

**USER'S MANUAL FOR THE
PSxx4
PROGRAMMING AND ARCHIVING KIT
FOR PS 164 – PS 204 – PS 254 – PS 254-2
POWER SOURCES**



POLYSOUDE



PSxx4



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2. SETTING UP THE PSxx4 KIT

The PSxx4 kit comprises:

- A memory card reader with connecting leads,
- A floppy disk containing the PSxx4 software package for Windows,
- This instruction sheet.

2.1 INSTALLING THE SOFTWARE PACKAGE

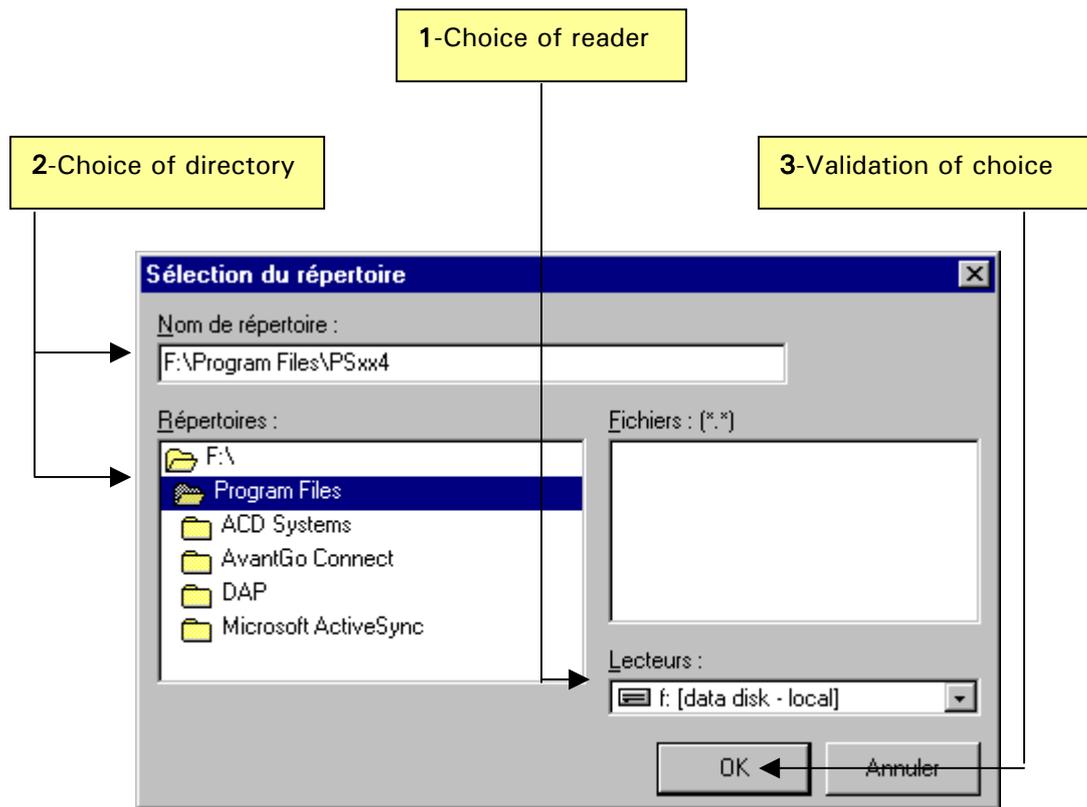
- Insert the floppy disk in the PC reader and launch the "Setup.exe" program in the root.
- The display below should appear once the program has been loaded. Choose the language in which you wish the installation to be done, then validate by clicking on the "OK" button.



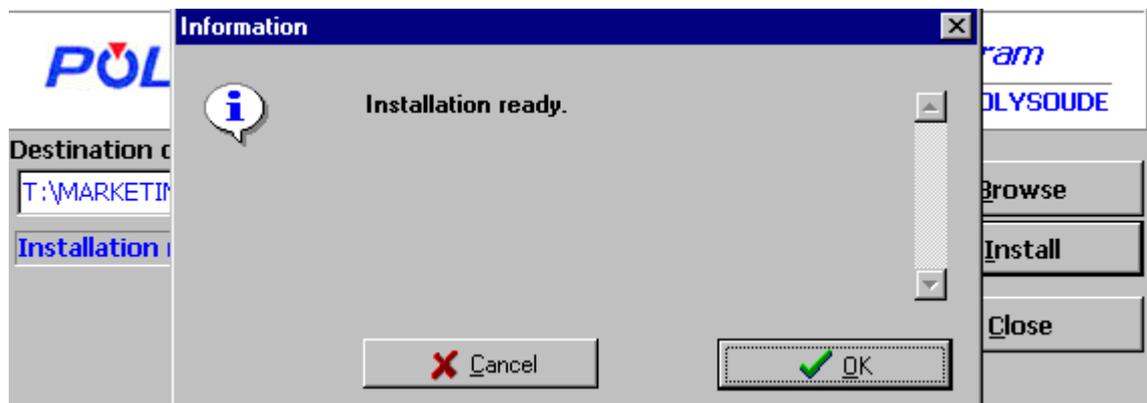
- "Setup.exe" proposes the program installation directory by default, as shown on the screen below.



- To change directories, simply click on the "Browse" button to display a directory selection window (see following figure) and choose the new directory.

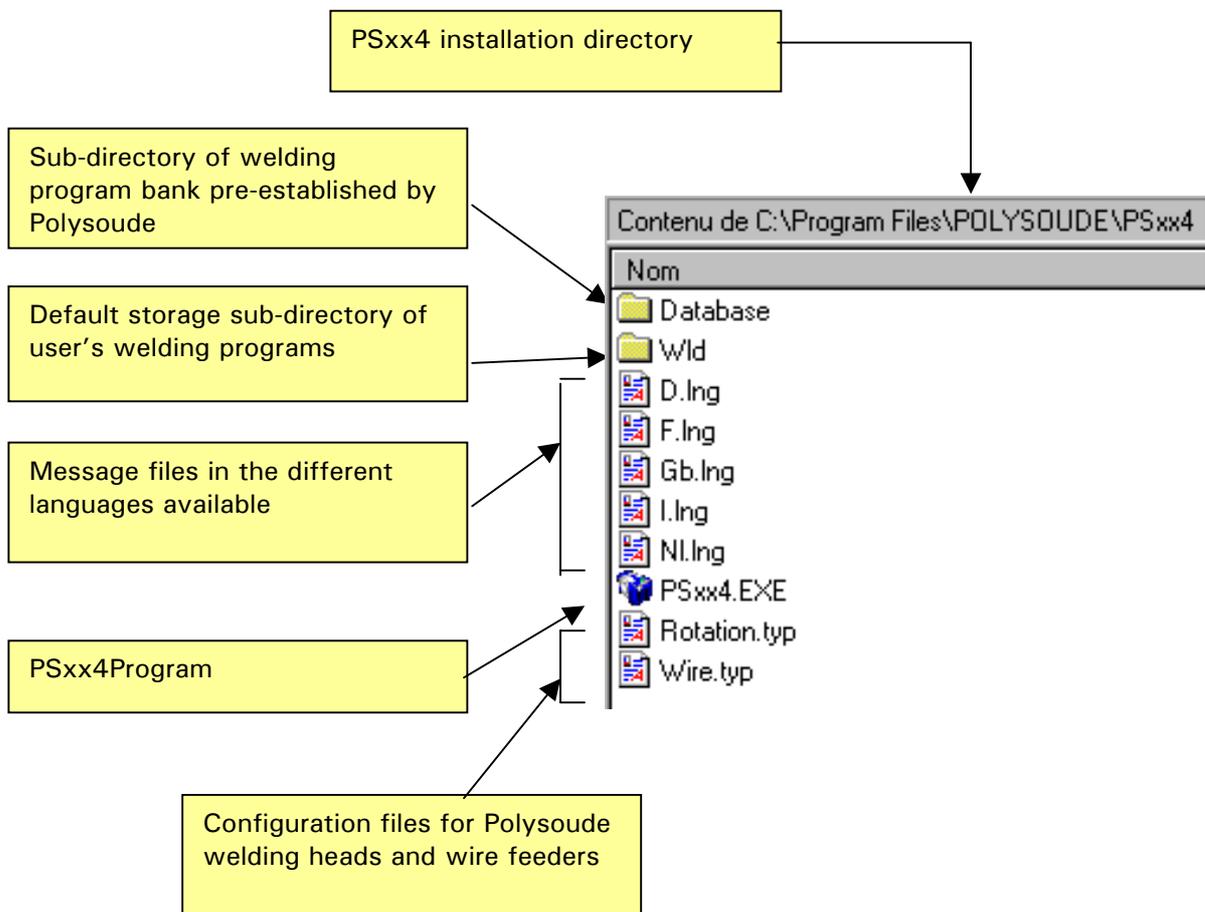


- Next, click on the “Install” button to finish installing the software package. At the end of the installation, the display below appears to show that the operation was done correctly. Validate with the mouse by clicking on the “OK” button.



- The software package is installed.

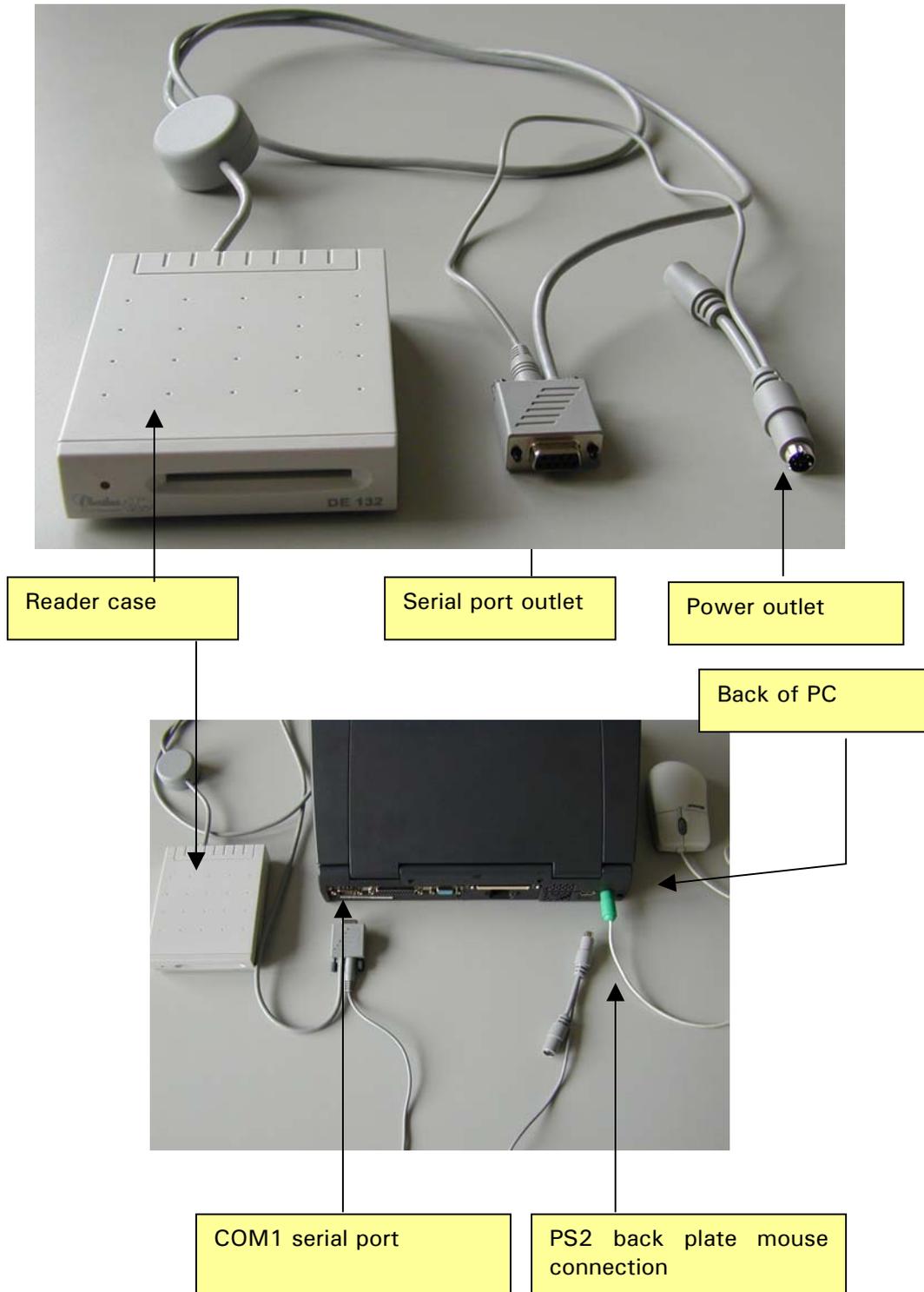
2.2 DETAIL OF PSxx4 WORKING FILES



2.3 CONNECTING THE MEMORY CARD READER TO THE PC

The memory card reader comprises a case that plugs in to the computer via two cables:

