WINTRISS®

User Manual

Waddington Wintriss® SFI

ServoFeed Interface for:
SmartPAC®
SmartPAC® 2
SmartPAC® PRO
ProCam® 1500
DiPro® 1500

1102700
Rev. D July 2018

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Whatever the product, we are committed to satisfying you with innovative engineering, quality construction, reliable performance, and ongoing, helpful support. Call us whenever you need assistance.

Changes for Revision D of the

Waddington Wintriss SFI User Manual (1102700)

Revision D of the Waddington Wintriss SFI User Manual covers all Waddington Wintriss SFI versions, except where noted.

The changes for Revision D include:

- Added installation and other information for using with SmartPAC 2 and SmartPAC PRO.
- Added wiring diagram 6.

PROVIDE IMPORTANT INFO

DURING TROUBLESHOOTING WITH WINTRISS TECH SUPPORT!

Whenever you need to contact Wintriss Controls Group for technical assistance, be ready to provide some important information to expedite a resolution to the problem. Please supply: product name (e.g. SmartPAC, ProCam 1500, or DiPro 1500); installed options (e.g. 8-channel cam.); and firmware version number (e.g. Vs. 2.00). You can determine firmware version number from the chip on the processor board (see "location of components" in Chapter 2).

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How to use this manual

Chapter 1 introduces you to the Waddington Servo Feed Interface (SFI). It explains what a servo feed interface is, and how it relates to Wintriss products. And it talks about what you can do with your Waddington SFI.

Installation is discussed in Chapter 2. The Waddington Servo Feed Interface (SFI) installation is basically the same for all Wintriss products mentioned in this manual. There are two sections which provide detail on connecting the Wintriss product to the Waddington servo feed. Section 1 deals with SmartPAC, SmartPAC 2 and SmartPAC Pro. Any related wiring schematics for SmartPAC are provided at the very end of the manual after the index. Section 2 covers the 1500 series Wintriss products, specifically ProCam 1500 and DiPro 1500. Related wiring tables are provided in that section. Follow the steps in Chapter 2 to install SFI.

The next three chapters of the manual explains how to use SFI in all three SmartPAC operating modes: Initialization (covered in Chapter 3), Program (Chapter 4), and Run (Chapter 5). Each of these chapters is broken down into two sections: Section 1 SmartPAC and Section 2 1500 series, to provide specifics on using your Waddington SFI. These chapters mention specific parameters that you can initialize and/or modify at your Waddington servo feed. They do not, however, explain these parameters in any detail. Refer to your Waddington servo feed manual for more information.

Troubleshooting is discussed in Chapter 6. This chapter does not include any Waddington error conditions specific to the feed controller. For that information, consult your Waddington servo feed user manual.

NOTICE

WAVEFORMPAC SFI AND SMARTPAC 2 AND SMARTPAC PRO

You can use Waddington SFI with SmartPAC 2 and SmartPAC PRO as well as with the original SmartPAC. Instructions provided in this manual that are specific to SmartPAC pertain to SmartPAC 1, SmartPAC 2, and SmartPAC PRO (refer to “SmartPAC PRO, SmartPAC 2 and Original SmartPAC” in Chapter 1, for more information). Wiring diagrams at the end of the manual show pin connections for the different SmartPACs.

NOTICE

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Wintriss Controls warrants that Wintriss electronic controls are free from defects in material and workmanship under normal use and service for a period of one year (two years for Shadow light curtains) from date of shipment. All software products (LETS/SFC and SBR), electro-mechanical assemblies, and sensors are warranted to be free from defects in material and workmanship under normal use and service for a period of 90 days from date of shipment. Wintriss's obligations under this warranty are limited to repairing or replacing, at its discretion and at its factory or facility, any products which shall, within the applicable period after shipment, be returned to Wintriss Controls freight prepaid, and which are, after examination, disclosed to the satisfaction of Wintriss to be defective. This warranty shall not apply to any equipment which has been subjected to improper installation, misuse, misapplication, negligence, accident, or unauthorized modification. The provisions of this warranty do not extend the original warranty of any product which has either been repaired or replaced by Wintriss Controls. No other warranty is expressed or implied. Wintriss accepts no liability for damages, including any anticipated or lost profits, incidental damages, consequential damages, costs, time charges, or other losses incurred in connection with the purchase, installation, repair or operation of our products, or any part thereof.

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It is solely the user's responsibility to properly install and maintain Wintriss controls and equipment. Wintriss Controls manufactures its products to meet stringent specifications and cannot assume responsibility for consequences arising from their misuse.

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USER MANUAL
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Chapter 1 - Waddington Servo Feed Interface SFI

About Wintriss Servo Feed Interfaces

Servo Feed Interface (SFI) is an option available with Wintriss products: SmartPAC, SmartPAC 2, SmartPAC PRO, ProCam 1500, and DiPro 1500 with Cam. SFI, which is a combination of hardware and software, is available for most servo-driven feeds. SFI can be integrated with an existing system or can be ordered with a new one. SFI means that the micro-processor-based Wintriss product is “interfaced” with the feed’s controller, so that the tool’s feed settings are stored in the Wintriss “Tool Number Memory”. The Wintriss control will automatically transmit the settings to the servo feed every time a tool is changed. Typically, there is only one operator interface, or control panel, to use and only one tool number to load when setting a die. With some feeds the Wintriss product becomes the feed’s panel. With other feeds, the feed panel remains but may be rarely, if ever, used.

Although SFI is similar from one feed to the next, there are differences that are feed manufacturer- or feed controller-specific. Remember that SFI is communicating with the feed controller and is not performing the functions of the feed controller. Some feeds will not accept certain information via a communications port or the controller only communicates during certain modes. This may be a controller issue, or a decision on the part of the feed manufacturer. SFI cannot change this, but rather can only "talk/work" within the controller’s communications capabilities or as requested by the feed manufacturer. However, SFI works like the Wintriss product within which it is installed. So, if you are accustomed to the Wintriss product – the SFI programs, adjusts, and loads using similar menus and expected key strokes.

To use the Servo Feed Interface, you must have or install the appropriate firmware chip into the appropriate Wintriss control. Then you simply connect the unit to your servo feed using a cable that plugs into your servo feed's RS-232 port. See Chapter 2 for installation instructions for the appropriate product.

The Waddington Servo Feed Interface allows several user-defined choices, as well as feed adjustments while running. It also includes "Feed Advisor". Feed Advisor determines the optimum (slowest) feed speed for your feed setup. You program the parameters (press speed, feed arc/degrees available to feed, and length) and it calculates the feed speed. If it is impossible, Feed Advisor will offer a suggested solution.

With SFI, the feed is set and its parameters stored at the Wintriss product. There are three modes: Initialization, Program, Run/Adjust. Depending on the product, there may be different titled subheadings in these modes. However, the features are basically similar.

In **Initialization mode**, you set the major parameters – basically configuring how the feed/SFI works. Here is where you also zero the resolver, determine the system’s security, and configure cam “auto advance” parameters, plus more…. **See Chapter 3.**

In **Program mode**, you program a tool number, make major changes to a setup, use the Feed Advisor (if applicable), and load the Tool Number that you want to run. **See Chapter 4.**

In **Run or Adjust mode**, you can load a Tool Number and fine-tune the loaded Tool Number – if allowed by your security settings (Initialization Mode). **See Chapter 5.**

The "1500" series products have 8-line displays, while the SmartPACs have larger displays. The ProCam 1500, DiPro 1500, and SmartPAC have similar menus, displays (except size), style, and ease of use.

REFER TO THE APPROPRIATE WINTRISS USER MANUAL

If you need additional help with any of the Wintriss products documented here, consult the appropriate Wintriss user manual (available at www.wintrissdocs.com), which explains in detail how to use all of the operating modes mentioned above as well as use of the keypad:

SmartPAC: #1100500
SmartPAC with WPC: #1101000
SmartPAC 2: #1126700
SmartPAC 2 with WPC: #1126800
SmartPAC 2 with WPC 2000: #1128600
SmartPAC PRO: #1143100
SmartPAC PRO with WPC 2000: #1143300
ProCam 1500: #1095000
DiPro 1500: #1092000

How SFI works

You do not need to know any of the following information, but here is a little background about how your SFI works. Your Waddington Servo Feed Interface (SFI) is actually an RS-232 interface. The RS-232 interface does not just consist of cables and connectors. Like ANSI standards that govern how your press must operate, the RS-232 interface requires specific circuits and software instructions for the transmission of signals and data between your servo feed and your Wintriss control. Transmission of data is handled by software in the Wintriss product and by the software built into your servo feed. Your servo feed came with all the RS-232 circuitry and software already in place.

Wintriss Controls Group worked in conjunction with your servo feed manufacturer to design the proper hardware and software that will automatically interface with your Waddington servo feed. That is why all you have to do is install the firmware chip and connect a cable from the Wintriss control to your servo feed's RS-232 port. Everything else is automatic. You can then make SFI settings at the Wintriss product's keypad just as you would if you used the interface on the servo feed itself.

What you can do with the Waddington SFI

Using the Wintriss control menus, you can:

- Set feed length, percent acceleration, and possibly some other parameters for your servo feed
- Save these settings under the tool number and recall them automatically when you load setups by tool number
- Modify or change setups
- Use Feed Advisor to check your settings. If you key in feed angle and press speed, Feed advisor warns you if your settings are not right for that job.
- Adjust feed length and percent acceleration while the press is running
- Lock SFI settings in Adjust Mode to prevent unauthorized tampering

> **IMPORTANT**
>
> For more detailed information regarding your Waddington servo feed controller, consult the user manual.

Your Waddington Servofeed Interface (SFI) can be used with the original SmartPAC, SmartPAC 2 or SmartPAC PRO. The Waddington SFI user manual covers installation and operation with the original SmartPAC.

When installing your Waddington SFI with SmartPAC 2, use the wiring diagrams at the end of this document instead of the ones in your Waddington SFI manual. For instructions on operating your SFI, read the next section and refer the appropriate SmartPAC manual.

SmartPAC PRO, SmartPAC 2, and Original SmartPAC

Your Waddington SFI can be used with the SmartPAC PRO, SmartPAC 2 and original SmartPAC.

To install Waddington SFI on a SmartPAC, follow the instructions in Chapter 2 and refer to the appropriate wiring diagrams at the end of the manual. (Wiring diagrams show connections for SmartPAC 1, SmartPAC 2, and SmartPAC PRO.)

Waddington SFI menu organization in SmartPAC 2 and SmartPAC PRO is similar to that in SmartPAC 1, and the Waddington SFI screens are similar in all SmartPACs. As a result, you can refer to the screens and follow the steps provided in chapters 3-6 of this manual to initialize, program, run, and troubleshoot Waddington SFI in SmartPAC 1, SmartPAC 2, and SmartPAC PRO. The main differences among the three SmartPACs are in their panel displays, as shown in Figure 1-1 and Figure 1 2.

SmartPAC 2 operates very much like the original SmartPAC, which you may already have in your plant. All the PAC module options for SmartPAC work with SmartPAC 2.

If you are familiar with the original SmartPAC, you will find using the SmartPAC 2 very similar. Figure 1-1, above, shows the differences between their front panels. Some of the instructions in this manual are based on the instructions for the original SmartPAC.

The manual for your SFI option is written in terms of the original SmartPAC; the display shown in the manual is the original SmartPAC's. Your SmartPAC 2 display will look somewhat different, but the menus and the actions you take are very similar.

Figure 1-1 shows the differences between the keyboard and display of your SmartPAC 2 and the original SmartPAC.

Since SmartPAC 2 has eight function keys and the original SmartPAC has only six, the function keys will be different in many instances. These are also called "**F keys**." Be sure to read the instructions on the display and read the descriptive labels next to the function keys before you press a function key.

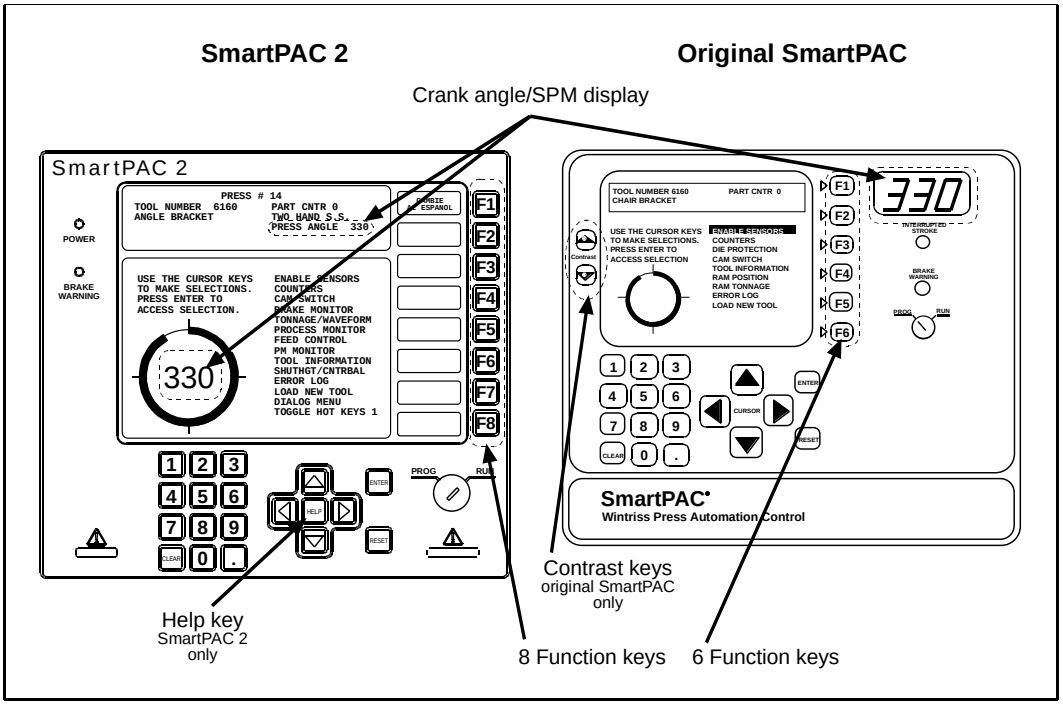

Figure 1-1. SmartPAC 2 and Original SmartPAC

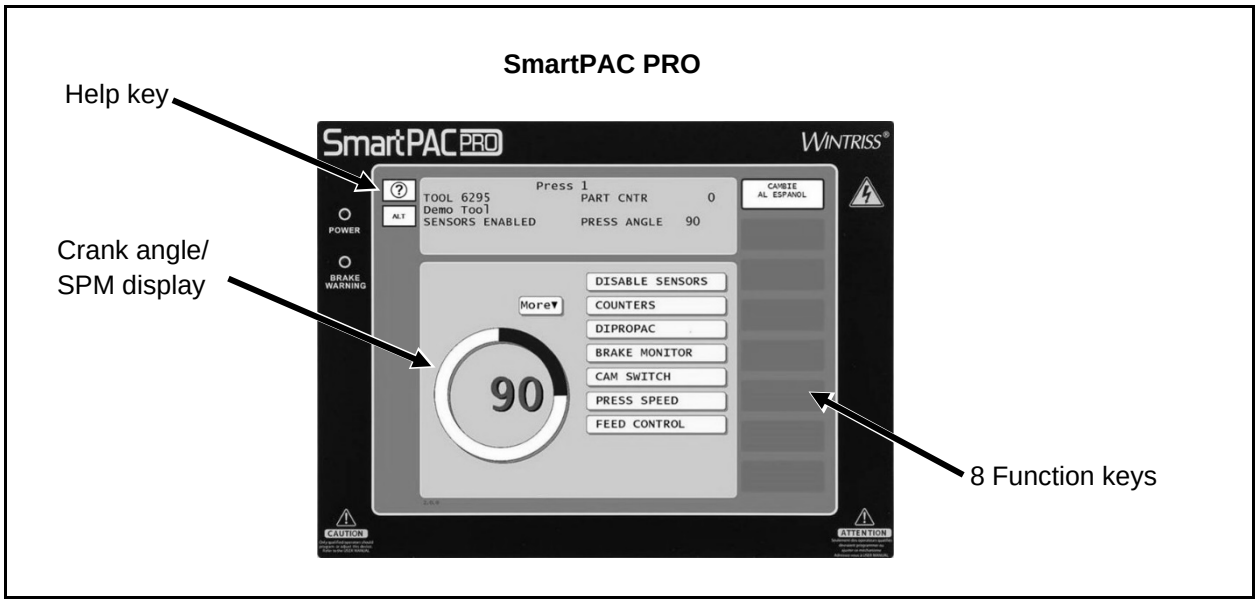

Figure 1-2. SmartPAC PRO

SmartPAC 1, SmartPAC 2, and SmartPAC PRO panel displays use a different number of function, or "F," keys. SmartPAC 2 and SmartPAC PRO have eight function keys, and the original SmartPAC only six. Be sure to read the instructions on the display and the descriptive labels on or next to the function keys before you press an "F" key.

> **NOTICE**
>
> On many screens, you can press the **HELP** key (see figures 1-1 and 1-2) to display instructions showing you how to use the screen.

If you need additional help using Waddington SFI with SmartPAC, SmartPAC 2 or SmartPAC PRO, refer to the appropriate manual, listed on page 2.

Chapter 2 - Installing Waddington SFI

Installing the components that allow your Wintriss control to operate your servo feed is quite simple, and requires these tasks:

- Installation of SFI firmware into Wintriss control
- Wiring connections from the Wintriss control SFI-communications terminal block to the RS-232 port of your Waddington servo feed controller. The location of the wiring diagrams (or tables) for each Wintriss product will be noted in the appropriate installation section.

Wiring diagrams are provided at the end of the manual.

NOTICE

WADDINGTON SFI AND SMARTPAC, SMARTPAC 2, AND SMARTPAC PRO

You can use Waddington SFI with SmartPAC 2 and SmartPAC PRO as well as with the original SmartPAC. Instructions provided in this manual that are specific to SmartPAC pertain to SmartPAC 1, SmartPAC 2, and SmartPAC PRO (refer to "SmartPAC PRO, SmartPAC 2, and Original SmartPAC," page 3, for more information). Wiring diagrams at the back of the manual show pin connections for the different SmartPACs.

Section 1 SmartPAC

Installing the SmartPAC SFI

This section explains how to perform the installation for SFI with SmartPAC. For SmartPAC to be compatible with the Waddington servo feed, your kit would consist of the following ordered items:

- SFI firmware (unless factory-installed at time of order)
- 20-foot 2-conductor shielded cable with a DB25 connector attached on one end (Wintriss cable #4199104)
- 10-pin connector

WARNING!

ELECTRICAL HAZARD!

