Instruction Sheet
SmartPAC Backup and Restore (SBR)

This document shows you how to install the SmartPAC Backup and Restore (SBR) utility and use SBR to back up tools on and restore tools to SmartPAC 1 and SmartPAC 2 controls. SBR enables you to back up/restore up to 200 tools as well as Initialization settings on each SmartPAC, and you can back up/restore tool programming and Initialization parameters on multiple controls.

The document also shows you how to use SBR to transfer tool settings between SmartPAC 1 and SmartPAC 2 when you are upgrading from SmartPAC 1 to SmartPAC 2.

In order to use SmartPAC Backup and Restore, you must be running SmartPAC 1/SmartPAC 2 with SBR/PACNet or LETS as an installed option.

The document is organized in the following sections:

Installing SBR on Your Laptop

NOTICE

YOU MAY NEED ADMINISTRATOR PRIVILEGES TO INSTALL SBR ON SOME SYSTEMS

On some Windows operating systems, you may need Administrator privileges to install SBR.

SBR is compatible with Windows 10 operating system. To install the software on your laptop or other computer, do the following:

NOTICE

CLOSE ALL APPLICATIONS BEFORE STARTING INSTALLATION PROGRAM

If other applications are running on your computer during execution of the SBR installation program, SBR may not install successfully. Make sure to close all applications on your computer before launching the installation program.

1. Download the SBR files you receive from Wintriss Customer Service.
2. Open the SBR Install Package folder, and click on the *Setup* icon.
3. When a screen with the message "Welcome to the SBR Install installation program" displays, click on *OK*. The screen shown in Figure 1 (next page) displays.

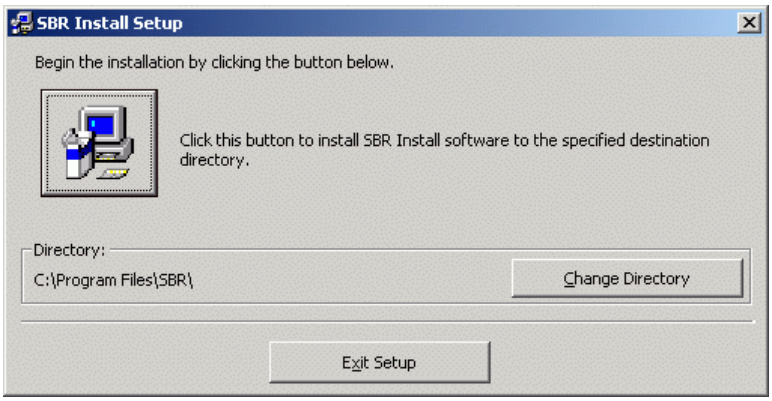

Figure 1. SBR Begin Installation Screen

NOTICE

If you are running other applications, click on *Exit Setup* on the SBR Begin Installation screen, close the applications, re-launch the Setup program, and click on *OK*.

4. Click on the large button in the top half of the SBR Begin Installation screen (see Figure 1) if you want SBR installed in the destination directory shown in the **Directory:** field in the lower half of the screen. The Choose Program Group screen, shown in Figure 2, displays.

NOTICE

If you want to specify a different directory for the SBR software installation, click on *Change Directory*, navigate to the directory you want in the "Directories:" window on the Change Directory screen, and click on *OK*. Then click on the large button in the top half of the Begin Installation screen.

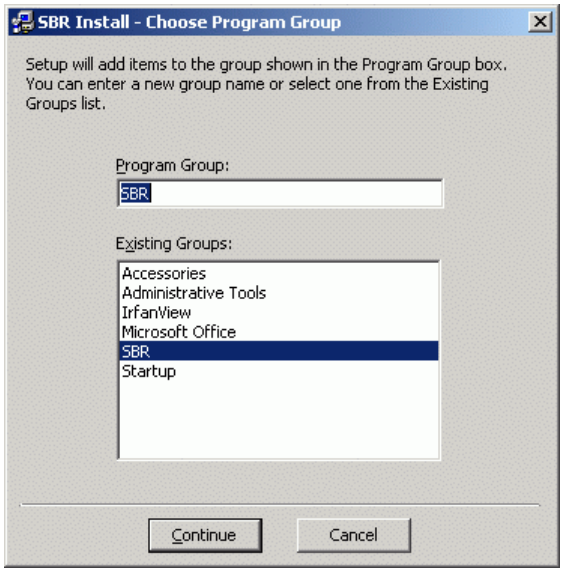

Figure 2. SBR Install – Choose Program Group Screen

5. Click on *Continue* if you want SBR installed in the group shown in the "Program Group:" window ("SBR" is the default entry).

   If you want to specify a different Program Group name, select an item in the "Existing Groups:" window by clicking on it, or type a new entry in the "Program Group:" window, then click on *Continue*.

6. A screen displays briefly, showing the progress of the installation, followed by a screen displaying the message "SBR Install Setup was completed successfully." Click on *OK* to return to your desktop.

Connecting Your Laptop to SmartPAC

⚠ WARNING

ELECTRIC SHOCK HAZARD

Turn off and disconnect power from SmartPAC 1 or SmartPAC 2 and from the machinery it is connected to before making any wiring connections.

Failure to comply with these instructions could result in death or serious injury.

CAUTION

DAMAGE TO BOARD FROM STATIC DISCHARGE

Ground yourself before touching circuit boards or chips by touching a large metal object such as the press. Static electricity can destroy electronic components.

Failure to comply with these instructions could result in property damage.