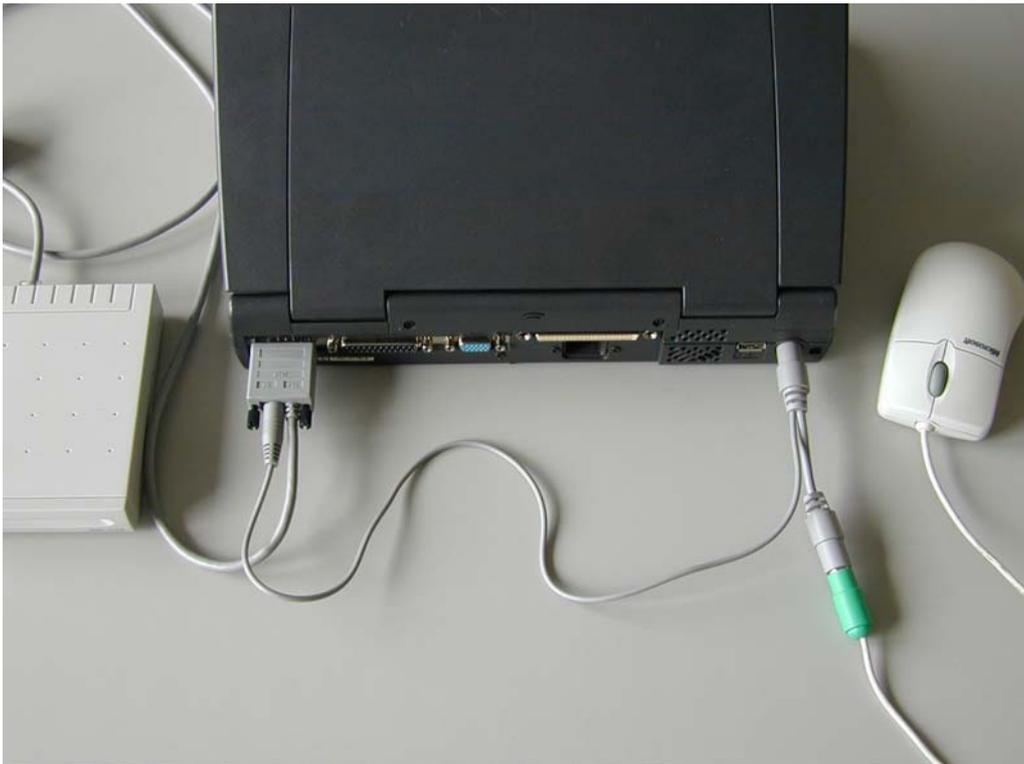
- one to supply power to the case via the PC's PS2 back plate (mouse port),
- the other ensures communication between the PC and the case, via the PC's serial port (COMx port).



To connect the reader to the PC:

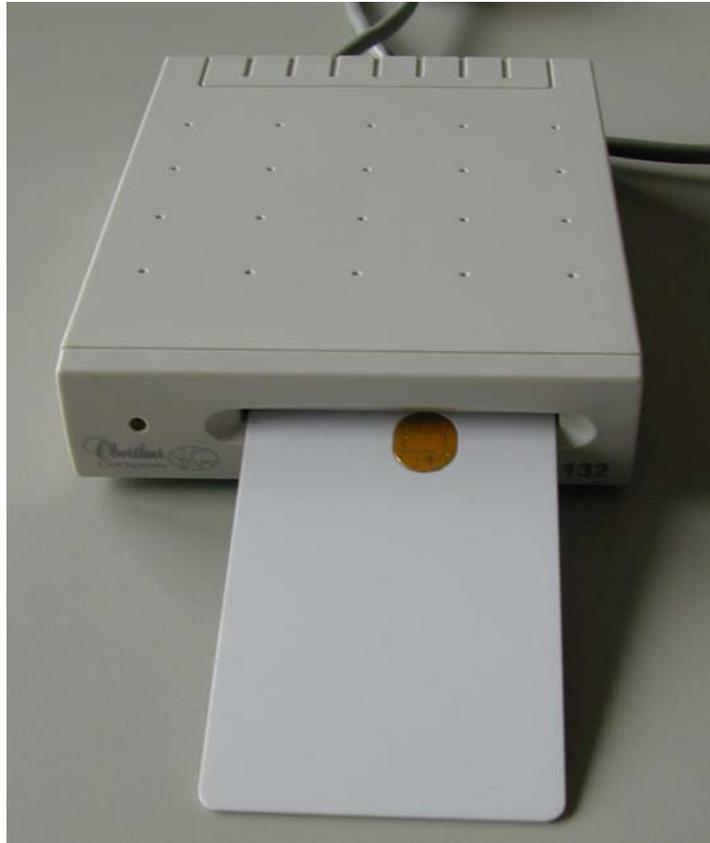
- Quit Windows and disconnect the PC's power supply.
- Plug the serial port into the PC's COM1 port.
- Disconnect the mouse.
- Plug the reader power supply into the mouse port.
- Connect the mouse to the free outlet on the reader power cable.
- Re-connect the PC's power supply – the reader is ready for use.

The figure below shows a correct reader connection.



2.4 USING THE MEMORY CARD READER

The memory card should be inserted into the reader slot with the chip contact side up, as shown in the figure below. Push it in until it touches the stop inside the reader.



Note:

There is no danger of the reader or card being destroyed if it is inserted the wrong way up. You will simply not be able to read or write a program until it has been replaced the right way up.

2.5 CONFIGURING AND TESTING THE PORT USED BY THE CARD READER

The "Setup.exe" installation program adds a configuration and reader test utility program to the *Windows™* configuration panel (icon below).



The default configuration, used by the PSxx4 software package to communicate with the reader card, is a connection to the **COM1** port. This corresponds to the majority of PC configurations. However, if this choice is not compatible with the configuration of your PC, you can change the port number attributed to the card reader, as described in the following procedure.

2.5.1 Serial port configuration

Start up the "Smart Card Reader" utility program in the configuration panel.

1- Click on the logical name of the connection to select it

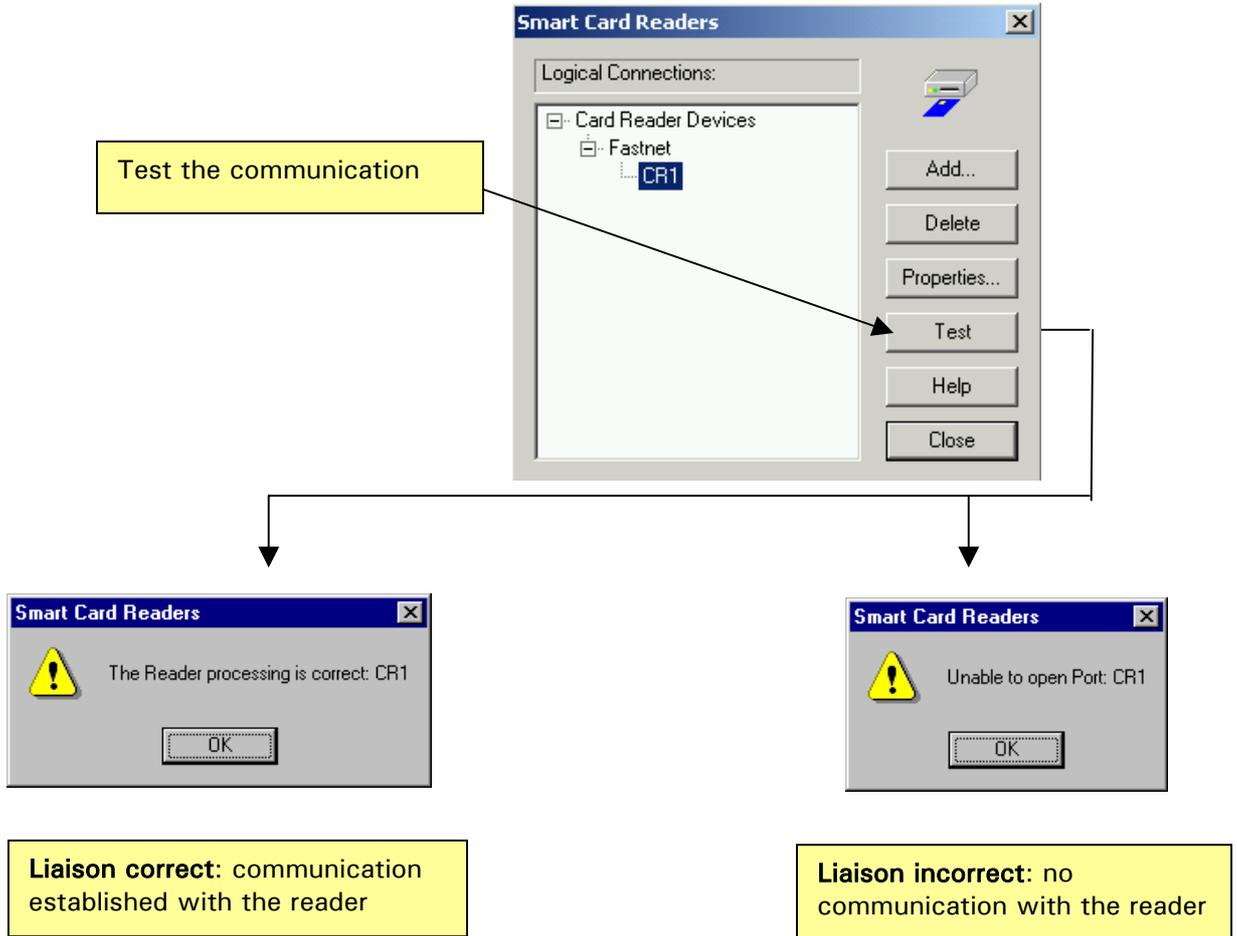
2- Display the properties of the connection

3- Choose the communication port

4- Validate the new configuration

2.5.2 Communication test with the reader

To check the liaison between the PC and the card reader, launch the "Test" option in the "Smart Card Reader" utility program.