Dangerous voltages are present. Verify that the power to SmartPAC and to the Waddington feed have been turned OFF before servicing any components! Servicing must be performed by qualified personnel.

Upgrading SmartPAC firmware

You will need to upgrade SmartPAC for SFI™ ServoFeed Interface capability. Follow these steps:

1. Turn power off to SmartPAC. The LCD on the front panel should be blank and the angle/RPM display should be unlit.

CAUTION!

Always verify that power has been turned off to SmartPAC!

2. Before you proceed, you should ground yourself by touching any large metal object. This will remove any static electricity that you may be carrying around. A static electricity "zap" will destroy the components.

CAUTION

The SmartPAC firmware board location is also not interchangeable. It must be installed on the main processor board as illustrated in Figure 2-1 of this chapter.

3. Look inside SmartPAC and locate the firmware board, which is located toward the bottom left of the main processor board (Figure 2-1). Take note of its orientation.
4. Remove the four screws which hold the board to the standoffs under the board and put them aside for now.

5. Unplug and remove the board. Be sure not to confuse the old firmware board with the new one you will be installing. If necessary, jot down the version number that is found on the firmware chip's white label.
6. Verify that you are still "grounded", and then remove the new board from the package.
7. Plug the board in. The connectors on the underside of the board are keyed so they can only be plugged in one way. These connectors will connect correctly with the mating pins on the main SmartPAC processor board.
8. Once the board is properly seated, screw the four corners down again (reverse of step 4).
9. Turn the power on and verify the normal operation of the unit. If the unit powers up with a garbled display or "rolling" LEDs, turn the power off and check that the board is properly seated.

NOTE

If yours is a SMS servo feed, the Terminal Mode screen (Figure 2-3) appears when you power up the SmartPAC. Press RESET to go to normal SmartPAC operation.

When you are ready to proceed to the next section, shut off the power to the unit.

NOTE

After you perform this SmartPAC may generate a tool number checksum error the first time you try to reload each setup. SmartPAC creates a checksum for a tool number to check that the data stored in memory for the tool is the same as the data that comes out of memory when you load the tool number. To correct this problem, go to Program mode and review the currently loaded tool number setup. Check your counters for accuracy; then reload this tool number again. If the unit is still malfunctioning, call Wintriss Tech Support.

Refer to your SmartPAC manual (Wintriss P/N 1107500) or SmartPAC with WPC manual (Wintriss P/N 1107600) for an explanation of checksum errors.

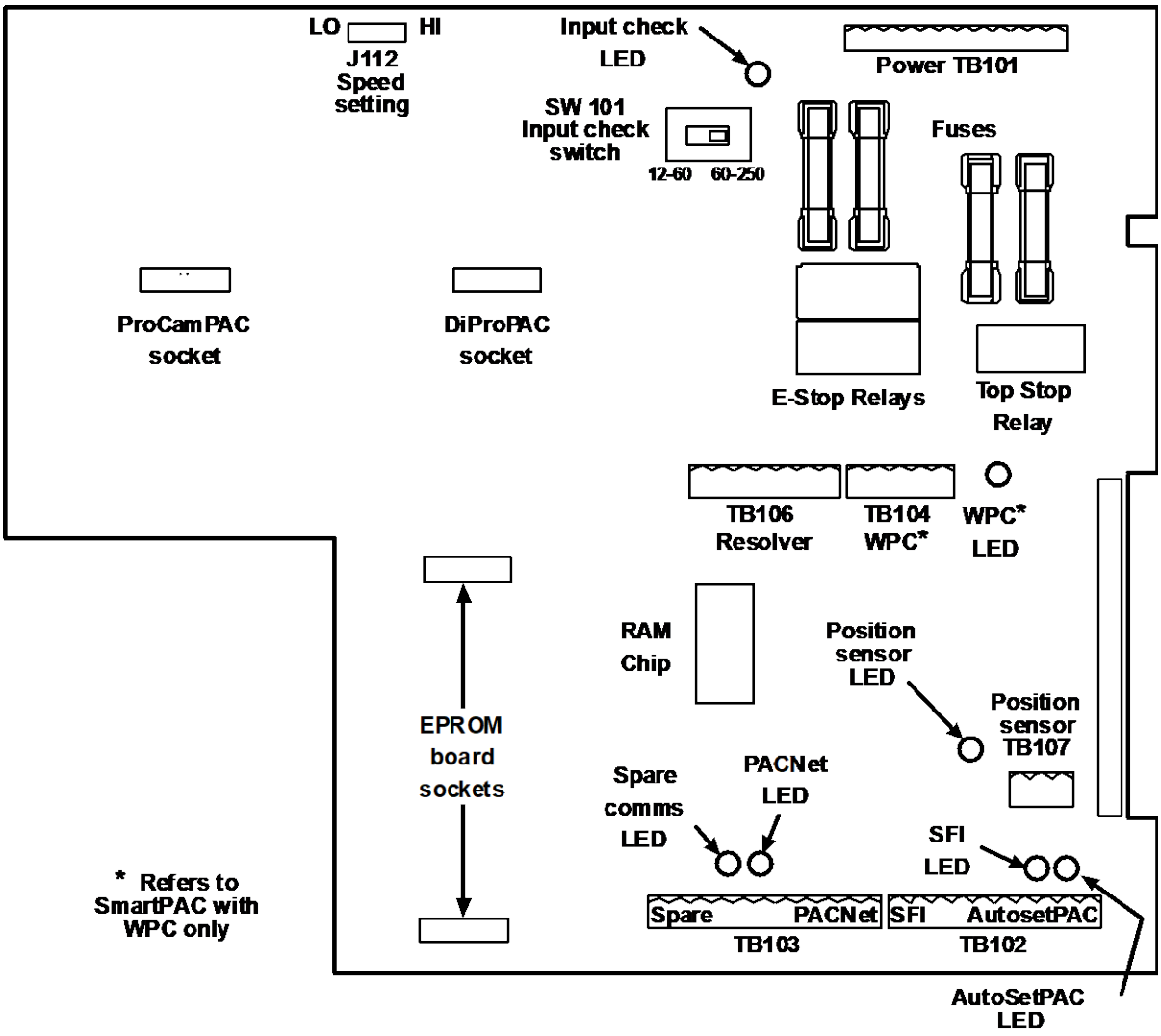

Figure 2-1A. Location of Components on SmartPAC Processor Board (important components shown and labeled)

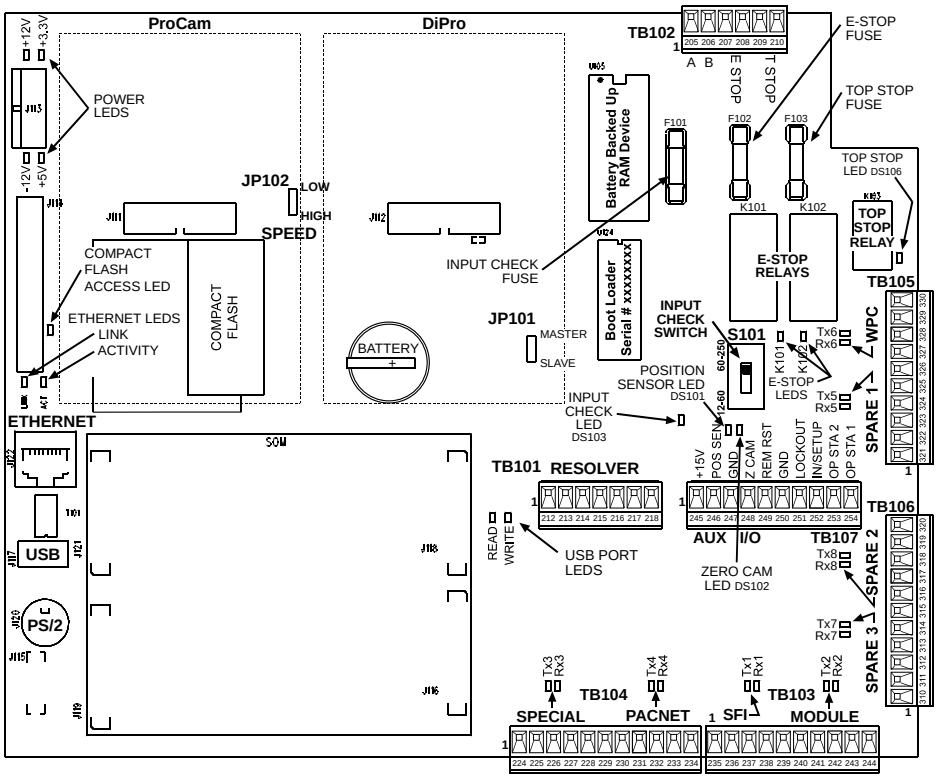

Figure 2-1B. Location of Components on SmartPAC Processor Board (important components shown and labeled)

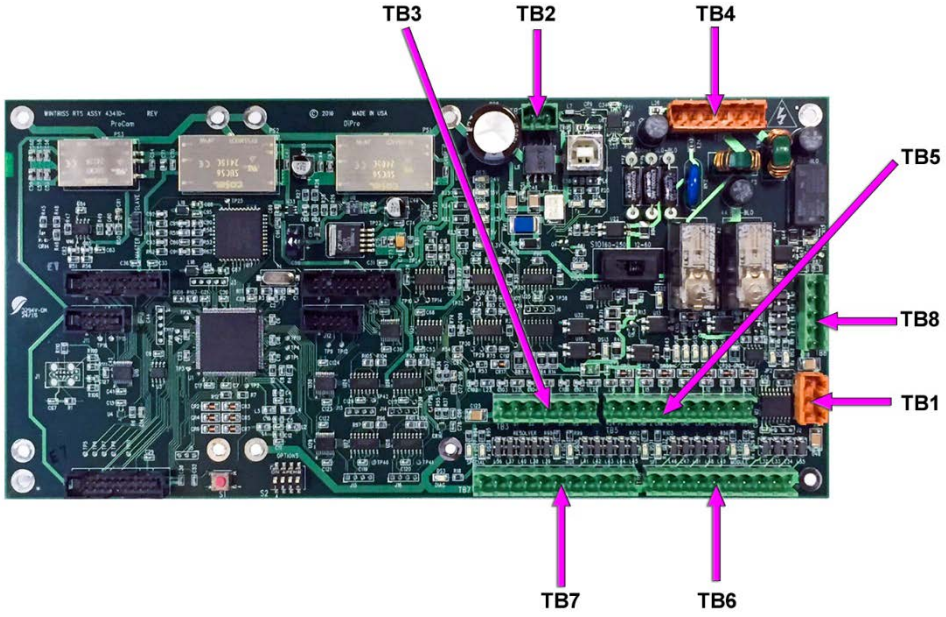

Figure 2-1C. SmartPAC PRO Processor Board: Location of Terminal Blocks (important components shown and labeled)

Wiring Connections

Wiring for your feed model

NOTICE

Be sure you have verified that SmartPAC is working properly before you proceed.

NOTICE

WIRING FOR YOUR SPECIFIC WADDINGTON FEED MODEL

Figures at the end of the manual provide wiring schematics for the following Waddington servofeeds and SmartPAC 1/SmartPAC 2/SmartPAC PRO:

- Figure 1. SmartPAC to Waddington Minifeed Pac Sci 450 with Servo Roll Release
- Figure 2 SmartPAC to Waddington Minifeed Pac Sci 450 Wiring Diagram
- Figure 3 SmartPAC to Waddington SMS feed control Wiring Diagram
- Figure 4 SmartPAC to Waddington CR DB9 feed control Wiring Diagram
- Figure 6 SmartPAC to Waddington CR DB15 feed control Wiring Diagram

For additional information, consult your Waddington feed controller manual.

These instructions explain how to wire your SmartPAC to the Waddington feed. For additional information, refer to the Waddington feed controller manual.

1. *Verify that SmartPAC and your feed are still turned OFF!* You are now ready to connect your servo feed to SmartPAC. Locate the 10-pin connector and the black round cable with a large 25-pin connector on one end. The other end of the cable has three unattached wires (red, black, and shield). Check to make sure that you have the female connector as described in the wiring diagram illustration at the end of this manual.
2. Open the SmartPAC enclosure and locate terminal TB102 on the SmartPAC processor board (see Figure 2-1A, page 10) or TB103 on the SmartPAC 2 board (see Figure 2-1B, page 11), or TB6 on the SmartPAC PRO board (see Figure 2-1C, page 11). Next, find the RS-232 port at the bottom of the feed controller.
3. If you have the optional second servo-driven roll release controller which replaces Waddington's mechanical cam, you should also locate terminal TB103 at SmartPAC as well as the communications port at the bottom of the roll release controller. Refer to the wiring diagram at the end of the manual.

Only with SmartPAC

The second servo-driven roll release mechanism, which replaces Waddington's mechanical cam, is an option that is only available with SmartPAC. It is not available with the 1500 series products.

4. Run the cabling through dedicated, flexible liquid-tight conduit from your feed to SmartPAC. SmartPAC is rated NEMA 12 (protected against dust and oil). You must use conduit of the same rating and make proper connections to ensure NEMA 12 protection.

5. Go to the RS-232 port on your feed first. Plug the DB25 connector which is attached to the cable from SmartPAC into the feed's RS-232 port. It can only go in one way. Tighten the screws on the connector to hold it firmly in its socket. Also tighten all conduit connections. If you have the optional roll release, connect that DB25 connector as per the wiring diagram.
6. Now go to SmartPAC. The end with the unattached wires goes to SmartPAC. Cut off any extra cable if necessary, leaving a 1-foot service loop, and carefully remove the outer insulation and inner shielding on the cable in order to expose the wires. Strip insulation back 1/4" on each wire.
7. You will be connecting the two wires (with shield) to the 10-pin connector which you will attach to terminal TB102 on the SmartPAC processor board, TB103 on the SmartPAC 2 board, or TB6 on the SmartPAC PRO board. Refer to the wiring diagram at the end of this manual. Again, if you have the optional roll release, connect the other end to terminal TB103 at SmartPAC.
8. To connect a wire, loosen the screws to your feed's terminal (as referenced in the wiring diagram at the end of the manual). See below. Insert the bare part of the wire 90% of the way into the open slot. Retighten the screw, holding the wire firmly in place.

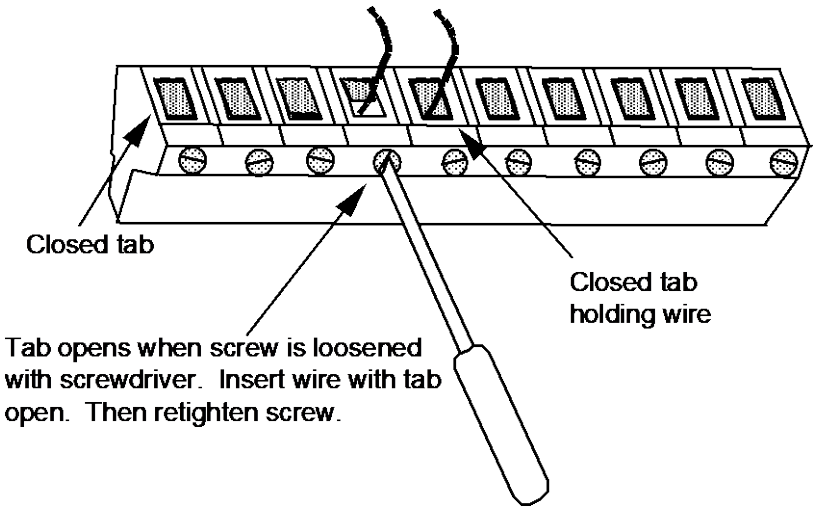

Figure 2-2. Attaching a Wire to a Connector

IMPORTANT About wiring

When making wiring connections, be sure that the tab is tightened onto the bare part of the wire, not onto the insulation. If it is on the insulation, you will have a bad connection.

9. Wire according to the appropriate wiring diagram figure at the end of the manual.
10. Plug the 10-pin connectors into TB102 on the SmartPAC processor board, TB103 on the SmartPAC 2 board, or TB6 on the SmartPAC PRO board.
11. You are finished installing the Waddington SFI to SmartPAC. Close the SmartPAC and re-tighten the hardware.

IMPORTANT Power Up Sequence

Power up the servo feed before or at the same time you power up SmartPAC.

12. Turn power to your feed back ON, then turn power on to your SmartPAC.

NOTE

If yours is a SMS servo feed, the Terminal Mode screen (Figure 2-3, next page) appears when you power up the SmartPAC. Press RESET to go to normal SmartPAC operation.

13. If SmartPAC is working properly, you are now ready to use SFI. Go to the next chapters to learn how to set up and operate your feed through SmartPAC. If the unit powers up with a garbled display or "rolling" LEDs, turn the power OFF and recheck how you installed your firmware. Review "Installing SFI firmware" earlier in this chapter. If the unit is still malfunctioning and you cannot find the reason for the problem, call Wintriss Tech Support for assistance.

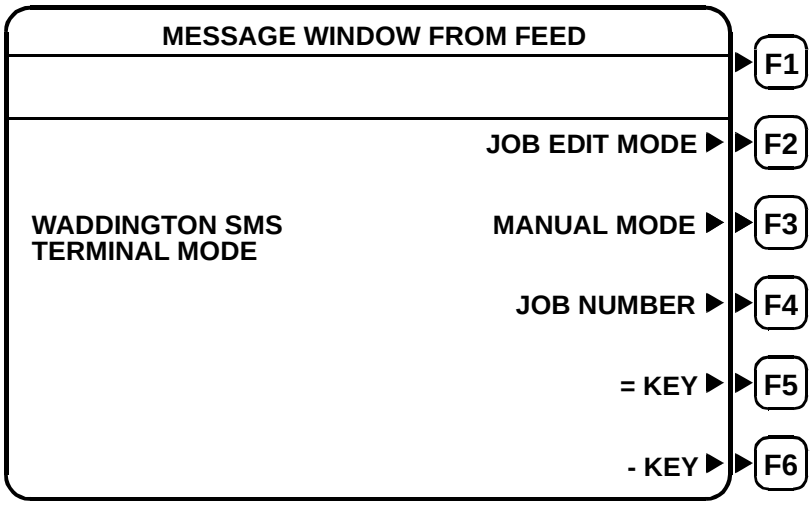

Figure 2-3. Waddington SMS Terminal Mode Screen

Section 2 "1500 series"

Installing the "1500 series" Servo Feed Interface

This section explains how to perform the installation for SFI with the 1500 series Wintriss products. These include ProCam 1500 and DiPro 1500. Before starting, make sure that you have all these components in your kit:

- SFI firmware chip (EPROM) (unless factory-installed at time of order)
- 20-foot 2-conductor shielded cable with a large DB25 connector attached on one end (Wintriss part no. 4199104)
- 10-pin phoenix connector

Follow these steps to install the components:

> **WARNING!**
>
> ELECTRICAL HAZARD!
>
> Dangerous voltages are present. Verify that the power to ProCam 1500 and to your feed have been turned OFF before servicing any components. Servicing must be performed by qualified personnel.