To establish communications between your laptop and the SmartPAC 1 or SmartPAC 2 you wish to back up, you need to connect the computer's serial port to the communications port on the SmartPAC. The communications port is labelled TB103 on SmartPAC 1, TB104 on SmartPAC 2. To make the connection, you use an SBR cable (Wintriss part #4199105) with a 9-pin DB-9 female connector at one end to plug into the serial port on the laptop and an 11-pin Phoenix connector at the other end to plug into TB103 or TB104 on the SmartPAC.

NOTICE

If your laptop does not have a serial port or the serial port is not configured with 9 pins, you will have to use a serial adapter to connect to the SmartPAC. If you would like to learn more about or need help selecting a serial adapter, Wintriss Tech. Support can also provide information about serial adapters.

To connect your laptop to a SmartPAC, using the SBR cable, do the following:

1. With your laptop and SmartPAC both turned off, plug the Phoenix connector at one end of the cable into TB103 on the SmartPAC 1 board or TB104 on the SmartPAC 2 board. The connector can be inserted in only one orientation.
2. Plug the DB-9 connector at the other end of the cable into your computer's serial port.

NOTICE

If you are using a serial converter, plug the DB-9 connector into the mating DB-9 connector on the converter. The other end of the converter should be plugged into a USB port.

3. Turn on power at the SmartPAC, and turn on the laptop.

Backing Up Tools

To back up tools on a SmartPAC 1 or SmartPAC 2, do the following:

1. On your existing SmartPAC, check to make sure the CPU number in the communications menu is set to 1:

   Original SmartPAC: "CPU NUMBER = 1"

   See *Communications (optional)* in Chapter 4 - Initialization Mode of your original SmartPAC manual

   SmartPAC 2: "RSR/SBR CPU NUMBER = 1"

   See *SETUP DATA COMMS (Optional)* in Chapter 4 - Initialization Mode of your SmartPAC 2 manual

2. With the SmartPAC control turned on and the laptop wired to the control (see previous section), launch the SBR program by clicking on *Start* | *Programs* | *SBR* (or the Program Group you specified during installation) | *SBR*. The SBR Startup screen displays briefly, then a screen with the caption "SBR" followed by the SBR version number displayed on the title bar appears.

3. With the SmartPAC control turned on and the laptop wired to the control (see previous section), launch the SBR program by clicking on *Start* | *Programs* | *SBR* (or the Program Group you specified during installation) | *SBR*. The SBR Startup screen displays briefly, then a screen with the caption "SBR" followed by the SBR version number displayed on the title bar appears.

4. Click on *File* | *Settings* on the SBR screen. The SBR Settings screen with the General tab selected displays (see Figure 3).

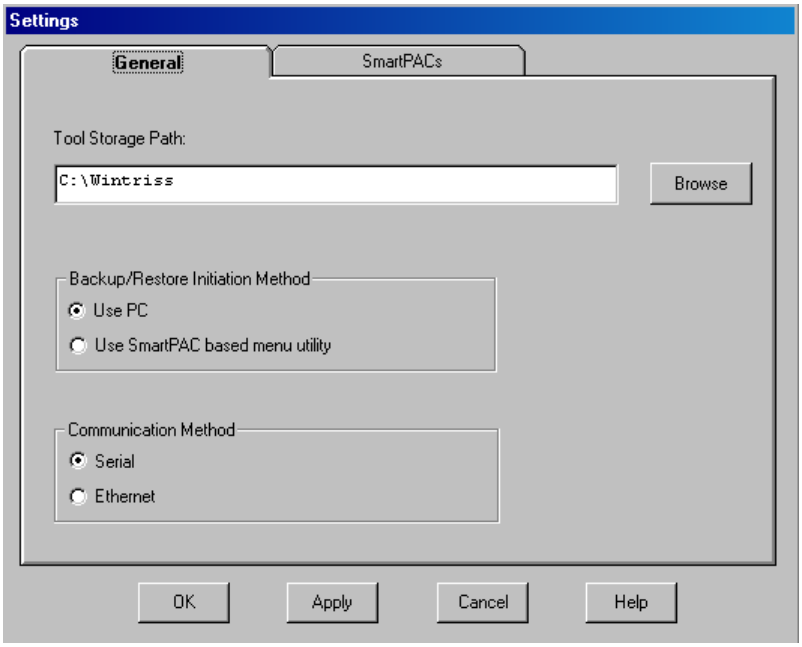

Figure 3. SBR Settings Screen, General Tab

5. If you want to change the disk location to which tools will be backed up (the default is "C:\Wintriss"), click on the *Browse* button to the right of the "Tool Storage Path:" window on the General tab, then navigate to the folder you want on the Browse for Folder screen, and click on *OK*. You are returned to the General tab with the folder you selected displayed in the "Tool Storage Path:" window.

6. Make sure that the *Use PC* radio button is selected in the **Backup/Restore Initiation Method** field and the *Serial* radio button is selected in the **Communication Method** field. These are the default settings. If *Use PC* and *Serial* are not selected, select them.

7. Click on *Apply*.

   If you have selected "C:\Wintriss" as the backup destination and no folder by that name exists on your computer, a screen will display asking if you want to create that folder. Click on *OK* to create the folder.

8. Click on the *SmartPACs* tab.

9. Click on the *Add* button (see Figure 5, next page). The Add SmartPAC screen displays (see Figure 4), on which you must enter identification information about the SmartPAC you are backing up or restoring to. Information must be entered in all fields.

