



V3 RSWA Software Administrator Guide

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1 Installing and Updating RSWA Software

This chapter describes how to download and install (or update) RSWA software. By following these procedures you can ensure that your RSWA equipment is up to date with our latest software developments.

You can use these instructions to:

- Update software on existing RSWA units.
- Install or update RSWA software on a PC;

For additional assistance, you can call Tessonics at +1(519)250-4455 or toll free +1(866)440-3313.

To complete these steps, you will need a computer with Internet connection. When updating an RSWA unit, you will also need a USB memory stick with at least 32 MB of memory free.

1.1 Downloading the Setup File

On a computer with an Internet connection, open a web browser and navigate to the Tessonics web site <http://www.tessonics.com>.

Navigate to Downloads section. Locate and download RSWA Software Setup file, e.g. RSWA Software Setup (3.9.5.49).exe.

Note: RSWA software can also be installed onto the desktop computer. Older versions of RSWA Reporter, Template Designer and Synchronizer are contained in this package.

1.2 Updating Software on RSWA Units

Copy the downloaded setup file from your desktop computer to a USB memory stick. Unplug the USB memory stick from the desktop computer.

Note: If you are running Windows 2000 or earlier, use the Safely Remove Hardware option before unplugging the drive, otherwise the file may be corrupt.

If the RSWA unit is not running, turn it on and wait until the unit boots up. Close all running applications. Log in as either the Admin user or as a user with System Administration permissions.

Note: If your screen does not look like the one in **Figure 1.1**, you will need to manually start the installer (start Windows Explorer; browse to the inserted USB drive; locate and run the setup file; proceed to Initial Setup Stages).

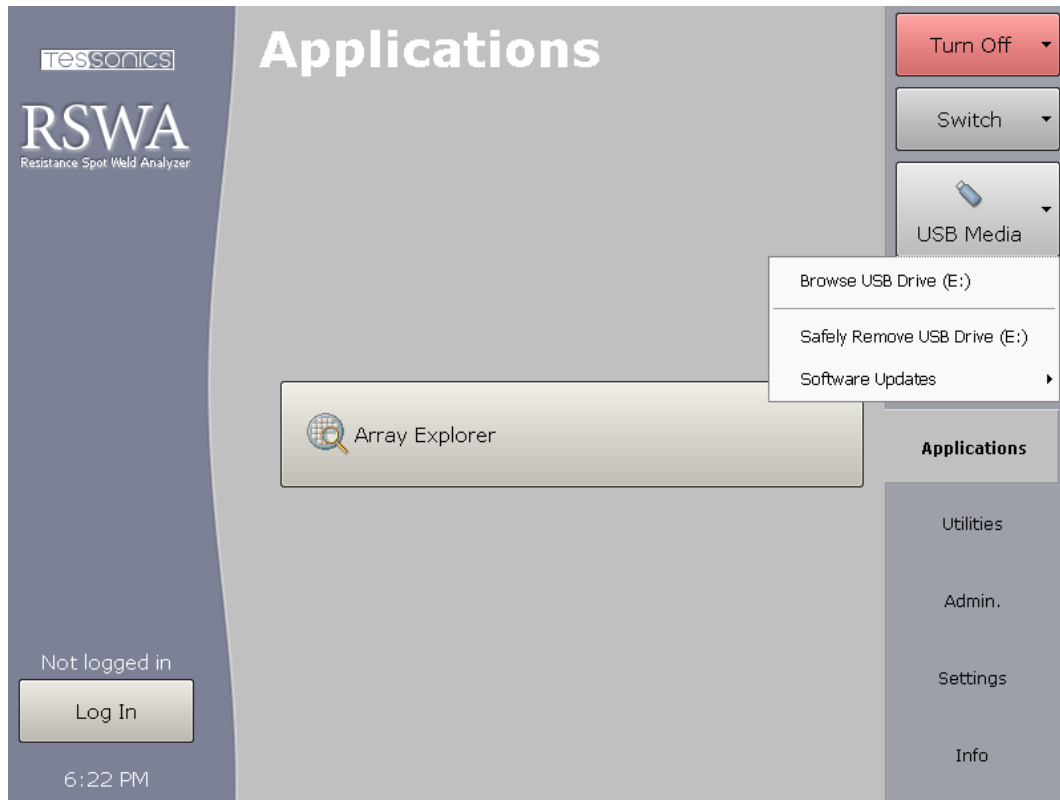


Figure 1.1 RSWA screen before updating the software

When you plug the USB memory stick into the RSWA, the USB Media button will appear at the right hand side of the Launcher screen (see the RSWA User Guide for information on the Launcher application). If the button does not appear, try to restart the RSWA unit. If this does not help, call Tessonics for assistance.

Click the “USB Media” button, then choose “Software Updates” and select the setup file to update the software. You can also choose “Browse USB Drive” to locate and run the setup file manually.

1.3 Installing and Updating Software on a Desktop PC

You can install the RSWA software on a desktop PC or a laptop running Microsoft Windows 2000 or later. After installing RSWA software on a desktop PC, you will be able to perform the following tasks:

- Open and review inspections exported from RSWA units (Reporter)
- Manage Users from a central location (Managing Users)

- Create inspection routes with part graphics (Template Designer)
- Generate inspection reports from collected inspections (Reporter)
- Synchronize information between RSWA units and a coordinator's PC (Synchronizer)

Note: Before you install or update the RSWA software, make sure all running applications are closed.

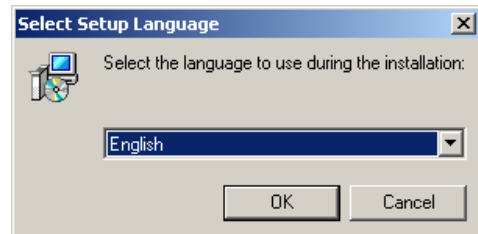
Locate the downloaded setup file and double click it to run the installer. Proceed to Initial Setup Stages.

1.4 Initial Setup Stages

Choosing Language

This setting only affects the language during the installation process. It does not change system or user language preferences.

Choose your language, then click **OK**.



Verifying Software Version

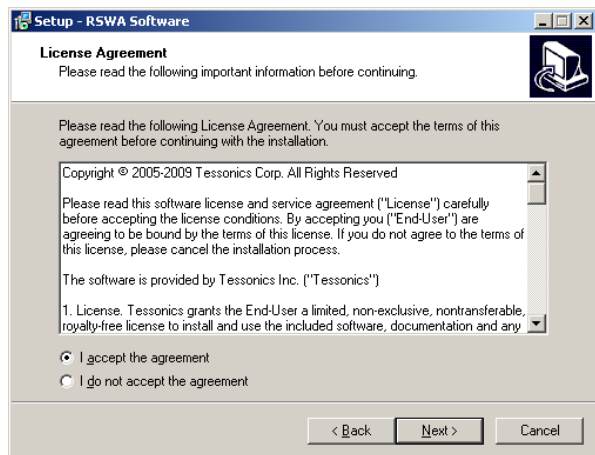
Make sure you are installing the latest version.

Click **Next** to proceed.



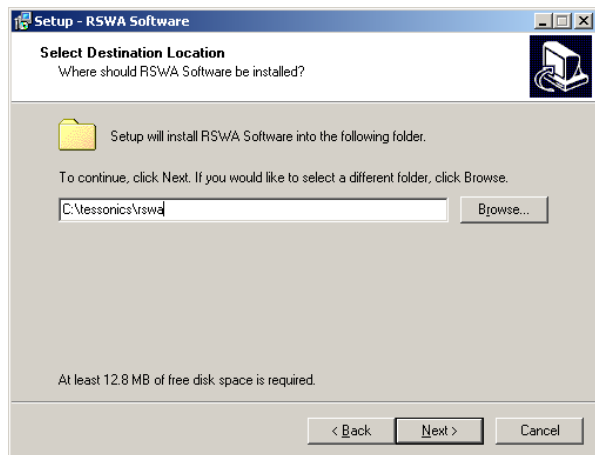
Reading License Agreement

Please review the software license agreement. You will only be able to proceed if you select the “I accept the agreement” option. Click **Next**.



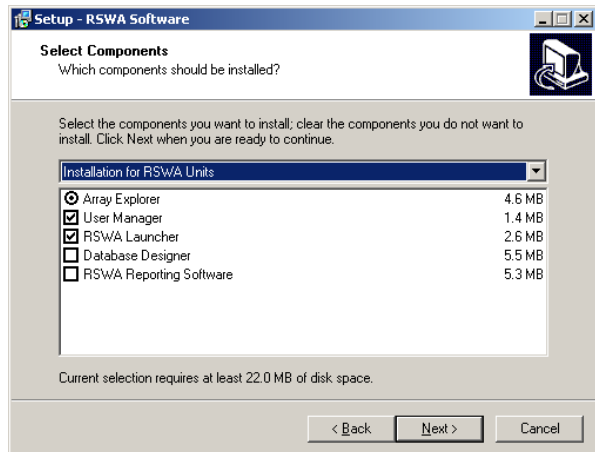
Selecting Destination Location

Choose the directory where RSWA files will be installed. It is recommended to keep the default path C:\tessonics\rswa. Click **Next** to continue.



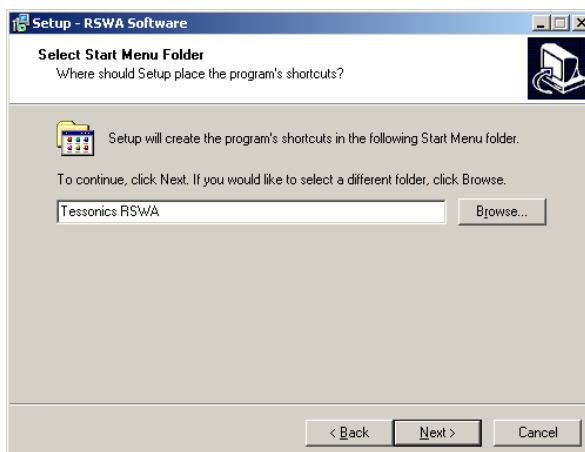
Selecting Components

In the next window, choose which software components are installed. Choose “Installation for RSWA Units” when installing the software on RSWA unit. If installing on a desktop computer or on a laptop, choose “Installation for Desktop computers”. When installing on a desktop computer, certain components (e.g. RSWA Launcher) are not installed. Click **Next**.