Installing SFI firmware

To upgrade the 1500 unit to communicate with your servo feed, follow these instructions:

1. With power to the 1500 unit turned off, notice that the LCD display on the front panel is blank and the angle/RPM display unlit.
2. Carefully remove the front panel assembly from your enclosure by loosening the hardware and temporarily propping the unit on a flat surface.
3. Locate the firmware chip for that product, located at U104 on either the ProCam 1500 or DiPro 1500 processor boards (refer to Figure 2-4 or Figure 2-5 respectively). Notice that this firmware chip has a label on it.

Installing the Chip

Be sure to note the exact orientation of the firmware chip. Notice in particular the semi-circular notch on the bottom of the chip. When you replace the chip, the notch on the new chip *MUST* also be face down. *If you plug the chip in backwards, it will be destroyed!*

4. Insert a small screwdriver between the bottom of the chip and the socket and carefully pry the chip out of its socket. Be careful not to get the screwdriver under the socket itself. Put the chip aside.
5. Open the package containing your new SFI firmware chip. Before you remove the chip from the package, you should ground yourself by touching any large metal object (the

press will do nicely). This will remove any static electricity that you may be carrying around. A static electricity "zap" will destroy the chip.

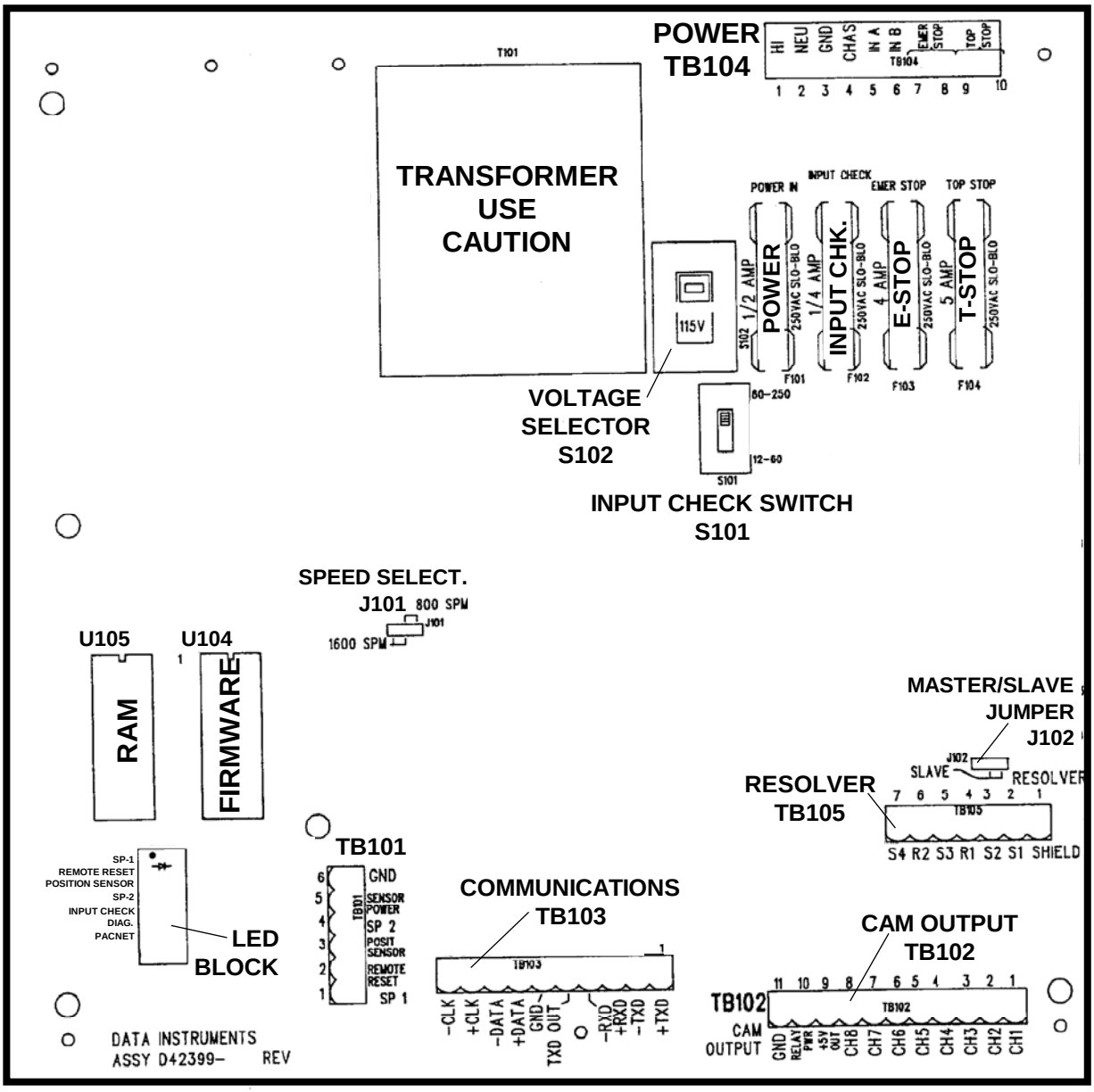

Figure 2-4. Location of Components on ProCam 1500 Processor Board

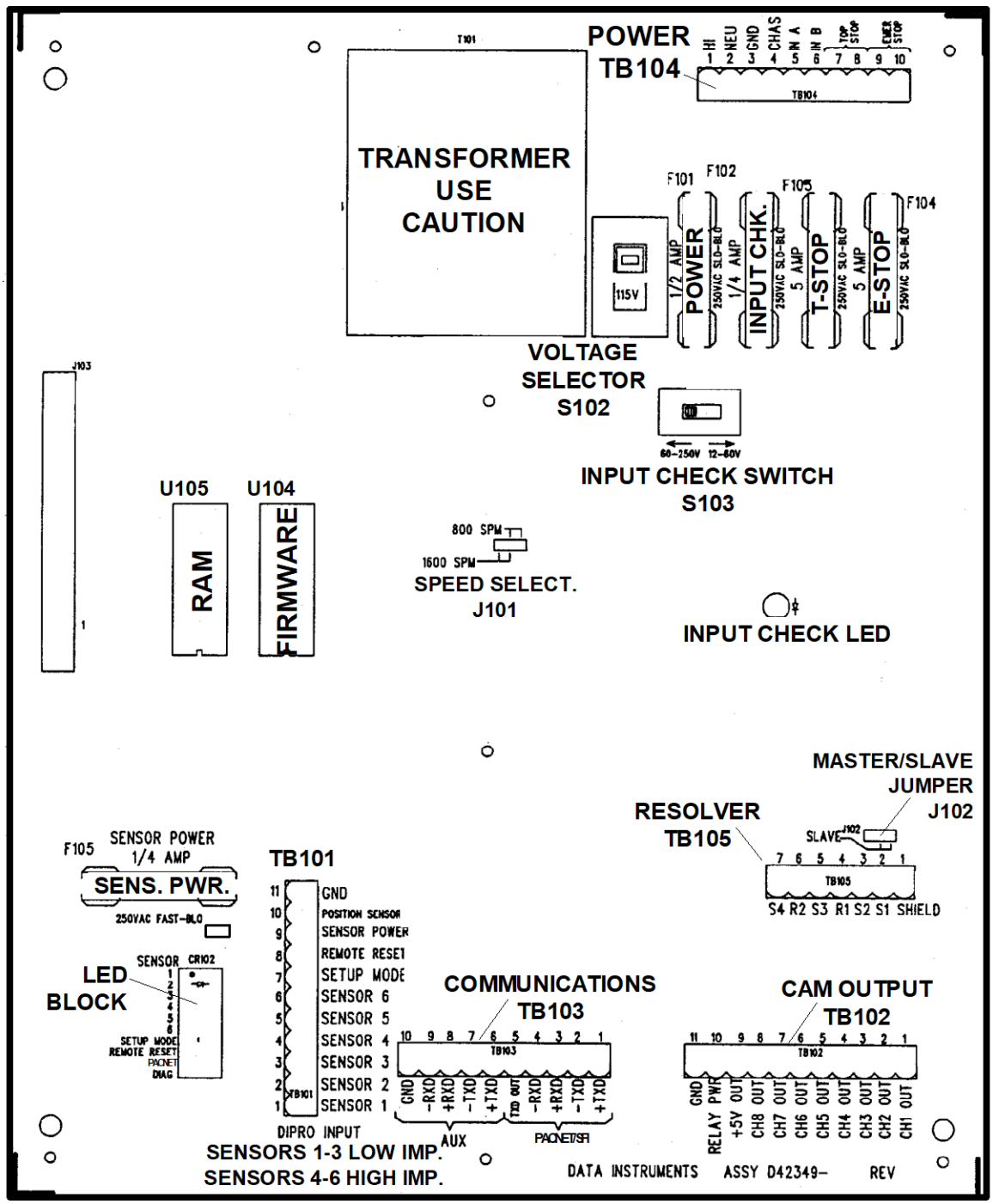

Figure 2-5. Location of Components on DiPro 1500 Processor Board

6. Once you are "grounded", remove the chip from its holder. *REMEMBER to orient the chip so that the notch faces downward.*

7. Plug the chip into its socket by first plugging in the left row of pins and then aligning the right row of pins over the socket and pushing straight in.

8. If the two rows of pins are spread too far apart to plug easily into the socket:
   a. Hold the chip on its side on a desk or a flat surface with the pins pointing towards you.
   b. Being careful NOT to overbend the pins, gently flex the top of the chip towards you. Turn the chip over so that the other row of pins is now on the desk pointing towards you. Flex it again, thus bending the other row of pins towards each other. Pins should be parallel.
   c. Try plugging the chip into the socket again, as in step 7. If necessary, repeat Steps 8A and 8B.
9. Make sure that the notch in the chip is at the bottom and that all of the pins are in the socket.
10. Turn the power ON to the 1500 unit without re-connecting the panel to your enclosure. Verify the normal operation of the unit.

    If the unit powers up with a garbled display or "rolling" LEDs, turn the power OFF and repeat step 9. Sometimes one or more pins are bent and not plugged in properly. If the unit is still malfunctioning, call Wintriss Tech Support for assistance. *Turn the 1500 unit and your feed controller OFF before proceeding to the next step.*

Wiring Connections

About Wiring

Be sure to refer to Table 2-1 (for ProCam 1500) or Table 2-2 (for DiPro 1500) for specific wiring specifications mentioned in these steps. These tables can be found at the end of the "1500 series" section.

1. *Verify that the 1500 unit and your feed are still turned OFF!* You are now ready to connect the unit to your servo feed controller. Find the 10-pin phoenix connector and the black round cable with a large connector (DB25 connector) on one end. The other end of the cable has three unattached wires (red, black, and shield). Check to make sure that you have the female connector for your feed as indicated at the end of this section.
2. Locate terminal TB103 on the 1500 unit's processor board (see Figure 2-4 for ProCam 1500 or Figure 2-5 for DiPro 1500).

   Also find the RS-232 port on your feed. Refer to your feed manual if necessary.
3. Refer to step 3a for ProCam 1500 or 3b for DiPro 1500 below.
   a. <u>For ProCam 1500</u>: If ProCam 1500 and your servo feed controller have been installed inside two separate enclosures, run the cable through flexible liquid-tight conduit from your feed to ProCam 1500. ProCam 1500 is rated NEMA 12 (protected against dust and oil). You must use conduit of the same rating and make proper connections to ensure NEMA 12 protection.
   b. <u>For DiPro 1500</u>: Run the cable through flexible liquid-tight conduit from your feed to DiPro 1500. DiPro 1500 is rated NEMA 12 (protected against dust and oil). You

must use conduit of the same rating and make proper connections to ensure NEMA 12 protection.

4. Go to the RS-232 port on your feed.
5. Plug the DB25 connector which is attached to the cable from ProCam 1500 into the feed's RS-232 port. It can only go in one way. Tighten the screws on the connector to hold it firmly in its socket. Also tighten all conduit connections.
6. Now go to the 1500 unit. The end with the unattached wires goes to it. Cut off any extra cable if necessary, and carefully remove the outer insulation and inner shielding on the cable in order to expose the wires. Strip insulation back 1/4" on each wire.
7. You will be connecting the two wires (with shield) to the 10-pin phoenix connector which you will attach to terminal TB103 on the 1500 unit's processor board. Remember to refer to the tables at the end of this section for the RS-232 configuration.
8. To connect a wire, loosen the screws that correspond to the appropriate terminal, so that the corresponding slot to the right will open. See Figure 2-2 earlier in this chapter. Insert the bare part of the wire 90% of the way into the open slot. Retighten the screw, holding the wire firmly in place.

Avoiding a Bad Wiring Connection

When making wiring connections, be sure that the tab is tightened onto the bare part of the wire, not onto the insulation. If on the insulation, you will have a bad connection.

9. Repeat step 8 when connecting the other two wires. Make sure you add the jumper between terminals 3 and 6 on TB103 at ProCam 1500, or between terminals 3 and 10 at DiPro 1500.
10. Look at TB103. There may be a plastic plug over pin 5 on this terminal block. If so, remove the pin using needle-nose pliers. Plug the 10-pin connector into TB103.
11. You are finished installing the 1500 SFI. For ProCam 1500, re-connect the panel to your enclosure and re-tighten the hardware. For DiPro 1500, close the DiPro 1500 and re-tighten the hardware. Turn power back ON to both the 1500 unit and to your feed controller.
12. Check that the 1500 unit is operating normally. If it is working properly, you are now ready to use SFI. Go to the following chapters to learn how to initialize, program, and operate your feed using the Wintriss 1500 products. If the unit powers up with a garbled display or "rolling" LEDs, turn the power OFF and recheck how you installed your firmware. Review "Installing SFI firmware" earlier in this chapter. If the unit is still malfunctioning and you cannot find the reason for the problem, call Wintriss Tech Support for assistance.

Table 2-1. Wiring ProCam 1500 TB103 to Waddington MiniFeed

ProCam 1500 TB103	Direction of data flow	Waddington MiniFeed Feed Controller RS232 Port
#4 -RXD	←	#3 Red
#5 TXD OUT	→	#2 Black
#6 GROUND #3 +RXD	↔	#7 Ground shield
TYPE OF CONNECTOR	*requires female DB25 connector*	

Table 2-2. Wiring DiPro 1500 TB103 to Waddington MiniFeed

DiPro 1500 TB103	Direction of data flow	Waddington MiniFeed Feed Controller RS232 Port
#4 -RXD	←	#3 Red
#5 TXD OUT	→	#2 Black
#10 GROUND #3 +RXD	↔	#7 Ground shield
TYPE OF CONNECTOR	*requires female DB25 connector*	

Chapter 3 - Initialization Mode for Waddington SFI

NOTICE

WADDINGTON SFI AND SMARTPAC 1, SMARTPAC 2, AND SMARTPAC PRO

You can use Waddington SFI with SmartPAC 2 and SmartPAC PRO as well as with the original SmartPAC. Instructions provided in this manual that are specific to SmartPAC pertain to SmartPAC 1, SmartPAC 2, and SmartPAC PRO (refer to "SmartPAC PRO, SmartPAC 2, and Original SmartPAC," page 3, for more information). Wiring diagrams at the back of the manual show pin connections for the different SmartPACs.

If you need additional help using Initialization mode in SmartPAC or 1500 series controls, refer to the applicable Wintriss user manual. For more information about your Waddington servofeed, refer to the appropriate Waddington servofeed manual.

In this chapter you will learn how to use the Waddington SFI menus. Specifically, you will set several feed initialization parameters. This chapter is divided into two sections:

- Section 1: SmartPAC (MiniFeed and SMS), next section
- Section 2: 1500 series products, including ProCam 1500 and DiPro 1500 (MiniFeed only), page 34

Each of these sections provides you with detail on initializing parameters for the Waddington servo feed with the applicable Wintriss control. Refer to your Wintriss control manual and your servo feed manual as necessary.

IMPORTANT

Refer to Waddington Servo Feed Manual

This manual mentions certain parameters that you can modify at your Waddington servo feed control. It does not, however, explain these parameters in great detail. Refer to your Waddington servo feed manual for more information.

Section 1 SmartPAC

IMPORTANT Power Up Sequence

Power up the servo feed before or at the same time you power up SmartPAC.

NOTE

If yours is an SMS servo feed, the Terminal Mode screen (Figure 2-3) appears when you power up the SmartPAC. Press RESET to go to normal SmartPAC operation.

This section contains instructions for the following procedures for initializing your Waddington servo feed connected to a SmartPAC control:

Refer to your SmartPAC manual and your servo feed manual as necessary.

Entering Initialization Mode

IMPORTANT

SMS Servo Feed must be homed and AUTO/MAN/JTL switch must be set to MAN

Be sure you have homed the feed and set the AUTO/MAN/JTL switch to MAN. Otherwise, you cannot read any feed information under the feed control menu. See your servo feed manual.

To enter Initialization mode, turn the Program/Run key to PROG and then press *both* the "1" and "CLEAR" keys at the same time for one second. (See "Using the Keyboard" in Chapter 3 of the SmartPAC user manual)

NOTE

Before changing modes (for instance -- from Initialization to Program), make sure your screen shows the first display in the mode you are in. If that display is not shown, nothing will happen when you turn the Program /Run key. In that case, keep pressing the RESET key. When the first display in the mode is reached, you will instantly switch to the new mode.

SELECT = HIGHLIGHT + ENTER

When this manual says “select,” it means “use the cursor keys to highlight the item and then press ENTER. “

Here is the first display in Initialization mode.

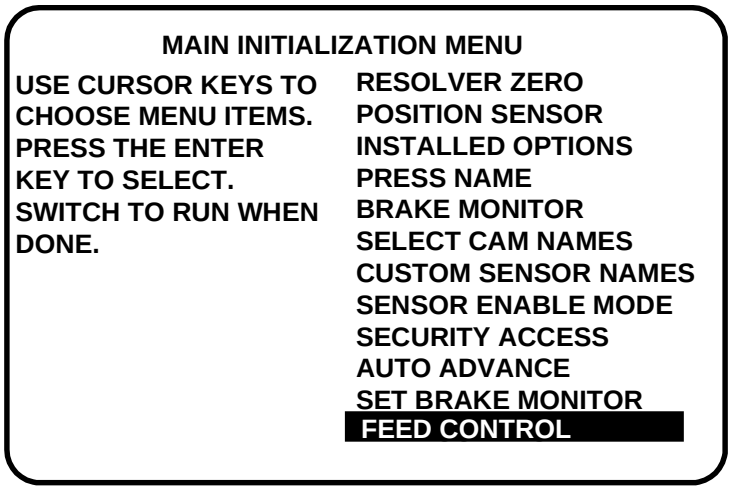

Figure 3-1. Main Initialization Menu (SmartPAC)

If you want to set security access, proceed to the next section.

