Dialog

An image filter in ReTouch is a mathematical matrix operation that will be applied to every pixel of the image.



The type of filter operation can be set with this drop down Combo box. With the drop down arrow button on the right side, all filters will be listed that have been implemented in ReTouch. The following filter types can be chosen:

- Soften Picture
- Sharpen Picture
- Enhance Detail
- Enhance Focus
- Edge Enhance
- Edge Detect
- Emboss

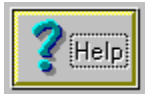
The current setting will remain after leaving the program.



The *OK* button has the same meaning as the Enter key and is used to confirm a choice.

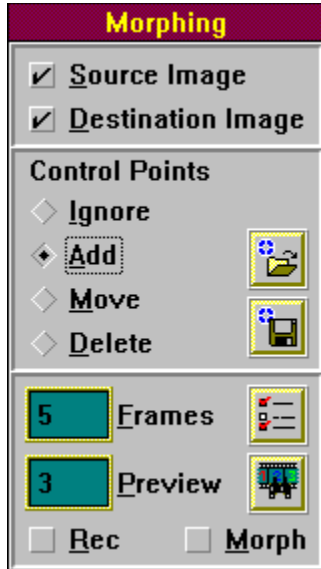


The *Cancel* button cancels all entries and has the same meaning as the Escape key.



You have pressed the *Help* button, if you reached this Help page directly.

Morphing Module



The Morphing Modul enables you to create amazing transition sequences and record them as Video Clips. Morphing was developed from the two dimensional rectification of images, mainly used by the Geocoding of maps created from air- and satellite pictures. With morphing, the transition from [Source-](#) to [Destination Image](#) will be made visible through a number of single steps (called [Frames](#)). Then both images go stepwise through a calculated contortion-sequence (named [Warping](#)), that is controlled from Control Point pairs in both images. The weighted superimposition of the Warp sequences from Source- to Destination Image results in the characteristic metamorphosis of morphing.

Like in film and advertising, a video format presents itself for use in storing the process. ReTouch uses the [AVI format](#) of 'Video for Windows' from MicroSoft™. The created AVI files (Movies) can then be simply played back with the MediaPlayer of an installed video system. A free runtime version (for Windows 3.1) is available through CompuServe™ in the MicroSoft Multimedia forum as 'vfwrt.zip'.

Note:

The illustration contains sensitive areas, that stand for the particular elements of the Morphing Module. For further explanation, with the left mouse button click on the desired area.

Creating a Morphing Sequence with ReTouch:

First you define the [Source-](#) and [Destination Image](#) and load them in ReTouch. The pictures used in morphing are [TrueColor Images](#) of the same size and will eventually be automatically transformed.

After the Source- and Destination Images are known, the Control Points that control the contortion can be defined. For this, Control Points [Insert](#) must be marked. With a click on the left mouse button, a control point will be created at the mouse position alternating in Source- and Destination Image. In each case, a point from the Source Image will be portrayed through contortion, on the corresponding point of the Destination Image's point pair. The position of each point can be subsequently changed through Control Points [Move](#). [Delete](#) removes a point pair from the point list. The point lists can be saved with [Save](#) and read again with [Load](#).

Now you can determine the number of single steps in the Entry Field [Frames](#). With the [Preview](#) function you can judge precomputed single frames at particular critic steps and accordingly correct appropriate control points.

In the [Morph Settings Dialog](#) you can make additional settings to control the sequence. With [Rec](#) you specify the AVI file name and start recording. Activating the Rec Box once more stops recording and closes the video file. By this means, also the recording of several related Morph sequences can be put into a single video file. The [Morph](#) Box finally starts and ends the calculation of the actual morphing process.

(**Hint:** After the completion of a Morph sequence, you may choose the Source Image as Destination Image without losing the control points. In a repeated Morph sequence, the first sequence will be practically calculated backwards, resulting in a cyclic video-sequence.)

MicroSoft specified the AVI Format (Audio Video Interlaced) especially for the Multimedia Extensions of Windows. The format supports **interlaced** saving of the Audio- and Video-Stream. This technique achieves simultaneous playback for picture and sound, just called a 'Video Clip'. Of course AVI files created from ReTouch only contain raw image data and therefore are recommended for subsequent treatment. With applications like 'VidEdit', the material can be set to music and archived in compressed form.

Source Image

This function marks an image to act as Source Image of a Morph sequence. The mouse pointer changes to the Picker cursor. On moving this pointer over the Desktop, partial covered windows will be activated and brought to top. Now click on the window, which is intended to become the Source Image. The image will eventually be automatically transformed into a TrueColor image. (**Note:** While selecting a window, the process will be cancelled, if you activate the right mouse button.)

See also:

[Morphing Module](#)

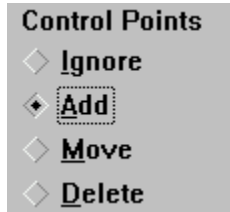
Destination Image

This function marks an image to act as Destination Image of a Morph sequence. The mouse pointer changes to the Picker cursor. On moving this pointer over the Desktop, partial covered windows will be activated and brought to top. Now click on the window, which is intended to become the Destination Image. The image will eventually be automatically transformed into a TrueColor image and adjusted to the resolution of the Source Image. (Note: While selecting a window, the process will be cancelled, if you activate the right mouse button.)

See also:

[Morphing Module](#)

Control Points



This group determines the mode of Control Points from Source- and Destination Image.

- If the Box 'Ignore' is marked (default), mouse clicks upon these windows are ignored.
- If 'Add' is marked, new Control Points are created alternating in Source- and Destination. This function works also in [Zoomed](#) view. Position the mouse pointer over the desired pixel and click with the left mouse button.
- With 'Move', you can move single Control Points. Mark the point that is to be moved with positioning the mouse pointer and confirm the selection with a click of the left mouse button. Now click on a pixel to where the control point shall move.
- In 'Delete' mode, Control Point pairs can be removed. Mark the point pair that is to be moved with positioning the mouse pointer and confirm the selection with a click of the left mouse button.

See also:

[Morphing Module](#)

Load Control Points



With this function, you can load a complete list of Control Point pairs. In the [File Selection Dialog](#), you select a previous saved Control Point list. The points were loaded and replace the actual ones. (**Hint:** The new points also can be edited with the [Control Points](#) functions.)

See also:

[Morphing Module](#)

Save Control Points



With this function, you can save the actual list of Control Points. In the [File Selection Dialog](#), you enter a valid file name and activate the **OK** button.

See also:

[Morphing Module](#)

Frames

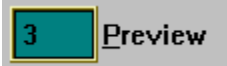


This input field determines the number of single steps (Frames) to compute. ReTouch writes the uncompressed TrueColor images in the AVI file named when recording, and sets a play back rate of 25 frames/sec. By this means, the number determines also the length of time the Morph sequence takes.

See also:

[Morphing Module](#)

Preview



In this input field you enter the number of the [frame](#), which you want to be precomputed by preview.



This button starts the computation of preview.

See also:

[Morphing Module](#)

Morph Settings Dialog

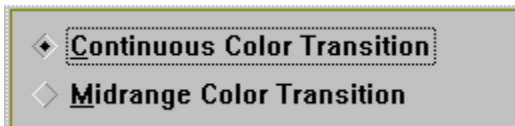


With this Dialog, additional parameters of a Morph sequence are controlled.

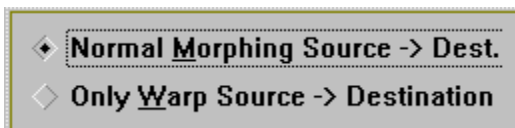


The first check box determines whether distortion at the scan points is to be interpolated or not. If the second check box is marked, ReTouch applies the selected [Image Filter](#) on the frame, before the frame is stored.

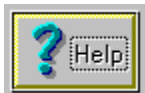
(**Note:** The illustration contains sensitive areas that give further explanation with a click of the left mouse button.)



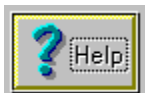
This group controls the color transition from [Source-](#) to [Destination Image](#). In the first case, the color will be continually faded over (linear). In the second case, the color transition concentrates more on the middle area of the sequence (linear, but steeper).



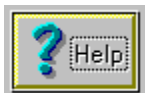
Here you set whether only the contortion of the source picture should be calculated (warp only), or whether the contortion of the [Source-](#) and [Destination Image](#) will be superimposed (normal morphing).



The **OK** button has the same meaning as the Enter key and is used to confirm a choice.



The **Cancel** button cancels all entries and has the same meaning as the Escape key.



You have pressed the **Help** button, if you reached this Help page directly.

Rec

This function starts and stops AVI video recording. A checkmark signals the current recording status. (**Note:** Before other applications can access the video file, you first have to stop recording in order to close the still open file.)