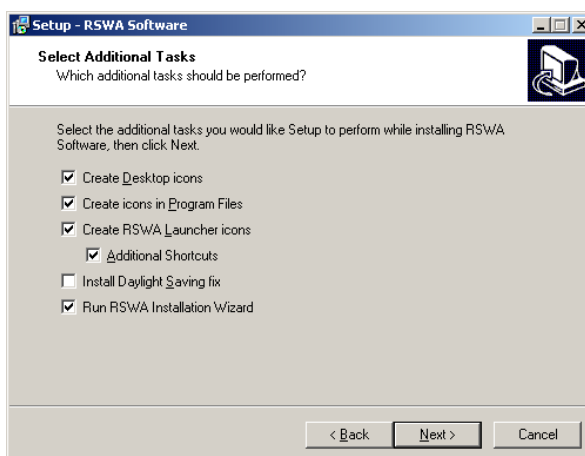
Selecting Start Menu Folder

Accept the default setting here when installing the software on an RSWA unit. Click **Next** to continue.



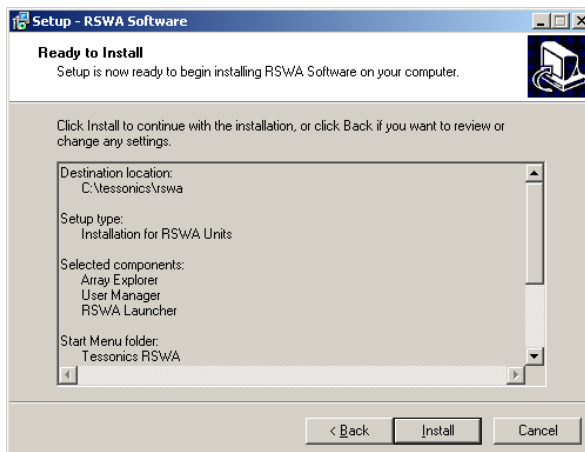
Selecting Additional Tasks

For installation on an RSWA Unit, keep the default options. If this is the first time you are running the installer on an RSWA, choose “Install Daylight Savings fix” to update some of the internal Windows components. Click **Next**.



Reviewing Installation Steps

Please review the installation steps, then click **Install** to continue.



1.5 RSWA Software Installation Wizard

The RSWA Installation Wizard runs automatically after the initial setup. This wizard configures the Array Explorer software.

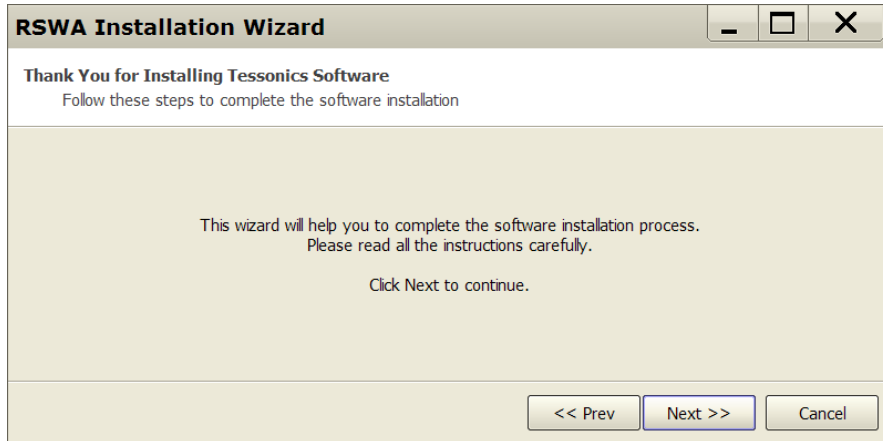


Figure 1.2 Running installation wizard

It is important to completely follow these steps if you are upgrading an RSWA from version 3.5.4 (or older) or when installing RSWA software on a Desktop computer. This wizard will skip through some of the steps if the task described in the step is already complete. (For example, Administrator Password page will not be shown if the administrator's password is already assigned.)

Click **Next** to proceed.

Assigning Administrator Password

Choose a password for the Admin user, and be sure to write it down and keep it in a safe place. If you loose or forget this password, you will need to go through the password reset procedure. For information on the Admin user, see Basic Concepts.

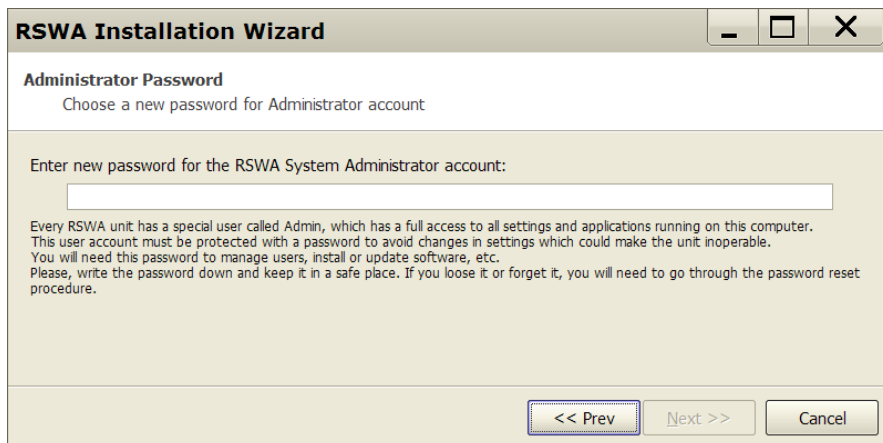


Figure 1.3 Assigning administrator password

Note: Choose a reasonably short (but still hard to guess) password. Remember that most of the time you will be entering it using touch screen. It is recommended to use the standard 26 characters from Latin alphabet, and digits. Avoid spaces and characters from other alphabets.

Note: RSWA Passwords are NOT case sensitive

Choose Admin password as shown in **Figure 1.3**, then click **Next**.

Creating First User

Optionally create a first local user with the permission to use the RSWA Array Explorer in standard mode. You can log in as a user with System Administrator permissions later and use the RSWA User Manager to add more local users. You could also use the RSWA Synchronizer to import shared users from a Coordinator PC.

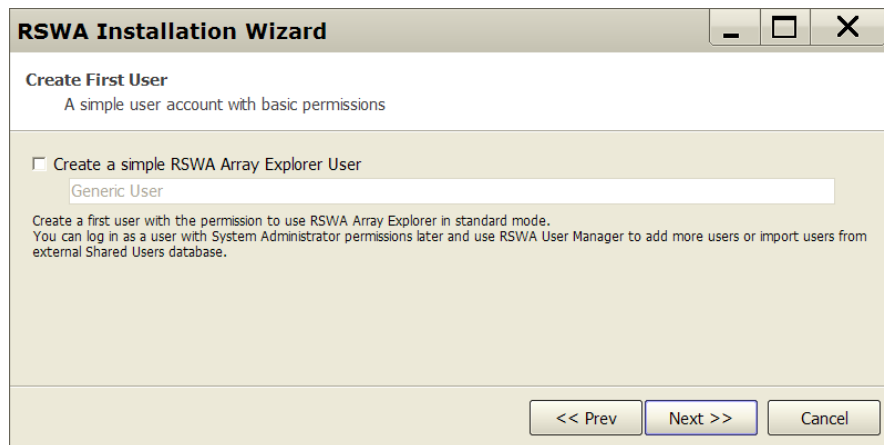


Figure 1.4 Creating First User

This step is only recommended for actual RSWA units, and not Desktop PCs. Click **Next**.

Replacing Windows Shell with RSWA Launcher

It is recommended to leave this option checked on all RSWA units (**Figure 1.5**). See the "V3 RSWA Software User Guide" document to learn more about the RSWA Launcher.

Warning: Do not check this box if you are installing this software on a desktop computer or on a laptop!

Note: If due to some reason you decide to un-install the RSWA software, please use the Launcher to switch Windows Shell back to standard otherwise you may make your system un-bootable.

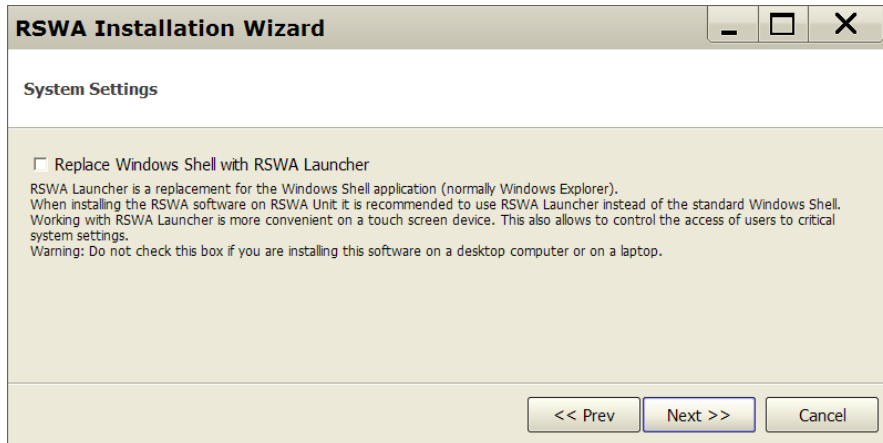


Figure 1.5 Replacing Windows Shell with RSWA Launcher

Click **Next**.

Activating Array Explorer License

A license is required to operate the Array Explorer software. **(Figure 1.6)** If you had a previous version of the software registered, you can transfer that license to the new application. Otherwise you can run the Software Registration Application to activate the new license. If you skip this step now, then the registration process will start automatically upon starting Array Explorer.



Figure 1.6 Activating Array Explorer License

Choose appropriate options, then click **Next**.

Reviewing Summary

Review the summary, then click **Next** to complete the installation **(Figure 1.7)**.