Otherwise, proceed to the feed-specific instructions to complete the initialization process.

- Initializing Waddington MiniFeed, page 24
- Initializing Waddington SMS Servo Feed, page 30

Setting Security Access

Use the Security Access to control who can adjust the feed control settings. You can allow changes

- In Program mode only
- In both Program and Run modes
- By password access only.

Note

If you set access to Adjust Feed to PROGRAM MODE ONLY, you must remove the Program/Run key to prevent unauthorized personnel from entering Program mode and adjusting the feed.

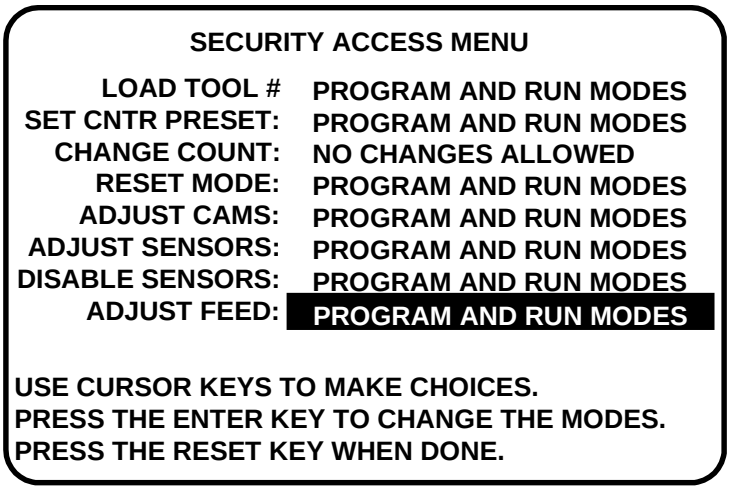

Figure 3-2. Security Access Menu

1. Select SECURITY ACCESS from the Initialization menu (see page 22). The Security Access menu appears (see figure above).
2. Highlight the security level next to ADJUST FEED. Press ENTER repeatedly. The security level toggles through PROGRAM AND RUN MODES, PROGRAM MODE ONLY and PASSWORD REQUIRED. When the security level you want appears, press RESET to exit the Security Access menu. Feed adjustment will now be controlled according to the security level you set.

Proceed to the feed-specific instructions to complete the initialization process.

- Initializing Waddington MiniFeed, next section
- Initializing Waddington SMS Servo Feed, page 30

Initializing Waddington MiniFeed

Select FEED CONTROL from SmartPAC's Initialization menu. The Feed Control display appears.

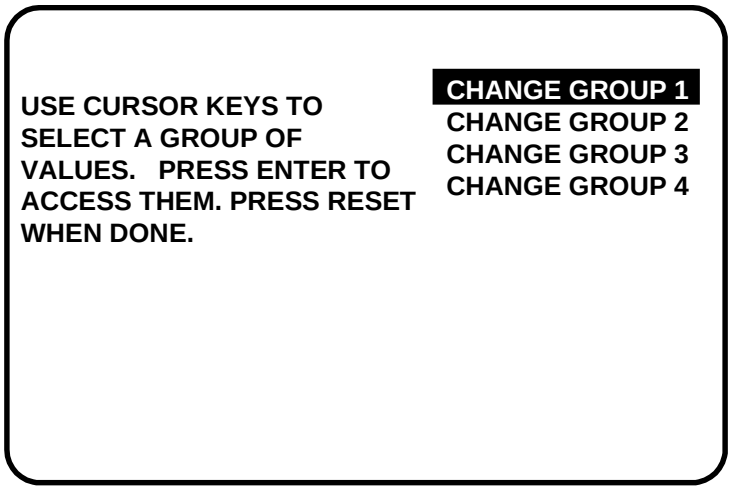

Figure 3-3. Feed Control Menu

Change Group 1

> **Note**
>
> If you do not use the servo-driven roll release mechanism, disable it according to "Turn Off Servo-driven Roll Release Mechanism," page 28.

When you select "CHANGE GROUP 1", you will see this group of parameters:

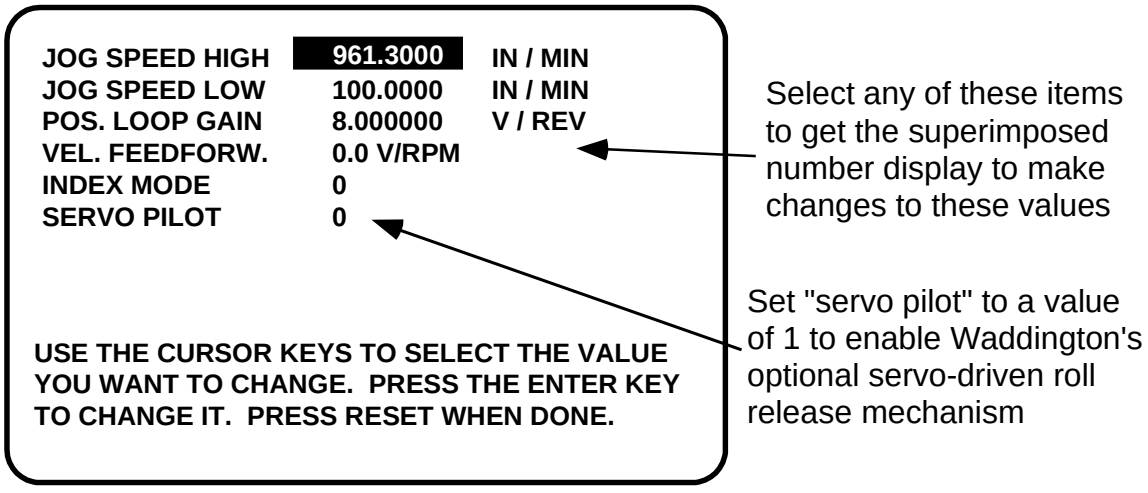

Figure 3-4. Change Group 1 Display

Notice that there will be actual values appearing on the screen. These values are coming directly from your servo feed. Select the item you want to change.

In our example, we have chosen "Jog speed high".

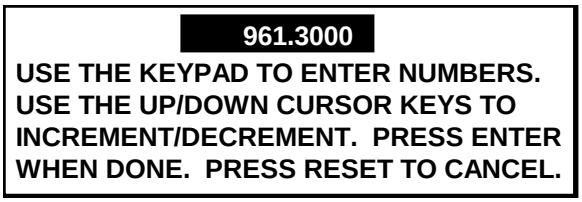

Figure 3-5. Setting "Jog Speed High" in Superimposed Number Display

You use the number keys to input numeric values for SFI parameters. You will see a display similar to the illustration above, which guides you on how to use the number keys, as well as the cursor keys. When you are done entering a number using the number keypad, press ENTER. SmartPAC will accept the number and move on to the next display. SmartPAC accepts numbers up to seven digits in length. Go to Chapter 3 of the SmartPAC user manual if you are not sure how to use the number display.

A Special Note About "Servo Pilot"

This is an option available with the Waddington feed controller, only when you interface with SmartPAC (option not available with the 1500 series products). You can optionally obtain a second servo-driven roll release mechanism which replaces Waddington's mechanical cam. By entering "1", this feature is enabled at SmartPAC Initialization. A value of "0" disables this option. If enabled, you will be able to program the corresponding "Pilot Angle" in the Program mode (refer to a discussion of "Pilot Angle" in Chapter 4).

When you are done with all the parameters on the "Change Group 1" display, press RESET to return to the Feed Control menu.

If you want to change any of the other groups (2 through 4), select that item on the Feed Control menu and then follow the previous steps. The next illustration shows how each of these displays look.

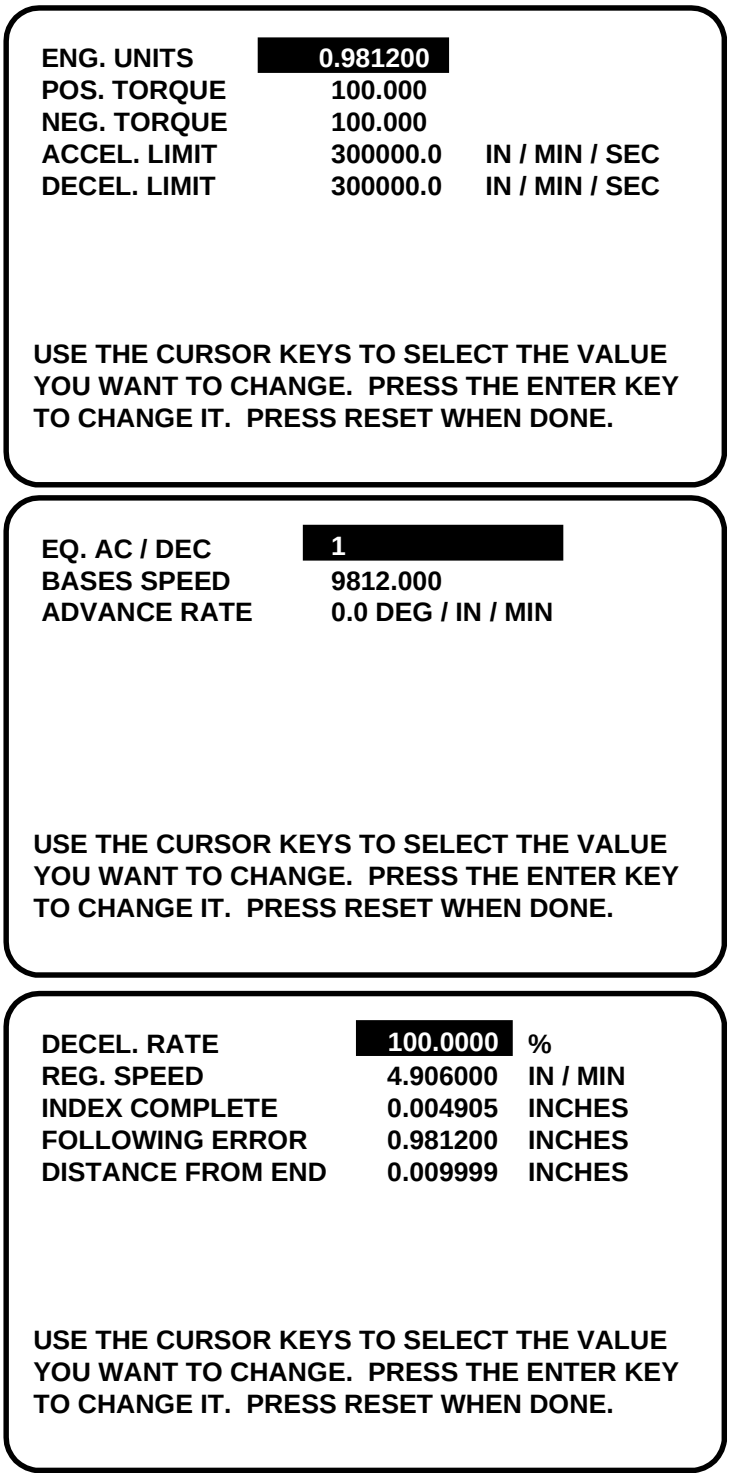

Figure 3-6. Illustrations of Change Groups 2 Through 4

Remember that when you are done changing parameters on any of these displays, press RESET to return to the Feed Control menu.

The next section will explain how to use "Check setup", which is also listed on the Feed Control menu.

Turn Off Servo-driven Roll Release Mechanism

If you do not use the servo-driven roll release mechanism, disable it by making the following settings:

1. Go to the following screen and set SERVO PILOT to 0 (zero).

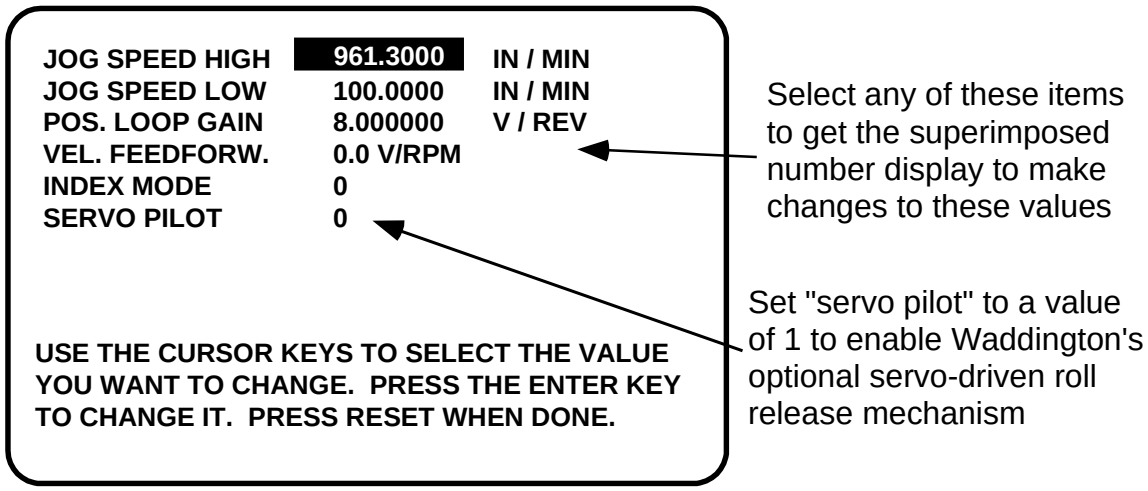

Figure 3-6A. Change Group 1 Display

2. Go to the Feed Parameters screen and select TERMINAL MODE. Refer to your feed manual and set the value for PROFILES to 1 (one).

Check Setup

When you select "Check setup", you will see this display.

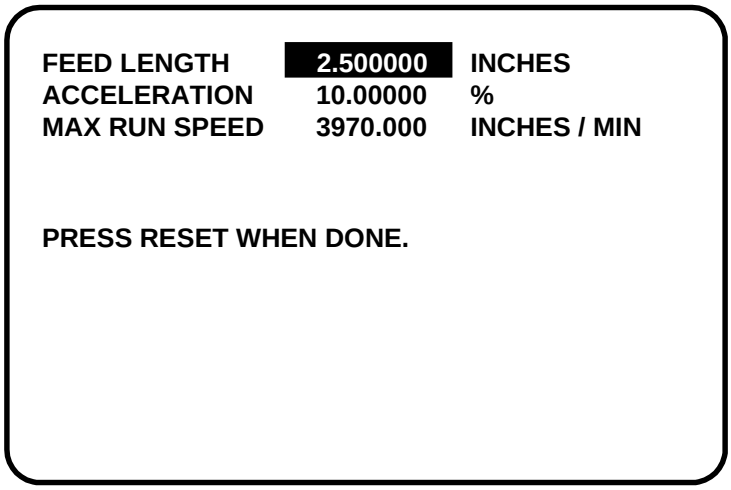

Figure 3-7. Check Setup Display

"Check setup" is a diagnostic tool available in SFI which allows you to view the feed parameters in your servo feed. It gives you an opportunity to make sure that these parameters match your currently loaded setup.

Notice that you cannot change any of these items. This display is for viewing purposes only.

When you are done looking at the information on the screen, press RESET to return to the Feed Control menu, and then one more time to go back to the main Initialization menu.

Initializing Waddington SMS Servo Feed

IMPORTANT

SMS Servo Feed must be homed and AUTO/MAN/JTL switch must be set to MAN

Be sure you have homed the feed and set the AUTO/MAN/JTL switch to MAN. Otherwise, you cannot read any feed information under the feed control menu. See your servo feed manual.

Home your feed and turn the AUTO/MAN/JTL switch to MAN (See your SMS feed manual). Enter Initialization mode as described on page 22.

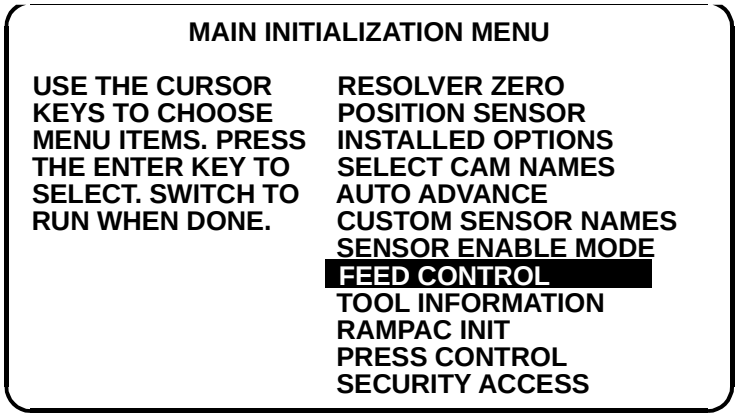

Figure 3-8. Main Initialization Menu

Select FEED CONTROL from the Initialization menu. The Feed Initialization menu appears.

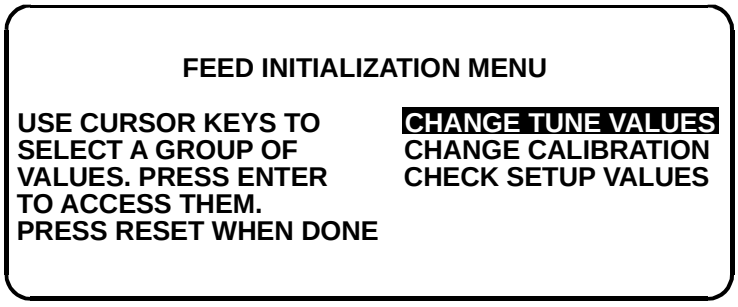

Figure 3-9. Feed Initialization Menu

Changing Tune Values

IMPORTANT

Change these values *only* when instructed to by Waddington Tech Support.

In the Feed Initialization menu, select CHANGE TUNE VALUES. The Change Tune Values screen appears (see next figure).