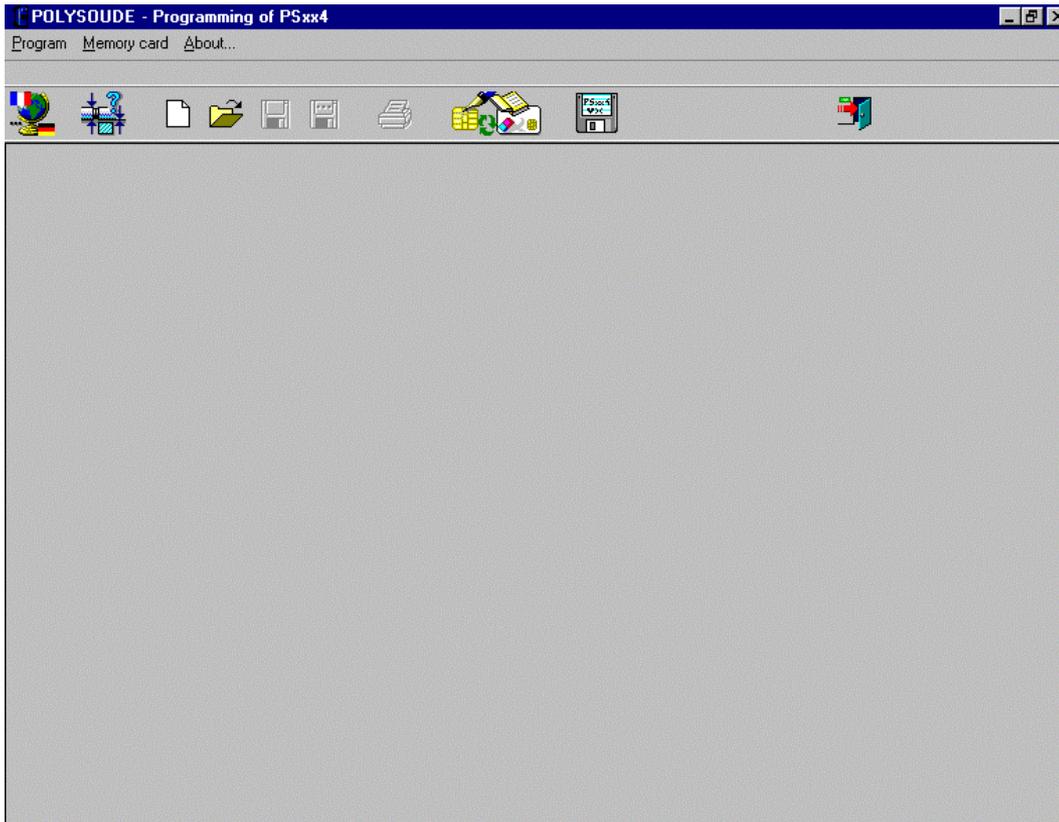


2.6 THE PSxx4 MAIN SCREEN

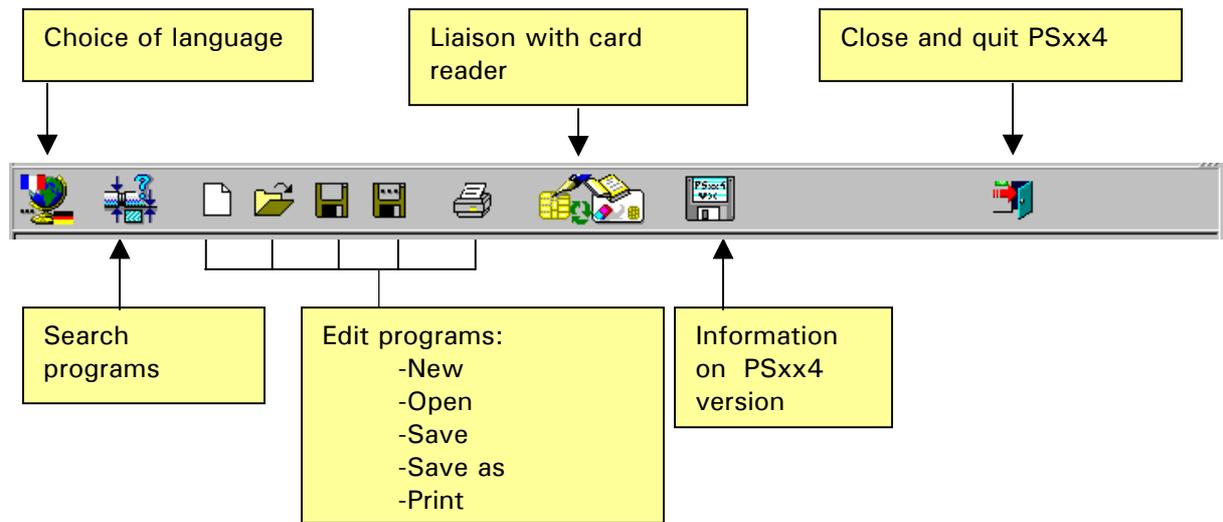
The "Setup.exe" installation program automatically adds the shortcut enabling to launch the PSxx4 software package to the *Windows™* desktop (icon below).



When starting up PSxx4, the main screen is displayed.

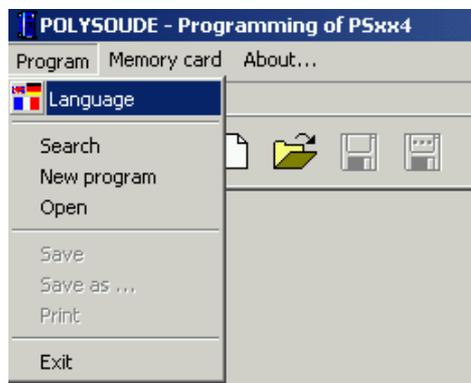


2.6.1 Detail of the shortcut bar



2.6.2 Detail of the main menu

The main menu contains exactly the same commands as those accessible in the shortcut bar.



3. CHANGING LANGUAGES AND CHOOSING UNIT

Simply click on the corresponding shortcut button, choose a language in the list (figure below) and validate by clicking on the "OK" button.



Choose the programming units by clicking on the corresponding button.

- mm/min – sector start is made in degrees (impulses)
- rotations/min (RPM) – sector start is made in seconds

4. CREATING A WELDING PROGRAM

There are two ways of creating a new program:

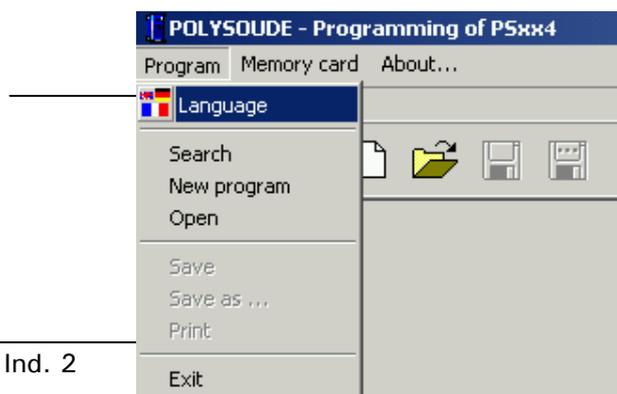
- Using the program bank pre-established by Polysoude,
- Using the program editor directly.

4.1 Using the program bank pre-established by Polysoude

Click on the following icon in the shortcut bar to launch the search utility program.

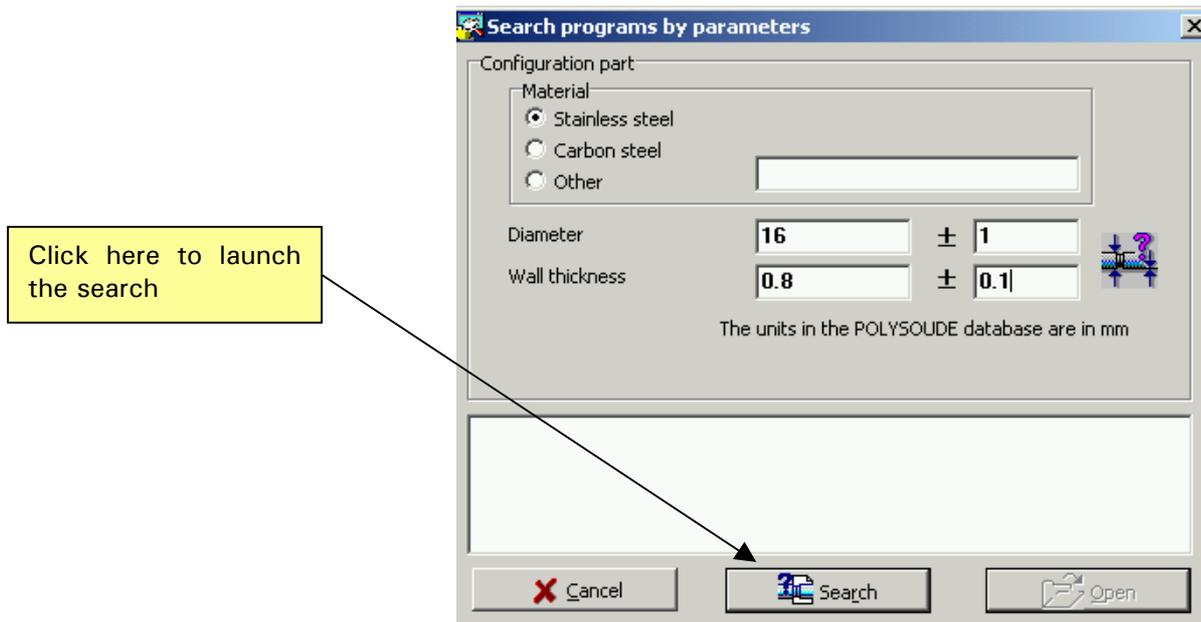


Or, in the main menu, select "File" then "Search".



The following dialogue box is displayed on the screen. It enables you to specify:

- The material you wish to weld,
- The diameter and thickness of the article to be welded,
- A tolerance range authorized according to the values searched for, to enable to find all the welding programs that come under the defined bracket.



Note:

The program search is done in the first instance in the Polysoude PSxx4's **"Database"** sub-directory, then in the user **"Wld"** sub-directory, and then in all the directories that may have been created in the same directory structure as the first two.

The sub-directories created within these sub-directories are not scanned by the search utility program.

If no digital value is entered into the "Diameter" and "Thickness" fields, the utility program will search all the programs corresponding to the material you have entered.

If no digital value has been entered for the search tolerances, the exact value specified for the diameter and/or thickness will be searched for.

List containing the search result

The screenshot shows the 'POLYSOUDE - Programming of PSxx4' application window. A 'Search programs by parameters' dialog box is open, containing the following elements:

- Configuration part:**
 - Material:** Radio buttons for 'Stainless steel' (selected), 'Carbon steel', and 'Other'. An empty text input field is next to 'Other'.
 - Diameter:** Input field with '16', a tolerance of ± 1 , and a help icon.
 - Wall thickness:** Input field with '0.8', a tolerance of ± 0.1 , and a help icon.
- Units:** Text below the parameters: 'The units in the POLYSOUDE database are in mm'.
- Results List:** A list box containing the text: '\\SERVER\MAN\SERVER\UR\MARKETING\MARKETING\MANUELS\MANUE'.
- Buttons:** 'Cancel', 'Search', and 'Open' buttons at the bottom.

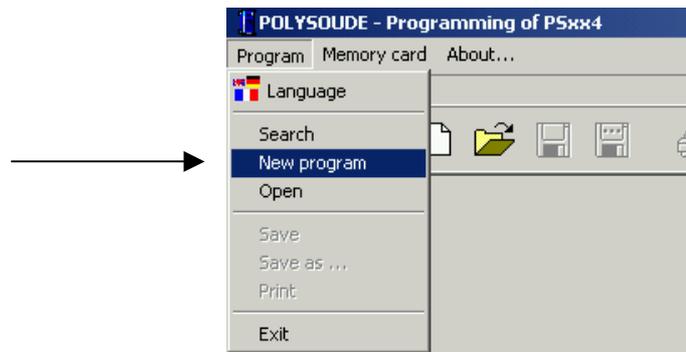
An arrow from the text box 'List containing the search result' points to the results list. Another arrow from the text box 'Click here to create a program from the one pointed to in the list' points to the 'Open' button.

4.2 Using the program editor directly

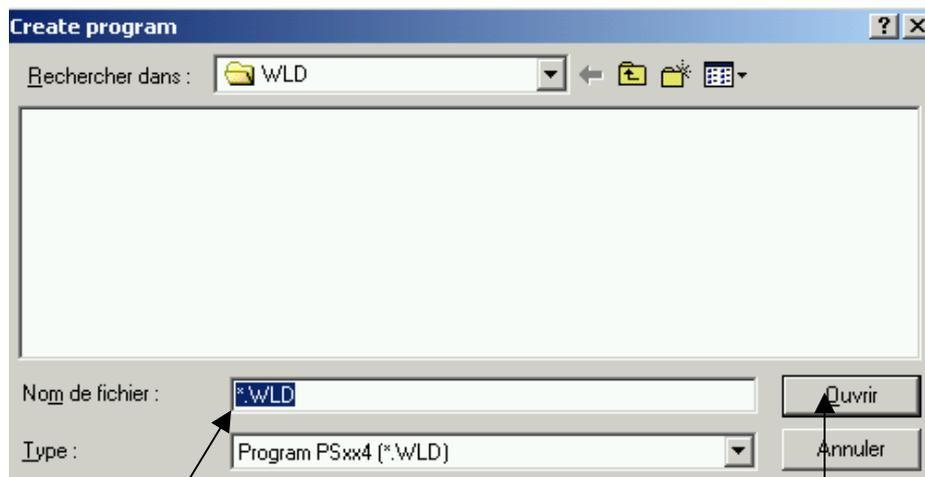
Click on the following icon in the shortcut bar to create a new program.



Or, in the main menu, select "File" then "New".



Before continuing editing the program, PSxx4 will ask you to name the welding program you wish to create. For example, "TEST 16 x 0.8".