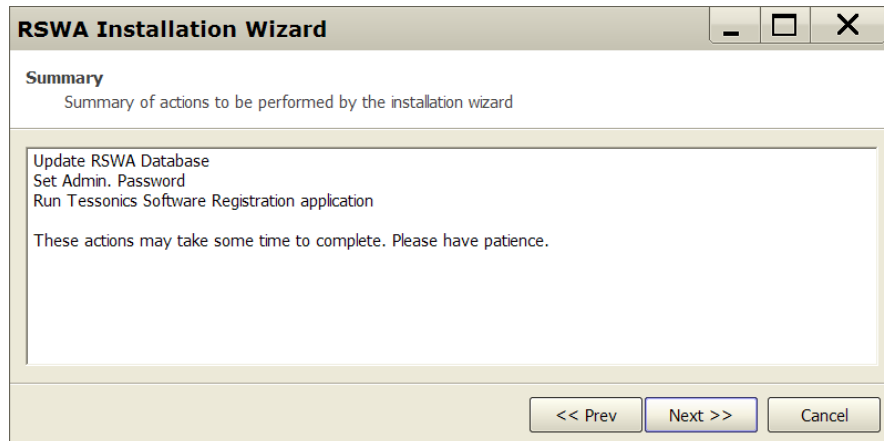


Figure 1.7 Reviewing Summary

Final Steps

You may need to restart the computer. This completes the software upgrade process.

Please visit our web site at www.tessonics.com regularly for updates to software and documentation.

If you have any comments, questions, or suggestions, please email us at rswa@tessonics.com or call us at +1(519)250-44-55 or toll free +1(866)440-3313.

2 Managing Users

Note: This section describes old version of the User Manager. Tessonics recommends using newer version of the designer software for managing RSWA users.

This chapter describes the User Manager – an application developed for managing users. The user information created by the User Manager is then used by other Tessonics applications.

User management provides the following benefits:

- Associate RSWA measurements with operators
- Control available options in user interfaces
- Enables the RSWA to manage Inspections for each user
- Control access to system settings and applications

2.1 Basic Concepts

User

Identifies the person who is using an application or RSWA so that access to functionality and data can be controlled.

Shared Users

Users that exist on many RSWA units and Desktop PCs with the same settings and permissions. This is meant to be used when a team of inspectors share many RSWA units. Additionally, data that is stored on individual units by shared users can easily be collected, merged, and redistributed.

Local Users

Users that only exist on one single RSWA. This is useful for individuals who only use one particular RSWA unit. This mode is only recommended for single RSWA units that do not use any Part Inspection types or Reporting. Local users on an RSWA are not known on a Desktop PC, and their names will not show properly.

Admin User

The user on every RSWA unit that has access to all applications, settings and data. This user is password protected and cannot be deleted or edited in any way. This user is only meant to be used for administration purposes.

Permissions

Used to limit and control users access to restricted functionality and data. There are no limitations as to how permissions are granted but users should be trained to use the restricted features and data before they are granted permission. Because permissions directly affect the execution of the applications we develop, the list of permissions that can be granted is maintained by Tessonics.

Passwords

All users have the option of password protecting their account but are not required to do so. Passwords are case-insensitive (i.e. PAssWOrd = password) and allow for any combination of characters (including spaces). In the event that a user forgets their password, it can be reset by the user management software.

2.2 Logging In

To start the user manager:

- From Launcher: switch to the Utilities tab, then click the User Manager button
- From Windows Desktop: Start → Programs → Tessonics and click the User Manager shortcut

If you are not logged in, the User Manager will ask you to log in. Only users with permission to run the User Manager will be shown. See the RSWA Users Manual for details on how to log in.

On an RSWA unit, the User Manager only works with Local users. On a desktop PC, the User Manager only works with shared users.

The user manager will display the group of users it is currently working with in the title bar; see **Figure 2.1** and **Figure 2.2**.

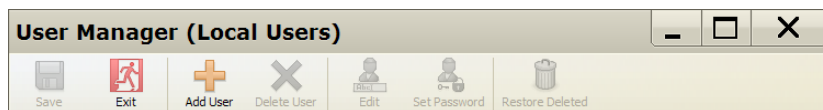


Figure 2.1 Editing local users – RSWA Unit



Figure 2.2 Editing shared users – Coordinator PC

2.3 Main Window

The main User Manager window is shown in **Figure 2.3**.

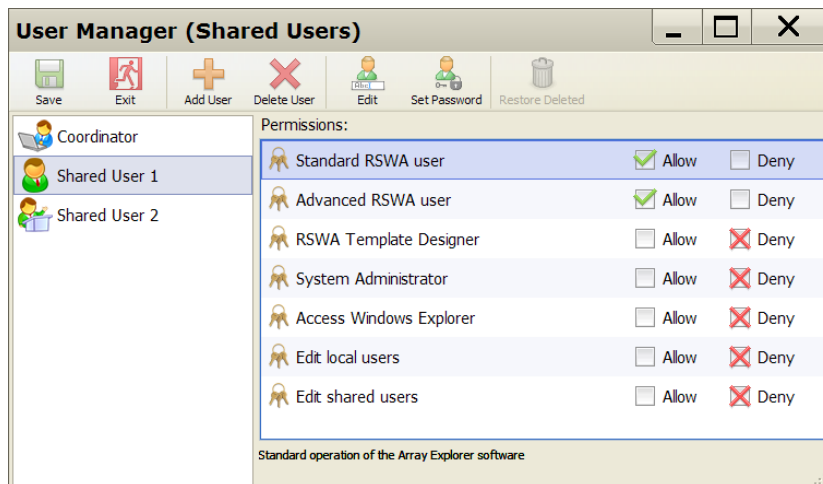


Figure 2.3 Main screen of user manager

The list on the left shows all the users on the RSWA and the list on the right shows the currently selected user's permissions. Permissions for the selected user can be granted or revoked simply by clicking the Allow or Deny check boxes.

Adding Users

Clicking the Add User button brings up the New User dialog window shown in **Figure 2.4**. Enter the new user's name and choose an image for the user from the list. Optionally, type in a password for the user, enter an email address, and choose a language preference for this user.

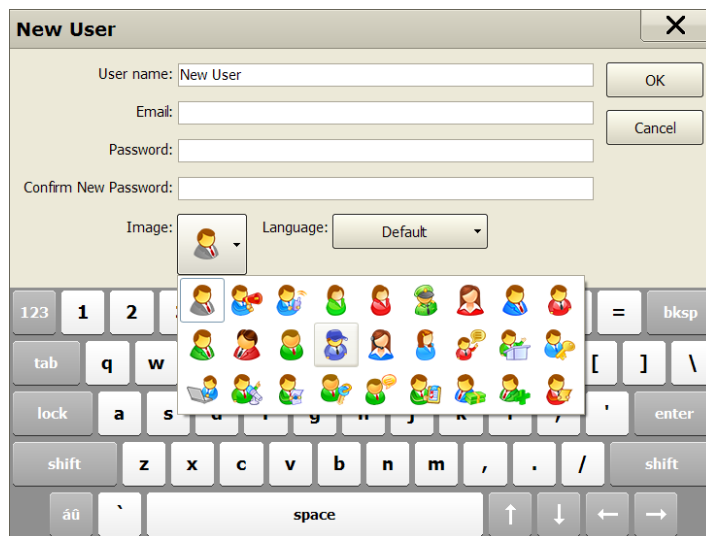


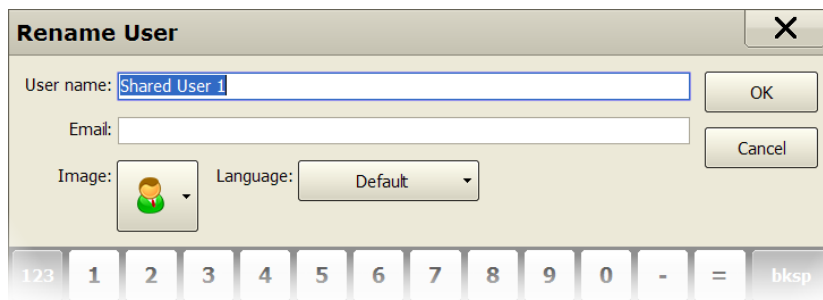
Figure 2.4 New user dialog

Deleting Users

Clicking the Delete User button deletes the selected user, placing all of their information into the trashcan. This deleted user is now unusable, and will not appear in the log in prompts.

Editing Users

Clicking the Edit button will display the prompt shown in **Figure 2.5**. This prompt is used to change the name, image, email address, or language associated with the currently selected user.

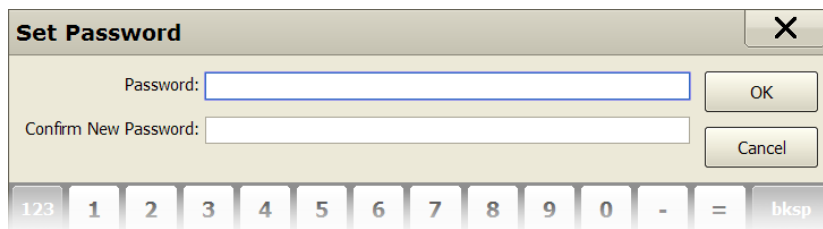


The image shows a dialog box titled "Rename User" with a close button (X) in the top right corner. It contains four input fields: "User name:" with the text "Shared User 1", "Email:", "Image:" with a small icon of a person, and "Language:" with a dropdown menu set to "Default". There are "OK" and "Cancel" buttons on the right side. At the bottom, there is a numeric keypad with buttons for digits 1-9, 0, "-", "=", and "bksp".

Figure 2.5 Rename user prompt

Setting Password

Clicking the Set Password button will display the Set Password prompt shown in **Figure 2.6**.



The image shows a dialog box titled "Set Password" with a close button (X) in the top right corner. It contains two input fields: "Password:" and "Confirm New Password:". There are "OK" and "Cancel" buttons on the right side. At the bottom, there is a numeric keypad with buttons for digits 1-9, 0, "-", "=", and "bksp".