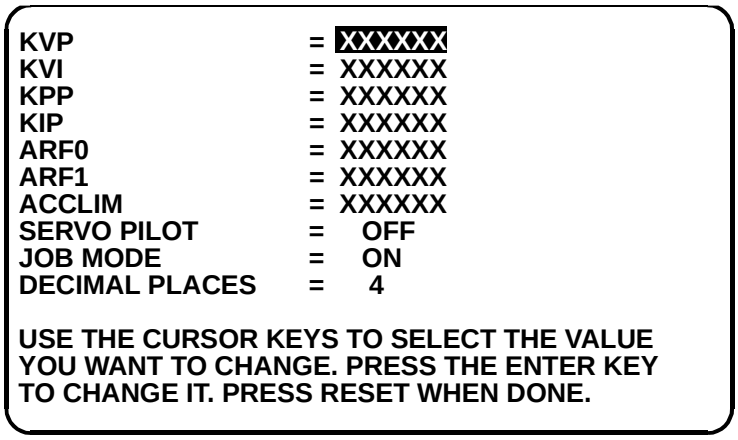

Figure 3-10. Change Tune Values
(Tune values represented by XXXXXX)

Refer to your SMS Servo Feed manual for information. about these values. Press RESET to return to the Feed Initialization menu.

Refer to your SMS Servo Feed manual for more information.

Setting Servo Pilot

A Special Note About "Servo Pilot"

This is an option available with the Waddington feed controller, only when you interface with SmartPAC (option not available with the 1500 series products). You can optionally obtain a second servo-driven roll release mechanism which replaces Waddington's mechanical cam. If this feature is enabled, you will be able to program the corresponding "Pilot Angle" in the Program mode (refer to a discussion of "Pilot Angle" in Chapter 4).

In the Change Tune Values screen, above,

- Turn ON Servo Pilot by entering "1" as the SERVO PILOT value
- Turn OFF Servo Pilot by entering “0” as the SERVO PILOT value.

If Servo Pilot is ON, you will be able to program the corresponding Pilot Angle in Program mode (see “Table 4-1. Feed Parameters Menu Items,” page 51). Refer to your SMS Servo Feed manual for more information.

Setting Job Mode

With Job mode, you can store some of the feed parameters for a setup so that next time you use that setup all you have to do is enter the job number.

In the Change Tune Values screen, above,

- Turn ON Job Mode by entering "1" as the JOB MODE value
- Turn OFF Job Mode by entering “0” as the JOB MODE value.

Refer to your SMS Servo Feed manual for more information.

Set Number of Decimal Places

To set the number of decimal places for feed parameters, in the Change Tune Values screen, select the value next to DECIMAL PLACES. A value entry screen appears. Use the up and down cursor keys or the keypad to enter the number of decimal places, to a maximum of four. Press ENTER to accept the value and return to the Change Tune Values screen. Press RESET to return to the Change Tune Values screen.

Refer to your SMS Servo Feed manual for more information.

Changing Calibration

In the Feed Initialization menu, select CHANGE CALIBRATION. The Change Calibration screen appears:

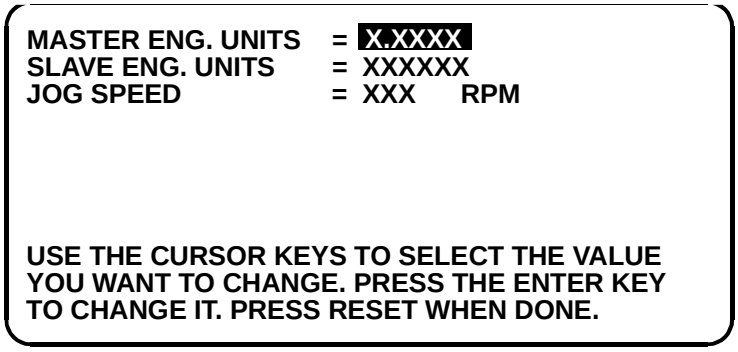

Figure 3-11. Change Calibration Screen

(Values represented by “X”s)

To adjust these parameters, select the value you want to change.

In the entry box that appears, use the keypad to enter numbers. Press ENTER when you are done. Press RESET to leave the value unchanged. Refer to your SMS Servo Feed manual for more information.

Checking Setup Values

"Check setup" is a diagnostic tool available in SFI which allows you to view the feed parameters in your servo feed. It gives you an opportunity to make sure that these parameters match your currently loaded setup.

In the Feed Initialization menu (see page 22), select CHECK SETUP VALUES. The Setup Values screen appears.

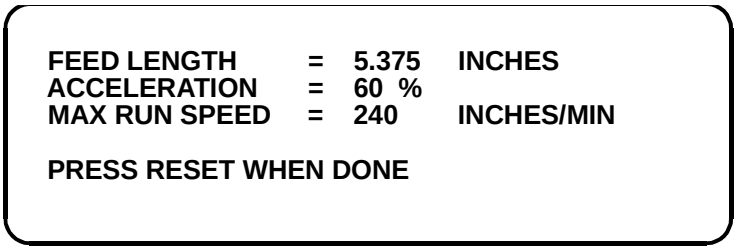

Figure 3-12. Check Setup Values Screen

Notice that you cannot change any of these items. This display is for viewing purposes only. Refer to your SMS Servo Feed manual for more information. When you are done looking at the information on the screen, press RESET to return to the Feed Initialization menu.

Section 2 1500 Series

NOTE

Waddington SMS Servo Feed cannot be used with 1500 series controls.

About the DiPro 1500's Auto Advance and Security

With DiPro 1500, “Auto advance” and Adjust Feed "security" are not main Initialization choices. SFI was not originally offered with DiPro 1500. Therefore feed-specific selections are grouped together as a part of the Feed Initialization. “Auto Advance” and “Adjust Feed” are a sub-choice under “Feed Parameters 2”. Only DiPro 1500’s Channel 1 can be an auto channel with SFI.

Initialization menu

IMPORTANT

This manual mentions certain parameters that you can initialize at your feed. It does not, however, explain these parameters in any detail. Refer to your servo feed manual for more information.

To get into Initialization mode, turn the Program/Run key to "PROGRAM" and then press both the left and right "ANGLE-OFF" keys at the same time for one second. (See "Using the keyboard" in Chapter 3 of the applicable 1500 unit's user manual.)

NOTE

Before changing modes (for instance -- from Initialization to Program), make sure your screen shows the first display in the mode you are in. If that display is not shown, nothing will happen when you turn the Program /Run key. In that case, keep hitting the RESET key. When the first display in the mode is reached, you will instantly switch to the new mode. See your Wintriss product manual.

Feed Parameters 1

Here is the first display in Initialization mode. From this display, select "Feed parameters 1".

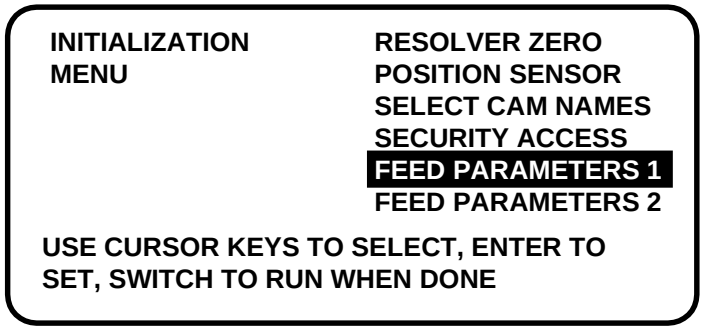

Figure 3-13. Selecting "FEED PARAMETERS 1" from Initialization Menu

SELECT = HIGHLIGHT + ENTER

When this manual says “select,” it means “use the cursor keys to highlight the item and then press ENTER. “

Once you have selected "FEED PARAMETERS 1", here is the display you will see:

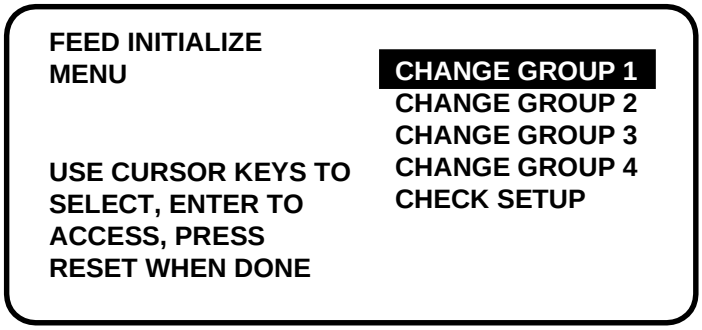

Figure 3-14. Feed Initialize Menu

Change Groups

When you select "CHANGE GROUP 1", you will see this group of parameters:

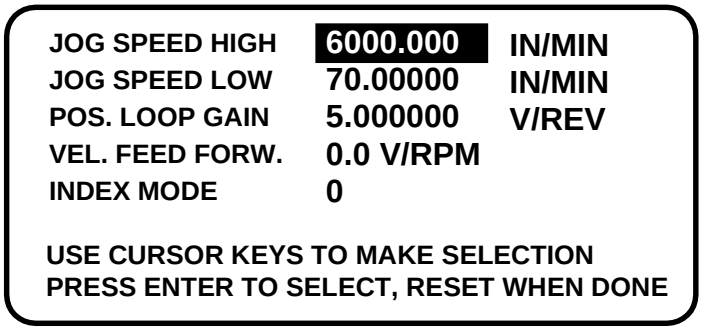

Figure 3-15. Change Group 1 Display

Notice that there will be actual values appearing on the screen. These values are coming directly from your servo feed. Select the item you want to change.

In our example, we have chosen "Jog speed high".

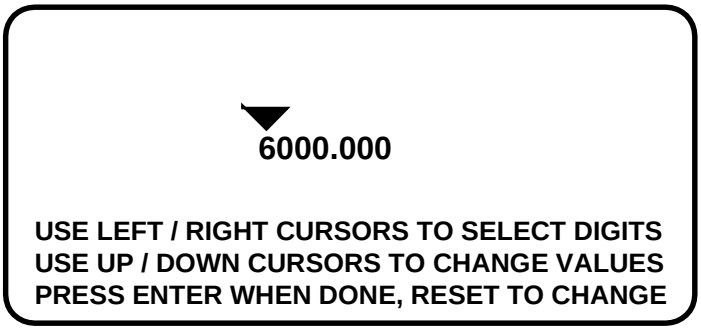

Figure 3-16. Setting "Jog Speed High"

As the display indicates, use your left or right CURSOR keys to position the triangular-shaped pointer over the digit you wish to change. Then use the up or down CURSOR keys to increase or decrease that value. Go to Chapter 3 of the applicable 1500 unit's user manual if you are not sure how to use the CURSOR keys. When you are done, press RESET to return to the Feed Initialize menu.

If you want to change any of the other groups (2 through 4), select that item on the Feed Initialize menu and then follow the previous steps. The next illustration shows how each of these displays look.

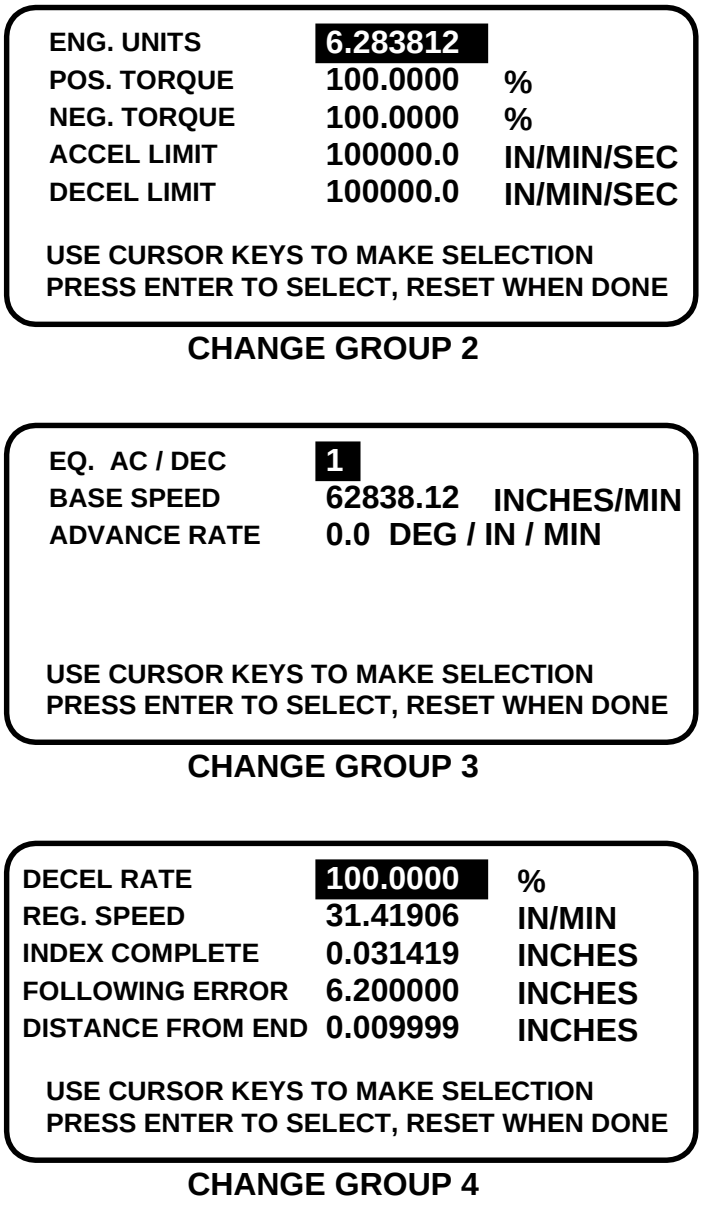

Figure 3-17. Illustrations of Change Groups 2 Through 4

Remember that when you are done changing parameters on any of these displays, press RESET to return to the Feed Initialize menu.

The next section will explain how to use "Check setup", which is also listed on the Feed Initialize menu.

Check Setup

When you select "Check setup", you will see this display.

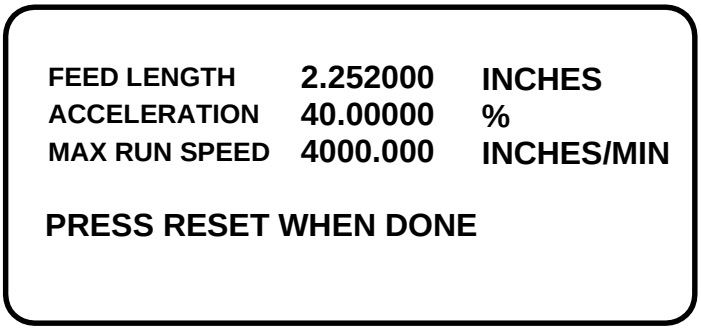

Figure 3-18. Check Setup Display

"Check setup" is a diagnostic tool available in SFI which lets you view the feed parameters in your servo feed. It gives you an opportunity to make sure that these parameters match your currently loaded setup.

Notice that you cannot change any of these items. This display is for viewing purposes only.

When you are done looking at the information on the screen, press RESET to return to the Feed Initialize menu, and then one more time to go back to the main Initialization menu.

Feed Parameters 2

From the first Initialization menu display, select "Feed Parameters 2".

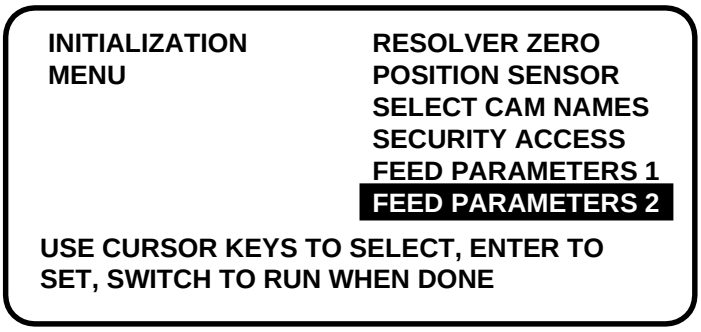

Figure 3-19. Selecting "Feed parameters 2" from the Initialization Menu

You can use this choice to lock out "Adjust feed" so that unauthorized personnel cannot perform adjust feed settings in Run mode. You can also use it to set the advance constant and slow RPM at channel 1.

Security Access

Locking Adjust Feed at ProCam 1500

To prevent unauthorized personnel from unlocking "adjust feed", you must remove the Program/Run key once ProCam is switched to Run mode. This will prevent unauthorized access into the Initialization or Program modes, so that feed settings cannot be unlocked or altered. The key has to be positioned at "PROGRAM" to get into these modes.

Select "Security access" from the Initialization menu. Select "Program and Run modes" shown to the right of the action "Adjust feed", as illustrated below. The default settings (settings made at the factory) allow this action to be made in Program and Run modes.

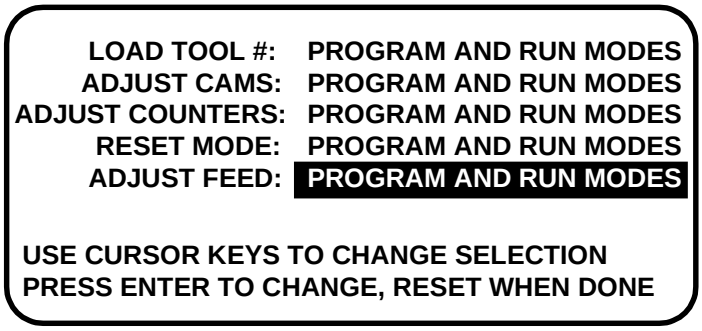

Figure 3-20. Security Access Display

To lock out the action so it cannot be taken in Run mode, press the ENTER key. The setting is now locked out. You will see the words "Program mode only" next to the action.

You will now see this display.

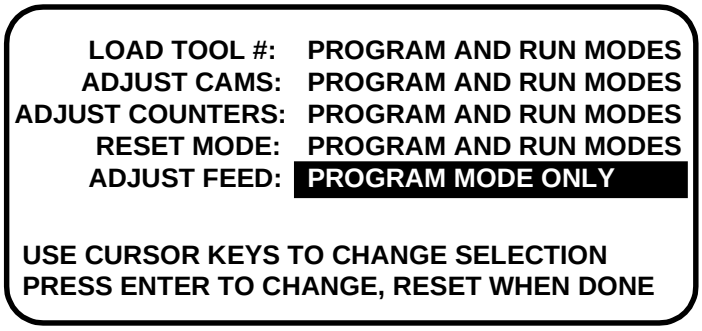

Figure 3-21. Locking out "Adjust Feed"

The feed controller can now be adjusted in the Program mode only. If you do not want to make a change, press RESET to go back to the Initialization menu.

About the DiPro 1500's Auto Advance and Security

With DiPro 1500, “Auto advance” and Adjust Feed "security" are not main Initialization choices. SFI was not originally offered with DiPro 1500. Therefore feed-specific selections are grouped together as a part of the Feed Initialization. “Auto Advance” and “Adjust Feed” are a sub-choice under “Feed Parameters 2”. Only DiPro 1500"s Channel 1 can be an auto channel with SFI.