See also:

[Morphing Module](#)

Morph

This check box starts and stops the Morphing computation. A checkmark signals the current computation status.

See also:

[Morphing Module](#)

Apply Image Filter

With this check box marked, ReTouch will use an image filter on a complete calculated Frame. The filter applied will be the filter which was chosen in the [Image Filter Dialog](#) at the start of the Morph-sequence. With this for example, you can compensate the loss of picture sharpness by interpolating with the 'Enhance Details' filter.

Saving the Active Window

To save an image, use the following steps:

- From the ReTouch Main Menu choose |File|.
- Then choose |Save...| from the pull-down menu.
The image in the [Active Window](#) will be saved with the same [Image Format](#) and under the name of the original image. If the active image was created using a graphic operation or by inserting from the [Clipboard](#) (meaning there is no image file), then the command branches automatically to |Save as...|.
- Or choose |Save as...| from the pull-down menu.
Using this command, you can file an image with a new name and with your chosen image format. In the [File Selection Dialog](#), an image format suitable to the color depth will be recommended.
- In the [File List](#), all files in the current directory that correspond to the setting of the group file extension will be shown. You can change the display mask in the [Edit box](#) or enter a file name.
- Set the desired image format by clicking the option boxes of the [File Extension](#) group.
- You can change to another directory or disk drive by double clicking the desired directory in the [Directory List](#) or the desired disk drive.

Note:

If the chosen image format does not support the color depth of the image, it could come to a loss of color information due to color reduction. Especially with the [JPG Format](#) (by which an information loss always occurs dependent on the quality factor), you should load the saved image once again for examination.

Using the ReTouch Functions

Using the ReTouch functions allows you to change images through a variety of graphic operations.

You can

- combine the image and the contents of the clipboard,
- display an image with different resolution,
- change the size of an image,
- rotate an image in steps of 90°,
- rotate an image plain by any angle,
- apply a filter to the image,
- increase or reduce the color depth of an image,
- apply a gamma correction to the image,
- set color, brightness and contrast like on a television set,
- change the weight of the individual color components,
- set the contrast specifically,
- obtain additional transformation- and color-information,
- capture any snapshots from the Windows Desktop with [View|Capture]
- color individual pixels with the current drawing color,
- apply an image filter on a quadratic area.

Note:

As a result of the graphic operations, you will generally receive a TrueColor image. It is difficult to judge the effect of such operations on monitors with only 256 representable colors, because the representation does not correspond exactly to the original. Therefore it is recommended at least to work in HiColor mode.

Marking an area in the active image

ReTouch supports two different variations on marking image areas.

- Rectangle: This mark always is in the shape of a rectangle.
- Polygon: This mark can be defined freely and is in the shape of a polygon.

With |Mark|Rectangle| or |Mark|Polygon| in the [Edit Menu](#), you can decide which method is to be used.

To mark a rectangular area, use the following steps:

- Set |Mark|Rectangle| accordingly. (The Menu Entry then reads 'Polygon'.)
- Choose the image area of the [Active Window](#) where the starting point lies.
- Double click with the left mouse button on the display area of the image that you would like to mark. The mouse pointer changes to a cross cursor which is limited to the image window.
- With the left mouse button, click on the starting point of the mark and keep the button depressed.
- Pull with pressed mouse button to mark a frame of desired size. If scroll bars are available and the marking frame has reached the image border, the display area will be automatically shifted through the mouse movement.
- When you release the left mouse button, the marking process will be completed.

To mark a polygonal area, use the following steps:

- Set |Mark|Polygon| accordingly. (The Menu Entry then reads 'Rectangle'.)
- Choose the image area of the [Active Window](#) where the starting point lies.
- Double click with the left mouse button on the display area of the image that you would like to mark. The mouse pointer changes to a circle cursor which is limited to the image window.
- With the left mouse button, click on the starting point of the mark. A line appears from the start point to the middle of the circle cursor. Move the marking cursor with the mouse to the next foothold and click on that point too. Repeat this action until all footholds (except the last one) are placed. If scroll bars are available and the marking frame has reached the image border, the display area will be automatically shifted through the mouse movement.
- To close the polygon and to complete the marking process, doubleclick with the left mouse button on the final foothold.

Hint:

If you want to abort the marking process, press the right mouse key.

If the entire image is marked, then the marking frame is invisible. On newly created windows, this is the default setting and the entire image is marked.

Using the Clipboard

The Clipboard is a temporary storing device, that serves in receiving data of different formats. The function of the clipboard is to offer the possibility to exchange data with other programs. The image formats 'DIB' and 'DDB' are the most interesting in working with ReTouch. The DIB format (Device Independent Bitmap) supports all color depths and contains the entire image information. Therefore ReTouch uses this format when it works in conjunction with the clipboard. Older Windows programs (like Paintbrush) use the DDB format (Device Dependant Bitmap). In this format an image always exists in the color depth of the monitor representation plus an optional color palette. This has the disadvantage, that images with more color depth lose color information and pictures with little color depth waste memory. For this reason, ReTouch supports the DDB format only when reading the clipboard. The actual contents of the clipboard can be displayed with the clipboard application from windows.

ReTouch makes the following exchange possibilities available with the clipboard:

Copy an image (respectively the marked area) to the clipboard

Paste a bitmap from the clipboard as new image

Paste a bitmap from the clipboard into the active image (combination)

Copying an image to the Clipboard

Using the function |Edit|Copy|, the [marked area](#) of the [active image](#) will be copied to the [Clipboard](#). (By an image with polygonal mark, the enclosing rectangular area and the footholds of the polygon will be copied.)

Hint:

You can view the contents of the clipboard with the Clipboard application from Windows.

Pasting an image from the Clipboard as a new image

Using the function |Edit|Paste|, the image contents of the [Clipboard](#) will be loaded into a new image window. For this purpose, the option 'Insert Clipboard into active Image' of the [Paste Options Dialog](#) should not be marked.

Note:

The new image has the same color depth as the image from the clipboard.

Combining two images

QuickSilver ReTouch enables you to combine a picture from the [Clipboard](#) with the [Active Image](#). In the image combination, the color information of the original image with that of the clipboard picture will be combined by using a combination rule. You choose between the various combination methods in the [Paste Options Dialog](#).

Note:

The combination of two images always results in a [TrueColor](#) image.

The ReTouch Script Macros

With the Script Language you can apply ReTouch Functions on a selection of image files. You create and edit the Script Macros with a text editor like notepad and save them with the extension '.MAK'.

Language Reference:

QS.ReTouch Script:

This character sequence must lead in the Script-File to mark it interpretable by ReTouch.

Selection = "c:\reto25*.bmp"

The *Selection Assignment* defines a file selection for image processing (i.e. all Bitmap files in the directory c:\reto25).

while (Selection)

```
...  
    Macro Commands  
...  
    Selection.Next
```

endwhile

The preliminary only one 'while loop' of the Script Language. It applies all Macro Commands to every file specified in the *Selection Assignment*. Note the last statement in the loop, selecting the next file on each pass respectively.

Load()

The Load Macro loads the actual file of a preceding *Selection Assignment* into ReTouch.

Save([Directory], [Format])

Saves the [Active Image](#) either in the specified Directory, or when not specified, in the directory of the original loaded image defined by the *Selection Assignment*. Note however, on saving to the original directory with the original format, the original image is overwritten without warning! The second parameter selects the desired image format. If Format is omitted, ReTouch selects the preferred file format on its own. Valid Format values are:

- [BMP](#)
- [GIF](#)
- [HIC](#)
- [TGA](#)
- [TIF](#)
- [JPG](#)

Close()

The active image can be closed with this macro, in order to suppress the accumulation of processed image windows.

Size(Width, Height, [Interpolation])

This macro resizes the actual image to the values of the specified Width and Height. Interpolation is applied, when this parameter takes the value of 1.

Rotate(Angle, [Interpolation])

This macro rotates the actual image by the specified Angle. The angle relates to the mathematical spin direction (counter clockwise). Interpolation is applied, when this parameter takes the value of 1.

RSpecial(Type)

This macro applies one of the following special rotation types to the actual image:

- RIGHT - Rotation in steps of 90° clockwise.
- LEFT - Rotation in steps of 90° counter clockwise.
- FLIP - Reflection by the horizontal axis.
- MIRROR - Reflection by the vertical axis.

Filter(Type)

This macro applies one of the following digital filter Types to the actual image:

- SOFTEN - Softens the image.
- SHARPEN - Sharpens the image.
- DETAIL - Enhances details.
- FOCUS - Enhances the focus.
- EDGEEnhance - Enhances edges.
- EDGEDetect - Detects edges.
- EMBOSS- Looks embossed.