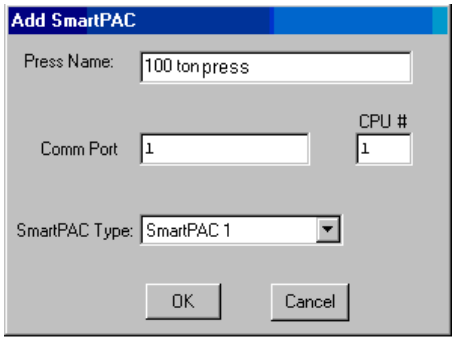

Figure 4. Add SmartPAC Screen

10. Type a name for the press in the **Press Name** field. You may want to use the name you have assigned to the press in SmartPAC Initialization, but this is not required.

11. Type in the **Comm Port** field the number assigned to the serial communications port on your laptop that is connected to your SmartPAC. The default setting is "1"; enter the correct Comm Port, according to the notice below.

> **NOTICE**
>
> The Comm Port field number when using a USB to Serial Adapter will be different from the default setting "1." Go to your computer's Device Manager under Ports (COM & LPT) to identify the COM port number. Enter it in the **Comm Port** field.

12. The default setting for CPU number is 1. Leave "1" in the **CPU#** field.

13. Specify in the **SmartPAC Type:** field the type of SmartPAC you are backing up (i.e., a SmartPAC 1 or SmartPAC 2), using the Down Arrow (▼) to display the two options, then selecting the option you want.

> **NOTICE**
>
> If you are backing up tools on a SmartPAC 1 in order to restore them to a SmartPAC 2 as part of a SmartPAC-1-to-SmartPAC-2 upgrade, make sure to identify the control being backed up as a "SmartPAC 1" and the control being restored to as a SmartPAC 2.

14. Click on *OK*. You are returned to the SmartPACs tab with the information you just entered displayed on a line beneath the *Press Name*, *Port-CPU No*, and *SmartPAC Type* captions. See Figure 5 for an example.

> **NOTICE**
>
> If you want to set up additional SmartPACs before proceeding with the backup of this control, repeat steps 7-12 for each SmartPAC, making sure the *Use PC* and *Serial* settings are selected in the General tab.

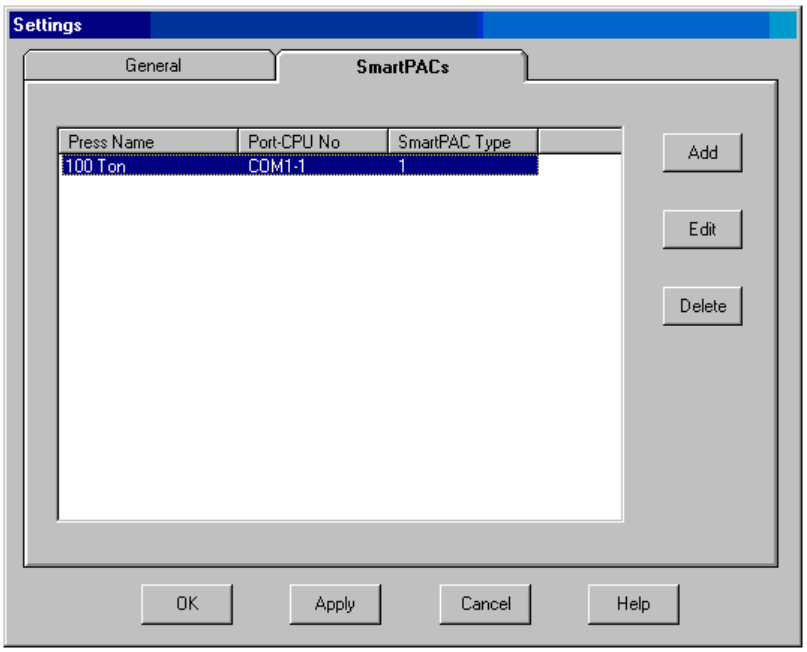

Figure 5. SBR Settings Screen, SmartPACs Tab

15. Click on *OK*. You are returned to the SBR screen (see Figure 6, next page). The information you specified for the SmartPAC you are backing up is displayed on the first line of the screen to the right of an icon representing the SmartPAC control.

NOTICE

If you are setting up multiple SmartPACs, you can click on *Apply* each time you create a new line of information to display that line on the SBR screen, or you can create multiple lines of information, then click on *OK* to display them all simultaneously on the SBR screen.

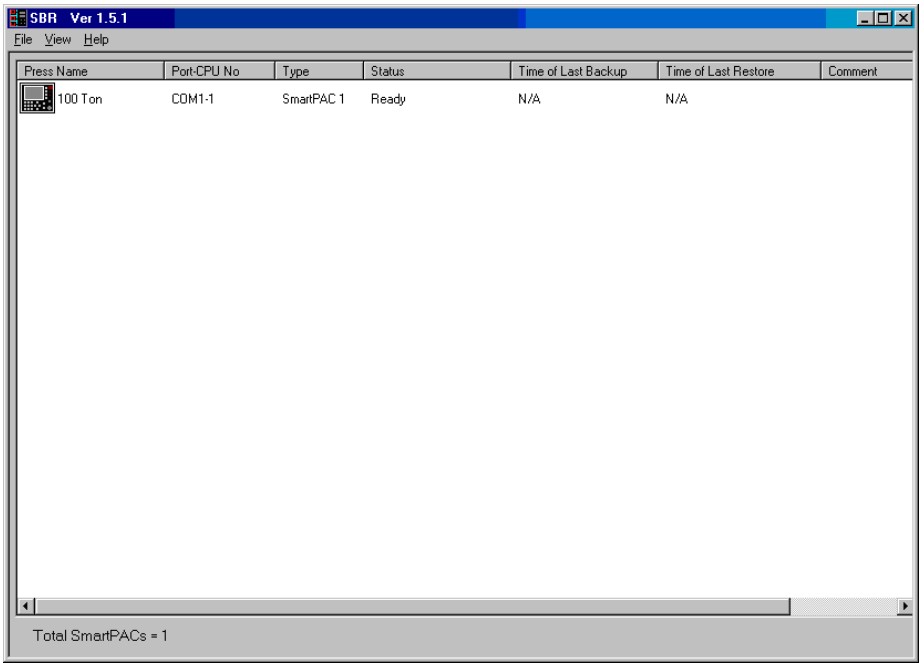

Figure 6. SBR Screen with SmartPAC Information Displayed

16. If the specified SmartPAC is turned on and your laptop and the SmartPAC are communicating, the entry in the **Status** field on the SBR screen should be *Ready*.