Locking Adjust feed at DiPro 1500

To prevent unauthorized personnel from unlocking "adjust feed", you must remove the Program/Run key once DiPro is switched to Run mode. This will prevent unauthorized access into the Initialization or Program modes, so that feed settings cannot be unlocked or altered. The key has to be positioned at "program" to get into these modes. over "Program and Run Modes" shown to the right of the action "Adjust feed", as illustrated below. The default settings (settings made at the factory) allow this action to be made in Program and Run modes.

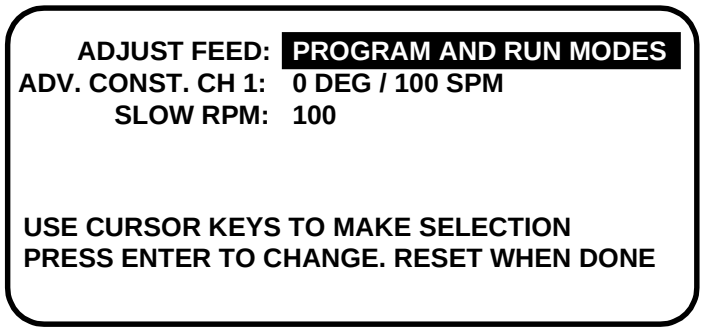

Figure 3-22. Feed Parameter 2 Display Featuring Feed Security

To lock out the action so it cannot be taken in Run mode, press ENTER. The setting is now locked out. You will see the words "**Program mode only**" next to the action.

The feed controller can now be adjusted in the Program mode only. If you do not want to make a change, simply press RESET to go back to the Initialization menu.

Auto Advance and Slow RPM in DiPro 1500

Determining the Advance Constant for DiPro 1500's Channel 1 Automatic Speed Compensation

You use this choice in the Initialization menu to set an auto advance constant for the press auto advance function for cam channel 1. Some cam functions that may use auto advance are feed advance or pilot release. This feature works best on presses that have speed ranges of several hundred to over a thousand strokes per minute. Advance constant is equal to the number of degrees of advance per 100 RPM increase in press speed

A.C. = # °/100 RPM

To calculate the auto advance constant for pilot release, follow these steps:

1. Determine the fastest press speed (RPMa) and the optimum angle at which the pilot release cam should turn on at this speed (Aa).
2. Determine the slowest press speed (RPMb) and the optimum angle at which the pilot release cam should turn on at this speed (Ab).
3. Subtract the two angle values. We will call this result "Ac".

   Aa - Ab = Ac
4. Subtract the two press speeds. We will call this result "RPMc".

   RPMa - RPMb = RPMc
5. Divide Ac (the difference between the angles) by RPMc (the difference between the press speeds) and multiply that value by 100. That is the number of degrees per 100 RPM.

   $\frac{Ac}{RPMc} \times 100 = \#\,° / 100\ RPM$

Example for calculating the auto advance setting:

Your fastest speed is 100 RPM and the pilot release angle is at 75°.

Your slowest speed is 50 RPM and the pilot release angle is at 100°.

Subtract 100 RPM from 50 RPM.

100 - 50 = 50

Subtract 100° from 75°.

100 - 75 = 25

Divide the difference in angles by the difference in RPM and multiply this by 100. 50° is your advance constant.

$\frac{25}{50} \times 100 = 50.00 \Rightarrow \underline{50° / 100\ RPM}$

MORE ON ADVANCE CONSTANT SETTINGS

You can make only one advance constant setting. This advance constant that you set in Initialization will automatically affect channel 1, but it will not be displayed as an "auto" setting in Program or Run modes.

If you do not wish to use the Auto Advance feature function, you must leave the "advance constant" value equal to zero (0).

Auto Advance does not function if channel 1 had been programmed as a "timed output".

See Chapter 5 in the DiPro 1500 user manual for more information about making cam channel settings.

IMPORTANT TO SET SLOW RPM

When you determine the correct auto advance constant, you also need to identify the “Slow RPM", or the slowest speed at which you will run your press. DiPro uses that value as a starting point to begin the auto advance process. If an incorrect number had been entered in "slow RPM", DiPro will not begin to auto advance at the right time. In our example, slow RPM should be set to 50.

Setting the advance constant and slow RPM for DiPro 1500

Select "ADV. CONST. CH 1" by moving the highlight bar to the second line of the "Feed parameters 2" display and then pressing ENTER (see below). Notice that the prompt at the bottom of the screen has changed.

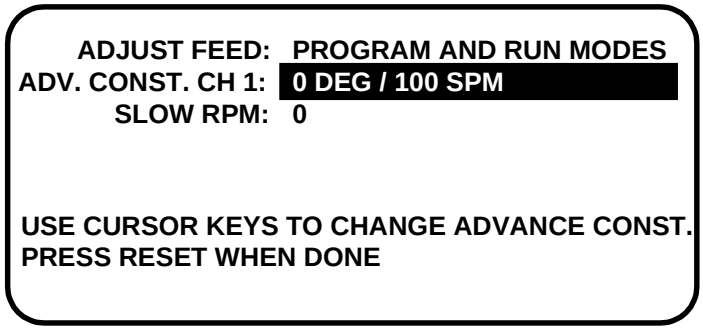

Figure 3-23. Setting Advance Constant at Channel 1

To set "ADV. CONST. CH. 1", simply use the up or down CURSOR keys on your DiPro 1500 keypad. The range for this value is from 0-500.

To set "SLOW RPM", move the highlight bar to the third line of the "FEED PARAMETERS 2" display, and then press ENTER. Here again, the prompt at the bottom of the screen has changed and now reads: "USE CURSOR KEYS TO CHANGE SLOW RPM. PRESS RESET WHEN DONE". As before, use the up or down CURSOR keys on your DiPro 1500 keypad. The range for this value is from 0-2000. Notice that the number increases or decreases in multiples of 5.

Chapter 4 - Program Mode for Waddington SFI

NOTICE

WADDINGTON SFI AND SMARTPAC 1, SMARTPAC 2, AND SMARTPAC PRO

You can use Waddington SFI with SmartPAC 2 and SmartPAC PRO as well as with the original SmartPAC. Instructions provided in this manual that are specific to SmartPAC pertain to SmartPAC 1, SmartPAC 2, and SmartPAC PRO (refer to "SmartPAC PRO, SmartPAC 2, and Original SmartPAC," page 3, for more information). Wiring diagrams at the back of the manual show pin connections for the different SmartPACs.

In this chapter you will learn how to use the Waddington SFI menus in Program mode. These functions include:

- Setting feed length
- Setting percent acceleration
- Setting maximum run speed
- Setting pilot angle (optional)
- Using the Feed Advisor
- Loading feed settings

The chapter is divided into two sections, one for SmartPAC (next page), the other for 1500 series Wintriss controls (page 53). Refer also to the manual of your Wintriss product.

IMPORTANT

Refer to Waddington Servo Feed Manual

This manual mentions certain parameters that you can modify at your Waddington servo feed control. It does not, however, explain these parameters in great detail. Refer to your Waddington servo feed manual for more information.

Section 1 SmartPAC

IMPORTANT Power Up Sequence

Power up the servo feed before or at the same time you power up SmartPAC.

NOTE SMS Terminal Mode

If yours is an SMS servo feed, the Terminal Mode screen (Figure 2-3) appears when you power up the SmartPAC. Press RESET to go to normal SmartPAC operation.

About Tool Number

The terms "Tool" or "tool number" will be used many times in this chapter. A tool number consists of all the programmed settings (including the servo feed settings) that you make for one job. You can save servo-feed information for up to 200 tools and then recall these settings for each job whenever you need to.

Program Menu

Go into Program mode, by turning the Program/Run key to "Run" and then back to "Program". Next, select a tool number to modify. If you are not sure how to do this, refer to Chapter 5 in the SmartPAC user manual.

SELECT = HIGHLIGHT + ENTER

When this manual says “select,” it means “use the cursor keys to highlight the item and then press ENTER. “

Once you have selected a tool to modify, you will see a display which lists the various settings you can make for the tool. Select "Feed Control", as shown below.

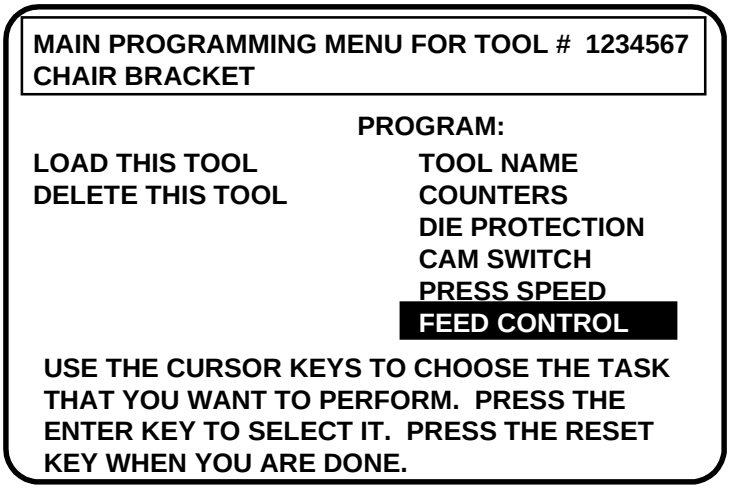

Figure 4-1. Selecting "Feed Control" in Program Mode (the order on your display may be different)

If you have a MiniFeed servo feed, follow the instructions in the next section.

If you have an SMS servo feed, follow the instructions that start on page 50.

Programming the SmartPAC/Waddington MiniFeed Servofeed

Here is the "Feed Parameters" display. You have up to five choices. Note that the optional "**Pilot angle**" ONLY appears if you have enabled "servo pilot" in SmartPAC Initialization mode. See Chapter 3 for details. If you have this option, enter the angle at which the pilots for the optional servo-driven roll release will actuate. Refer to your Waddington manual for specifics.

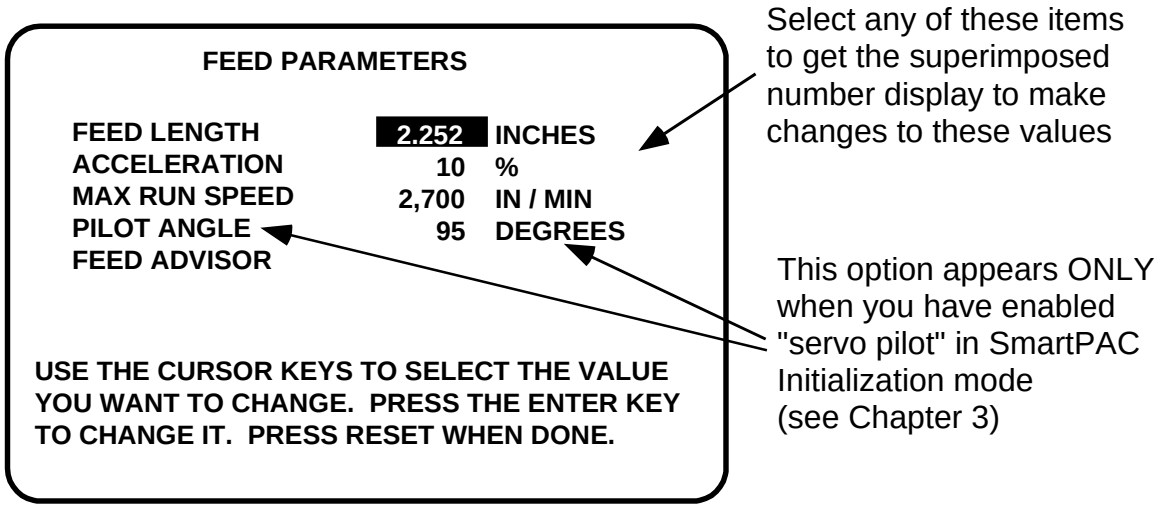

Figure 4-2. Feed Settings

Read your servo feed manual first

Consult the Waddington servo feed manual for any requirements you must meet for feed length and other settings. Remember, SmartPAC does not change the way the servo feed operates or any parameters or limitations built into your servo feed. Be sure you have read the manual and understand how your servo feed works before making any settings.

Feed parameters

When you select "Feed length", a number display appears over the Feed Parameters screen that allows you to set this value. This display is similar to Figure 4-4.

As explained previously, use the number keys to input numeric values for SFI parameters. When you are done entering a number using the number keypad, press ENTER. SmartPAC will accept the number and move on to the next display. SmartPAC accepts numbers up to

seven digits in length. Go to Chapter 3 of the SmartPAC user manual if you are not sure how to use the number display.

If you wish to leave this screen without making a change, press Reset.

When you select any of the remaining feed parameters, the same number display will appear. If you have and plan to use Feed Advisor, you do not need to set acceleration rate and maximum run speed. Be sure to read your servo feed manual before making feed settings.

MORE ABOUT YOUR SERVO FEED SETTINGS

The *acceleration rate* governs how fast the servo feed will accelerate to its set run speed. Your servo feed has a built-in maximum acceleration. The acceleration rate is a percentage of this maximum. For instance, a setting of 80% means the servo feed will accelerate to run speed at 80% of its maximum capability. Refer to your servo feed manual for more information about the acceleration rate. Follow all guidelines given there when making acceleration rate settings.

Maximum Run speed is usually stated as inches/min. Follow all guidelines in the servo feed manual to make proper settings for run speed.

Keep in mind that you can optionally use the *Feed Advisor* (see below) to automatically calculate the acceleration rate for you.

Using Feed Advisor

Select "Feed Advisor" when you want SmartPAC SFI to figure out the acceleration rate and maximum run speed for you.

Feed Advisor is a convenience which saves you the time of calculating the acceleration rate yourself. You need to enter feed length, feed arc (number of crankshaft degrees available to fully feed the material), and press speed when using Feed Advisor. The acceleration rate and run speed is calculated assuming the lowest acceleration rate to fully feed the material by the end of the feed arc. When determining this rate, take into consideration the feed initiate angle, which may be programmed as one of the cam timings in SmartPAC (not SFI).

Here is an example of a situation to avoid. If a 225 degree feed arc is assumed in the Feed Advisor but only 220 degrees is truly available to be fed up, punch engagement may occur before the feed is complete and a die crash may occur. Make sure that you know the actual number of degrees needed to feed up the material and that the feed initiate angle is correctly set.

Here is how Feed Advisor works with the information that you provided to it. Let's say your feed length is 2.252 inches. Also, let's say the number of degrees you have to feed in is 225° with the feed initiate ON angle set at 260°, and the press speed is 150 SPM. You want Feed Advisor to figure out the acceleration rate based upon these values.

How to use Feed Advisor

Select "Feed Advisor" on the "Feed Control" display (see below). Select each item on the screen — Feed length, acceleration, and maximum run speed (and Pilot angle if available); then enter new values. The number display looks similar to that which is pictured at Figure 4-4. Remember to use the number and cursor keys to set the value and ENTER to confirm your selection.

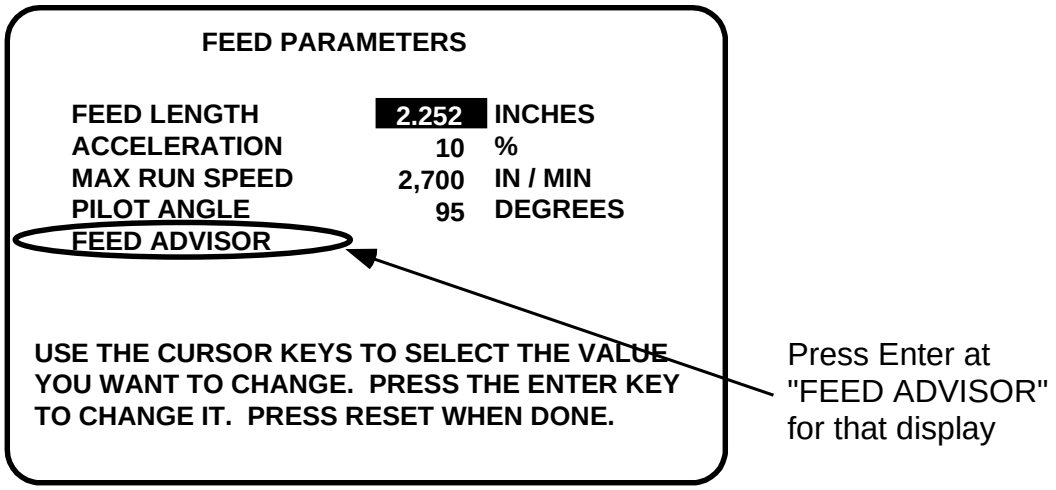

Figure 4-3. Feed Parameters Displaying Showing "Feed Advisor"

Now select Feed Advisor. You will see this display.

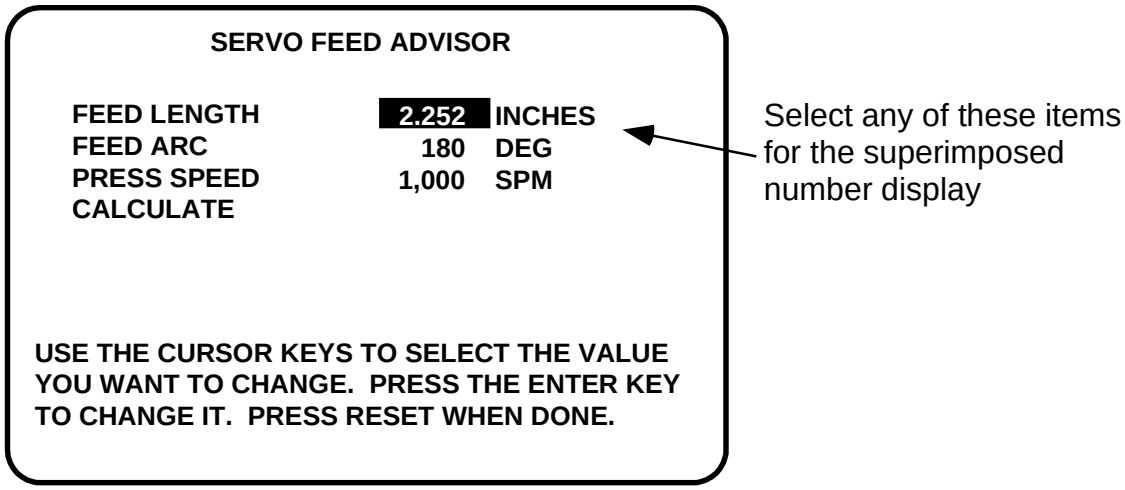

Figure 4-4. "Servo Feed Advisor" Display

Select each item on the screen, one a time -- feed length, feed arc, and press speed -- and enter new values. For variable speed presses, enter the press speed that you will use for the job, and enter it in strokes per minute.