Enter the name of the new program here

Validate the name

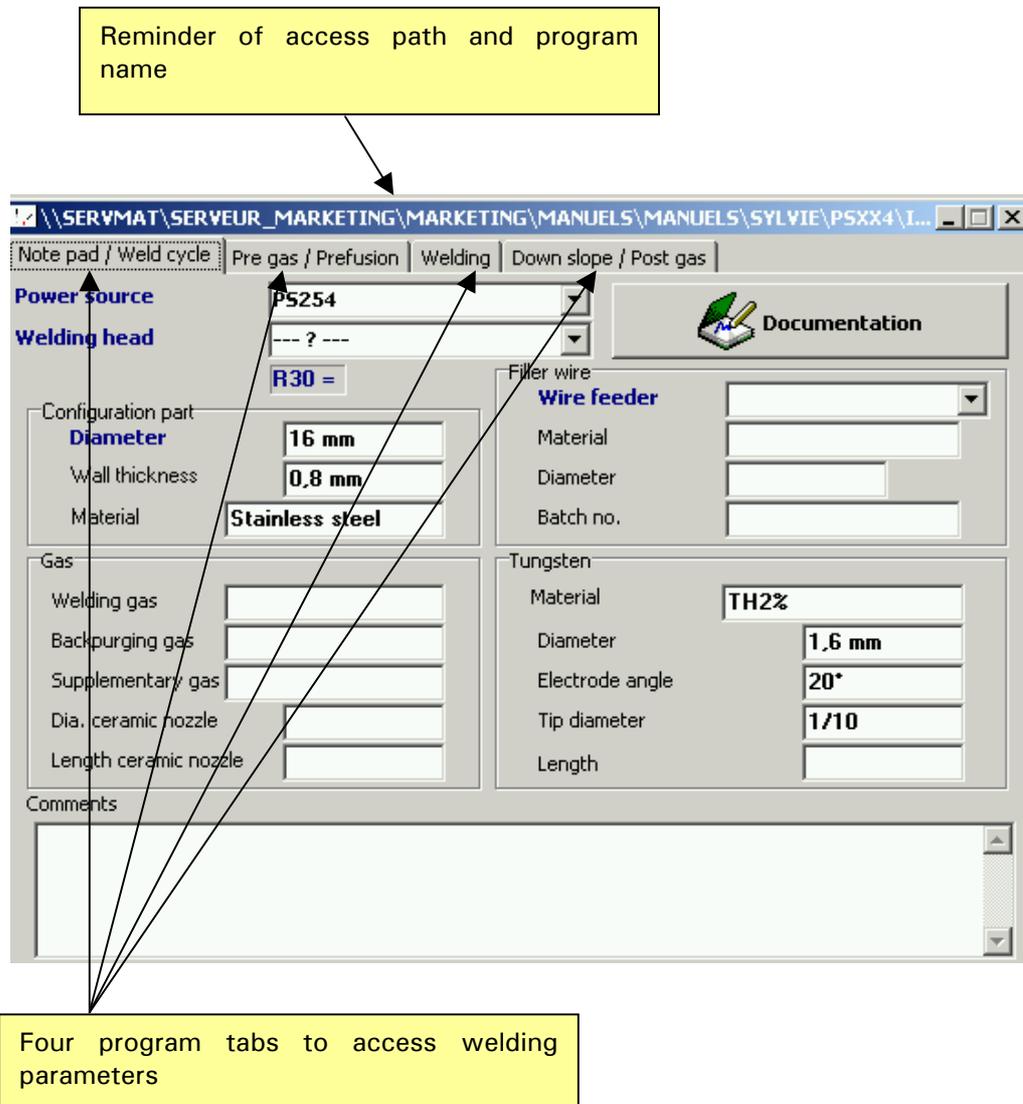
Note:

The file extension is optional. PSxx4 places it automatically when saving the program.

5. EDITING A WELDING PROGRAM

The example below shows the editor using the result of the search described in paragraph 4.1.

The editor comprises four tabs that break the welding program down into logical blocks.



5.1 “Notebook / Welding” Tab

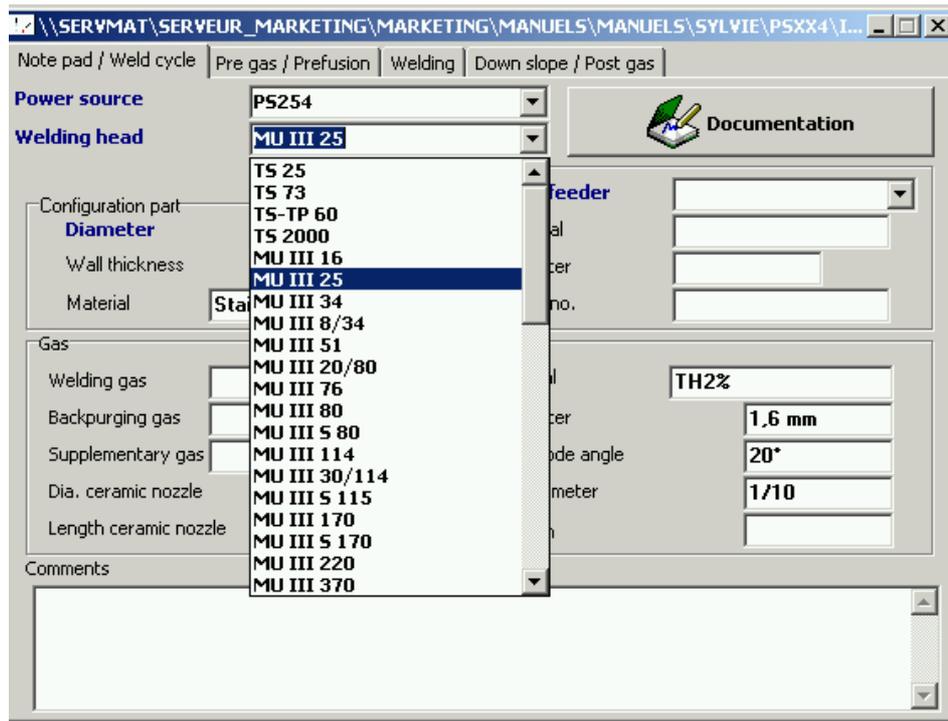
This page:

- Defines the Polysoude material that will be used for the weld,
- Gives the diameter of the article to be welded,
- Documents/Comments on the general welding parameters (optional),
- Attaches files or documents from applications other than PSxx4 to the weld (optional).

The screenshot shows a software window titled '\\SERVMAT\SERVER_MARKETING\MARKETING\MANUELS\MANUELS\SYLVIE\PSXX4\I...'. The 'Welding' tab is active. The interface contains several input fields and dropdown menus. Fields with blue text labels are mandatory. The 'Documentation' button is visible in the top right. The 'Comments' field is a large text area at the bottom.

Note:

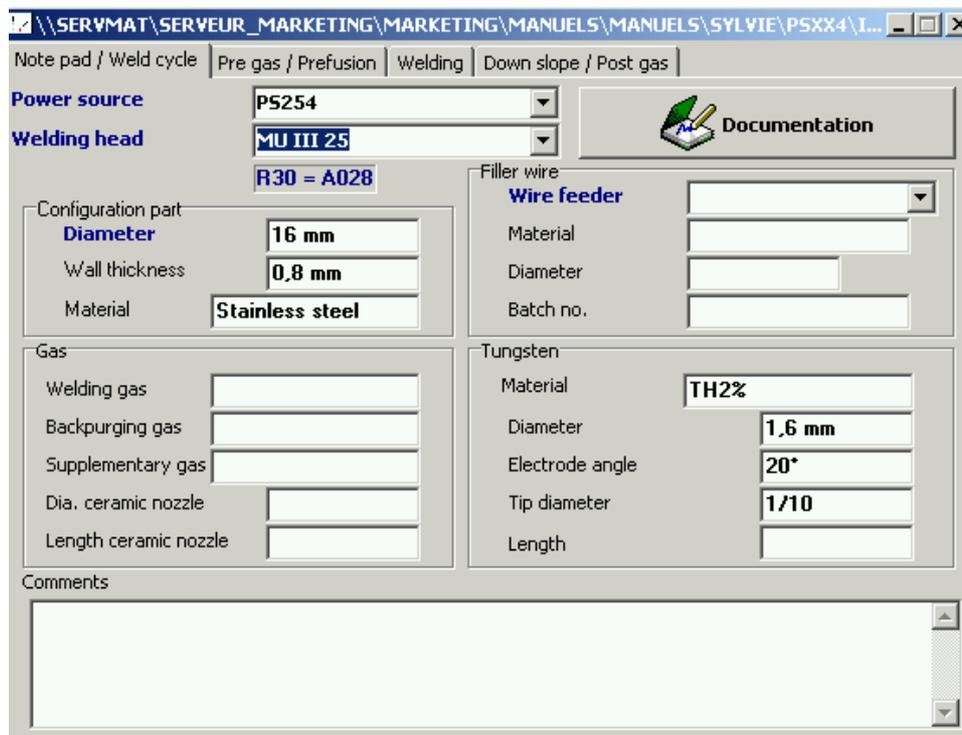
The fields in blue writing correspond to minimum obligatory information needed to be able to proceed to the following tabs. Naturally, if the weld does not use filler wire, the “wire feeder” field should be empty.



5.1.1 Choice of welding head

5.1.2 Configuring the R30 parameter

The R30 parameter is configured automatically at the correct value once the head has been chosen.

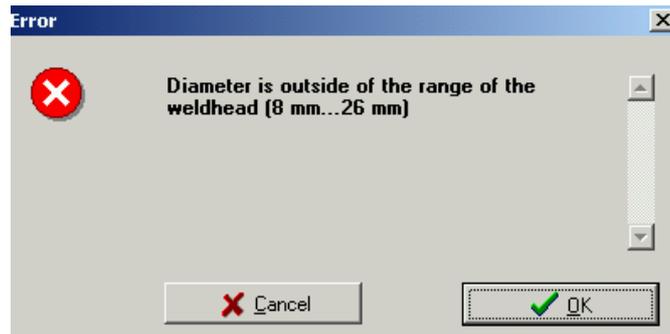


This field is not accessible to the user as PSxx4 manages it according to the choices made on the other program tabs, and depending on the head used.

5.1.3 Entering the article diameter

PSxx4 controls entry of the article diameter according to the welding head you choose. It is impossible to enter values outside the range authorized by the head.

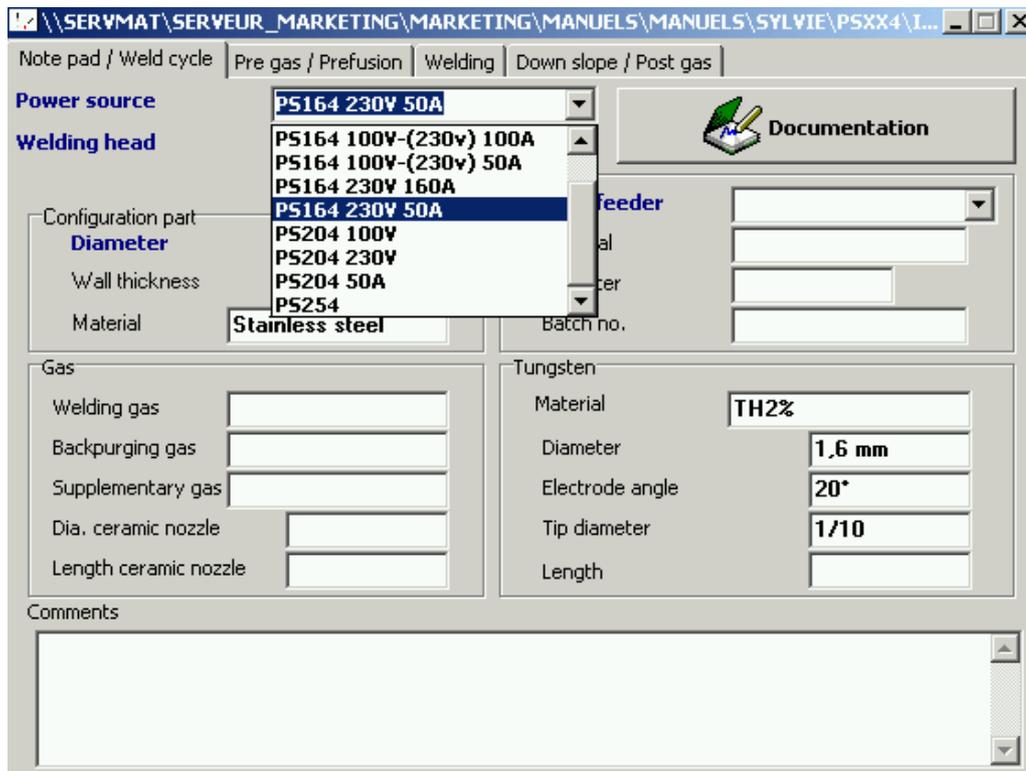
When you move the mouse cursor over the "Diameter" field, a help balloon is displayed to indicate the range of diameters accepted by the head. If you make an error when entering your data, an error message (figure below) is displayed when the field is validated or when you try to activate another one.