    If this SmartPAC is being backed up for the first time, the entry *N/A* appears in the **Time of Last Backup** and **Time of Last Restore** fields, and the **Comments** field is blank, as shown in Figure 6.

    If previous tool backups and restores have been made on this SmartPAC, the times of the most recent backup and restore transactions are shown in the **Time of Last Backup** and **Time of Last Restore** fields. The **Comments** field may display a comment about the last backup or restore if one has been entered for that transaction.

17. Click anywhere on the line of SmartPAC information to highlight it, then double-click on the highlighted line. A screen showing the press name you specified in step 8 followed by the SmartPAC model (i.e., "SmartPAC 1" or "SmartPAC 2") on the title bar displays (see Figure 7, next page). The Detail tab is selected. The entry in the **Status:** field should be *Ready*, as it is on the SBR screen, which is visible behind the current screen.

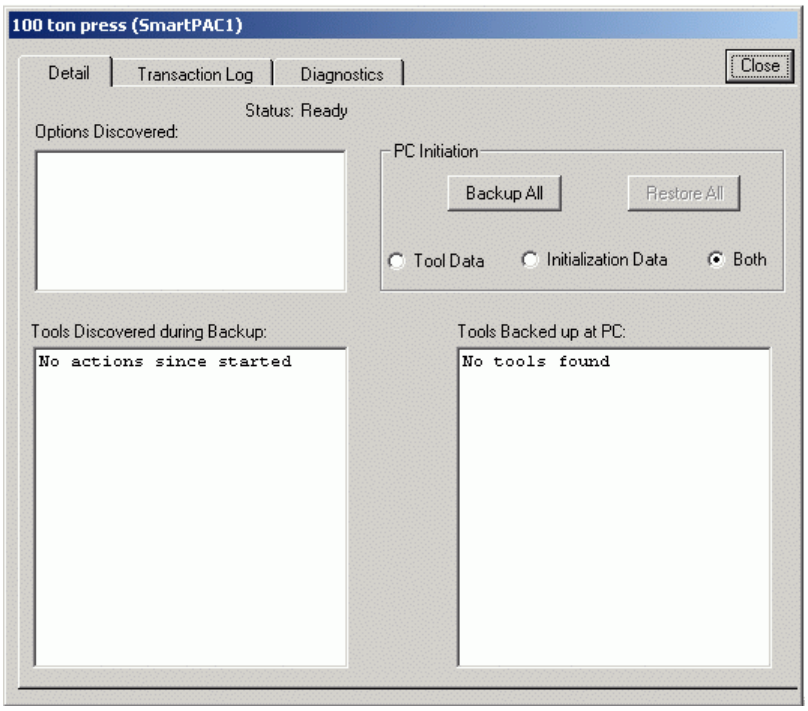

Figure 7. SBR Backup/Restore Screen

NOTICE

In most cases, you will want to back up both tool and Initialization data. However, the Backup/Restore screen gives you the option to back up tool data only or Initialization data only.

18. If you want to back up both tool and Initialization data, leave the ***Both*** radio button (the default) selected. Otherwise, select the ***Tool Data*** button to back up only tool information or the ***Initialization Data*** button to back up only Initialization data.

19. Click on ***Backup All***.

    The entry in the **Status:** field changes momentarily to ***Getting Options***, and then to ***Getting Tool List***, as the SBR program searches for installed options and tools on the SmartPAC. The results of these searches are displayed in the "Options Discovered:" and "Tools Discovered During Backup:" windows at the left of the screen, as shown in Figure 8 (next page).

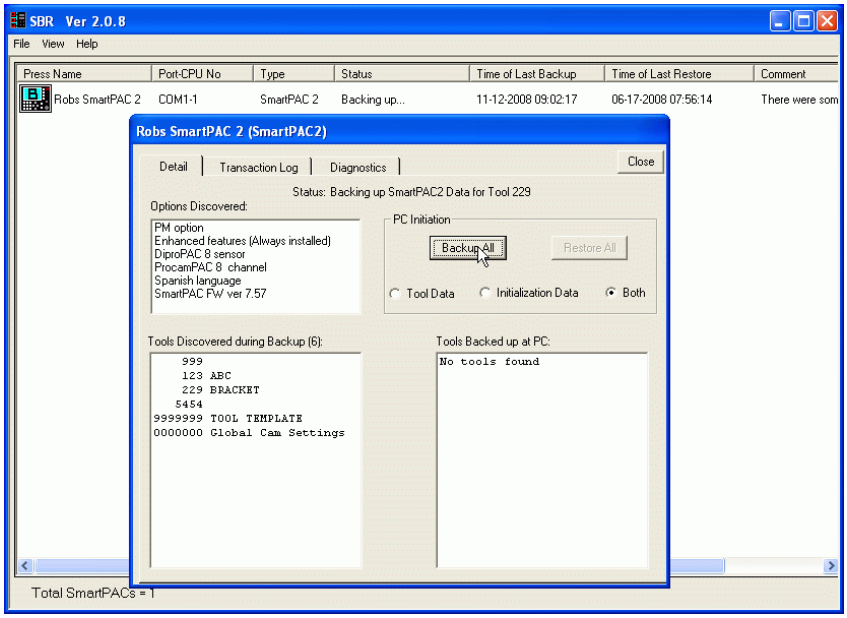

Figure 8. SBR Backup/Restore Screen with Installed Options and Tools Displayed

. If backups have been performed previously on this SmartPAC, backed up tools will be displayed in the "Tools Backed Up at PC:" window.