Once you have entered these values, select "Calculate". Once you press ENTER, Feed Advisor calculates your acceleration rate. This message quickly flashes on the screen.

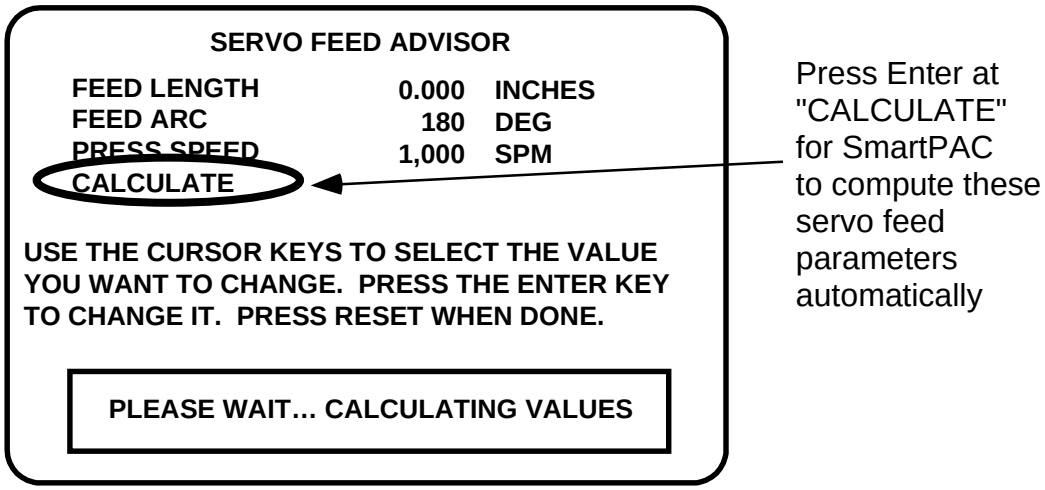

Figure 4-5. Selecting "Calculate" on the Servo Feed Advisor Display

Then Feed Advisor tells you if the feed length and feed arc you entered are valid for that press speed. For instance, if Feed Advisor determines that the feed has plenty of time to complete based on the values entered, you will see this message at the bottom of the "Feed Advisor" screen:

THE MATERIAL WILL BE FED UP WELL BEFORE THE FEED ARC IS COMPLETED.

This means that the feed will end well before the end of the feed arc you have entered even when it was operating at the lowest speed specified in Initialization.

If you see this message:

THE MATERIAL WILL BE FED UP JUST AS THE FEED ARC IS COMPLETED.

… this means that the feed will end just as the feed arc is completed. This is the optimum condition because feed never had to reach the maximum speed specified in Initialization.

If you entered values that will not allow the feed to complete before the end of the feed arc, you see this message:

THE MATERIAL CANNOT BE FED UP IN TIME. MORE TIME MUST BE ALLOWED.

In this case, recheck your values. It might just be a matter of lengthening the feed arc if that will not affect other actions, such as part transfer or part cut off. If you choose to lengthen the arc, make sure that you reprogram the cam angle to initiate the feed earlier. If you cannot do that, your other option is decreasing press speed. In any case, revise your figures if SmartPAC gives you a warning. Then "calculate" Feed Advisor again.

When you get a good calculation, press RESET. You will see the acceleration rate and maximum run speed for your feed setup are automatically revised by Feed Advisor. In our example, the acceleration rate is 40%. This means that the feed is comfortably within an acceptable acceleration range and maximum run speed.

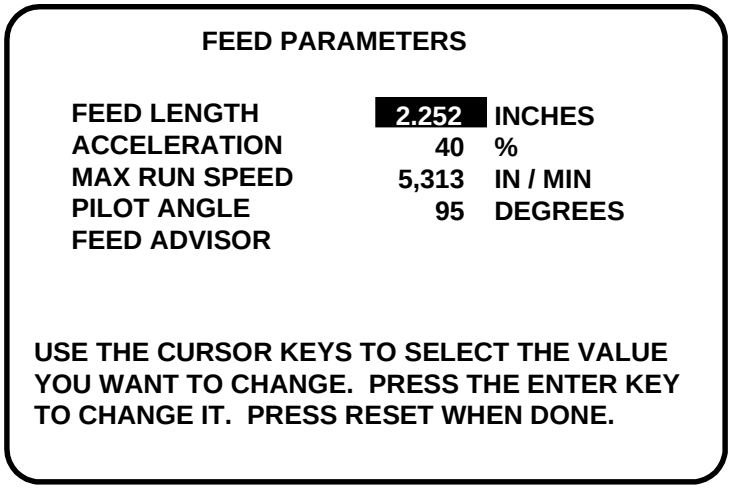

Figure 4-6. New Feed Parameters Created by Feed Advisor

ABOUT USING FEED ADVISOR

You can use Feed Advisor any time that you want SmartPAC to calculate the acceleration rate and maximum run speed for you. If you want to manually enter your own feed parameters, select "Acceleration" and "Max run speed" on the "Feed Parameters" screen.

Remember to program the "Feed Initiate angle" as the "on" angle of the "Feed Advance" cam in SmartPAC ProCamPAC!

Load by tool number

You can automatically load feed settings in SmartPAC by tool number. To load a tool number, press Reset twice, the first time to exit from the "Feed parameters" display and then again to get to the "Load tool number" screen. Press ENTER to load (or Reset to back out). You will get a message like this one which confirms that you have successfully loaded the tool (your tool number may be different):

PLEASE WAIT … LOADING TOOL 1

How to load by tool numbers is covered in detail in Chapter 5 (Program mode) and Chapter 6 (Run mode) of the SmartPAC user manual.

Programming SmartPAC/Waddington SMS Servofeed

In Program mode (see your SmartPAC manual) select PROGRAM OR LOAD TOOL NUMBER. The Tool List screen appears. Select the tool number you want to program. The Main Programming menu for that tool appears. Select FEED CONTROL. A display appears, similar to one of the displays in the next figure, depending on the settings you made in Initialization for Job Mode and Servo Pilot.

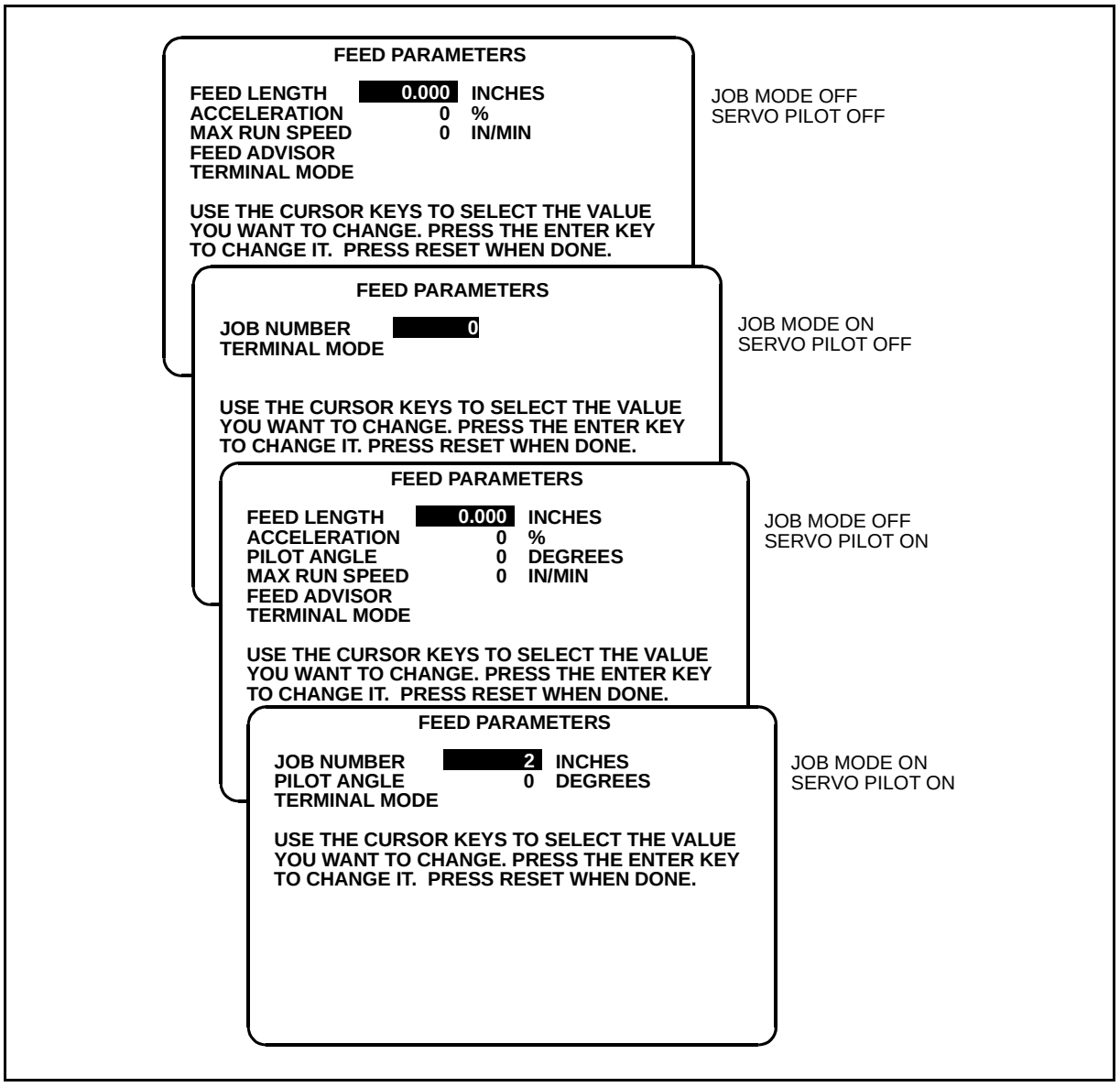

Figure 4-7. SMS Feed Parameters Displays (SmartPAC)

Table 4-1. Feed Parameters Menu Items
Refer to your servo feed manual

Menu Item	How to Use
ACCELERATION %	Enter acceleration rate as a percentage of maximum
FEED ADVISOR (optional)	Select FEED ADVISOR to use Servo-feed Advisor to calculate whether the feed parameters you set are likely to work. (See page 46.)
FEED LENGTH INCHES	Enter feed length in inches
JOB NUMBER	Appears when Job Mode is ON Enter Job number programmed in Waddington SMS Terminal mode – Job Edit mode. (See your Waddington SMS manual.)
MAX RUN SPEED IN/MIN	Enter maximum speed the servo feed should move the material in inches per minute
PILOT ANGLE 0 DEGREES	Appears when Pilot Angle is ON Enter angle at which the pilot pins should disengage
TERMINAL MODE	Select to enter Waddington SMS Terminal mode to program your SMS servo feed from the SmartPAC (see figure below). Refer to your servo feed manual for instructions.

To set up or edit parameters by job number, select TERMINAL MODE in the Feed Parameters menu and program as instructed in your feed manual. The SMS programming steps appear in the area between the two horizontal lines at the top of the display. Follow the instructions in your Waddington SMS manual.

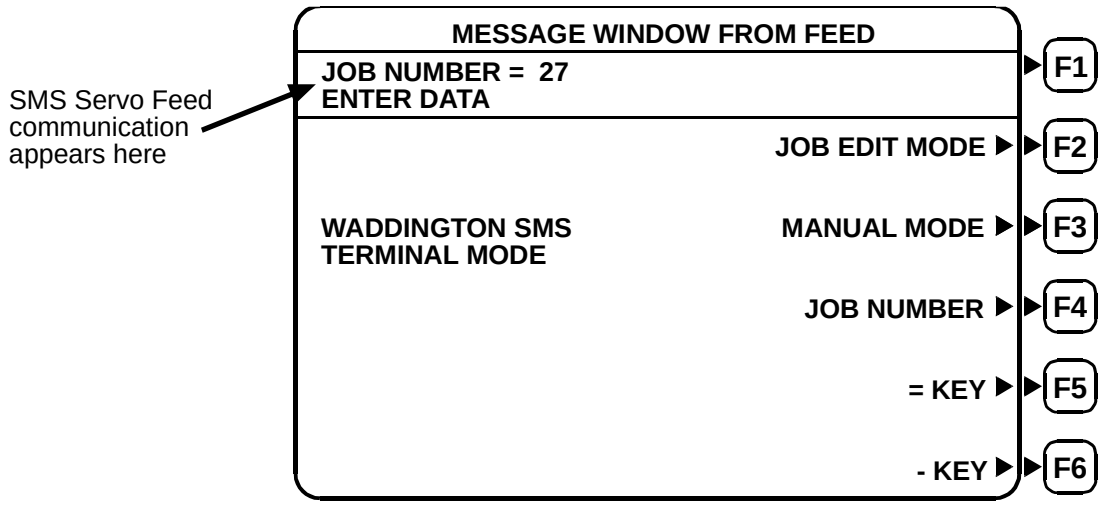

Figure 4-8. Waddington SMS Terminal Mode Screen

Load by Tool Number

You can automatically load feed settings in SmartPAC by tool number. To load a tool number, press Reset twice, the first time to exit from the "Feed parameters" display and then again to get to the "Load tool number" screen. Press ENTER to load (or RESET to back out). You will get a message like this one which confirms that you have successfully loaded the tool (your tool number may be different):

How to load by tool numbers is covered in detail in Chapter 5 (Program mode) and Chapter 6 (Run mode) of the SmartPAC user manual.

Section 2 1500 Series

About Tool Number

The terms "Tool" or "tool number" will be used many times in this chapter. A tool number consists of all the programmed settings (including the servo feed settings) that you make for one job. You can save servo-feed information for up to 200 tools and then recall these settings for each job whenever you need to.

Program menu

Go into Program mode, by turning the Program/Run key to "Run" and then back to "Program". Next, select a tool number to modify, and then select "Modify the tool number information". If you are not sure how to do this, refer to Chapter 5 in the applicable 1500 unit's user manual.

SELECT = HIGHLIGHT + ENTER

When this manual says “select,” it means “use the cursor keys to highlight the item and then press ENTER.”

Once you have selected a tool to modify, you will see a display which lists the various settings you can make for the tool. Select "Set feed", as shown below.

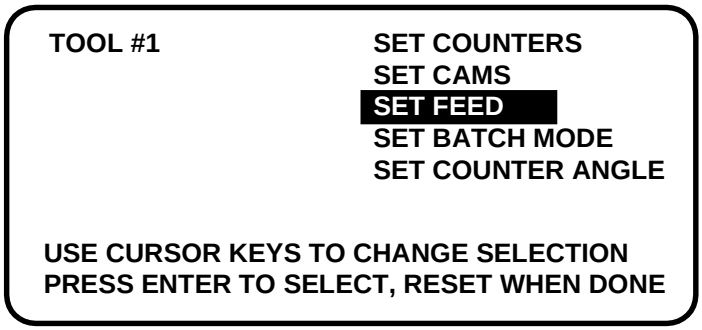

Figure 4-9. Selecting "Set feed" in Program Mode

Here is the "SET FEED" display (below). You have up to four choices.

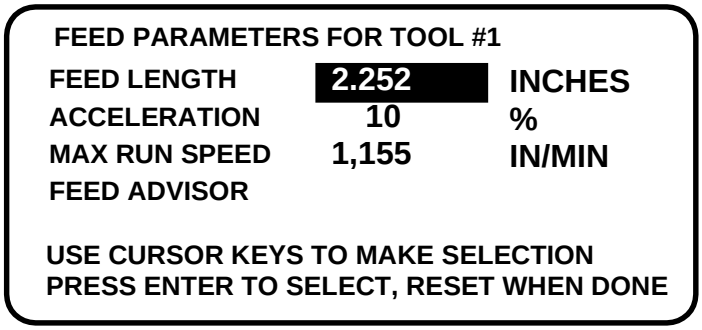

Figure 4-10. Feed Settings

Feed settings

When you select "Feed length", a new display appears that allows you to set this value. See the next illustration.

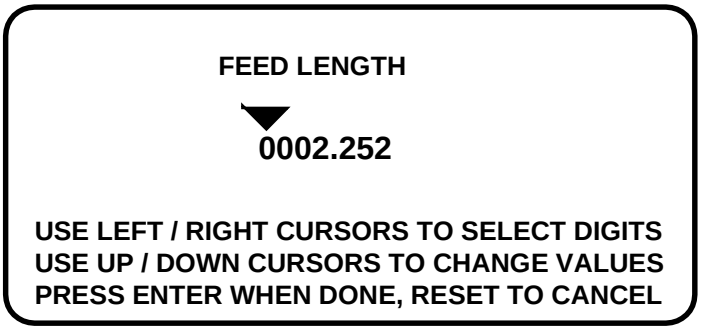

Figure 4-11. Setting Feed Length

As the display indicates, use the left and right, as well as the up and down CURSOR keys. Press the left and right CURSOR keys to position the triangular-shaped pointer over the desired digit, and then press the up and down CURSOR keys to increase or decrease the value, one step at a time. If you need assistance, Chapter 3 in the applicable 1500 unit's user manual explains how to use these keys. When you are satisfied with the value, press ENTER. However, if you wish to leave this screen without making a change, press RESET.

When you select either of the other two feed parameters - - "Acceleration" or "Maximum run speed", the display is similar to "Set Feed length", and the instructions at the bottom of the screen are identical. The next illustration shows the other two screens. *If you have and plan to use Feed Advisor (see page 46), you do not need to set acceleration rate and maximum run speed. Remember! Read your servo feed manual before making feed settings!*

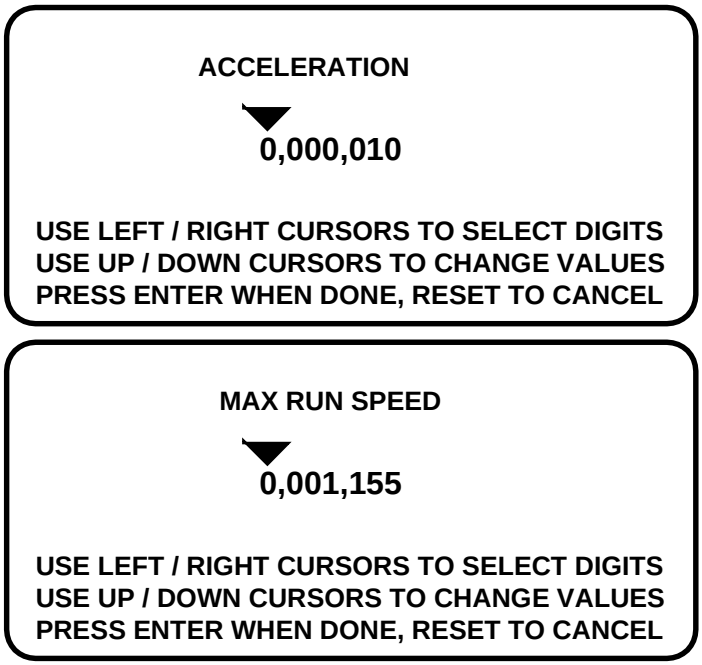

Figure 4-12. Setting Other Feed Parameters

MORE ABOUT YOUR SERVO FEED SETTINGS

The *acceleration rate* governs how fast the servo feed will accelerate to its set run speed. Your servo feed has a built-in maximum acceleration. The acceleration rate is a percentage of this maximum. For instance, a setting of 80% means the servo feed will accelerate to run speed at 80% of its maximum capability. Refer to the Waddington servo feed manual for more information about the acceleration rate. Follow all guidelines given there when making acceleration rate settings.