Gamma(Value, [RGB])

A Gamma correction is applied to the actual image by this macro. Thereby Value corresponds to the Gamma-Value and RGB specifies the color component(s), that participate in the correction (See also [Gamma Correction Dialog](#)). To toggle a component ON or OFF, enter the first character followed by 1 or 0 respectively (R1G0B0 = only Red-Channel). The default is 'all components', that means R1G1B1.

ColorTV(Color, Contrast, Brightness)

According to the [Color TV Dialog](#), this macro adjusts Color, Contrast and Brightness simultanously. For all three parameters, valid values range from -100..+100.

AdjustRGB(Red, Green, Blue)

This macro adjusts the relationship of the color components Red, Green and Blue in the actual image. For all three parameters, valid values range from -100..+100.

Contrast(Top, Mid, Bottom, [SRGB])

This macro adjusts the contrast of the actual image like the [Contrast Correction Dialog](#). The S-Bit of the optional parameter specifies whether the contrast is stretched (S1) or reduced(S0). To toggle a color component ON or OFF, enter the first character followed by 1 or 0 respectively (R1G0B0 = only Red-Channel). The default is 'all components stretched', that means S1R1G1B1.

Expand()

This macro expands the contrast of the actual image with no loss to the maximum of the possible value range.

GrayScale()

This macro creates a grayscale image of the actual image.

Negative()

This macro creates a negative image of the actual image.

ColDepth(Depth)

With this macro, you can adjust the color depth of the actual image. Following Depth values are valid:

- MonoChrome - Black and White (1Bit)
- LowColor - 16 Colors (4Bit)
- NormColor - 256 Colors (8Bit)
- HighColor - 32k Colors (16Bit)

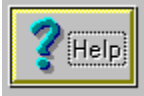
TrueColor - 16M Colors (24Bit)

Wait([Message])

In the developing cycle of your own scripts, this macro is used to force the program to wait. You can supply the MessageBox with your own message (i.e. Wait("Test")).

Hint:

As a starting point for your own Script-Files, you can use the file 'Script.MAK' in the ReTouch directory.



File Menu Commands

Open...

This command opens a file and loads the image in a ReTouch window, provided that the picture format of the chosen file is supported (see also: [Loading an image file](#)). The [File Open Dialog](#) serves to select the image file. Subsequently other functions can be applied to the loaded image.

Save

With this command, you store the [Active Image](#) window in the last applied [File Format](#). If no image file is yet available, then the command works like [Save as...].

Save as...

This command allows saving the [Active Image](#) window under one of the supported [Image Formats](#). Again the [File Selection Dialog](#) serves to choose the file name and directory.

Run Script...

This command runs a Script-File in batch mode. You find a comprehensive description of the macros under ReTouch [Script Language Reference](#).

Delete

Deletes the file of the [Active Image](#) from the file system upon confirmation.

Rename...

With this command, a loaded image file can be given another name without having to switch to the File Manager. The [File Rename Dialog](#) allows to enter a new file name.

File Info...

Opens a window with file- and format information about the [Active Image](#) (provided that the picture exists as a file). The file info window is always attached to an image. This window is reachable also in the [File Selection Dialog](#).

Print...

With this command, an image in the [Active Window](#) can be printed. In the [Printer Settings Dialog](#), the printer and page size can be selected.

Photo CD...

This command opens an overview window that shows **thumbnails** of the Photo CD images. Doubleclick on a thumbnail to load this image into ReTouch with standard resolution. You can select different resolutions defined by Kodak in the System Menu of Photo CD images.
(see also: Images in [Photo CD Format](#)).

PCD Drive...

This function opens the [Drive Selection Dialog](#), where you can select the disk drive on which Retouch searches for the overview pac. Predefined selection is the first local CD ROM Drive found in your system.

Acquire...

This command will send the instructions for data-transfer to an installed [TWAIN Driver](#).

By this means, ReTouch can read data directly from any TWAIN compatible scanner.

Select Source...

This function directs the TWAIN Driver to execute its dialog for selecting the data source. Analogous to the [Select Printer Dialog](#), a standard TWAIN device will be chosen if several TWAIN devices are available in the system.

Exit

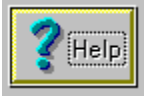
Serves to exit QuickSilver ReTouch and requests an optional saving of changed image windows.

Hint:

Some commands of this menu are only available if an [Active Image](#) is present. **Delete**, **Rename**, and **File Info** will be activated by images which are saved on disk.

TWAIN Standard

The TWAIN Standard was defined by leading DTP-distributors (along with others, Adobe and HP) for the development of a system independent scanner interface. In design of the TWAIN.dll, this driver makes the functions of the TWAIN device available to all windows applications.



Edit Menu Commands

Copy

This command executes the function [Copying an image to the Clipboard](#)

Paste

This command executes the function [Pasting an image from the Clipboard](#) to paste from the clipboard depending on the settings of the [Paste Options Dialog](#).

Mark

With this entry, the functions for [Marking an area](#) of an image are available.

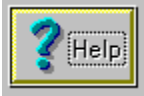
- [Load...](#)
This function loads a [Polygon Mark](#) from file into the [Active Image](#).
- [Save...](#)
This function files the [Polygon Mark](#) of the [Active Image](#).
- [Polygon](#) or [Rectangle](#)
This command toggles between Polygon- and Rectangle-Mark.
If the menu entry reads [Polygon](#), 'Rectangular Marking' is currently active. Now selecting [Polygon](#) activates 'Polygonal Marking' and the menu entry changes to [Rectangle](#).
- [Invert](#)
This function inverts a [Polygon Mark](#). With 'Polygonal Marking', the 'Inner area' of the mark is the default selection. To select the 'Outer area' up to the image borders, the marking can become [inverted](#). When the selection is inverted, a checkmark appears on the menu entry. Subsequently executing this function normalizes the inverted selection and the checkmark disappears.
- [Mark all](#)
This command selects the whole image as the [marked area](#). (This is the default setting on newly loaded images.)

Paste Options...

This command opens the [Paste Options Dialog](#), in which the settings for data exchange with the Clipboard can be changed.

Note:

Some commands of this menu are only available if an [Active Image](#) is present.



View Menu Commands

Fit to Window

This command adapts the representation of an image to the window size. This could cause a major change in aspect ratio. By calling the command once more, the previous display mode will be restored. A checkmark represents the current view mode. (See also: [Display in different Resolution.](#))

Zoom...

With this function, the represented view of the [Active Window](#) can be changed. You can set or change the view factor in the [ZoomFactor Dialog](#). The ZoomFactor effects only the representation, not the real size of the image. (See also: [Display in different Resolution.](#))
(Note: The image functions of ReTouch also work with zoomed pictures.)

Capture

This menu entry makes the functions for capturing the 'Windows Desktop' available.

- **Area**
With this capture function, any desired area of the Desktop can be loaded as an image into ReTouch. Hereby, the mouse pointer changes into the **cross cursor**. With the mouse click on a corner of the area to be marked and hold the left mouse button depressed. When you move the mouse, the rubber banding frame changes accordingly. After you have marked the desired area, release the mouse button, thus loading the area into ReTouch.
(Note: The capture function will be aborted if you activate the **right** mouse button during the marking operation.)
- **Client Area**
The client area is the **display** area of a window (without frame, menu-, and title bar). This capture function loads only the client area of a window. The mouse pointer changes into the **picker cursor**. If you move this cursor over the desktop, the window below will become active and brought into foreground. Click on the window, whose client area should be copied.
(Note: The process will be cancelled, if you activate the **right** mouse button during the window selection.)
- **Window**
Using this function, the actual representation of a complete **window** with frame, menu- and title bar, can be captured. The mouse pointer changes into the **picker cursor**. If you move this cursor over the desktop, the window below will become active and brought into foreground. Click on the window, which should be copied.
(Note: The process will be cancelled, if you activate the **right** mouse button during the window selection.)
- **Screen**
This function makes a complete copy of the current Desktop, which will then be loaded into ReTouch as an image.
- **Autosnap**
This function works like Capture Screen, but with a **delay time**. After the process is started, you can generate special views, before the actual capture event happens. With this method for instance, you can capture an open pull down menu from another application. In a certain range, you can set the delay time in the [Preferences Dialog](#).

Preferences...

This command calls the ReTouch [Preferences Dialog](#). Here you can make pre-settings, which influence the operation of various image functions.

System Info...

This command opens a dialog, which shows information about your computer, revision of drivers, and screen parameters.

German Language or Englische Sprache

The concept of 'Dynamic Link Libraries' (DLL) allows the creation of multi linguistic windows applications. This ReTouch function toggles between **english** and **german** language (even while the program is running).

Color Spectrum

This function computes a color spectrum of more than 130.000 colors, and loads the result in a ReTouch window. With a second call, the spectrum window will be closed. (A checkmark on the menu entry represents the current state.)

Histogram

This function creates a histogram for every RGB channel and shows the result in the [Histogram Window](#) related to the image. The Histogram shows a view of the color distribution of the picture.