Once the installed options and tool searches have been completed, the backup process begins. As tools are backed up, messages like the following display in the **Status:** field

Backing up SmartPAC Data for Tool nnnnnn

where *nnnnnn* is the number of the tool being backed up.

If the backup is proceeding smoothly, the letter "B" will appear on a turquoise LCD display on the icon for that SmartPAC on the SBR screen, as shown below and in Figure 8.

When the backup is complete, the message *Finished Backup* displays in the **Status:** field on the SBR Backup/Restore screen, and the message *Finished* displays in the **Status:** field on the SBR screen. Also, the SmartPAC icon in the **Press Name** field on the SBR screen displays a white check mark (√) on a grey LCD, as shown below,

and the date and time of the backup are shown in the **Time of Last Backup:** field.

NOTICE

If an error prevents the backup from being completed, the message "Operation Failed!" displays in the **Status:** field on the SBR Backup/Restore screen, and the message "Alert" displays in the **Status:** field on the SBR screen. Also, the icon on the SBR screen for the SmartPAC you are backing up displays a black exclamation mark (!) on a yellow LCD, as shown below.

For help with these errors, refer to *Responding to Errors That Interrupt Processing*, page 16.

If a checksum error occurs during the backup, the backup process runs to completion, but the message "Error" displays in the **Status:** field on the SBR screen, and the icon for the SmartPAC you are backing up shows a white question mark (?) on a red LCD, as shown below.

For help with checksum errors, refer to *Responding to a Checksum Error*, page 18.

20. 17. You can document the backup when it is completed by clicking on the *Diagnostics* tab on the SBR Backup/Restore screen (see Figure 9), then entering a description in the **Comment:** field (e.g., name of person performing the backup, reason backup is being performed, difficulties encountered in performing the backup, etc). Your description appears in the **Comment:** field on the SBR screen to the right of the date and time of the backup.

    If you

21. 18. Click on *Close* when you are finished to return to the SBR screen.

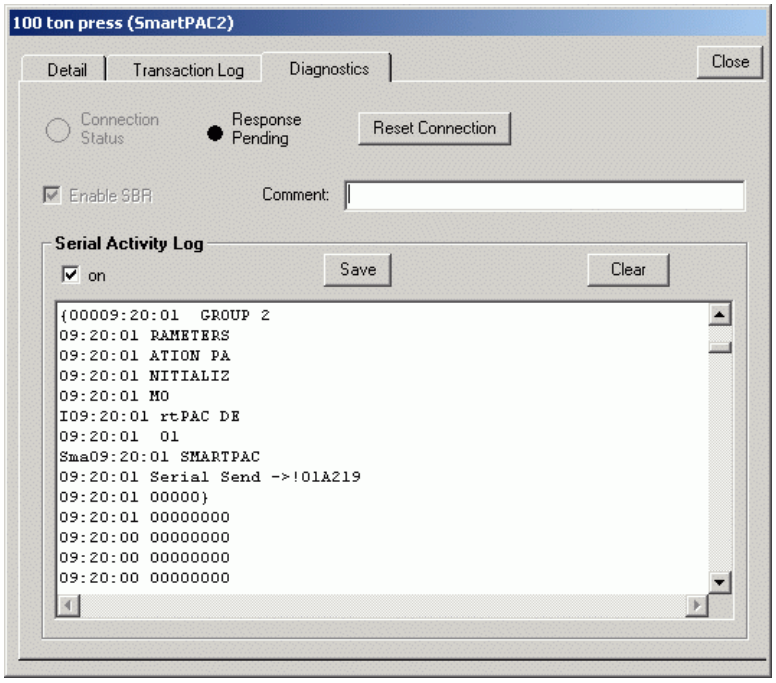

Figure 9. SBR Backup/Restore Screen, Diagnostics Tab

Restoring Tools

NOTICE

You should only need to perform a restore if the SmartPAC tool and Initialization programming has been corrupted or if the SmartPAC board has been replaced. The restore process overwrites your tool programming and Initialization setups with the tool and Initialization settings saved during the most recent backup. In performing a restore, you may lose information that has taken you considerable time to input.

To restore backed-up tools to a SmartPAC 1 or SmartPAC 2, do the following:

1. If you are copying tools to a SmartPAC that has not yet been set up in SBR, repeat steps 1-15 of the *Backing Up Tools* procedure, starting on page 4.

NOTICE

If you are restoring tools to a SmartPAC 2 as part of a SmartPAC-1-to-SmartPAC-2 upgrade, make sure to identify the control being restored to as a "SmartPAC 2." When SBR detects that a SmartPAC 2 is the other connected control, it will restore only the backed-up tool settings from the SmartPAC 1, ignoring the Initialization parameters.

If you are restoring tools to a SmartPAC that has already been set up, simply launch the SBR program (step 1 of the Backup procedure), then highlight and double-click on the line of information for that SmartPAC on the SBR screen (step 15). The SBR Backup/Restore screen displays with the Detail tab selected (see Figure 7).