Figure 2.6 Set password prompt

Enter in the new password twice to avoid typing errors, and press OK to save the changes.

Restoring Deleted Users

Click the Restore Deleted button will display the Deleted Users prompt shown in **Figure 2.7**.

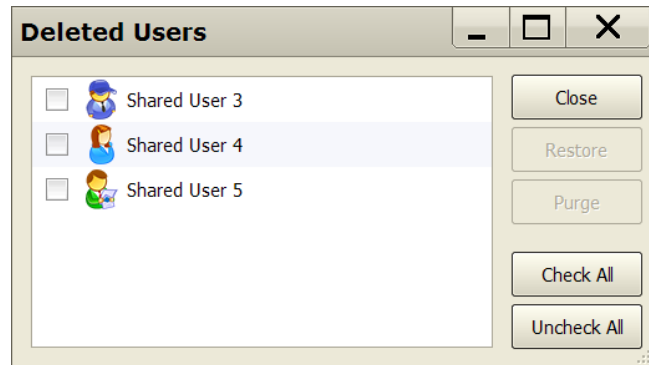


Figure 2.7 Managing deleted users

Select users by clicking on the checkbox next to their name, or by clicking the **Check All/Uncheck All** buttons in the lower right hand corner. Clicking **Restore** will undelete and restore those users to their original state. Clicking **Purge** will permanently delete the selected users.

Saving Changes

Clicking the **Save** button saves the changes you have made. This option is disabled if there haven't been any changes.

2.4 Managing Shared Users

The goal of shared users is to have consistent user names, passwords, and permissions in an environment where several operators have access to multiple RSWA units.



Similar to the RSWA Template Designer application, the RSWA Synchronizer takes care of ensuring each RSWA unit is up to date with the latest users. Managing shared users is done in the following manner:

1. Install the RSWA software onto a desktop PC (see Chapter Installing and Updating RSWA Software). Make sure the User Manager option is checked when you install the RSWA software.
2. Start the User Manager application, log in as Admin or as a user with shared user editing permissions.
3. Add, remove, or modify existing users as described earlier in this chapter.
4. Synchronize every RSWA unit using the Synchronizer application and a USB stick. Each RSWA will now have the updated Shared Users database.

2.5 Changing the Admin Password

The Admin user is in many ways different from other users. This account is not managed by the User Manager. It is also not shared; each RSWA or PC can have a different Admin password. We recommend picking a short, but hard to guess password for the admin user

and assign that same password to each PC or RSWA. To change the password for Admin, start the Admin Password utility:

- From Launcher – switch to Utilities tab, then click  **Admin. Password** button
- From Windows Explorer – go to Start→Programs→Tessonics and click  **Admin Password** shortcut

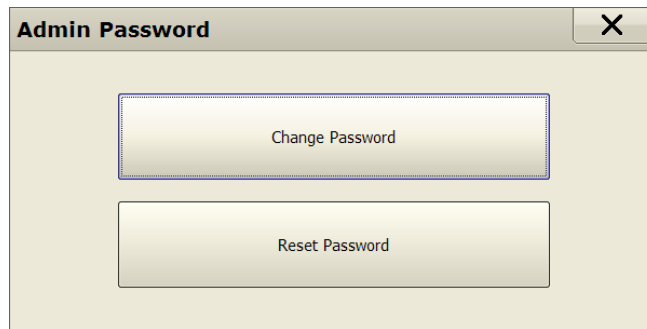


Figure 2.8 Admin Password application

In the Admin Password window, choose Change Password or Reset Password.

Change Password option

Allows you to change the Admin password if the existing Admin password is known. You will be prompted to enter the old password and the new password (see **Figure 2.9**). Hit **OK** to save the change.

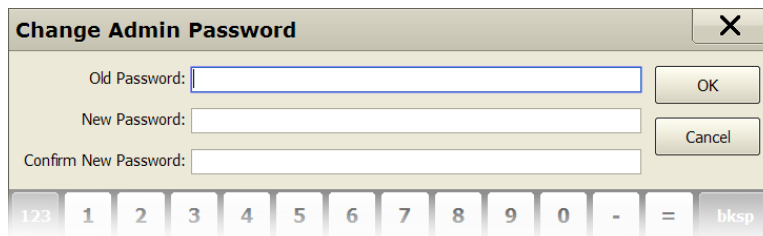


Figure 2.9 Changing Admin password

Reset Password option

Allows you to set the Admin password when the current Admin password is not known. To reset the password, call Tessonics, and we will provide you with a special password reset key which you will need to enter at the password reset prompt (see **Figure 2.10**). Hit **OK**, enter the new password, and then hit **OK** again to complete the operation.

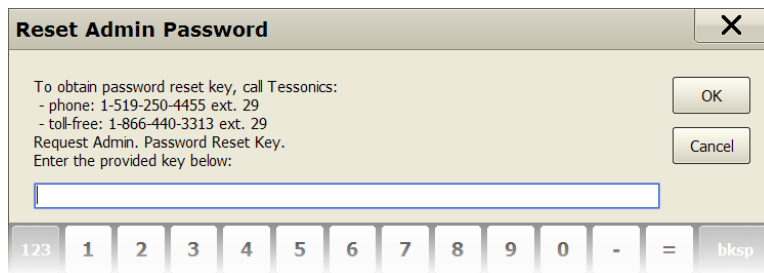


Figure 2.10 Resetting the Admin password

3 Template Designer

Note: This section describes an older version of the Template Designer. Tessonics recommends using newer version of the designer software for managing RSWA data.

The Template Designer Application is used for storing factory information into a database for RSWA operation. This enables your RSWA to use more advanced inspection types that help guide an inspector, keep track of all measurement data, and enable advanced data reporting for administrators.

Here are some terms that are used frequently throughout this section:

Part

A single real-life object that is manufactured with spot-welds.

Part Group

A collection of parts.

Default Group

The “Default” part group that always exists and cannot be modified by the user. If it is the only group that exists, the group selector is not shown on an RSWA unit. If it is empty, it is hidden from view and not used.

Image

A small picture showing a part and the welds that are on it. Each part can have many images (see Image Editor).

Weld

A spot-weld on a part. Each weld contains a number of properties for that spot-weld (see Weld List).

Weld Marker

The small label and circle on an image that indicates where a particular weld is on a part or model.

Reason

A short explanation as to why a weld was passed or failed (see Reason Manager).

Inspection Order

A numbered list of welds that defines the welds and order in which they are inspected (see Inspection Order Manager).

3.1 Main Window

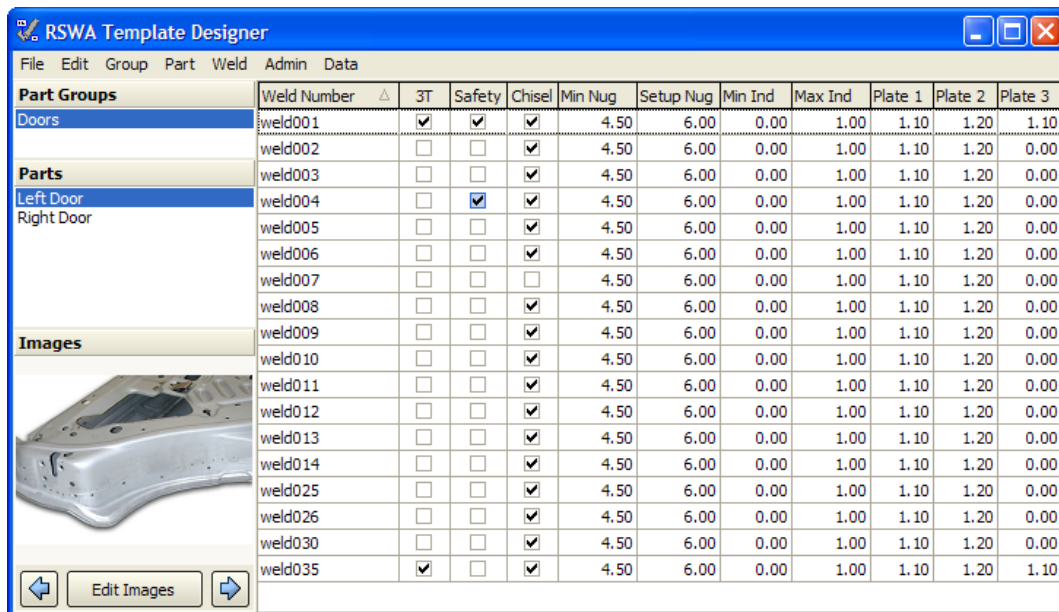


Figure 3.1 Main window of the Template Designer application

Part Groups

Shows a list of all the part groups that have been defined. Each part group can contain a number of parts. This is to break down and help organize a long list of parts that otherwise might be difficult to work with.

Parts Area

Shows a list of all the parts that belong to the currently selected part group. Selecting a part will make it become the active part. This will show its corresponding welds in the weld list and one of its images in the Image Area.

Images

This area shows an image of a spot welded part. You can change which image is shown by clicking on the arrow buttons on the bottom. The images available to be shown correspond to which part you have selected. To manage the images press the “Edit Images” button on the bottom (see Image Editor for more details.)

Weld List

The list of all the welds that belong to a selected Part. Using this grid you can add, edit, and modify welds in the list. This list looks and acts much like a regular spreadsheet does.

Each row represents one spot weld on an assembly line. Each column represents a property of a weld, and are explained below.

3T

A checkmark indicates if this weld is a 3T weld or not.

Safety

A checkmark indicates whether or not this weld is a safety weld.

Chisel

A checkmark indicates whether or not this weld can be checked by a hammer and chisel

Min Nug

The minimum size of the nugget

Setup Nug

The setup (nominal) size of the nugget

Min Ind

The minimum size of the indentation

Max Ind

The maximum size of the indentation

Plate1

The thickness, in mm, of plate 1

Plate2

The thickness, in mm, of plate 2

Plate3

The thickness, in mm, of plate 3. This is only used if the weld is marked as 3T.