Toolbox

This command shows or hides the [Toolbox Window](#). (A checkmark on the menu entry represents the current view mode.)

Morphing

This command shows or hides the [Morphing Module](#). (A checkmark on the menu entry represents the current view mode.)

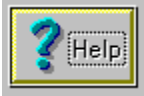


Image Menu Commands

Size...

This function changes the measurements of the image in the [Active Window](#). New measurements can be entered in the [Resize Image Dialog](#). In contrast to the zoom function, the height and width of an image will really change.

(**Note:** By an image enlargement, accordingly more memory will be necessary for the enlarged image.)

Rotation (fixed)...

Through this function, the [Active Image](#) can be turned in steps of 90 degrees. The type of rotation can be set in the [Image Rotation Dialog](#).

Rotation (angle)...

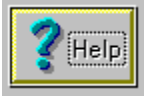
With this function, the [Active Image](#) will be plain rotated by a desired angle. Set the angle in the [Rotation \(variable Angle\) Dialog](#).

Filter...

This function applies a **digital image filter** to the [Active Image](#). Select the desired filter in the [Filter Selection Dialog](#).

Note:

The image menu is not available when there is no [Active Image](#).



Color Menu Commands

Decrease Color Depth...

With this function you can reduce the [Color Depth](#) of an image. For paletted images, it will try to determine a representative color palette. The check box 'on Color Reduction apply Error Diffusion' of the [Preferences Dialog](#) determines whether the 'Dithering Method' or the 'Nearest Color Method' should be applied to the process. With the reduction of color depth, the image naturally also loses picture information.

Increase Color Depth...

This function makes it possible to increase the color depth up to [TrueColor](#) images. The result of the transformation needs correspondingly more storage memory. Loss of picture information does not occur.

Color TV...

This function allows color adjustment of an image analogous to that of a color television. In the [Color TV Dialog](#), the color saturation, contrast and brightness can be adjusted.

Gamma Correct...

This command opens the [Gamma Correction Dialog](#).

RGB Adjust...

With this function, the relation of each primary color can be adjusted separately in the [RGB Adjustment Dialog](#).

Contrast Correct...

The contrast of a picture can be very specifically changed with this function in the [Contrast Correction Dialog](#).

Expand (Contrast)

This function determines the darkest and the brightest color value of an image. Subsequently, it stretches the range to the maximum value range of 0..255. Thus a picture with low contrast will be set to maximum contrast that can be achieved with no loss.

Select Drawing Color...

This command calls the Windows common dialog for selecting a specific color. This color is adapted by ReTouch as the [Current Drawing Color](#), which is the color the [Pen Tool](#) draws.

Count Colors

This function determines the number of distinct colors of an image. The procedure needs more time with TrueColor images because each pixel will be tested separately (by paletted images, only the palette has to be scanned). The result will be displayed in a window related to the picture.

Gray Scale

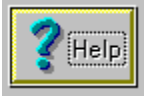
With this function, the weighted average of the RGB color values of a pixel will be formed. As a result, the RGB components of every pixel have the same (gray-) value.

Negativ

This function creates a negative image of the original through reflection of the color values.

Note:

The image menu is not available when there is no [Active Image](#).



Window Menu Commands

Arrange Icons

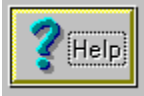
This function arranges windows that have been reduced to icons, in regular rows on the Windows Desktop.

Window List

The dynamic menu of the window list contains all image names currently loaded in ReTouch. The [Active Image](#) has a checkmark. If you select an entry from the window-list, this image becomes the active image (even if it is iconified).

Note:

The window menu is only available when at least one image has been loaded in ReTouch.



Help Menu Commands

Index

This command calls **ReTouch Help**. The first page of the help text appears with the [Index Topics](#).

Using Help

This command calls the integrated **Help on Help** of Windows.

License...

This command opens the [License Manager Dialog](#) where you can check and alter your License.

About ReTouch...

This command opens a window with general information about ReTouch.

Loading an Image File

To load an image file, use the following steps:

- Select |File| from the ReTouch main menu.
- Thereafter choose |Open| from the pull down menu. This command opens the [File Selection Dialog](#).
- All files will be shown in the [File List](#), that correspond to the setting of the group [File Extension](#) in the current directory. You can change the display mask in the [Edit Box](#) or enter a file name. By clicking the option buttons of the file extension group, the display mask can also be changed according to the heading (This group is only shown in conjunction with images).
- You can change to another directory or drive by double clicking the desired directory or drive
- in the [Directory List](#). To select a file, click on the desired file name with the left mouse button. By double clicking or confirming with the enter key, the picture will be loaded into a new ReTouch window.

Note:

In the Windows File Manager you can also drag one or more files with the mouse onto the ReTouch main window or icon and drop it there. With the support of 'Drag&Drop', a image file can be directly opened bypassing any dialog box.

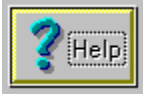


Image Formats

QuickSilver ReTouch was not designed as a format converter. Its strength lies much more in the processing ([Color](#), [Filter](#), [Combination](#), etc.) of existing images. As a Windows application, it supports of course the Bitmap (BMP) format without restrictions. By using the [Clipboard](#), pictures of the Device Independent Bitmap format (DIB) can also be exchanged.

Color Depth

The color depth is a measure for the number of simultaneously representable colors. Black/White pixels have the least color depth with 1 bit and therefore use the least amount of storage. To represent 16 different colors, 4 bits per pixel are needed. For graphical work in ReTouch, at least 256 color shades are required. The value of each pixel corresponds to an index in an image dependent color palette. Without color palettes, only the [HiColor](#) and the [TrueColor](#) modes suffice, by which the intensity of the primary colors directly determine the pixel value. The various commonly used image formats differ mainly in their capability to store the usual color depths.

Compression

To efficiently store the enormous data amounts of high resolution images of great color depth, various compression techniques were developed. A simple and therefore quick method is the [RLE technique](#). The [LZW technique](#) attains better compression but is also more complicated and lengthy. The JPEG (Joint Picture Expert Group) pursues another way, in order to achieve even higher compression. However the JPEG-technique can no longer restore the original without a loss of quality.

Supported Image Formats

[BMP-Format](#)

[GIF-Format](#)

[HIC-Format](#)

[TIF-Format](#)

[TGA-Format](#)

[JPG-Format](#)

[PCD-Format](#)

The BMP-Format

Bitmaps support all color depths from monochrome (1Bit) to TrueColor (24Bit). This format is well suitable as an exchange format between applications and is the basis of all Bitmap-oriented Window functions. Unfortunately it is not known for good compression. Normally the picture is not compressed, only for 4Bit and 8Bit color depths the RLE technique will be selectively supported.

Possible Color Depths:

- 1 Bit: Monochrome (Black/White) with color palette.
- 4 Bit: 16 colors with color palette (optional RLE compression).
- 8 Bit: 256 colors with color palette (optional RLE compression).
- 24 Bit: 16M colors with direct specification of color intensity.

Implemented Capabilities:

ReTouch reads and writes all color depths, but writes without RLE-compression.

The GIF-Format

This format was instituted by CompuServe® for the exchange of pictures through mailboxes. To minimize the transfer time, the LZW compression-technique was chosen. There are two different versions of this format; at first the version 87a and later the version 89a with additional properties. Both versions can also be coded 'Interlaced', whereby the line sequence is broken up. By direct image construction, the viewer receives a good impression of the finished picture already before half of the picture has been decoded. In addition to pure image information, description text can also be stored in the GIF file.

Possible Color Depths:

- 1 Bit: Monochrome (Black/White) with color palette.
- 4 Bit: 16 colors with color palette.
- 7 Bit: 128 colors with color palette.
- 8 Bit: 256 colors with color palette.

Implemented Capabilities:

ReTouch reads all color depths, but writes only 8Bit color depth, as most GIF pictures have 256 colors. Additional text is shown in a separate window. ReTouch reads both versions (87a and 89a), writes however only in version 87a as the additional properties of version 89a are not needed for storing ReTouch images.

The HIC-Format

This format was developed by QuickSilver especially for HiColor images. For efficient storage, it uses the LZW compression-technique. One HIC file can contain several pictures. As Windows does not support a 16Bit color depth directly, these pictures will be changed into 24Bit color depth.

Possible Color Depths:

- 16 Bit: 32k colors without palette, with LZW compression.

Implemented Capabilities:

ReTouch reads and writes all possible color depths. It reads however only the first image of a HIC file with many pictures.

The TIF-Format

The TIF-Format (Tagged Image File Format) was developed for the purpose of uniform data exchange, by MicroSoft and other notable companies of the DTP (Desktop Publishing) market. Because of the complex requirements and inadequate implementation, there are many files in circulation, which do not exactly match the specification and therefore break up the standard. The inclusion of additional, but unusual compression techniques, once more increased the difficulties of implementation. On creating compressed TIF files, ReTouch restricts itself to the well defined LZW method.