NOTICE

In most cases, you will want to restore both tool and Initialization data. However, the Backup/Restore screen gives you the option to restore tool data only or Initialization data only.

2. If you want to restore both tool and Initialization data, leave the ***Both*** radio button (the default) selected. Otherwise, select the ***Tool Data*** button to back up only tool information or the ***Initialization Data*** button to back up only Initialization data.
2. Click on the ***Restore All*** button. The following confirmation window displays (see Figure 10).

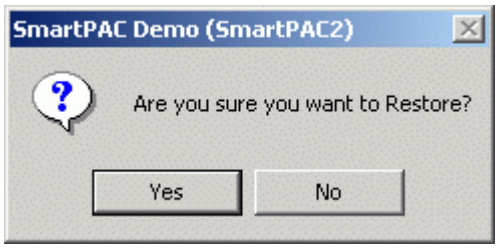

Figure 10. Restore Confirmation Window

NOTICE

Make sure that you really want to restore the tool settings backed up on the laptop to the selected SmartPAC. During the restore process, current tool programming will be overwritten by the backed-up settings.

3. Click on *Yes* to continue with the restore.

   Searches for installed options, available tools, and tools backed up on the laptop are performed as they are during backup (see step 17 in the *Backing Up Tools* procedure, above) and the results displayed in the "Options Discovered:," "Tools Discovered During Backup:," and "Tools Backed Up at PC:" windows.

   Once the installed options and tool searches have been completed, messages like the following display in the **Status:** field

   Restoring SmartPAC Data for Tool nnnnnn

   where *nnnnnn* is the number of the tool being restored.

. If the restore is proceeding smoothly, the letter "R" will appear on a purple LCD display on the icon for that SmartPAC on the SBR screen, as shown below.

Completion of the Restore process is indicated by the message *Finished Restore* appearing in the **Status:** field on the SBR Backup/Restore screen and the message *Finished* displaying in the **Status:** field on the SBR screen. A SmartPAC icon with a white check mark (√) on a grey LCD displays on the SBR screen, as shown below,

and the date and time of the restore are shown in the **Time of Last Restore:** field.

NOTICE

If an error prevents the restore from being completed, the message "Operation Failed!" displays in the **Status:** field on the SBR Backup/Restore screen, and the message "Alert" displays in the **Status:** field on the SBR screen. Also, the icon on the SBR screen for the SmartPAC your are restoring to displays a black exclamation mark (!) on a yellow LCD, as shown below.

For help with these errors, refer to *Responding to Errors That Interrupt Processing*, page 16.

4. You can enter a comment about the restore just as you can for a backup. You make your entry in the **Comment:** field in the Diagnostics Tab on the SBR Backup/Restore screen (see Figure 9).
5. Click on *Close* when you are finished to return to the SBR screen.

Using SBR to Upgrade from SmartPAC 1 to SmartPAC 2

If you are using SBR to transfer tool settings from a SmartPAC 1 to a SmartPAC 2 as part of the SmartPAC-1-to-SmartPAC-2 upgrade procedure, follow the instructions below.

NOTICE

Be sure to copy the following SmartPAC Initialization settings to a paper form before the back-up so you can enter them manually into SmartPAC 2 after you have restored the tool settings:

- Position Sensor (If Installed): Enabled or Disabled
- Counter Setup Mode: Incremented in All Modes or Not Incremented in Inch Mode
- Press Name
- Brake Monitor: Stop and Start Time Limits
- Custom Cam Names
- Auto Advance Settings (If Used)
- Custom Sensor Names
- Sensor Enable Mode: Manual Enable, Auto by Tool, Auto by Sensor
- Setup Mode: Inch or Disabled
- Tool Information
- Security Access: All Settings
- Installed Options (If Applicable): Settings for PACNet (e.g., CPU #), PM Monitor, SFI, MultiPAC

You don't need to record settings for AutoSetPAC, WaveFormPAC, ProPAC, or RamPAC. This information is stored at the PAC.

SmartPAC Initialization settings cannot be restored to SmartPAC 2. Initialization settings should be copied to a paper form (see the SmartPAC Initialization Setup Sheet at the back of the SmartPAC 2 manual), then, after tool settings have been restored, entered manually into SmartPAC 2, referring to the settings on the form.

If you have programmed tool #99999999 in SmartPAC 1, be sure to make a copy of that tool with a new tool number, then delete tool #99999999 before initiating a backup. In SmartPAC 2, tool #99999999 is reserved for Tool Template, a new SmartPAC 2 feature (see the SmartPAC 2 manual).

NOTICE

MAKE SURE TO GIVE YOUR REP. THE SMARTPAC 1 FIRMWARE VERSION NUMBER

Your Wintriss representative needs to know your SmartPAC 1 firmware version number, which you can determine by accessing the List of Installed Options screen in Initialization. Firmware versions 7.95 and earlier reside on a 4 Mb board; versions later than 7.95 are on an 8 Mb board. If your SmartPAC 1 is running a 4 Mb board, your Wintriss rep. will have to use an 8 Mb board so that he can access PACNet/RSR to back up your tool settings.

Firmware versions 7.95 and earlier will NOT work with the 8Mb board, which must have current firmware (i.e., versions later than 7.95) with or without SFI. In order to allow backup of SmartPAC 1 data, the 8 Mb board must also have the PACNet/RSR option installed.

The procedure for converting from a 4 Mb to an 8 Mb board must be followed exactly. When the SmartPAC displays the message "IF YOU HAVE JUST UPDATED THE FIRMWARE IN THIS SMARTPAC, PRESS THE ENTER KEY TO SHIFT THE TOOL NUMBER TABLES," make sure to press ENTER to have the conversion work properly. Once converted to an 8 Mb board, SmartPAC 1 cannot use the 4 Mb board again.