Like a spreadsheet, use the arrow keys to move around the cells and enter in new values. Pressing down to the end of the list will add a blank new weld. Pressing Insert will also add a new weld to the bottom of the list. Pressing Escape during any editing or adding will cancel the action.

The grid can be sorted by any one of these columns by clicking on the column name at the top of the grid. If you are adding or editing a weld, sorting will cancel the action.

To delete a weld, highlight the weld you want and press Delete. Be sure that you are not editing the weld before you press delete.

Main Menu

The main menu provides the following commands:

File→Save

Save all changes made to the database. Any current weld editing is cancelled during a save.

File→Exit

Exit the Designer application.

Edit→Paste from Clipboard

See Import Weld Data for more information.

Edit→Import XML File

Use this function to select a properly formatted XML file for input into the designer. See XML Import for more information.

Group→Add Group

Creates a new, empty part group.

Group→Delete Group

Deletes the currently selected group. All parts that belonged to this group are moved to the Default group.

Group→Rename Group

Allows you to rename a part group.

Part→Add Part

When selected, a small box pops up asking for the name of the new part. Type in a part name, and then press OK. The new part then is added and selected in the Part List.

Part→Rename Part

Allows you to rename the currently selected part.

Part→Delete Part

Deletes a part, and all of the associated welds, images, and inspection orders. This option is only available to the admin user, due to deletion being unrecoverable.

Part→Move Part

When selected, a list of other part groups becomes available. Select a different part group, and the currently selected part is moved to that part group.

Weld→Add Weld

Add a new weld into the weld list. This is the same as pressing the Insert key on your keyboard.

Weld→Delete Welds

Deletes the currently selected welds from the list. This is the same as pressing the Delete key on your keyboard.

Weld→Edit Selected

Allows editing many welds at once. This option is useful for setting many different welds to same parameters without entering information repeatedly.

Admin→Reasons

Launches the Reason Manager, see Reason Manager.

Admin→Inspection Order

Launches the Inspection Order Manager, see Inspection Order Manager.

Data→Setup Data Source (Admin user only)

Launches the Data Source wizard, see Data Source Wizard.

Data→Save Current Data (Admin user only)

Allows saving all current RSWA data (users, passwords, inspections, etc) into one file for backup purposes.

Data→Load Data (Admin user only)

Lets you choose an RSWA data backup file to restore to.

Warning: Load Data will completely overwrite all of your current data. Use with caution!

Note: All data operations can take a long time to complete, have patience.

Import Weld Data

Weld data can be imported from other applications, like Excel, by using the 'Paste from Clipboard (Ctrl + P)' feature found in the Edit menu. This feature will add any weld data found on the clipboard to the selected part. If the clipboard contains duplicate weld data or data that is not formatted correctly it will simply be ignored.

Import Weld Data from Excel

If you already have all your weld data in Excel, rearrange it so it looks like the data in the example. If you are missing certain information, just use a default value, like 0 or 'n'. Any default values can be edited later on from within the designer. Once your data is formatted correctly, select it all, copy it to the clipboard (Ctrl+c), bring up the designer, and then 'Paste from Clipboard (Ctrl + P)'.

Weld Number	3T	Safety	Chisel	Min Nug	Setup Nug	Min Ind	Max Ind	Plate 1	Plate 2	Plate 3
weld123	n	y	y	4.5	5.5	0.05	0.5	1.1	1.2	0
weld456	y	y	y	4.5	5.5	0	0	1	1.5	1
weld789	n	n	n	0	0	0	0	0	0	0

Import Weld Data from other applications

When data is copied in Excel, columns are separated by tab characters and rows are separated by new line characters. So when copied from Excel, the example above will actually store the following string to the clipboard. Any software that can produce weld data in this format can export weld data to the designer.

```
weld123[tab]n[tab]...[tab]0[new line]weld456[tab]...
```

Image Editor

The Image Editor is used to manage and edit the images associated with the currently selected Part. Using this editor allows you to add images to a part and place weld markers on each image. A screen shot of the Image Editor is shown in **Figure 3.2**:

Toolbar

Save and Close

Save all changes made and exits the Image Editor. (This only saves changes made inside the Image Editor. You still need to select "Save" from the main menu in order to save all changes to disk).

Add Image

Clicking this brings up the usual "Open File" pop-up most windows users are familiar with. Simply choose the image that you want to add and press OK.

Delete Image

Clicking this deletes the currently selected image. (It is only truly gone if you save and close the Image Editor and then save from the Designer main menu).

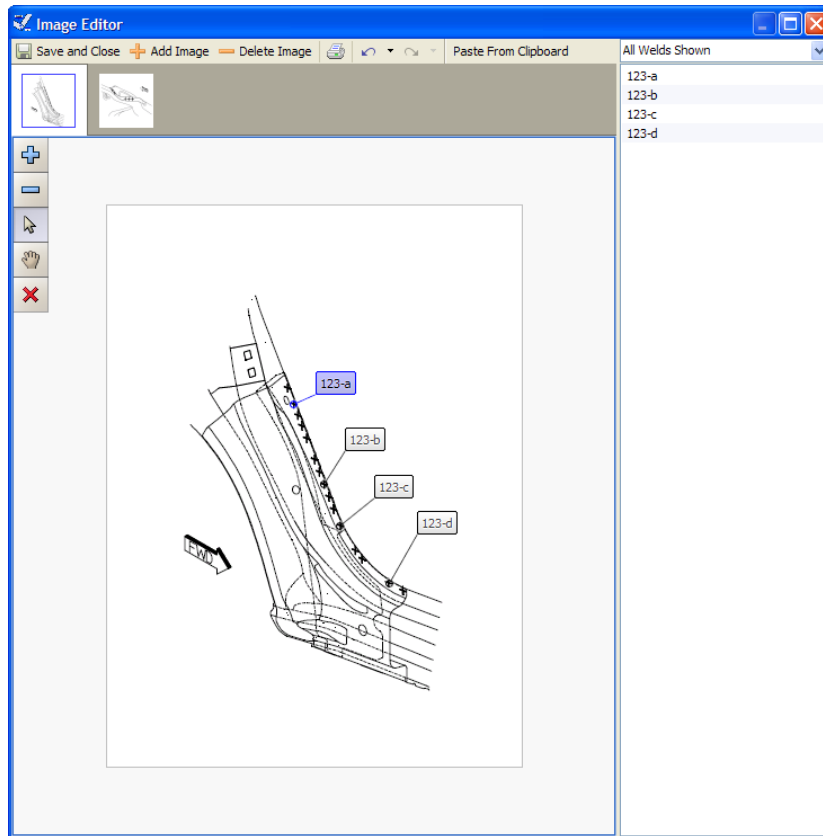


Figure 3.2 Image editor

Print

Click this button to print out the Image and the weld markers that are placed on it.

Weld List Filter

Clicking and selecting an option from this filter will only show welds that meet the filters conditions. This is meant to trim down the possibly long list of welds, and to help point out welds that might be missing or missing a marker on an image.

Undo

Undo the last change you made.

Redo

Redo the last change (revert the pervious Undo operation).

Image Selector

This horizontal bar shows all of the images associated with the currently selected Part, and shows which image is currently being shown. If the number of images to choose

from is large, two buttons appear that let you scroll horizontally through the list of images to find the one you are looking for.

Weld List

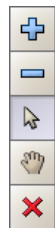
Shows a list of welds that can be placed on an image. Clicking on a weld that is already assigned to the currently displayed image will highlight that weld on the image. To add a weld to an image, just drag and drop the desired weld onto the image. A weld cannot appear in the same image twice; trying to add a second marker for a weld for the same image results in the first marker being erased.

Image Display

This large section shows what will be displayed on the RSWA screen. It shows the currently selected image and all of the markers that are placed on this image.

The buttons in the upper left corner of the image display provide the following functions:

- Zoom in
- Zoom out
- Switch to Selection mode
- Switch to Pan mode
- Delete selected markers



To move a marker and its tag, simply click on the marker or tag and drag it around the image. Clicking on a marker will also highlight the markers weld in the weld list automatically

Reason Manager

The reason manager lets you add, delete and modify the reasons an RSWA user can select for passing or failing a weld.

Each reason consists of the following properties:

Decision

Either pass or fail

Method

How it was determined that this weld passed or failed

Description

Optional additional information

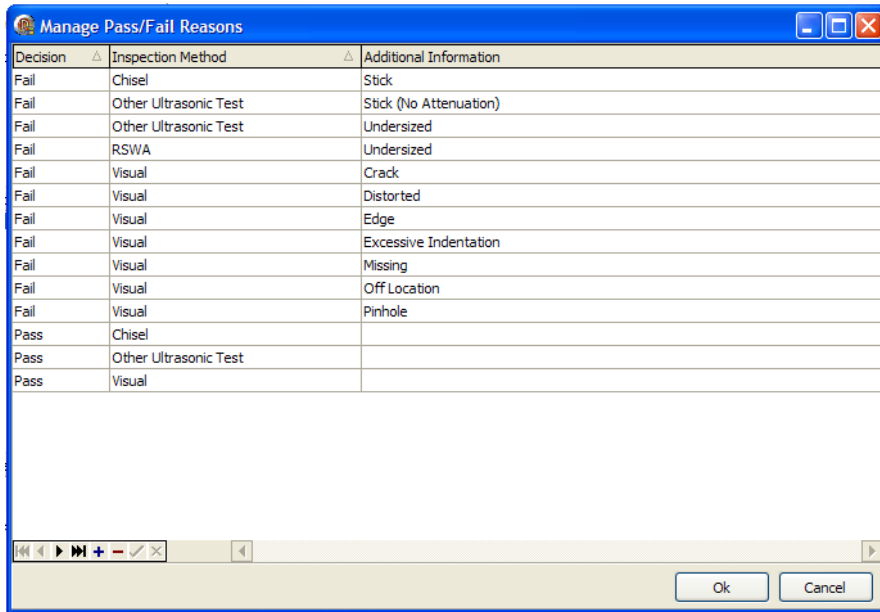


Figure 3.3 Reason manager

Similar to the weld list, the reason manager shows a table of reasons. Each row represents one reason, and each column is a property of that reason. You can add and delete reason using the buttons in the lower left corner of the list.