Possible Color Depths:

- 1 Bit: Monochrome (Black/White) with color palette (with optional compression).
- 4 Bit: 16 colors with color palette (with optional compression).
- 8 Bit: 256 colors with color palette (with optional compression).
- 24 Bit: 16M colors without palette (but optional compression).

Implemented Capabilities:

ReTouch reads all color depths and most of the compression methods specified in the format definition. In the [Preferences Dialog](#) you can select whether to use LZW compression or not. The TIF-functionality of ReTouch is based on the original source code of the **SGI** (Silicon Graphics Inc.) implementation.

The TGA-Format

The relatively uncomplicated Targa-Format from TrueVision supports 8Bit to 32Bit color depth selectively uncompressed or RLE coded. By 32Bit color depth, the additional 8 bits contain the Alpha Channel or Transparency Information. This format was implemented in ReTouch especially for the exchange and storage of TrueColor images.

Possible Color Depths:

- 8 Bit: 256 colors with color palette (optional RLE-compression).
- 16 Bit: 32k colors without palette (optional RLE-compression).
- 24 Bit: 16M colors without palette (optional RLE-compression).
- 32 Bit: 16M colors without palette, with Alpha Channel (optional RLE-compression).

Implemented Capabilities:

ReTouch reads and writes 24Bit color depth selectively with RLE compression. An expansion to the additional color depths is planned for coming versions.

The JPG-Format

The JPG-Format (resp. JIF-Format) was developed by the JPEG (Joint Photographic Experts Group) to achieve still higher compression. With the compression technique of DCT (Discrete Cosine Transformation), the original can not be restored without a loss of quality. An additional 'quality' parameter controls the degree of information loss and therefore also the degree of compression (The higher this value is, the better is the image quality, but also the greater is the stored file). A second parameter, the 'smoothing' factor affects the visibility of the transition of Matrix blocks (The higher this value is, the smoother the transition, but the more focus the stored image loses).

Possible Color Depths:

- 8 Bit: 256 shades of gray without color palette.
- 24 Bit: 16M colors without palette.

Implemented Capabilities:

ReTouch reads and writes both color depths. The JPG-functionality of ReTouch is based on the original source code of the 'Independent JPEG Group'.

The PCD-Format

The PCD-Format (Photo CD) was developed by Kodak, especially for fadeless storage of high resolution images. When the Compact Disk comes into use, Kodak specified the PCD-Format in order to store negatives and slides, digitalized by the Photo Lab, directly to disk. The Photo CD comply with the ISO-norm for hybrid data storage and uses a special directory structure. The images are located in so called Image Pac's, containing several resolutions and with ascending numbering in the directory '\PHOTO_CD\IMAGES'.

Following resolutions are specified:

- PCD_BASE: 768 x 512 (1,2 MB)
- PCD_4BASE: 1536 x 1024 (4,7 MB)
- PCD_16BASE: 3072 x 2048 (18,9 MB)
- PCD_64BASE: 6144 x 4096 (75,5 MB)

Because of a special compression technique, at least 100 images in PCD_16BASE (equivalent to 25 images of the professional PCD_64BASE) can find place on a single CD. To get a quick overview of the images on a Photo CD, all images are stored in reduced resolution, as thumbnails, in the file '\PHOTO_CD\OVERVIEW.PCD'. Unfortunately Kodak's license policy is very restrictive, so that this well designed format slowly prevails.

Possible Color Depths:

- 8 Bit: 256 colors with color palette.
- 24 Bit: 16M colors without palette.

Implemented Capabilities:

ReTouch reads both defined color depths. The PCD-functionality of ReTouch is based on the dynamically loadable library PCDLIB.DLL from Kodak.

For example, you can use the Clipboard to demonstrate the deficiencies of the GDI. First, you adjust a display mode of 256 colors in the Windows Setup (Control Panel under WinNT). Then you copy a TrueColor image to the clipboard and call the Clipboard application to display the picture. Using images with a width larger than 3000 pixels, you can very well test the quality of the display driver.

The compression technique of the Run Length Encoding stores a number of similar pixels by specifying the color value and a repetition counter. It is most suitable for pictures with a high portion of areas with similar color. The original can be completely reproduced without loss of information.

The compression technique by Level-Zimp-Welch applies a dynamic Huffman pattern to minimize redundant information. This method adapts automatically to the pattern distribution of different images. The original can be completely reproduced without loss of information.

The HiColor Mode has a color depth of 16Bits per pixel (usually 5 bits for each primary color red, green, blue and one filler bit). Images of this type can contain 2 to the power 15 or 32k (32,768) different colors simultaneously.

Images in TrueColor Mode have a color depth of 24Bit per pixel (8 bits for each primary color red, green, blue). Thus they can contain 2 to the power 24 or 16M (16,777,216) different colors simultaneously. So many color shades are practically not distinguishable by the human eye.

In contrast to the Rectangle Mark, the Polygon Mark consists of a different number of corner points (footholds). Therefore you can mark and select any form of area in an image.

This is the QuickSilver ReTouch Icon

File Selection Dialog

This dialog box is used to select a specific file. You can

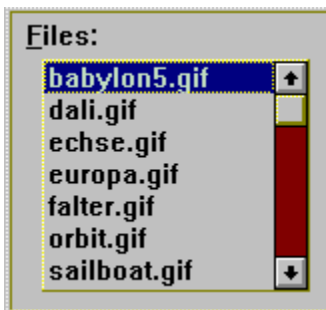
- enter a complete file name in the edit box,
- enter a file name with place holders, which correspondingly filters the files of the file list,
- create a file list, which corresponds to the setting of the file extension group,
- view the contents of various directories of different drives, by choosing a directory name or
- drive name in the directory list.



In the edit box for the [File Name](#), you enter either the name of the desired file or a file specification, which will be used as a filter for the file list.



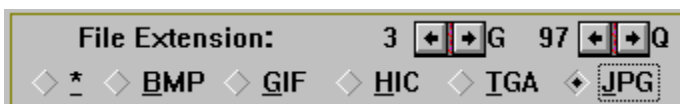
The text box 'Path' displays the path of the current directory. As soon as you enter a new path in the edit box of the file name, this text box will be changed accordingly.



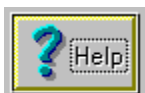
The [File List](#) lists all files of the current directory that matches the file specification in the edit box.



You can view the contents of various directories by selecting a name from the [Directory List](#).

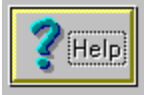


The [File Extension](#) group offers a useful way to set the file specification.



The **OK** button has the same meaning as the Enter key and is used to confirm a

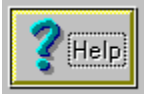
choice.



The *Cancel* button cancels all entries and has the same meaning as the Escape key.



If the *Info* button is visible, you can open an additional window with further information about the selected file.



You have pressed the *Help* button, if you reached this Help page directly.

File Name edit box

In the edit box for the file name, you enter either the name of the desired file or a file specification which acts as a filter on the file list.

Enter a file using the following steps:

- Enter a file name (if the file is not in the current directory, include the complete path name) and choose **OK** or press the Enter key.
- Enter a file name with * or ? as place holders, which correspondingly filters the files in the file list using your specification and choose **OK** or press the Enter key.

See also:

[File Selection Dialog](#)

File List

The file list lists the files of the current directory, which fit the file specification in the [File Name](#) edit box. If the file you wish to select appears in the file list, double click on the name.

If you use the keyboard, press the Tab key to step to the file list. Then use the arrow keys to mark the desired file. The Enter key confirms your selection.

Hint:

The file list also reacts on the arrow keys Home, End, PgUp and PgDn. You cannot change any of the entries of this list.

See also:

[File Selection Dialog](#)

Directory List

The directory list contains the names of the subdirectories and the available drives. Double click on a name of the list to change to the desired directory.

If you double click [..] the symbol, the current directory changes to the parent directory.

If you use the keyboard, press the Tab key to step to the directory list and then use the arrow keys to mark the directory or drive you want to select. The Enter key is used to confirm the choice.

See also:

[File Selection Dialog](#)

File Extension

The file extension group a useful way to set the file specification. Upon opening a file it updates the [File List](#) according to the used extensions of the supported [Image Formats](#). On saving an image, it also commits the format. Two values right above set the storing parameters 'S' (Smoothing) and 'Q' (Quality) for files of the [JPG Format](#).

Hint:

It's quite possible to load a [GIF Format](#) image, which uses the extension [.TGA](#). The load function checks the selected file for all known signatures of the supported image formats and chooses the appropriate one independently.

See also:

[File Selection Dialog](#)

File Rename Dialog

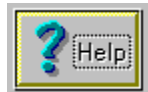
This dialog allows to specify a new file name for an image file.