Complete details about upgrading from a SmartPAC 1 to a SmartPAC 2 are provided in Appendix D of the SmartPAC 2 user manual.

To transfer tools from a SmartPAC 1 to a SmartPAC 2 using SBR, do the following:

1. With the SBR cable from your laptop connected to the SmartPAC 1, perform the *Backing Up Tools* procedure, starting on page 4. On the Add SmartPAC screen (see page 5), make sure to set the **CPU #** field to *1* and the **SmartPAC Type** field to *SmartPAC 1*.
2. When the backup is complete, unplug the SBR cable from the SmartPAC 1 and plug it into the SmartPAC 2.
3. Perform the *Restoring Tools* procedure, starting on page 13. On the Add SmartPAC screen, make sure the **CPU #** field is set to *1* and that you change the entry in the **SmartPAC Type** field from *SmartPAC 1* to *SmartPAC 2.*

Responding to Errors That Interrupt Processing

Errors that interrupt the backup or restore process are indicated by the following displays:

- The message "Operation Failed!" appears in the **Status:** field on the SBR Backup/Restore screen
- The message "Alert" appears in the **Status:** field on the SBR screen
- The icon for the SmartPAC you are backup up or restoring to displays a yellow exclamation mark on a yellow LCD, as shown below,

To respond to these errors, do the following:

1. Try running the backup or restore again by clicking on the *Diagnostics* tab, then clicking on *Reset Connection* (see Figure 9).
2. If this doesn't correct the problem, contact Wintriss Tech. Support.

   Be prepared to provide the Tech. Support person with information about the backup or restore that appears in the Transaction Log and Diagnostics tabs.

   The Transaction Log tab (to access this tab, click on *Transaction Log*) displays the date and time of each transaction in the backup or restore process (see Figure 11). For example, in Figure 11 you can see that a backup was initiated at 09:58:45 on 10/28/2008 and that the process was interrupted (this transaction is described as "Serial Action Timed Out") at 09:58:56. A Reset Connection command to rerun the backup (documented as "Manual Reset") was executed at 10:00:05.

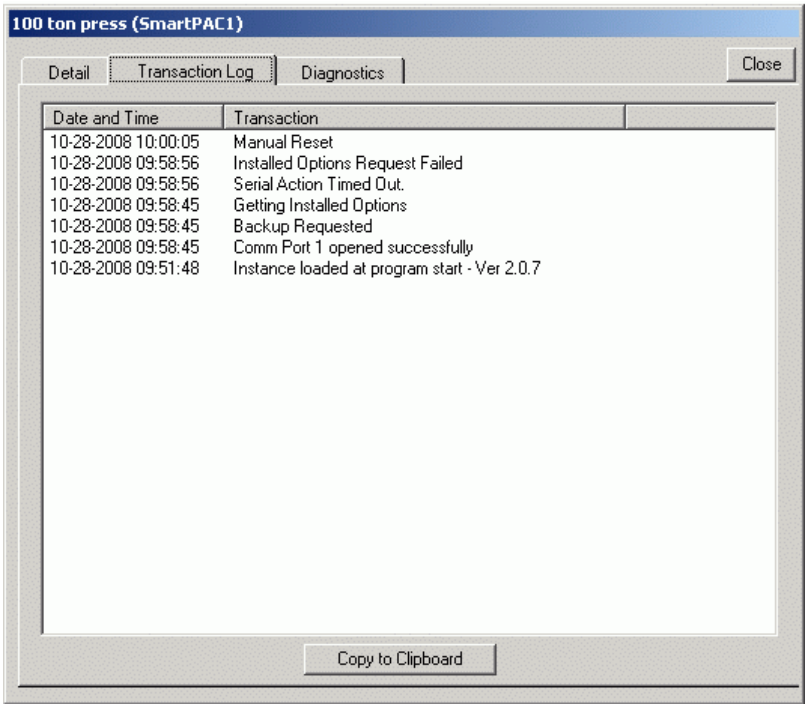

Figure 11. SBR Backup/Restore Screen, Transaction Log Tab

You can copy the Transaction Log to the clipboard by clicking on the *Copy to Clipboard* button at the bottom of the screen. From the clipboard, you can paste the log into an e-mail (press *Ctrl-V*) and send it to Wintriss Tech. Support.

Once you have located the date/time that the problem occurred, you can check the Diagnostics tab (see Figure 12, next page) for more detail. To do so, click on *Diagnostics*.

The Diagnostics tab shows the data being transmitted from the SmartPAC to your laptop (during a backup) or from your laptop to the SmartPAC (during a restore) with the date and time recorded for each piece of data. This information is displayed in the "Serial Activity Log" window.

You can display the transmission of data in real time by clicking on the **on** check box just beneath the *Serial Activity Log* caption. A check mark (√) appears in the box, and the data being transmitted scrolls down the window. When the receiving machine processes a data item, the **Response Pending** indicator turns green briefly.

When the backup or restore is finished, you can view individual data items and the time at which they were transmitted by moving back up the stream of data, using the vertical scroll bar, until you find the item you want.

You can also save the activity log to a file, which can be e-mailed to Wintriss Tech. Support for troubleshooting. To do so, select the **on** check box before you start the backup or restore and click on the *Save* button when the process is complete. The log is saved to a file consisting of the press name you entered on the Add SmartPACs screen (see step 8, page 5) followed by the suffix *.diag*. The file is saved to the destination you specified on the SBR Settings screen (see step 3, page 4). The destination folder and filename are displayed on the first line of the log, as shown in Figure 12.