To edit a reason, just click on the appropriate cell and enter in the new value. Press OK to save you changes and return back to the main window, or press “Cancel” to lose your changes and return back to the main window. (Once again, all of your changes are only truly saved if you select “Save” from the main menu).

Inspection Order Manager

An inspection order specifies which welds are inspected and the order that they are inspected. The inspection order manager lets you add, delete, and modify the inspection orders for the currently selected part.

The idea behind inspection orders is to guide an RSWA user to only check certain welds, and to check them in a particular order. The avoids needless shuffling during spot-weld inspection and lets an inspector focus on the welds that are most important.

Note: If no inspection orders are defined for the current part (“Default” is empty), then all the welds will appear on an RSWA in alphabetical order.

The inspection order manager was written to be simple and intuitive. To add welds to an inspection order, either drag and drop or double click on welds and drag them into the inspection order list. Moving and deleting involves either using the three buttons underneath the inspection order list or dragging and dropping. Read on for a more complete description of this manager.

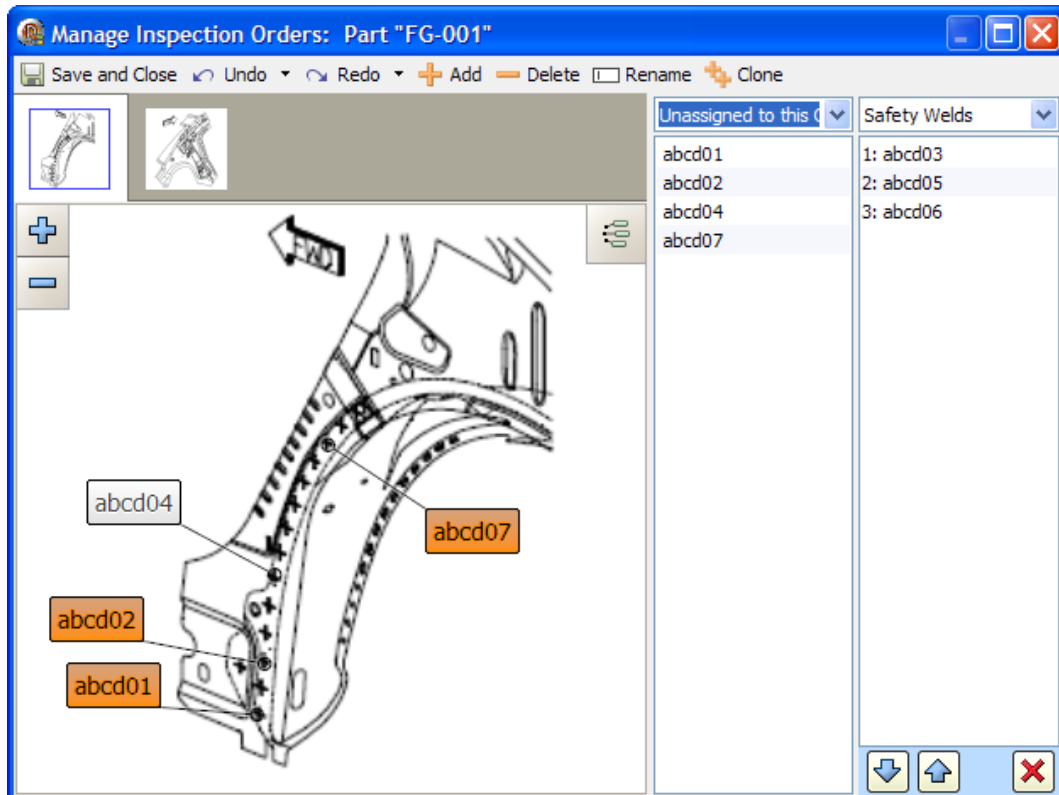


Figure 3.4 Inspection order manager

Toolbar

Save and Close

Saves any changes you have made and exits the Inspection Order Manager. Keep in mind you still need to select “Save” from the main menu to finally write the changes to disk.

Undo

Will undo the last change you made. Pressing the arrow on this button will show the list of actions that you can undo.

Redo

The opposite of undo, allows you to revert the actions that you have “undone”. Pressing the arrow on this button will show the list of actions that you can redo.

Add

Lets you add a new inspection order to this part. A window will pop up asking for you to input the inspection order name (For example, “Critical Welds”).

Delete

Pressing this will delete the currently selected inspection order. A window box will pop up to double check you actions.

Rename

This allows you to rename the currently selected inspection order. A window will pop up asking you to input the new name.

Clone

This will clone (duplicate) the currently selected inspection order into a new inspection order with a different name. The reason for this action is so that you can take an existing inspection order and make a new, slightly different inspection order with less work.

Image Selector

Similar to the image editor, this horizontal list shows all of the images belonging to the currently selected part. If the list grows too large, some scrolling buttons will appear. Clicking on a thumbnail will show that image in the image area.

Image Display

The image display shows the currently selected image and weld markers that are on it. Which weld markers (if any) are shown depends on what weld filter is chosen in the weld List. Similar to the image editor, you can zoom in and select welds. You can always pan and select welds, so no hand or pointer button is provided. At the top right there is a button that will toggle on or off the displaying of all weld markers.

To add a single weld to the current inspection order, double click that weld. It will be added to the end of the inspection order.

You can also add welds to the current inspection order by dragging and dropping welds from the image display into the inspection order list. Select the welds that you would like to insert by clicking on them (hold down Ctrl to select multiple welds), and then drag them into the inspection order list. You will see an insertion bar appear to let you know where these welds will be inserted.

The image display is meant to help you visualize the inspection order as you work, and does not represent all welds that are on a part. This is due to the fact that not all welds might be shown in an image. Some welds might not be in any image, but are still on a part. For this reason, consider the image area to be a useful tool, but not the primary source for welds.

Weld List

This list shows the welds that are on a part. Just above this list is the weld list filter, which only shows welds that meet certain conditions. This filter acts on both the weld list and the current image. The options are as follows:

All Welds

This option filters nothing, simply showing all welds that belong to the current part.

This Graphic Only

All welds in the current image are shown. Only welds that are in the current image are shown in the weld list.

Assigned to this Order

Only welds that are part of the currently selected inspection order are shown. Use this option to visually see in the image area which welds are part of the current inspection order.

Unassigned to this Order (default) Only welds that are not part of the current inspection order are shown. This way, as you add welds to the current inspection order, you see them disappear and you do not re-add them.

Unassigned to any Order

Only welds that are not part of any inspection order are shown. Use this option as a check to see if any welds have been left out.

To add a weld from the weld list to the current inspection order, just double click that weld. It will add to the end of the current inspection order.

As with the image display, you can also select some welds first and then drag and drop them to a specific position in the current inspection order. Hold down Ctrl key and make your selection of welds in the list, and then drag them over the inspection order list. An insert cursor will appear showing where the welds will be inserted, and let go of the mouse button to insert them.

Inspection Order List

This list shows the current inspection order. A numbered list of welds is shown, corresponding to the order in which those welds will be checked. It is sorted by position, the top is where the inspection order starts and the bottom is where it ends. Above the list is the inspection order selector. Click this will bring up a list of all the inspection orders for this part. Click the inspection order that you want, and that inspection order will be shown and become the current inspection order.

To select welds in the inspection order simply click on them. (Hold down Ctrl key to select multiple welds). You will see as you select welds, they are also selected in the image area and the weld list. This is to help visualize the inspection order.

Once you have selected some welds in the inspection order, you can perform the following actions:

Move

Pressing either the up or down arrow at the bottom of the inspection order list will move the selected welds up or down one spot in the list. You can also do this using drag and drop, similar to how welds can be added in the first place.

Delete

Pressing the X button at the bottom of the Inspection Order list will delete the selected welds from the inspection order. You can also press Delete on the keyboard to do this.

3.2 XML Import

XML Import provides a way to automatically import any data that can be hand created in the template designer.

XML Import option can import parts, part groups, images, welds, inspection orders, and weld markers, like a more advanced version of paste from clipboard. This feature is mainly meant for IT managers who already have their factory data in some electronic format, and want to quickly import it for RSWA usage.

For more information, please contact Tessonics.

3.3 Data Source Wizard

All of the data (parts, users, measurements, etc..) that is used by or collected from the RSWAs is stored on the desktop computer where the Synchronizer, Template Designer, etc... is installed. It is possible to tell the software to store and retrieve data from a different location like a shared network drive. Storing the data on a shared network drive has two major benefits:

1. network drives are usually backed up on a regular basis
2. data can be shared by all who need it

There are two reasons you would use the data source wizard:

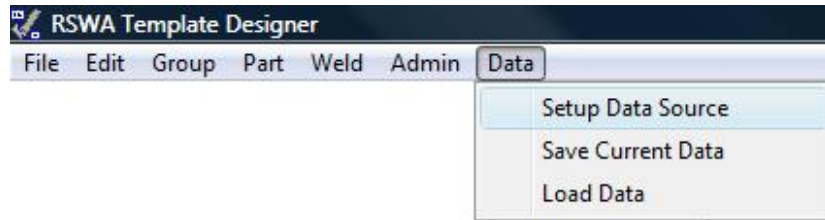
1. move existing data to a shared location (i.e. make it available to everyone)
2. point software to a shared location that already has data

It is important to know which action you are going perform before using the wizard.