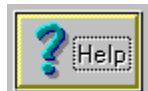
The text box 'Old Name' shows the current name of the image file.



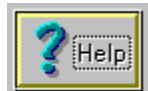
In the edit box 'New Name', enter the new file name according to the naming convention of the operating system (i.e. '12345678.XYZ').



The *OK* button has the same meaning as the Enter key and is used to confirm a choice.

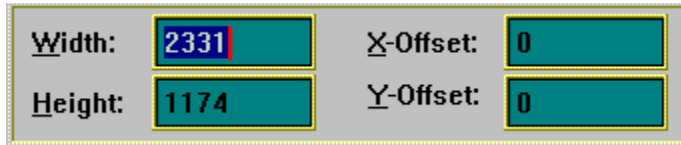


The *Cancel* button cancels all entries and has the same meaning as the Escape key.



You have pressed the *Help* button, if you reached this Help page directly.

Printer Settings Dialog



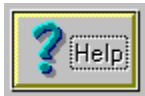
Width: 2331 X-Offset: 0
Height: 1174 Y-Offset: 0

This group of edit boxes changes the size and location of the representation on the printout.
(Note: Sensitive areas give further information.)

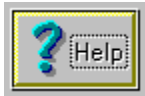


Unit: inch cm Pixel
 Preview Preserve Aspect Ratio

This group of check boxes influences the kind of representation type.
(Note: Sensitive areas give further information.)



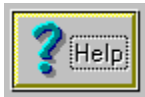
The **OK** button has the same meaning as the Enter key and is used to confirm a choice.



The **Cancel** button cancels all entries and has the same meaning as the Escape key.



The **Setup** button leads to the [Printer Selection and Setup Dialog](#).



You have pressed the **Help** button, if you reached this Help page directly.

Edit box Width

In this edit box, you set the desired width of the printout. The value is dependent on the unit setting and can be limited by the aspect ratio setting.

Edit box Height

In this edit box, you set the desired height of the printout. The value is dependent on the unit setting and can be limited by the aspect ratio setting.

Edit box X-Offset

In this edit box, you set the horizontal offset of the printout from the left top corner. The value is dependent on the unit setting and can be limited by the aspect ratio setting.

Edit box Y-Offset

In this edit box, you set the vertical offset of the printout from the left top corner. The value is dependent on the unit setting and can be limited by the aspect ratio setting.

Unit Checkboxes

With one of these checkboxes, you set the principal unit (inch, cm, pixel) of the edit boxes. Only one unit can be selected at a time. The chosen unit remains fixed.

Preserve Aspect Ratio

This check box influences the printout size. If the box is marked, the width or the height of the printout area will be increased or decreased so that the aspect ratio of the image is preserved.

Preview

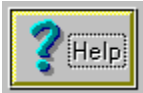
This check box controls the Print Preview. The image is displayed in the Preview Window, according to the Printer Settings. The illustration can be moved with the mouse, or adjusted at the rectangular marked areas.

Hint: By very large pictures, the illustration process can delay some time.

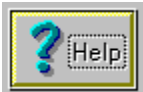
Printer Selection and Setup Dialog



With this combo box, you select the active printer for the Windows Print Manager. All of the following printouts will be created using this printer.



The *OK* button has the same meaning as the Enter key and is used to confirm a choice.



The *Cancel* button cancels all entries and has the same meaning as the Escape key.

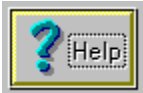


The *Setup* button calls the Setup Dialog of the active Printer. The Setup Dialog is treated of the driver and therefore is different for every printer.

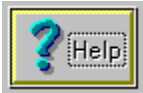
Drive Selection Dialog

When starting ReTouch, the program tries to determine the first local CD ROM drive in your system. If this attempt fails, or there is more than one CD ROM drive available, you can explicitly set the Photo CD drive in the Combo box.

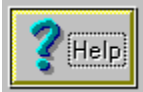
For example, you can copy the images of a Photo CD and the overview pac (under retention of the directory structure) to your harddisk, and then set this drive as Photo CD drive.



The *OK* button has the same meaning as the Enter key and is used to confirm a choice.



The *Cancel* button cancels all entries and has the same meaning as the Escape key.



You have pressed the *Help* button, if you reached this Help page directly.

Paste Options Dialog



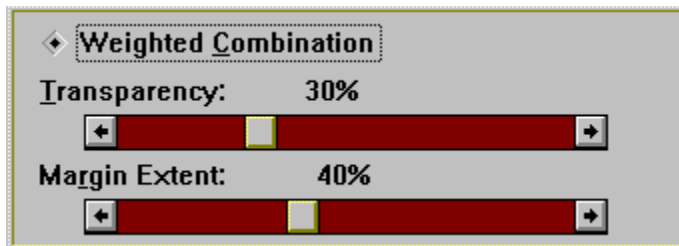
operation.

This check box controls the paste

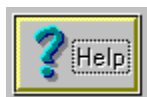
- If this box is marked, the (image-) contents of the [clipboard](#) will be [combined](#) with the active image and the result is loaded into a new ReTouch window. In addition, both groups of combination possibilities will be activated.
- If this box is **not** marked, the (bitmap-) contents of the clipboard will be simply copied into a new ReTouch window. The settings in the groups of combination possibilities has no influence on the copy procedure. The original color depth of the image is preserved.



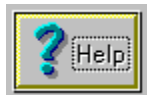
This group of check boxes chooses a [connection method](#) for the image combination (i.e. [Subtraction](#) for the difference of two pictures). The subgroup [scale](#) influences the value range for the combination. (Note: Sensitive areas give further explanation.)



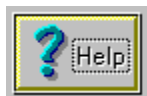
This group refers to the setting for the special case of the [Weighted Combination](#). Here, every pixel of the clipboard's image has an adjustable weight-factor. This factor determines the [Transparency](#) of the image to be inserted. With the [Margin Extent](#), a smooth transition will be achieved between both images. (Note: Sensitive areas give further explanation.)



The [OK](#) button has the same meaning as the Enter key and is used to confirm a choice.



The [Cancel](#) button cancels all entries and has the same meaning as the Escape key.



You have pressed the [Help](#) button, if you reached this Help page directly.

Subtraction Method

This method determines the difference between two images through difference-formation. This allows easier distinguishing of similar pictures.

Addition Method

This method combines two images through addition. This is useful for enhancing the contrast of the intersection of both images.

Multiplication Method

This method combines two images through multiplication. The contrast of the resulting image is a function of the brightness of the clipboard's picture applied to the original image.

Minimum Method

With this method, the pixel with the smaller RGB-value will be used in the resulting picture. This allows the definition of masked regions of different geometries.

Maximum Method

With this method, the pixel with the larger RGB-value will be used in the resulting picture. This allows the definition of masked regions of different geometries.

Or Method

This method combines two images using the Or function.

Stretch resp. Clip Scale

By combining images, the result of the predefined value range 0..255 can be over- or under bounds. You can choose how ReTouch should handle this condition.

- If you mark **Clip Scale**, values larger than 255 will be set to 255 and values less than zero will be set to zero.
- If you mark **Stretch Scale**, the possible value-range -255..510 will be squeezed to the valid value range 0..255.

Weighted Combination

With this check box, the special case of **transparent overlay** can be chosen for the combination.

Setting the Transparency

The scroll bar allows the setting of the grade of transparency for the clipboard picture. With a transparency factor of zero, the area in the resulting picture will simply be replaced with the clipboard picture. A transparency factor of 50% causes an average color mixture for the resulting image. With 100% transparency, the clipboard picture is completely transparent and therefore does not affect the resulting image.

Setting the Margin Extent

The scroll bar allows the setting of fading on the margin of the region to be inserted. With a margin extent of 50%, a square region will be defined internally (with half the surface) of the picture to be inserted, whereby the transparency constant corresponds to the transparency factor. In approaching the margin, the transparency increases continually up to complete transparency.

Preferences Dialog

In this dialog, you set up the default values for the operation of different functions of ReTouch.