It will be impossible to change the tab in the program, or save it, until the error has been corrected.

The diameter enables PSxx4 to convert the speeds between generator units (n per thousand) and legal units (mm/min).

5.1.4 Choice of power source



PSxx4 contains all the types of generators that comprise the xx4 family.

Remember to select the source you wish to use (sector tension and current range), since the minimum and maximum parameter values linked to the welding current vary from one type to another.

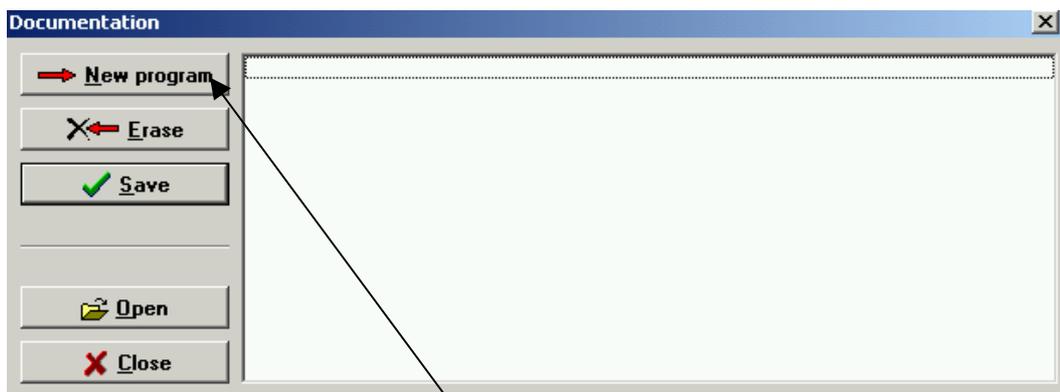
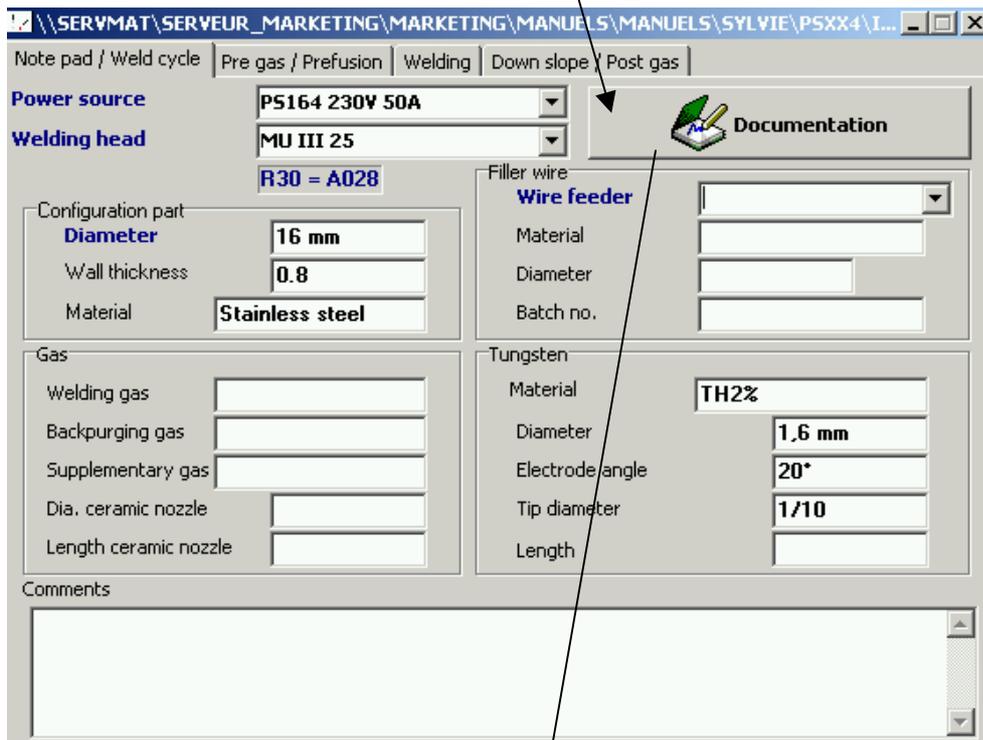
The list of current sources contains the following generators :

- **PS164 100V-(230V) 100A** PS164 on network tension of 100 V (Maximum current 100 A)
- **PS164 100V-(230V) 50A** PS164 on network tension of 100 V in 50 A range
- **PS164 230V 160A** PS164 on network tension of 230 V in 160 A range
- **PS164 230V 50A** PS164 on network tension of 230 V in 50 A range
- **PS204 100V** PS204 on network tension of 100 V (Maximum current 100 A)
- **PS204 230V** PS204 on network tension of 230 V (Maximum current 200 A)
- **PS204 50A** PS204 in 50 A range
- **PS254** PS254 (Maximum current 250 A)

5.1.5 Attaching documentation to the weld

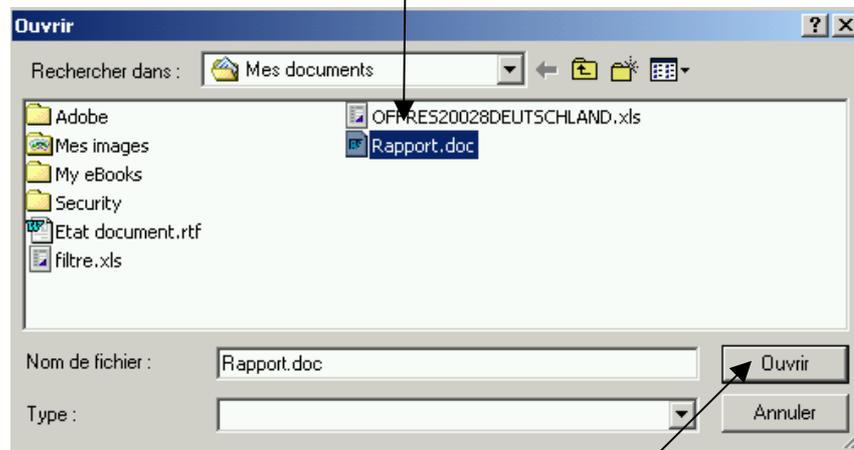
It is possible to link one or several files created using software package other than PSxx4 to the welding program. These documents can be word processing, spreadsheet programs, etc.