Opening the Data Source Wizard

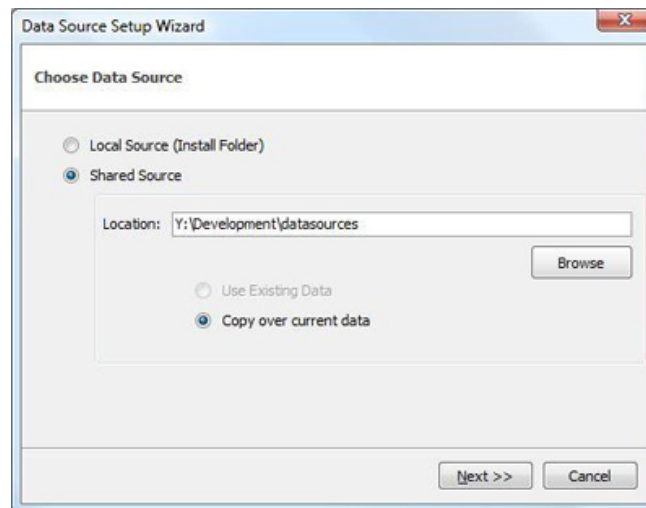
Changing the data source is an important operation and care should be taken when switching data sources. Because it is an important procedure, you must be logged in as

Admin in order to use it. When you log in as Admin, a new toolbar options will be available. To open the Data Source Wizard, select 'Data > Setup Data Source'.



Moving existing data to a shared location

The goal here is to make the data stored on a desktop accessible to others by moving it to a shared location.

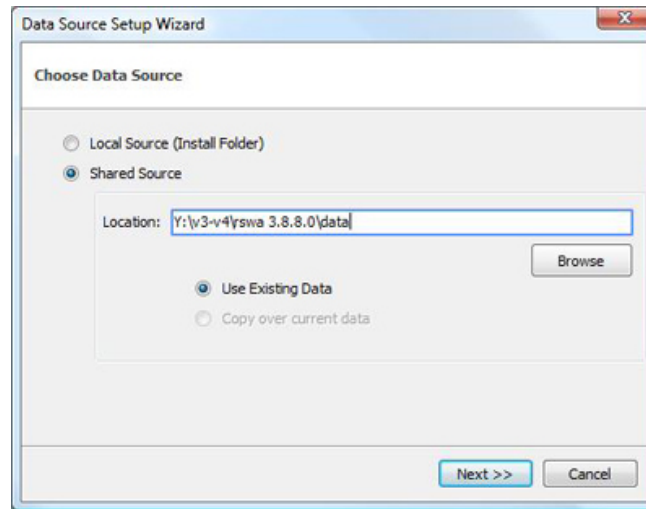


1. make a new folder on the drive
2. open the data source setup wizard
3. select shared source and browse to the new folder
 - you may get an error message indicating some file are missing; this is ok
4. double check that the option 'copy over current data' is selected, then click next
5. uncheck 'Make Full Backup of current Data', then click next
 - data will not be deleted from your hard drive
6. read the summary, then click finish

Once the data is copied over, the designer will restart. After it restarts, everything should look the same, however, now all changes will be saved to the new data source.

Pointing software to a shared location that already has data

The goal here is to tell the software to work with the data that is saved on the shared network drive.



1. figure out where the data is saved
2. open the data source setup wizard
3. select shared source and browse to the new folder
 - you should not get any error messages
4. double check that the option 'Use Existing Data' is selected, then click next
5. uncheck 'Make Full Backup of current Data', then click next
 - b data will not be deleted from your hard drive
6. read the summary, then click finish

The software will restart. After it restarts, you should have access to the data that is on the shared drive.

3.4 Image Optimization

One of the major factors that slows down the operation of RSWA is large images. If the imported graphic is too large, the data transfer during synchronization takes longer. The time it takes to load an image in the Array Explorer is also longer.

To address these issues, the image optimization dialog box allows to resize and recompress the images in the database.

Note: Please back up the database before optimizing images

To optimize the images log in as Admin, then in the main menu, choose Data -> Optimize Images.

The upper part of the image optimization dialog shows all the images in the database.

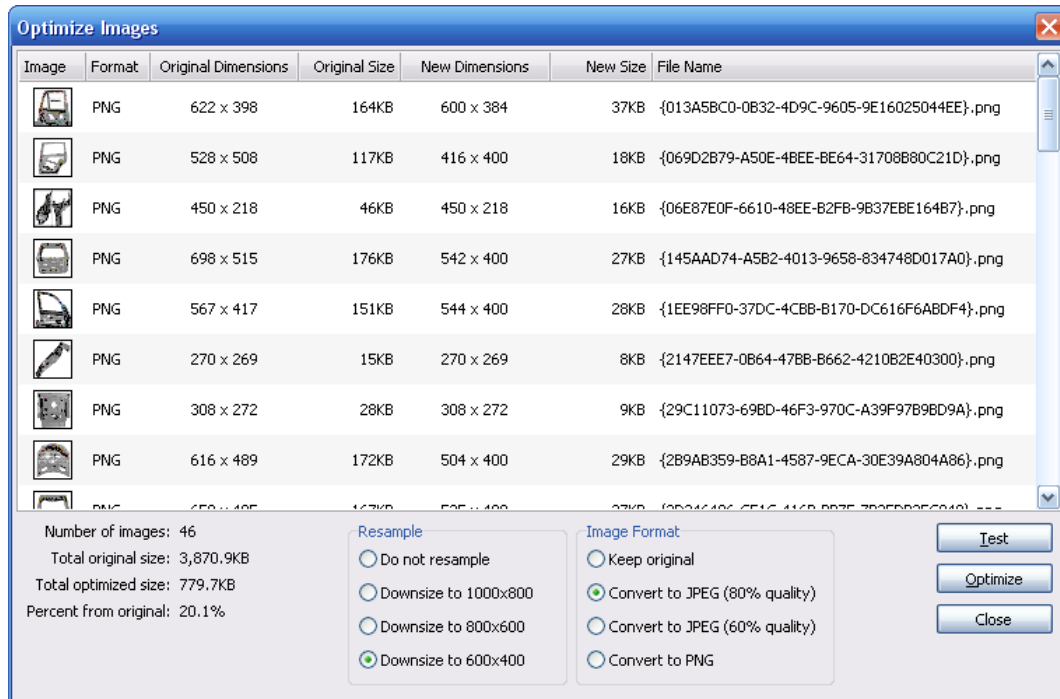


Figure 3.5 Image optimization window

Image List

Image

shows thumbnail of an image

Format

current storage format of an image, PNG or JPEG

Original Dimensions

dimensions of an original image in pixels

Original Size

size of an original image file

New Dimensions

dimensions of an optimized image in pixels

New Size

size of an image file after the optimization

Statistical Data

Statistical information is shown in the lower left corner:

Number of images

the number of images in the database.

Total original size

the total size of images before optimization

Total optimized size

the total size of images after optimization

Percent from original

the percentage of optimized size to the original size

Resample Box

The Resample box allows to choose how an image is resized:

Do not resample

keep original dimensions of an image

Downsize to 1000x800

optimized image dimensions not to exceed 1000x800 pixels

Downsize to 800x600 (recommended)

optimized image dimensions not to exceed 800x600 pixels

Downsize to 600x400

optimized image dimensions not to exceed 600x400 pixels

Image Format

The Image Format allows to choose the new storage of an image:

Keep original

keep original storage format

Convert to JPEG (80% quality)

save as JPEG image with moderate compression

Convert to JPEG (60% quality)

save as JPEG image with high compression

Convert to PNG

save as PNG image

For most images, it is recommended to choose JPEG (80% quality).

Completing Image Optimization

After you set up all the parameters, push the Test button and verify the statistical information to see how much space the optimization will save.

Proceed to optimization by clicking the **Optimize** button.

Once optimization is completed, click the **Close** button.

4 Synchronizer

The RSWA Synchronizer application is used to transfer updated information between RSWA units and a coordinator's PC.



Figure 4.1 Synchronizer window

Synchronization device

Shows which USB key you are going to use for synchronization.

Import

Transfers information from the selected device into the RSWA or PC you are using.

Export

Transfers information from the RSWA or PC you are using into the selected device.

Eject

Un-mounts the USB key from the RSWA or PC you are using, so you can safely pull it out of the RSWA or PC. (Press this button first, before taking out the USB key).

Machine ID

Shows the machine ID of the RSWA the synchronizer is being run on (N/A for a PC).

Synchronization ID

Displays the Synchronization Id. Data will only be synchronized if the Coordinator computer and RSWA have the same Synchronization Id. To change the Synchronization Id click the (...) button.

Synchronization device status

Shows the actions you can currently take.

4.1 Data Flow

A diagram showing how to use the synchronizer program is shown in **Figure 4.2**:

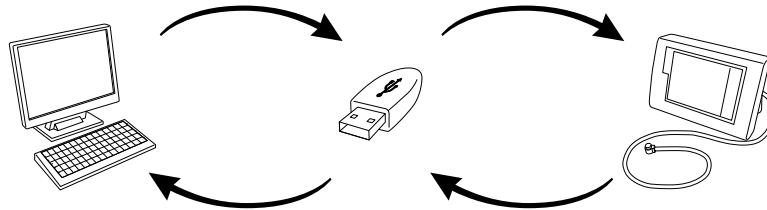


Figure 4.2 RSWA data synchronization

When Running on Coordinator's PC:

Export – Copies all the setup information created on this PC to the selected synchronization device. This includes:

- Weld template data (created by the template designer)
- Pass/fail reasons (created by the template designer)
- shared users (created by the user manager)

Import – Copies all the measurements on the USB key to the coordinator's PC. This data can then be used by the RSWA reporting software to view and generate weld reports.

When Running on RSWA:

Export – Copies measurements taken by the RSWA to the selected synchronization device. When started, a date selection window pops up that allows a user to choose which range of dates to copy. This cuts down on the amount of data and time used to synchronize. (Example: If you synchronized yesterday, only today's measurements need to synchronize). Pressing the 'hourly' button on the date selection window allows a user to select only the measurements that are less than a certain number of hours old. Pressing the 'daily' button brings back the date selection.

Import – Copies all the setup data from the USB key to an RSWA (shared users, weld template data, etc.)

4.2 Usage Scenario

An example usage scenario of the RSWA synchronizer program would be to first create the list of all the shared users on the coordinator's PC. Then create all the weld template

data with the template designer program. Plug in a USB key to the coordinator's PC, and then export the data. Take this key to each RSWA, and press import on each RSWA. Now all the RSWA's are ready to use advanced inspections.