JPG Optimum Compression

This setting applies only to the storage of [JPG Files](#). If the checkbox is marked, an optimal compressed Huffmann table will be created on JPG compression. The resulting JPG file will be optimally compressed, the compression procedure takes slightly longer.

write RLE compressed TGA Files

This setting applies only to the storage of [TGA Files](#). If the checkbox is marked, the [RLE compression technique](#) will be applied when storing the TGA file. In general, RLE compressed files are smaller than uncompressed image files.

write LZW compressed TIF Files

This setting applies only to the storage of [TIF Files](#). If the checkbox is marked, the [LZW compression technique](#) will be applied when storing the TIF file. In general, LZW compressed files are smaller than uncompressed image files.

write Interlaced GIF Files

This setting applies only to the storage of [GIF Files](#). A marked checkbox breaks up the normal arrangement of rows and only has an effect while downloading the image from a 'bulletin board system'.

delete Transformation Source Image

This setting influences the alternative 'undo' capability of ReTouch (see also [Active Image](#)). If the checkbox is marked, the original image will be deleted after a graphic operation. This way of working saves storage memory, but thereafter you can no longer restore the original image.

on Exit Prompt for changes

If this checkbox is marked, ReTouch will ask on closing changed images, if they should be saved.

drop Picker after Selection

This setting influences the behavior of ReTouch when choosing the [Current Drawing Color](#). The [Color Picker Tool](#) can load the color of a pixel in every ReTouch window for the current drawing color. You mark this checkbox, if ReTouch should activate the [Pen Tool](#) directly after the color selection.

on Color Reduction apply Error Diffusion

This setting applies only to the function of color reduction. If this checkbox is **not** marked, the color that will be used during color reduction is the color that has a value nearest to the new color space (Nearest Color). If the checkbox is marked, the color error that mostly occurs, will be spread to the neighboring pixels and therefore moderated (Dithering).

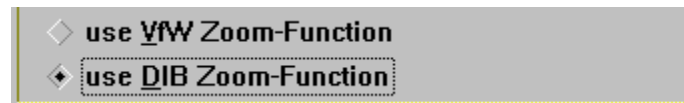
draw Picture Symbols

If this checkbox is marked, the icon of

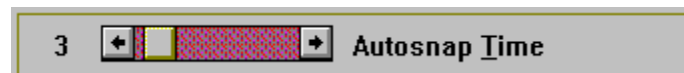
an image window is drawn as the visible area of the image. Otherwise the ReTouch image symbol is used to represent the icon.



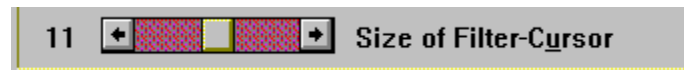
This checkbox influences the representation of larger images (>1600x1280). Some display drivers have problems handling large DIB's, whereby some areas are drawn erratic or not at all. If this checkbox is marked, large images are converted to DDB's before drawing (at the cost of storage memory and computation time).



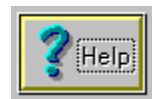
Because of the multimedia video extension, ReTouch can now use display functions from 'VfW' (Video for Windows). With these radio buttons, you can decide whether ReTouch should use the standard DIB zoom function or the VfW zoom function. The VfW function is faster on 'stretching', but slower on 'clipping' compared to the DIB function.



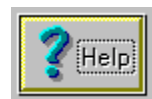
This is the delay time (in seconds) for the 'capture' function |View|Capture|AutoSnap|.



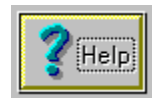
The value applies to the [Filter Cursor Tool](#). You can set up the size of the region, that applies the effect of the current filter.



The *OK* button has the same meaning as the Enter key and is used to confirm a choice.

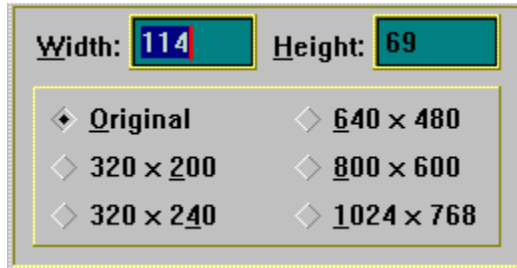


The *Cancel* button cancels all entries and has the same meaning as the Escape key.



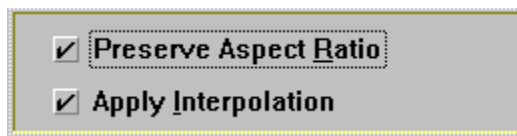
You have pressed the *Help* button, if you reached this Help page directly.

Resize Image Dialog



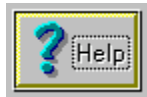
This group allows changing the image extents. The new size can be entered either using the width and height edit boxes, or using a predefined size.

(Note: Sensitive areas give further explanation.)

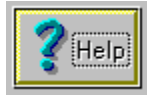


This group influences the boundaries and the type of extent change.

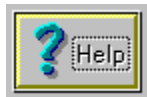
(Note: Sensitive areas give further explanation.)



The *OK* button has the same meaning as the Enter key and is used to confirm a choice.



The *Cancel* button cancels all entries and has the same meaning as the Escape key.



You have pressed the *Help* button, if you reached this Help page directly.

Edit box Width

Here you enter the desired width of an image in pixels.

Edit box Height

Here you enter the desired height of an image in pixels.

Original Marking

This radio button resets Width and Height to their original sizes.

Predefined Image Sizes

These radio buttons allow to easy set commonly used image extents.

Preserve Aspect Ratio

This checkbox influences the boundaries of the extent changes. If, for example, a new value is defined for the height and **preserve aspect ratio** is marked, the width value will automatically be adjusted.

Hint: When choosing a predefined size, this box is automatically deactivated.

Apply Interpolation

This checkbox influences the scanning type of an image transformation. By geometrical projections, fractional pixel-indices often occur and with them also **scanning errors**. If the checkbox is marked, the color of fractional index surrounding pixels will be **interpolated** in order to minimize the error. The better results of this method are bought with higher computation effort and very slight loss of image focus (Therefore it is recommended to apply the 'Enhance Detail' [filter](#) to the result). With interpolation turned off, the value of the pixel next to the scanning point goes into the calculation.

Rotate Image Dialog

The rotate image dialog makes functions for axis rotation of an image available. In the center, the original position of the image will be shown in order to make the procedure clear. The effect of a rotation will be shown next to the respective rotation button.



Simply press this button to rotate the image plain to the **left**.



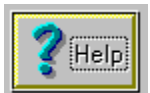
Simply press this button to rotate the image plain to the **right**.



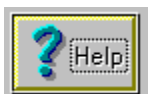
Simply press this button to turn the image upside down (**Flip**).



Simply press this button to turn the image left to right (**Mirror**).



The **Cancel** button cancels all entries and has the same meaning as the Escape key.



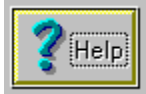
You have pressed the **Help** button, if you reached this Help page directly.

Rotate Image by angle Dialog

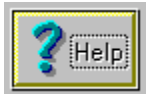


The edit box Angle allows the entry of an angle in the range -360..360°.

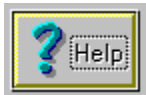
(Note: Sensitive areas give further explanation.)



The **OK** button has the same meaning as the Enter key and is used to confirm a choice.



The *Cancel* button cancels all entries and has the same meaning as the Escape key.



You have pressed the *Help* button, if you reached this Help page directly.

Edit box Angle

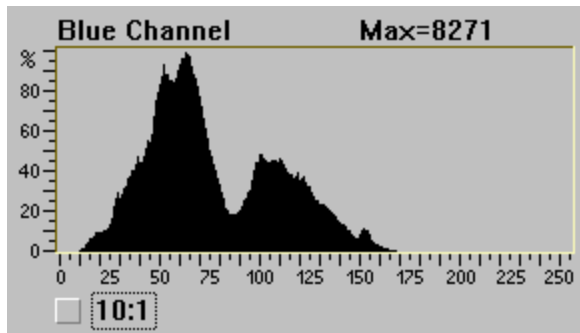
The angle will be conceived mathematically counter-clockwise. Values greater than 360° or smaller than -360° will be cyclically converted to this range.

Changing the Color Depth

The color depth applies to the property of an image, how many different colors can be simultaneously contained. Photo realistic or TrueColor images need another [Image Format](#) than for example, black and white printouts. The color depth functions in the [Color Menu](#) make the transformation of images into different color depths possible.

Histogram Window

The Histogram shows a view of the color distribution of the picture.



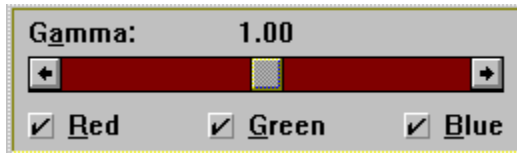
The horizontal axis is equivalent to the value range of a color component [0..255]. A bar represents the relative frequency of occurrences of a specific value. The specification 'Max=8271' shows the absolute value of one components' largest bar. Thus, the greatest Max-value corresponds to the 100% mark. The checkbox '10:1' toggles the display to a ten times elongated representation.

Color Information and Transformation

The [Color Menu](#) makes more functions available, like [Expand](#), [Count Colors](#) or [Negative Image](#). With the [Histogram Window](#) you can view the distribution of color-frequencies separated by components.

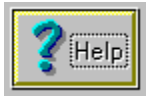
Gamma Correction Dialog

This dialog serves to correct the [Active Image](#) with the values of a gamma-curve. The correction adjusts the contrast and color components to the qualities of your monitor. For example, a scanned image looks generally too dark on the monitor, the overall impression can be improved by correcting it with gamma value smaller than one. Visibly false colors can arise by strong corrections due to the variable curvature of the gamma-curve. To avoid this effect, the individual RGB-channels of the image should be corrected successively with different gamma-values.