1- Click here to open the file liaison window

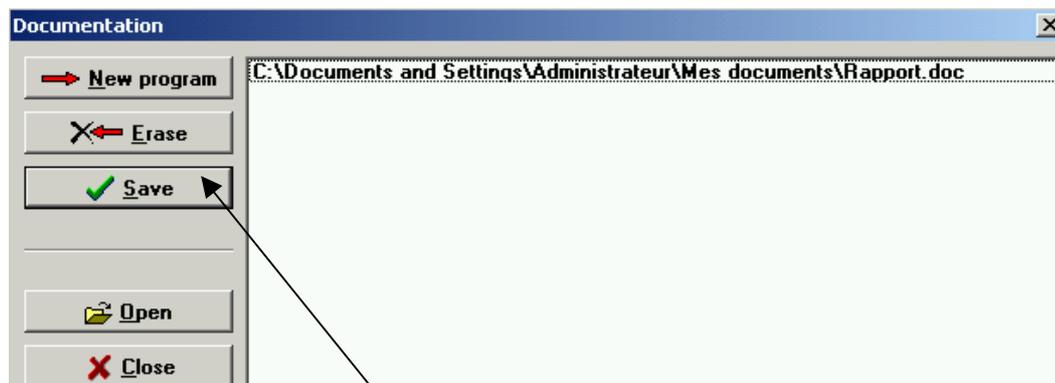


2- Click here to open the new file selection window

3- Select the file you wish to use

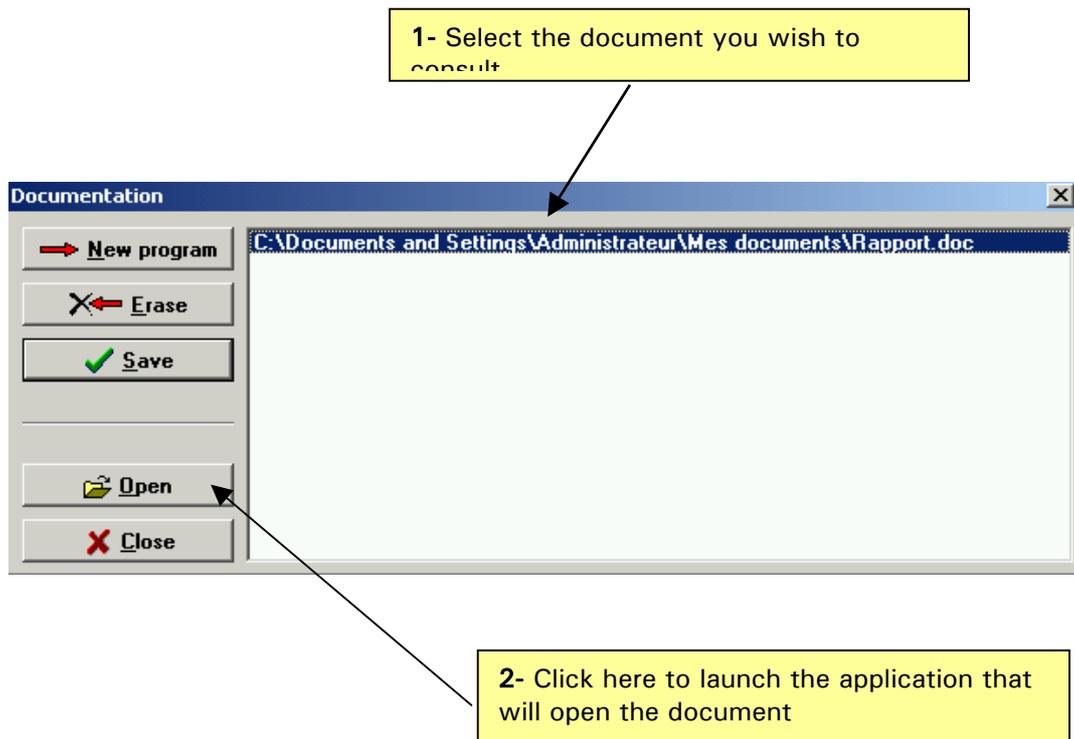


4- Validate the selection

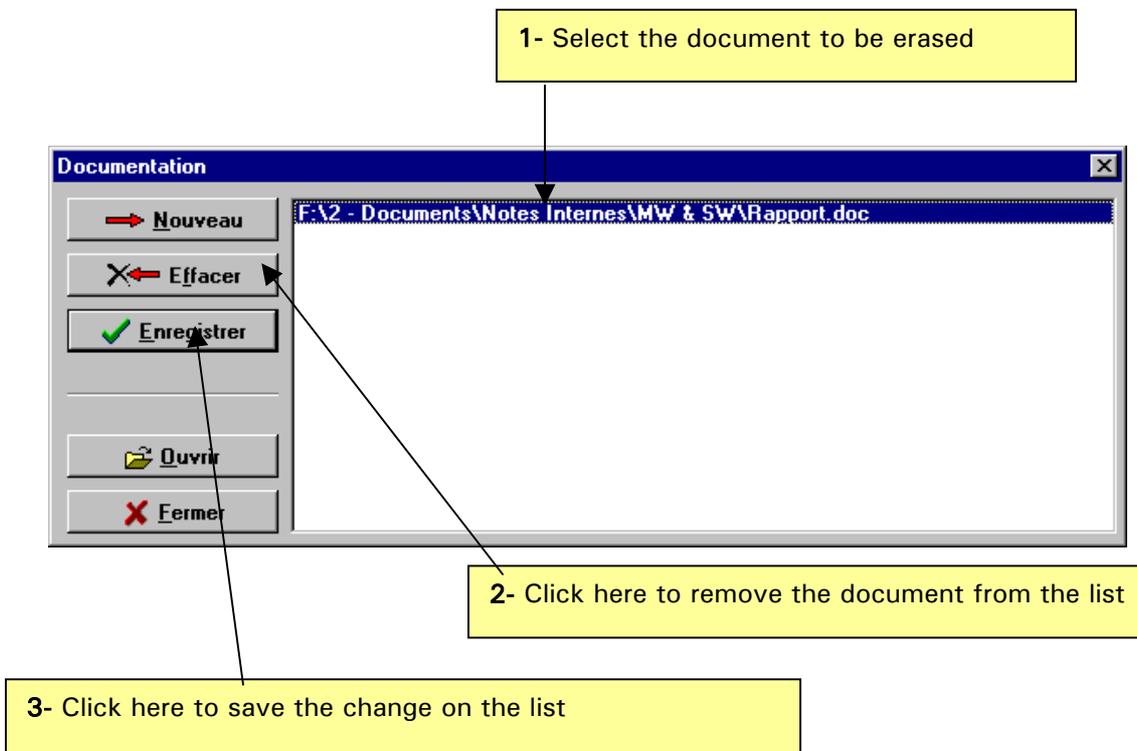


5- Save the file as a new document attached to the weld

5.1.6 Opening documentation attached to the weld



5.1.7 Erasing documentation attached to the weld



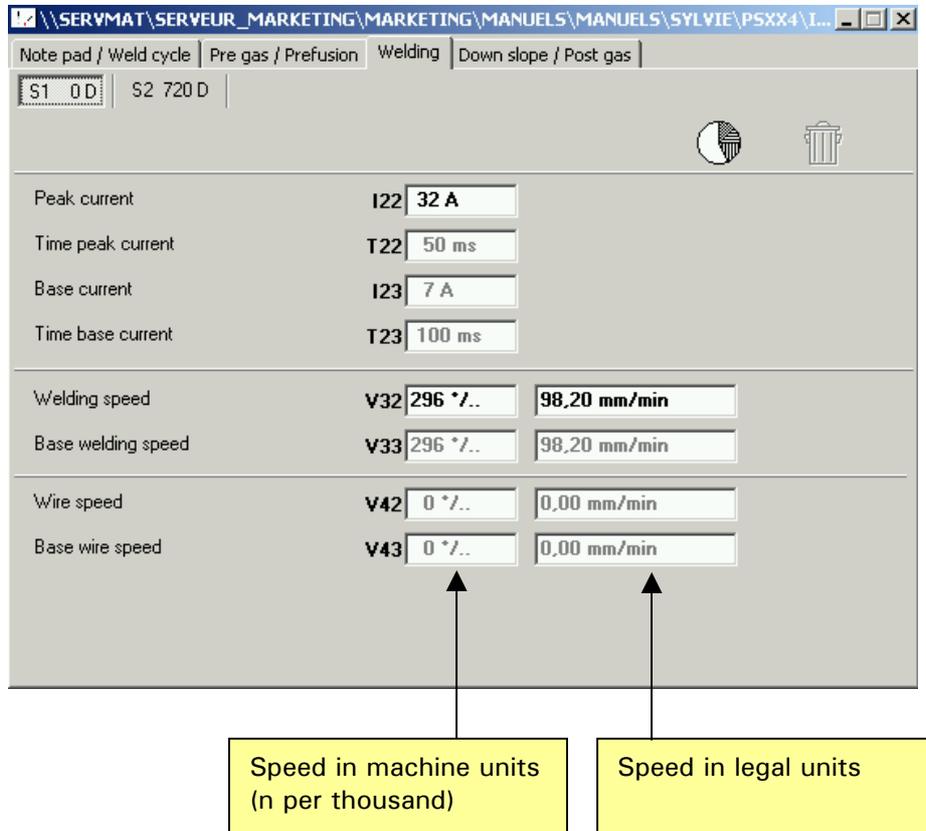
5.2 “Pre-gas/ Pre-fusing” tab

This page proposes the parameters to be fixed before starting welding, up to the beginning of the first sector.

The buttons for choosing the mode of functioning for rotation, filler wire and the parameters linked to the wire are greyed over when they cannot be selected. Indeed, if the weld does not need filler wire, then choosing smooth or pulsed wire and temporising before starting do not apply here; PSxx4 thus makes them inactive. Similarly, the choice of pulsed rotation in smooth current is illogical.

5.3 "Welding" tab

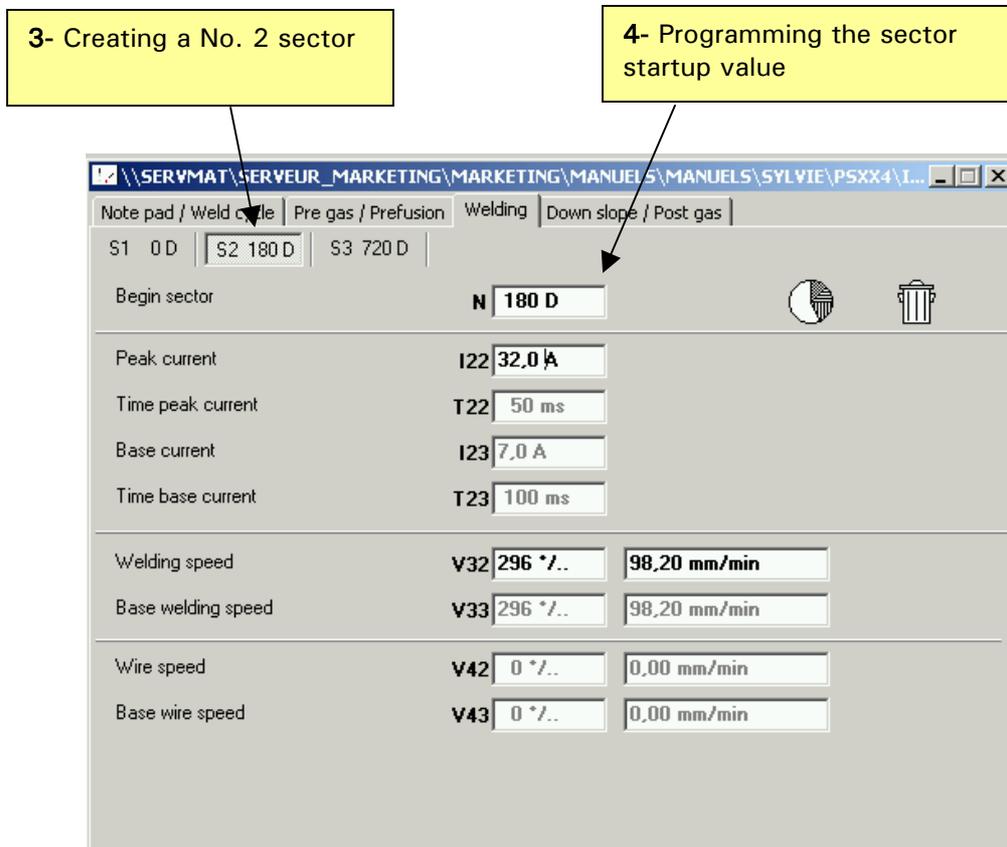
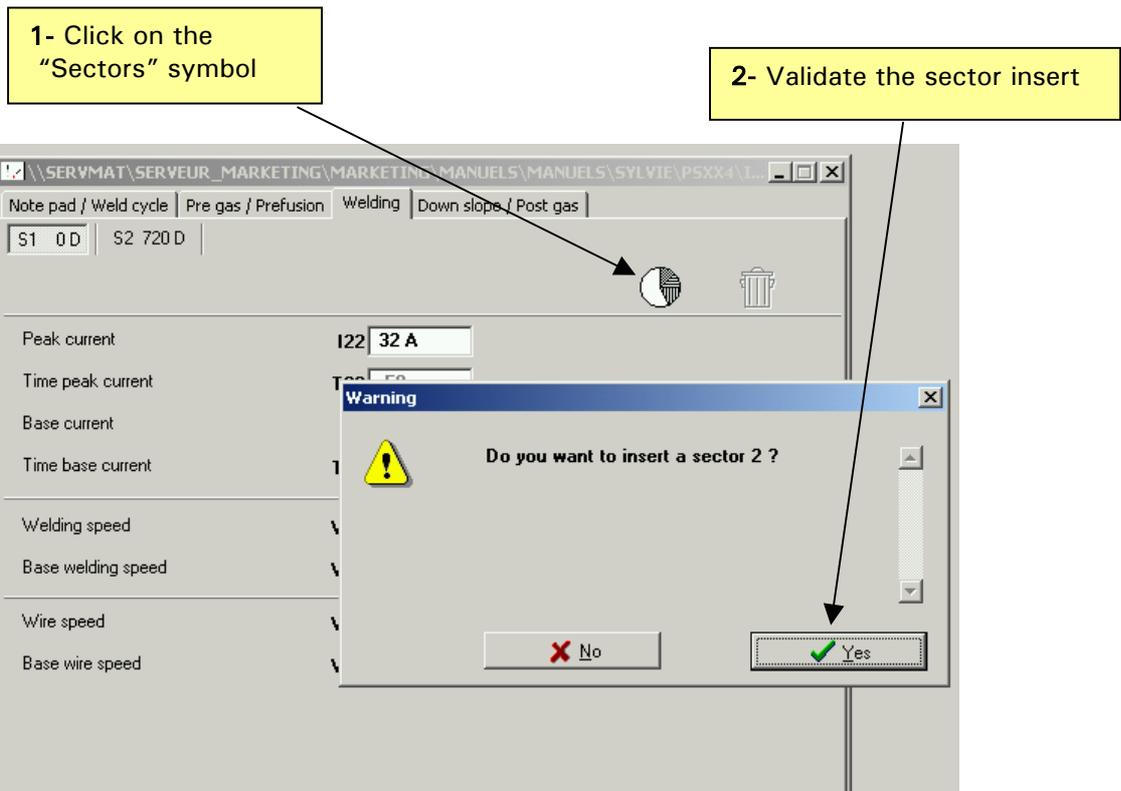
This page proposes the parameters linked to the current, head rotation and filler wire that can vary according to the sectors of the weld.



For parameters linked to a speed, the conversion of one unit system to another is automatic when the value has been validated with the "Enter" key.

As in the previous tab, the parameters that do not apply to the weld due to the axes used and their chosen mode of functioning are greyed out and are not accessible to the user.

5.3.1 Adding a sector to the weld



5.3.2 Inserting a sector between two sectors

1- Activate the sector to precede the new one

2- Click on the « Sectors » symbol

3- Validate the sector insertion

4- Insert a new No. 2 sector and shift the old one

5- Program the sector startup value

Begin sector	N	90 D
Peak current	I22	32,0 A
Time peak current	T22	50 ms
Base current	I23	7,0 A
Time base current	T23	100 ms
Welding speed	V32	296 % / 98,20 mm/min
Base welding speed	V33	296 % / 98,20 mm/min
Wire speed	V42	0 % / 0,00 mm/min
Base wire speed	V43	0 % / 0,00 mm/min

5.3.3 Erasing a sector

1- Activate the sector to be erased

2- Click on the "waste-bin" symbol

3- Validate the erasure of the sector

The screenshot shows the software interface with the following parameters for sector 3 (S3 180 D):

Begin sector	N	180 D
Peak current	I22	32,0 A
Time peak current	T22	
Base current	I23	
Time base current	T23	
Welding speed	V32	
Base welding speed	V33	
Wire speed	V42	
Base wire speed	V43	0,00 mm/min

4- Erase the sector and activate the previous sector

The screenshot shows the software interface with the following parameters for sector 2 (S2 90 D):

Begin sector	N	90 D
Peak current	I22	34 A
Time peak current	T22	50 ms
Base current	I23	8 A
Time base current	T23	100 ms
Welding speed	V32	482 % / 160,00 mm/min
Base welding speed	V33	482 % / 160,00 mm/min
Wire speed	V42	0 % / 0,00 mm/min
Base wire speed	V43	0 % / 0,00 mm/min