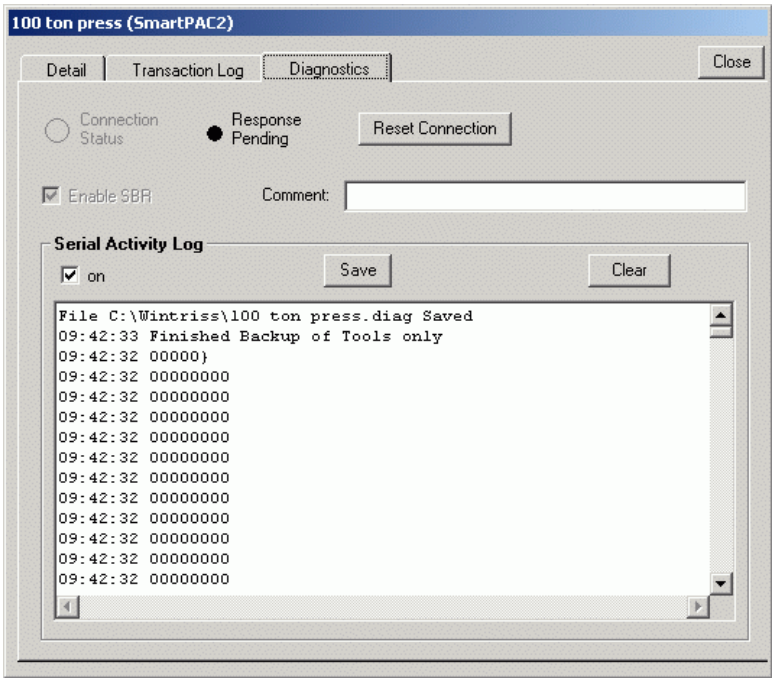

Figure 12. SBR Backup/Restore Screen, Diagnostics Tab

To clear information displayed in the "Serial Activity Log" window, click on the *Clear* button.

Responding to a Checksum Error

A checksum error is indicated by a white question mark (?) on a red LCD on the icon for the selected SmartPAC on the SBR screen, as shown below,

A "checksum" is a calculated number used to verify that the tool data being loaded at the SmartPAC is identical to the settings programmed for the tool. SmartPAC calculates the checksum whenever a tool number is programmed or tool settings are changed; the checksum is verified whenever a tool number is loaded. When there is a discrepancy between the two sets of data, SmartPAC generates a checksum error. Checksum calculations ensure that tool settings do not change unexpectedly.

While performing a backup, SBR calculates a checksum for the data retrieved for each tool and compares that value with the last checksum calculated by SmartPAC following tool programming. When the two values disagree, SBR generates a checksum error, as described above, to alert the user that one or more backed-up tools may be corrupted.

Checksum errors do not interrupt the backup process. You can check to see which tools have generated a checksum error by clicking on the *Transaction Log* tab and viewing the transactions for your backup job displayed in the log (see Figure 13, in which the third item displayed in the Transaction Log example is a checksum error).

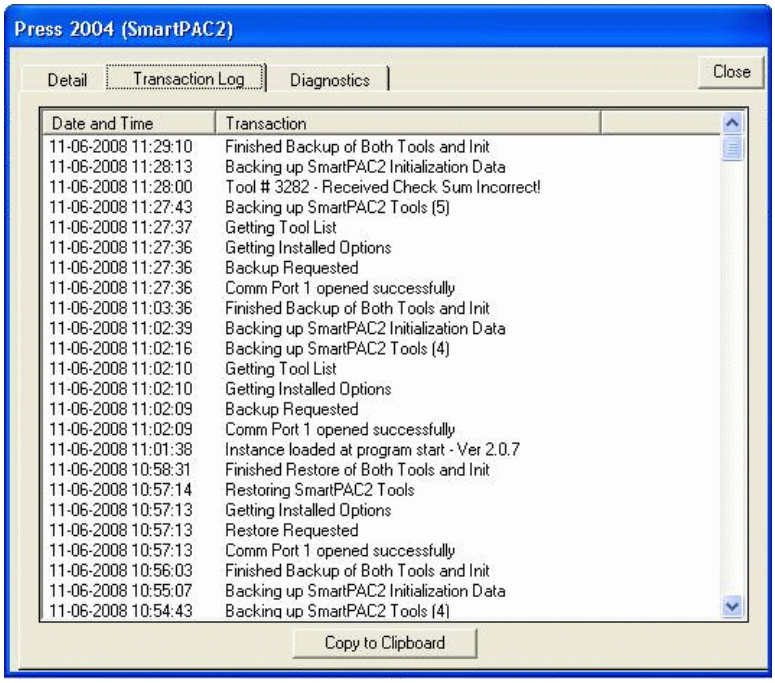

Figure 13. Transaction Log Tab Showing Checksum Errors

For each tool that generates a checksum error, do the following:

1. In SmartPAC Program mode, select a tool to edit on the Tool Program Menu.
3. Select each of the Tool Program Menu items (i.e., COUNTERS, DIE PROTECTION, CAM SWITCH, etc.) and check the settings, correcting any parameters that have been corrupted. When you press RESET to save your changes and/or return to the Tool Program Menu, SmartPAC recalculates the tool's checksum.
4. Reload the tool. If you don't get a "Tool number table checksum error" message, the tool programming has been restored.
5. When you have eliminated the checksum errors for all identified tools, re-run the backup.
6. If you can't correct checksum errors for one or more tools, contact Wintriss Tech. Support.