After some time, you'd like to collect all the measurement and inspection data that the RSWA units have generated. Plug in a USB key into each one of them and press export. This will collect all of the measurement data. Bring the USB key back to the coordinator's PC, plug it in, and press import. You can now run the RSWA reporter application to generate and view reports on this information.

5 Reporter

Note: This section describes an older version of the Reporter. Tessonics recommends using newer version of the reporter software for managing RSWA data.

The RSWA Reporter allows a coordinator to review inspections and generate reports based on these inspections.

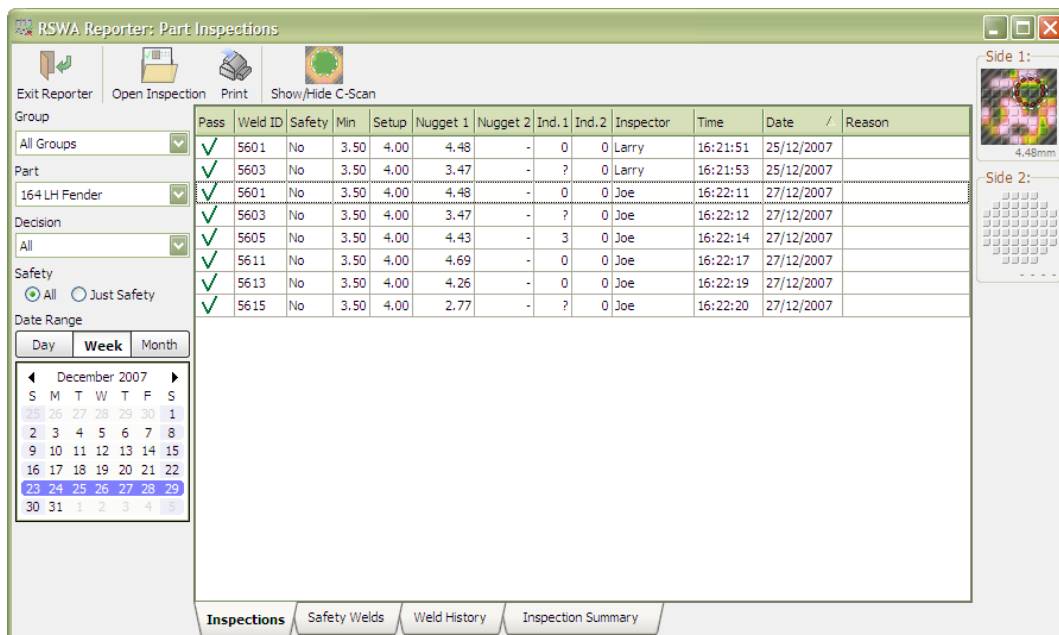


Figure 5.1 Main window of the Reporter application

5.1 Part Mode Reports

The main window of the reporter shows the measurements obtained in the part inspection mode.

Each report type shows its data in the content area primarily through an spread-sheet-like table of data. Each column can be sorted by clicking on the header for it at the top of the grid.

The area at the left shows the filters that affect what data is shown in the content area.

Part

Choose the part for viewing

Decision

Show all welds, passed, welds, failed welds, or welds with no decision

Safety

Show all welds or only safety welds

Date range

Click to select a day, week, month, or all of time. (“All” tells the reporter to ignore the date, and display everything).

Weld List Select a particular weld with this list.

Use the tabs at the bottom of the window to switch between the following report types:

Inspections

Simply shows the welds that have been inspected for the selected part and date.
Does not show welds that haven’t been checked.

Safety Welds

Shows all the safety welds that belong to the current part, and shows how many times these safety welds were inspected. Useful to find out how many safety welds were checked, or not checked.

Weld History

Choose a part and a weld, and this report shows you the history of that weld for a certain time range.

Inspection Summary

Choose a date range, and this report shows the inspections that have been performed for that date range. Double clicking on an inspection will automatically load that inspection for viewing (Same as using the Open Inspection button).

5.2 Opening Inspections

Similar to the RSWA Array Explorer, this mode lets you open and view an inspection. If you have no parts defined in the RSWA template designer, then this is the only mode you can use.

The top of the screen displays the inspections name, data, and operator who performed the inspection. Below that is a list showing all of the welds that were inspected. You can choose to hide the C-scan image if you like, or show a small or large C-scan image by pressing the toolbar buttons on the top of the page.

To open an inspection, press the Open Inspection button on the toolbar. A window pops up that lets you select which inspection to open. Choose a date and an operator on the

left side, and then inspections matching that criteria will be shown. Choose which inspection you want and press Open. If needed, you can open an inspection file, and also save an inspection to a file via the Open From File and Export Inspection buttons.

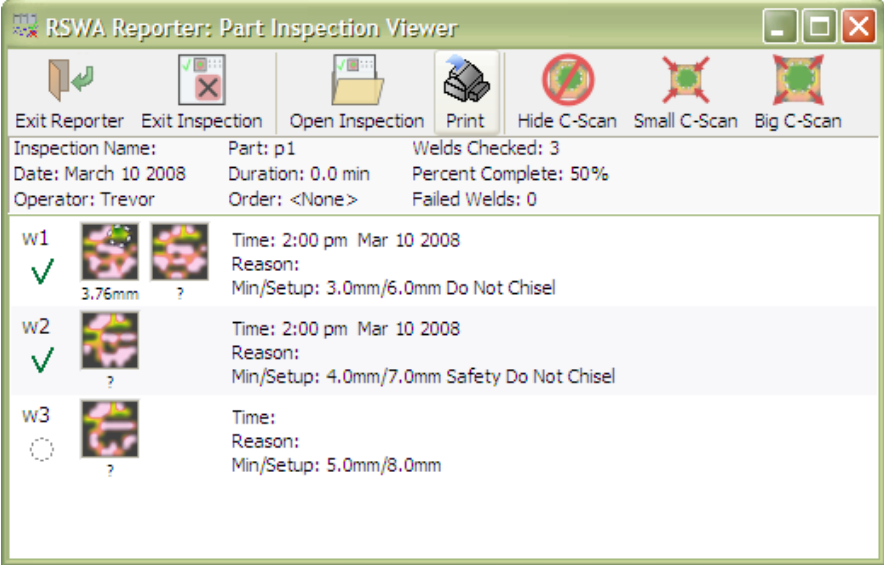


Figure 5.2 Viewing a single inspection

6 Delete Inspections Tool

The delete inspections tool allows to clean out old inspections from an RSWA unit.

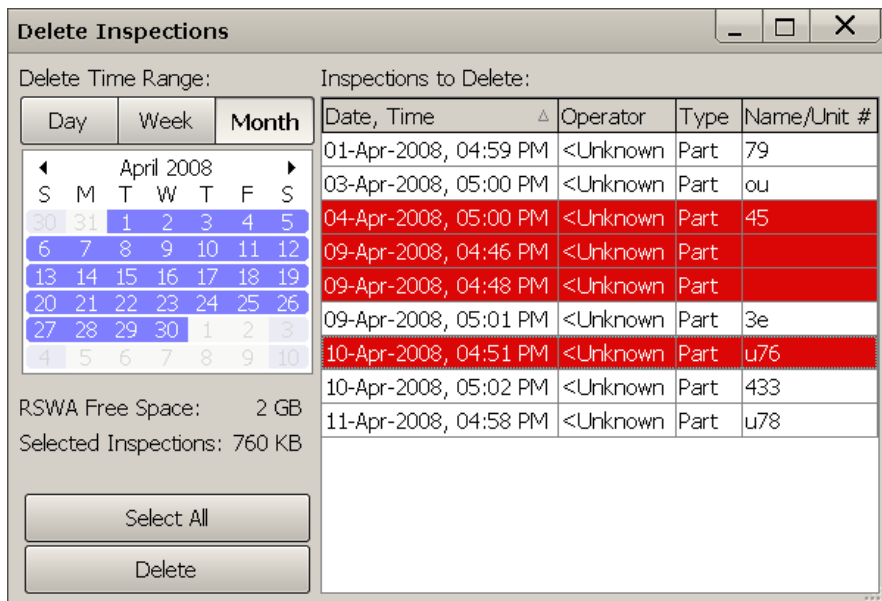


Figure 6.1 Delete inspections tool

An RSWA's hard drive, and can hold thousands of inspections. If you are running out of hard drive space, you will need to delete some of them to make room for new inspections.

To delete inspections, you must log in as the Admin user. Before deleting inspections from RSWA, please ensure that all the inspections have been synchronized to a coordinator's PC. This way the data isn't lost, just transferred to another PC.

Warning: Inspections are deleted completely from the hard drive. You will not be able to undo this operation.

The left side of the window shows the date range currently selected. By default, the date of the oldest inspection found on the RSWA is selected.

The right hand side shows the inspections that match the selected date range. Selecting an inspection turns it red, and marks it for deletion. Selecting it again will un-mark it, and turn it white.

Once you are satisfied with the selection, press the Delete button.

A Revision History

Date	Revision	Changes
2021/10/12	1	Initial release

End of document



Canada Headquarters

Tessonics Inc.
597 Ouellette Ave.,
Windsor, Ontario
Canada N9A 4J3
tessonics.com

Sales and General Inquiries

ph: +1 (519) 250-4455 x224
tf: +1 (866) 440-3313 x224
fax: +1 (519) 250-5747

Technical Support

ph: +1 (519) 250-4455 x229
tf: +1 (866) 440-3313 x229

United States

Tessonics Corp
2019 Hazel Street,
Birmingham, Michigan,
U.S.A 48009
tessonics.com

ph: +1 (248) 885-8335

Germany

Tessonics Europe GmbH
Augustinusstr. 9d,
50226 Frechen, Germany
ph: +49 (0)2234 911002-0
fax: +49 (0)2234 911002-9
saleseu@tessonics.com
tessonics.de

Russia

Тессоникс Россия
г. Москва
salesrus@tessonics.com
tessonics.ru

China

Tessonics Technology
(Beijing) Ltd
Beijing, China
ph: +86 17321126387

Poland

Tessonics Poland SP. Z. O.O.
Zatorska 78 / 7 51-215,
Wroclaw, Poland
ph: +0048603518150
mk@tessonics.com