5.4 “Down slope / Post-gas” tab

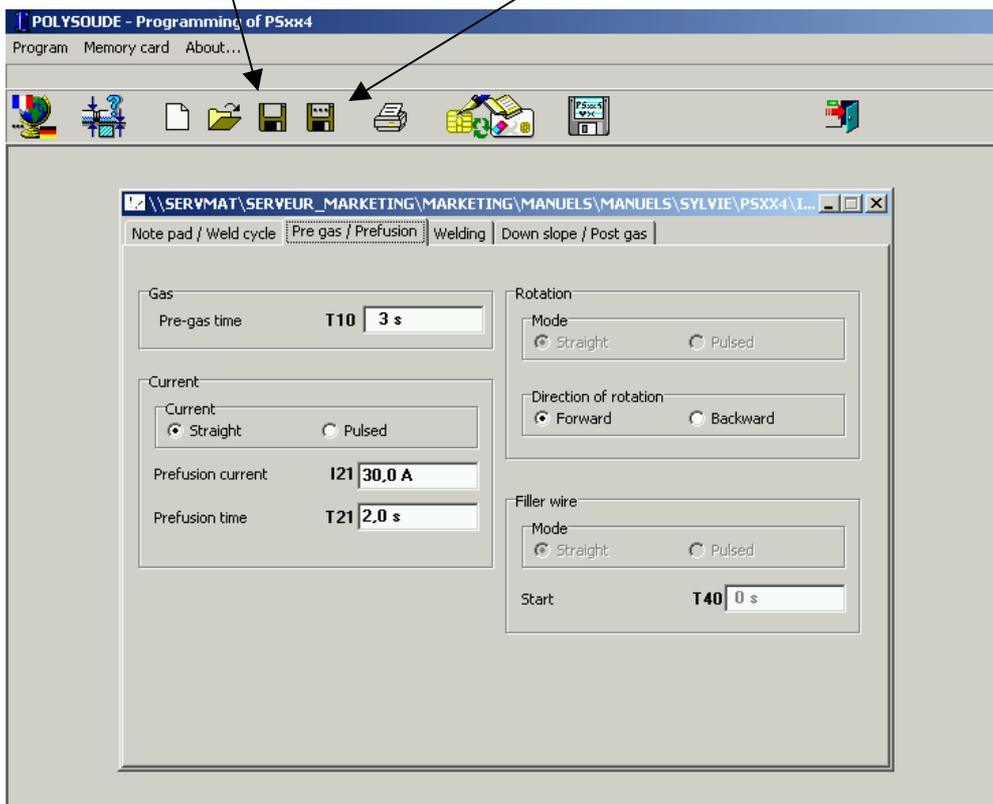
This page deals with the parameters linked to weld down slope and the actions that should be undertaken after the arc has been cut off.

Parameters specific to welding heads in the TS/TP series if one of them is used for welding

5.5 Making a backup copy of the welding program

Click on this button to save the program modifications

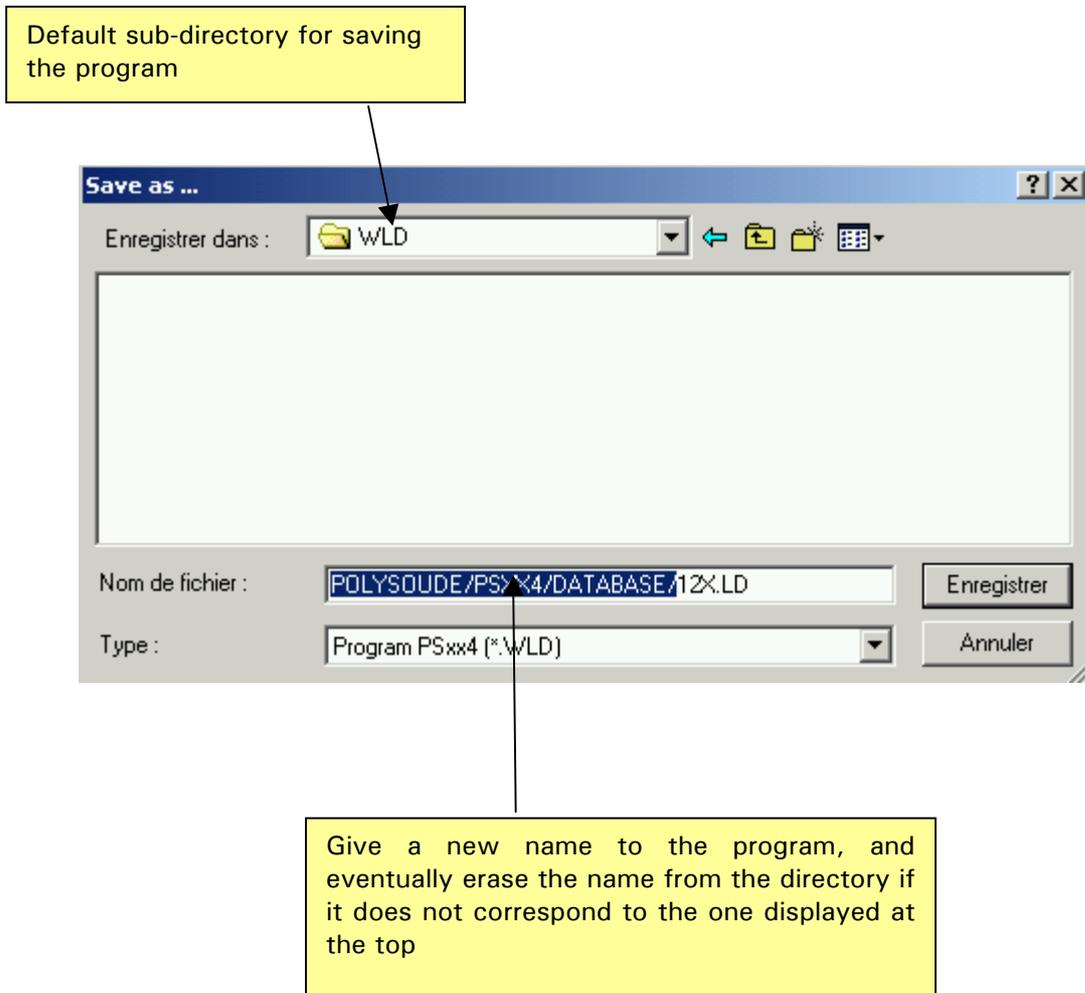
Click on this button to save a copy of the program under another name and/or in another sub-directory



Note:

If you are making the first backup of a program that has just been created using a copy from the Polysoude program bank, PSxx4 will ask you to save the program under another name and in a different directory to the program bank one.

The following figure shows the window that corresponds to the “Save under” command.

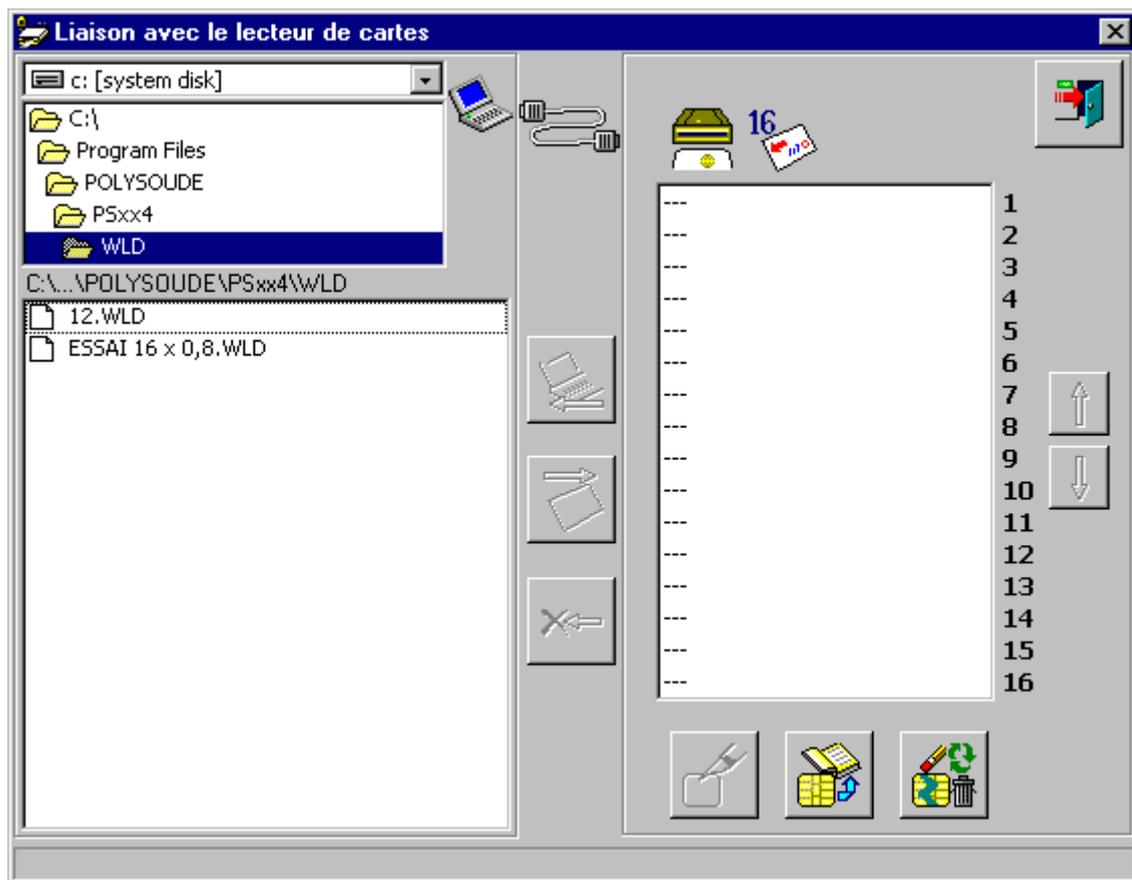


6. Liaison with the memory card reader

Click on the icon below in the shortcut bar when you want to launch a program reading / writing operation from / to the memory card.



This icon opens the window below.



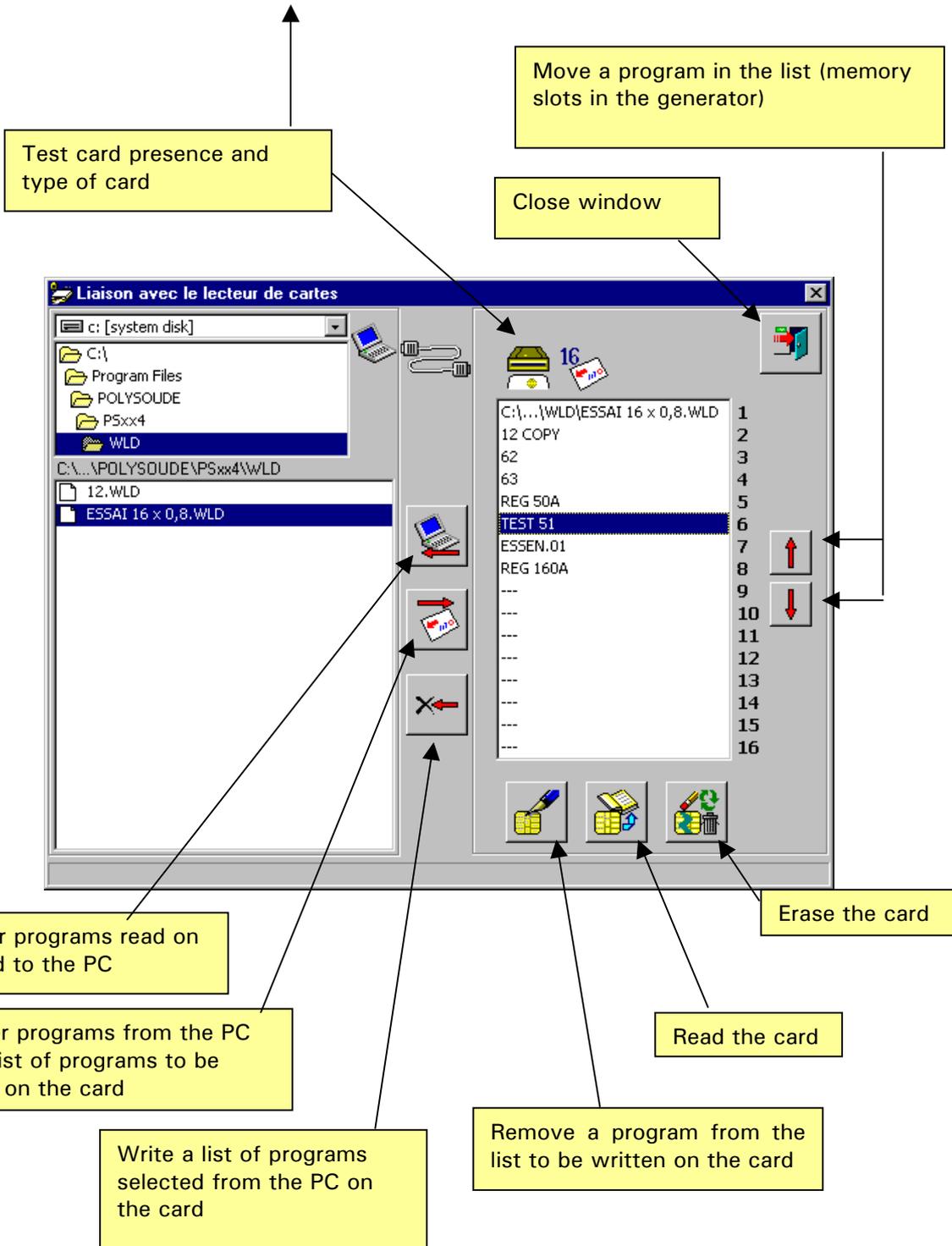
6.1 Description of the liaison window

The left side of the window displays the list of programs contained in the PC. Above the list, a directory structure displays the directory where the displayed programs are stored. This directory structure enables you to change directories by simply clicking on the mouse. Finally, there is a selection list above the directory structure to enable you to change readers or disks.