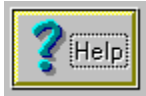


This group contains the scroll bar to set the gamma value and three checkboxes to choose the participating color components. With the [ToolBox Window](#) visible, the changes made in the dialog will be momentarily displayed for preview.

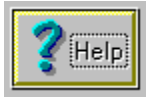
(Note: Sensitive areas give further explanation.)



The *OK* button has the same meaning as the Enter key and is used to confirm a choice.



The *Cancel* button cancels all entries and has the same meaning as the Escape key.



You have pressed the *Help* button, if you reached this Help page directly.

Gamma Value

With this scroll bar you can set the gamma value in a range of 0.2..5.0. The further a chosen value deviates from one, the stronger the image correction turns out. Values greater than one darken the image and values smaller than one brighten it.

Red Component

When this box is marked, the red component will be corrected, otherwise not.

Green Component

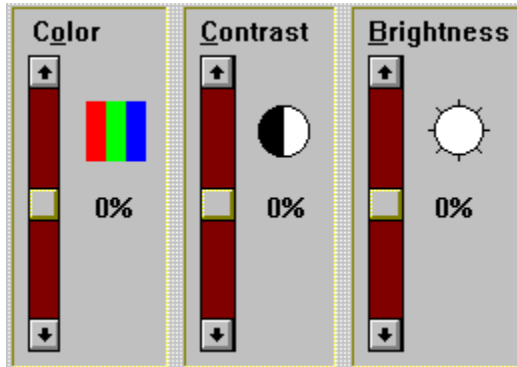
When this box is marked, the green component will be corrected, otherwise not.

Blue Component

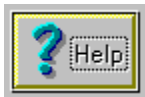
When this box is marked, the blue component will be corrected, otherwise not.

Color TV Dialog

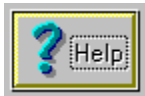
In this dialog you can set the color, contrast and brightness of the [Active Image](#), like a television.



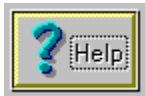
In this group you find the scroll bars (regulators) to change the picture impression. With the [ToolBox Window](#) visible, the changes made in the dialog will be momentarily displayed for preview. (Note: Sensitive areas give further explanation.)



The *OK* button has the same meaning as the Enter key and is used to confirm a choice.



The *Cancel* button cancels all entries and has the same meaning as the Escape key.



You have pressed the *Help* button, if you reached this Help page directly.

Color Saturation

With this scroll bar, the color saturation is tuned. A value of -100% corresponds to a grayscale image. Positive values increase the color impression.

Color Contrast

This scroll bar serves to adjust the contrast. Negative values weaken the contrast, positive values strengthen it.

(Hint: In the [Contrast Correction Dialog](#), a more flexible change of the contrast is possible.)

Image Brightness

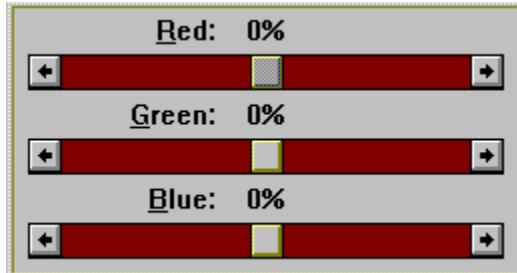
This scroll bar regulates the image brightness. Negative values darken the picture, positive values brighten it.

Relative Value of the Setting

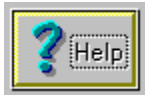
The relative value of the current setting will be shown in percent in the range from -100%.. +100%.

RGB Adjustment Dialog

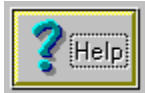
In this Dialog, you set up the relationship of the primary colors to one another. The impression of a picture with color tinges can be improved by suppression of a special component.



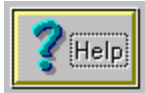
This group contains regulators for the suppression, resp. reinforcement of the portions of the three primary colors. With the [ToolBox Window](#) visible, the changes made in the dialog will be momentarily displayed for preview. (Note: Sensitive areas give further explanation.)



The *OK* button has the same meaning as the Enter key and is used to confirm a choice.



The *Cancel* button cancels all entries and has the same meaning as the Escape key.



You have pressed the *Help* button, if you reached this Help page directly.

Red Component

The primary color red in the range of 0..255 determines the red portion of an image. A relative value of the scroll bar of -100% means a halving of the red portion; correspondingly a value of +100% causes a doubling of the red portion.

Green Component

The primary color green in the range of 0..255 determines the green portion of an image. A relative value of the scroll bar of -100% means a halving of the green portion; correspondingly a value of +100% causes a doubling of the green portion.

Blue Component

The primary color blue in the range of 0..255 determines the blue portion of an image. A relative value of the scroll bar of -100% means a halving of the blue portion; correspondingly a value of +100% causes a doubling of the blue portion.

Contrast Correction Dialog

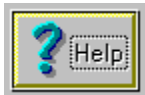
In this dialog, you can adjust the contrast of the [Active Image](#) very explicitly through three reference marks. The 'middle' mark tells the unchanged reference value of the transformation. The mark 'bottom' resp. 'top' stretch out the two ranges, which serve as the lower resp. upper boundaries for expansion (Contrast Intensification) or reduction (Contrast reduction).

(Hint: The contrast regulation in the [Color TV Dialog](#) is a special case of this method, where the marks 'bottom' and 'middle' are set to their minimum values, and only the regulator for the 'top' mark is active.)

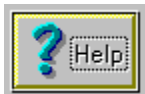


This group contains three scroll bars to set up the reference marks, the three check boxes to choose the participating color components and the check box to stretch resp. reduce the contrast. With the [ToolBox Window](#) visible, the changes made in the dialog will be momentarily displayed for preview.

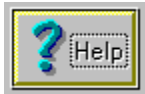
(Note: Sensitive areas give further explanation.)



The OK button has the same meaning as the Enter key and is used to confirm a choice.



The *Cancel* button cancels all entries and has the same meaning as the Escape key.



You have pressed the *Help* button, if you reached this Help page directly.

Range Top Boundary

This regulator sets the top boundary value of the range 'mid' .. 'top' and thereby affects the lighter areas of the image.

Middle Value

This regulator adjusts the reference value of the transformation. The color values of the original in this area correspond to the result.

Range Bottom Boundary

This regulator sets the bottom boundary value of the range 'bottom' .. 'mid' and thereby affects the darker areas of an image.

Stretching box

This checkbox tells how the two marked ranges, 'bottom' .. 'mid' resp. 'mid' .. 'top' will be projected to the value range 0..255 of the primary colors. If the checkbox is marked, the ranges will be stretched (the contrast will be increased), otherwise the range 0..255 will be reduced into these ranges (the contrast will be decreased).

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Rosenkavalierplatz 10
81925 München / GERMANY

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First Name:

Telephone/Fax:

Address:

How did you find out about ReTouch?

Preferred Diskette Format: ___3½" ___5¼"

No.: ___ (US\$ 20.- per license =) _____

Shipping/Handling : US\$ 8.00

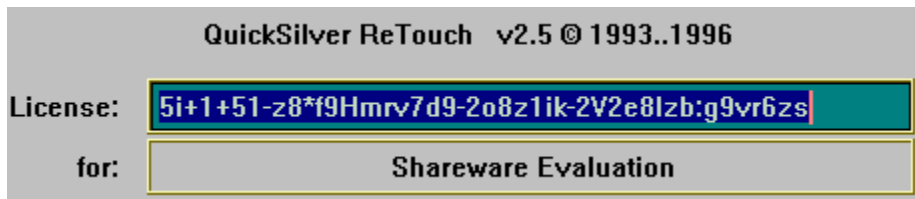
= Total amount _____

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The license manager is responsible for checking and registering your license. There are two different types of licenses in ReTouch:

- A temporary evaluation license, which is only valid for the 60 days trial period.
- A personal license, which applies to a specific version of ReTouch.

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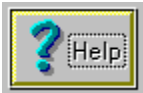


In this edit box, enter

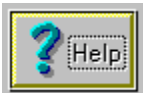
the **License-Number** you received from QuickSilver Software upon registration.

(**Hint:** You can also copy the License-Number via the Clipboard and use Shift+Insert to fill in the edit box.)

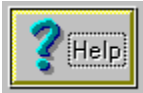
5i+1+51-z8*f9HmrV7d9-2o8z1ik-2V2e8lzb:g9vr6zs



The **OK** button has the same meaning as the Enter key and is used to confirm a choice.



The **Cancel** button cancels all entries and has the same meaning as the Escape key.



You have pressed the **Help** button, if you reached this Help page directly.