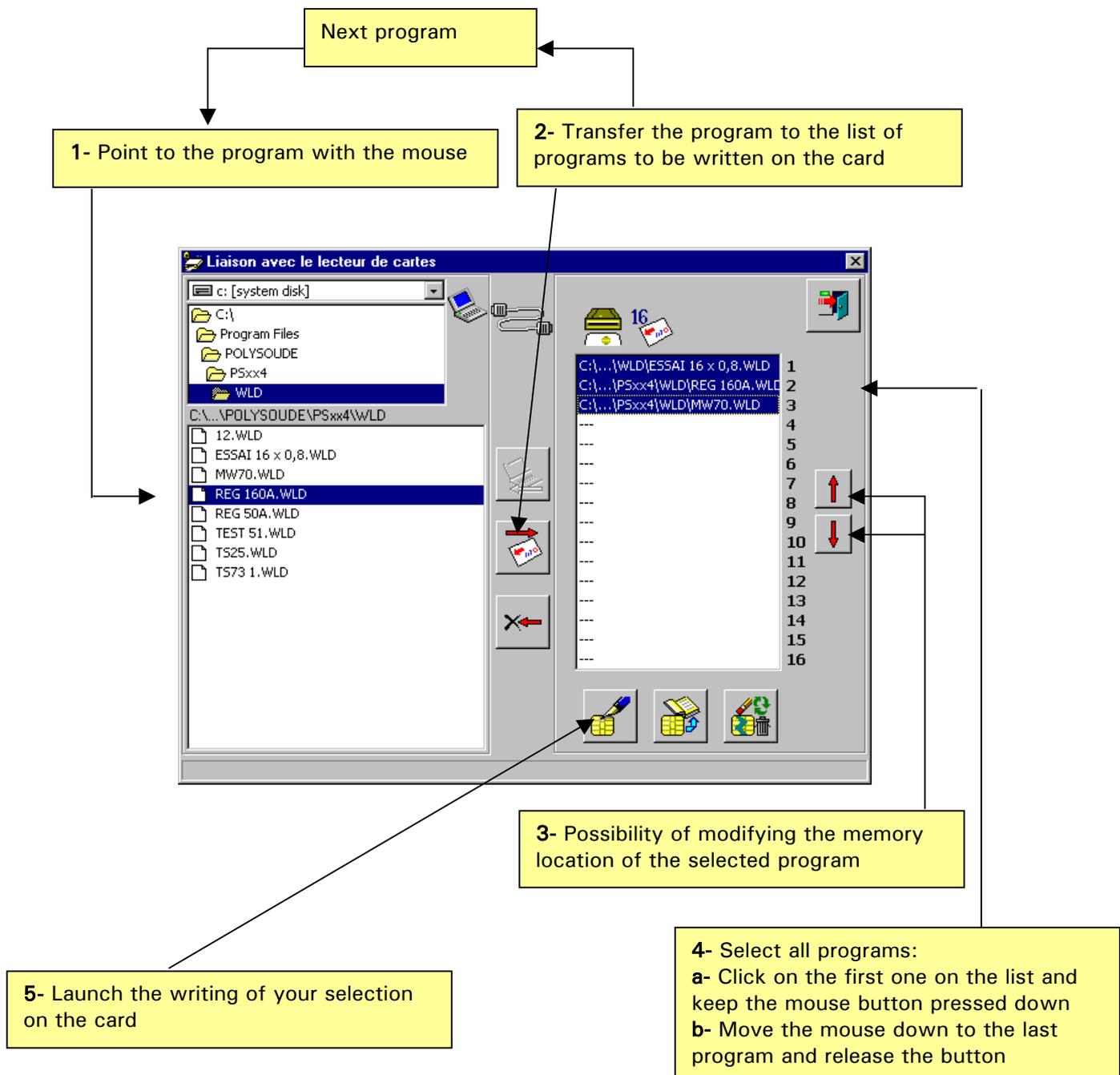
The right side of the window displays the commands relative to the card reader, as well as the list of programs it contains. The list is updated only after a read command.

Between the two sides, we find buttons enabling to transfer the programs from one list to the other, depending on the operation to be implemented (reading or writing).

	Card absent or wrongly inserted
	Card that can only hold one program
	Card that can hold up to sixteen programs



6.2 Writing programs on the card

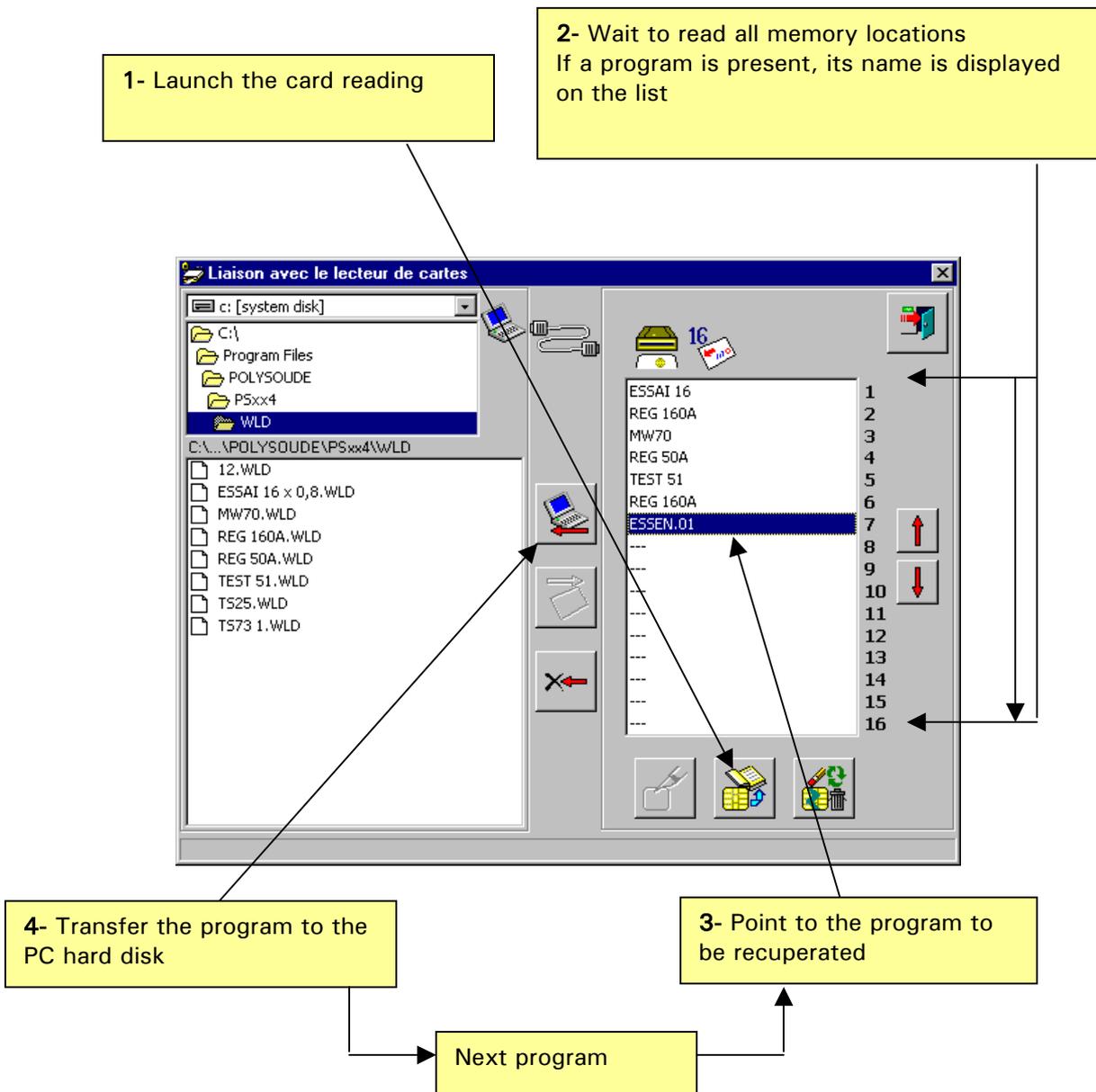


Note: Selection of several programs in the list to be written on the card

With *Windows™*, it is possible to make selections in a list (*) of several elements by keeping the "Ctrl" key pressed down and clicking the desired element with the mouse. This "Ctrl-click" combination enables alternately, at each click, to select / de-select a particular element in the list without modifying the status (selected / de-selected) of the other elements.

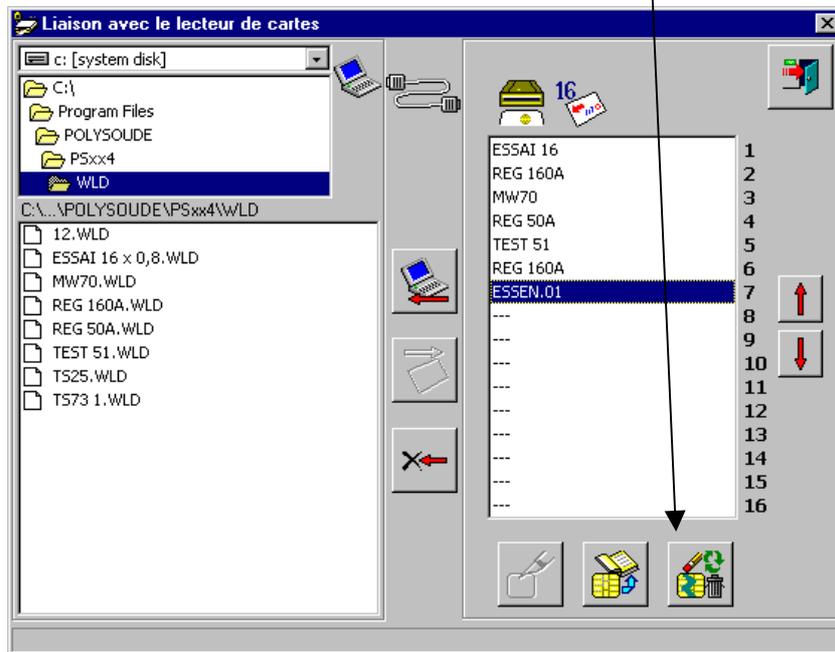
(*) Only for lists enabling multiple selection.

6.3 Reading the contents of a card and recuperating the programs

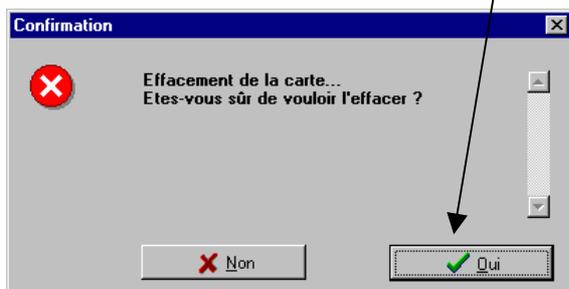


6.4 Erasing the card

1- Launch the erase command



2- Validate confirmation to erase



3- Wait for complete erasure of the card, then validate the end of the operation