Maximum Run speed is usually stated as inches/min. Follow all guidelines in the servo feed manual to make proper settings for run speed.

Keep in mind that you can optionally use the *Feed Advisor* (see page 46.) to automatically calculate the acceleration rate for you (if it is available with your servo feed).

Feed Advisor

You select "Feed Advisor" when you want the 1500 unit's SFI to figure out the acceleration rate and maximum run speed for you.

Feed Advisor is a convenience which saves you the time of calculating the acceleration rate yourself. You need to enter feed length, feed arc (number of crankshaft degrees available to fully feed the material), and press speed when using Feed Advisor. The acceleration rate and run speed is calculated assuming the lowest acceleration rate to fully feed the material by the end of the feed arc. When determining this rate, take into consideration the feed initiate angle, which may be programmed as one of the cam timings in the 1500 unit (not SFI).

Here is an example of a situation to avoid. If a 225 degree feed arc is assumed in the Feed Advisor but only 220 degrees is truly available to be fed up, punch engagement may occur before the feed is complete and a die crash may occur. Make sure that you know the actual number of degrees needed to feed up the material and that the feed initiate angle is correctly set.

Here is how Feed Advisor works with the information that you provided to it. Let's say your feed length is 2.252 inches. Also, let's say the number of degrees you have to feed in is 225° with the feed initiate ON angle set at 260°, and the press speed is 150 SPM. You want Feed Advisor to figure out the acceleration rate based upon these values.

How to use Feed Advisor

Select "Feed Advisor" on the "Set feed" display. Select each item on the screen, one a time -- feed length, feed arc, and press speed -- and enter new values. For instance, when you select "Feed length" and enter 2.252, here is how the screen will look (below). Remember to use your left/right and up/down CURSOR keys to set the value and ENTER to enter it.

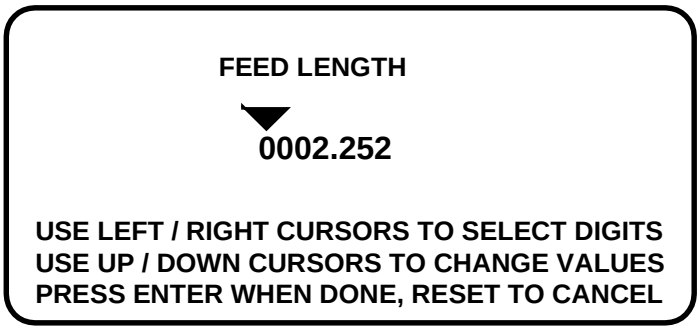

Figure 4-13. Setting Feed Length in Feed Advisor

Now do the same for "Feed arc" and "Press speed". Select "Feed arc" and enter 225. Then select "Press speed" and enter 150. *Keep in mind for variable speed presses, enter the press speed that you will use for the job, and enter it in strokes per minute.*

Once you have entered these values, here is how the "Feed Advisor" will display them:

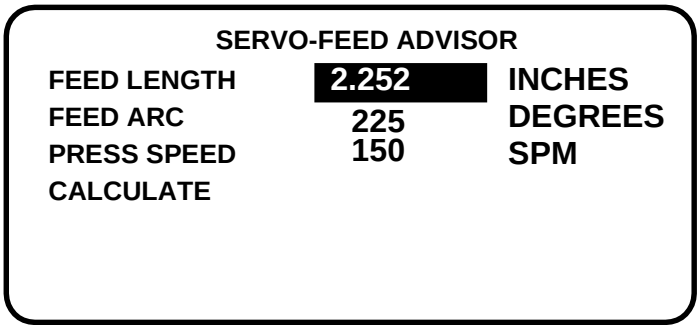

Figure 4-14. Feed Advisor Display

Now select "Calculate". Once you press ENTER, Feed Advisor calculates your acceleration rate. This message quickly flashes on the screen.

> *PLEASE WAIT … CALCULATING PARAMETERS*

Then Feed Advisor tells you if the feed length and feed arc you entered are valid for that press speed. For instance, if Feed Advisor determines that the feed has plenty of time to complete based on the values entered, you will see this message at the bottom of the "Feed Advisor" screen:

> *THE MATERIAL WILL BE FED UP WELL BEFORE THE FEED ARC IS COMPLETED.*

This means that the feed will end well before the end of the feed arc you have entered.

If you see this message:

> *THE MATERIAL WILL BE FED UP JUST AS THE FEED ARC IS COMPLETED.*

… this means that the feed will end just as the feed arc is completed. This is the optimum condition. If you entered values that will not allow the feed to complete before the end of the feed arc, you see this message:

> *THE MATERIAL CANNOT BE FED UP IN TIME. MORE TIME MUST BE ALLOWED.*

In this case, recheck your values. It might just be a matter of lengthening the feed arc if that will not affect other actions, such as part transfer or part cut off. If you cannot do that, your other option is decreasing press speed. In any case, revise your figures if the 1500 unit gives you a warning. Then "calculate" Feed Advisor again.

When you get a good calculation, press RESET. You will see the acceleration rate and maximum run speed for your feed setup are automatically revised by Feed Advisor. In our example below, the acceleration rate is 40%. This means that the feed is comfortably within an acceptable acceleration range and maximum run speed.

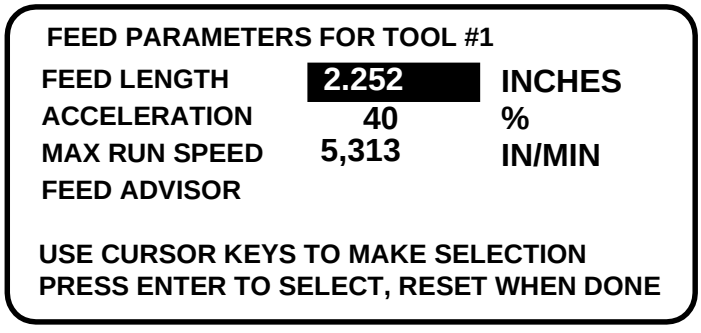

Figure 4-15. New Feed Parameters Created by Feed Advisor

ABOUT USING FEED ADVISOR

You can use Feed Advisor any time that you want the 1500 unit to calculate the acceleration rate and maximum run speed for you. If you want to manually enter your own feed parameters, select "Acceleration" and "Max run speed" on the "Feed Parameters" screen.

Remember to program the "Feed Initiate angle" as the "on" angle of the "Feed Advance" cam in the 1500 unit!

Load by tool number

You can automatically load feed settings:1500 by tool number. To load a tool number, press RESET twice, the first time to exit from the "Feed parameters" display and then again to get to the "Load tool number" screen. Press ENTER to load (or RESET to back out). You will get a message like this one which confirms that you have successfully loaded the tool (your tool number may be different):

PLEASE WAIT … LOADING TOOL 1

How to load by tool numbers is covered in Chapters 5 (Program mode) and 6 (Run mode) of the applicable 1500 unit's user manual.

Chapter 5 - Run Mode for Waddington SFI

NOTICE

WADDINGTON SFI AND SMARTPAC 1, SMARTPAC 2, AND SMARTPAC PRO

You can use Waddington SFI with SmartPAC 2 and SmartPAC PRO as well as with the original SmartPAC. Instructions provided in this manual that are specific to SmartPAC pertain to SmartPAC 1, SmartPAC 2, and SmartPAC PRO (refer to "SmartPAC PRO, SmartPAC 2, and Original SmartPAC," page 3, for more information). Wiring diagrams at the back of the manual show pin connections for the different SmartPACs.

In this chapter you will learn how to use the Waddington SFI menus in Run mode. Specifically, you will adjust feed parameters while operating the press.

Each of these sections provides you with detail on operating the Waddington servo feed with the applicable Wintriss control. If you need more assistance in using the Wintriss product, refer to its user manual.

Read your servo feed manual first

Consult your servo feed manual for any requirements you must meet for feed length and other settings. Remember, the Wintriss control does not change the way your servo feed operates or any parameters or limitations built into your servo feed. Be sure you have read your servo feed manual and understand how your servo feed works before making any settings.

The chapter is divided into two sections, one for SmartPAC (next page), the other for 1500 series Wintriss controls (page 63). Refer also to the manual of your Wintriss product.

Section 1 SmartPAC

About Tool numbers

The terms "Tool" or "tool number" will be used many times in this chapter. A tool number consists of all of the settings (including the servo feed settings) that you make for one job. You can save servo feed information for up to 200 tools and then recall the settings for each job whenever you need to.

Entering Run Mode

To use Run mode, turn the Program/Run key to "Run", and you will see the following screen.

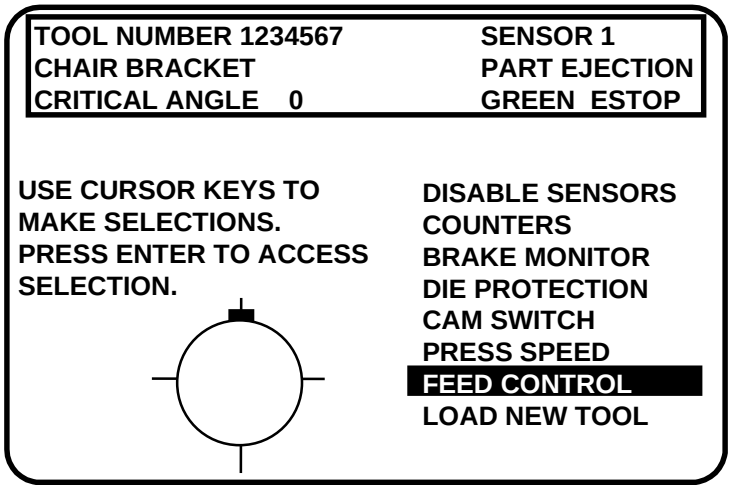

Figure 5-1. Run Menu
(The order of items may be different, depending on which options you have)

- Operate the MiniFeed servo feed according to the instructions below.
- Operate the SMS servo feed according to the instructions on page 62.

Using MiniFeed in Run Mode

Enter Run mode as described above. While you are running the press, SmartPAC will operate the Waddington MiniFeed servo feed based upon the settings you made in Program mode, and in some cases, you can make minor adjustments to the currently loaded tool number.

> **SELECT = HIGHLIGHT + ENTER**
>
> When this manual says “select,” it means “use the cursor keys to highlight the item and then press ENTER.“

To adjust feed settings, select "Feed control". As the display indicates, you can adjust "Feed length".

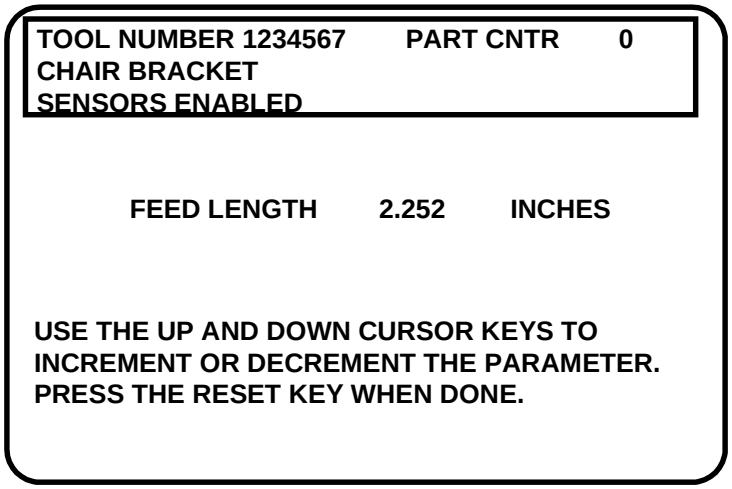

Figure 5-2. Adjusting Feed Length

You can make minor adjustments (if available) using the up and down cursor keys. Notice as you press either key, the value changes by .001 inch (1/1000) or less. This information is directly sent to the servo feed and is immediately saved to the currently loaded tool. Be sure to make a note of this change to your feed setup sheet for future reference. Press RESET to exit from this display.

Using the SMS Servo Feed in Run Mode

While you are running the press, SmartPAC will operate with the SMS servo feed based upon the settings you made in Program mode, and in some cases, you can make minor adjustments to the currently loaded tool number.

Enter Run mode as described on page 60. A screen similar to following appears.

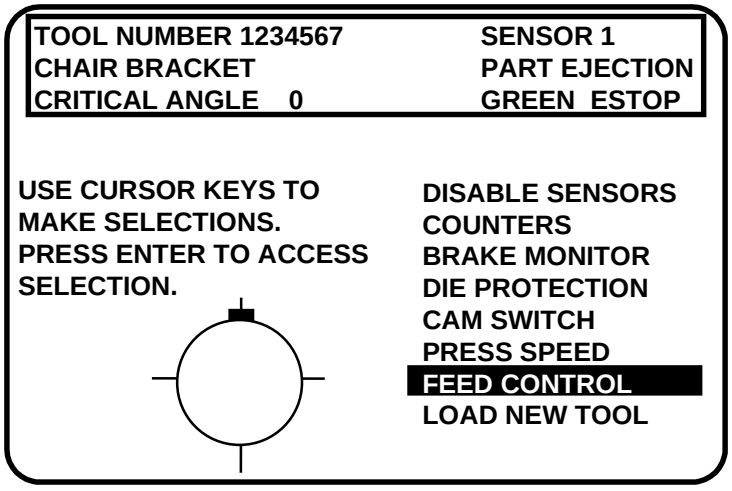

Figure 5-3. Run Menu

(The items and their order may be different, depending on which options you have)

To adjust feed settings, select "Feed control". Depending on your settings, you can then adjust one or more of the parameters shown.

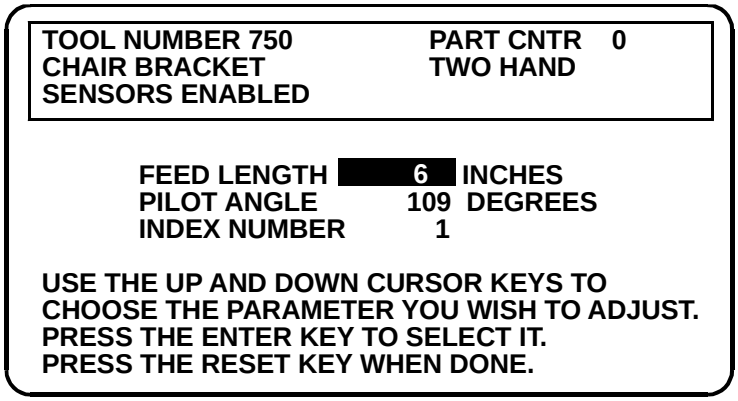

Figure 5-4. Feed Control Display in Run Mode

(Your display may look different, depending on your feed control settings.)

Select the parameter value you want to change. Follow the instructions on the display for changing the value, either using the up and down cursor keys or keying in the new value. This information is sent directly to the servo feed and is immediately saved to the currently loaded tool. Be sure to make a note of this change on your feed setup sheet for future reference. Press RESET to exit from this display.

Section 2 1500 Series

About Tool Numbers

The terms "Tool" or "tool number" will be used many times in this chapter. A tool number consists of all of the settings (including the servo feed settings) that you make for one job. You can save servo feed information for up to 200 tools and then recall the settings for each job whenever you need to.

Run menu

While you are running the press, the 1500 unit will operate the servo feed based upon the settings you made in Program mode, and in some cases, you can make minor adjustments to the currently loaded tool number.

To use Run mode, turn the Program/Run key to "Run". Here is the screen that you will see.

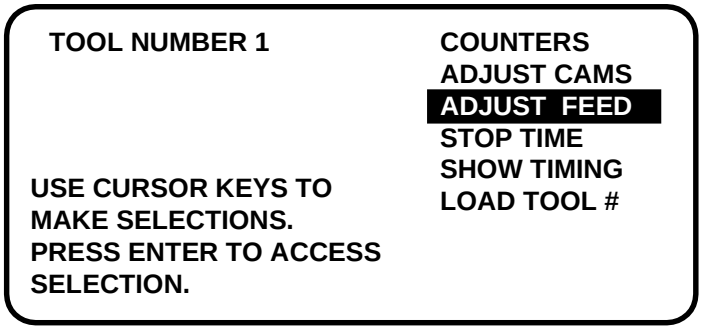

Figure 5-5. Run Menu

To adjust feed settings, select "Adjust feed". As the display indicates, you can adjust "Feed length".

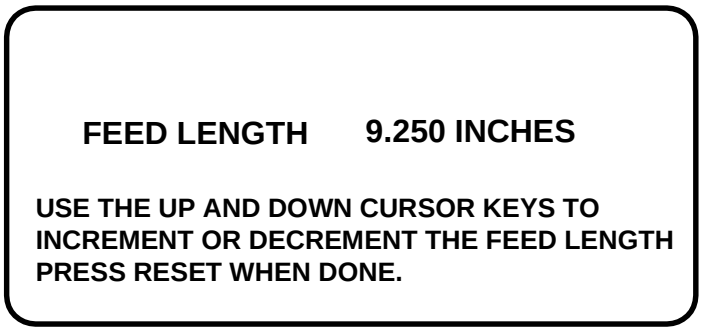

Figure 5-6. Adjusting Feed Length

Using the up and down cursor keys, you can make minor adjustments (if available). Notice as you press either key, the value changes by .001 inch (1/1000) or less. This information is directly sent to the servo feed and is immediately saved to the currently loaded tool. Be sure to make a note of this change to your feed setup sheet for future reference. Press RESET to exit from this display.

Chapter 6 - Troubleshooting Waddington SFI

NOTICE

WADDINGTON SFI AND SMARTPAC 1, SMARTPAC 2, AND SMARTPAC PRO

You can use Waddington SFI with SmartPAC 2 and SmartPAC PRO as well as with the original SmartPAC. Instructions provided in this manual that are specific to SmartPAC pertain to SmartPAC 1, SmartPAC 2, and SmartPAC PRO (refer to "SmartPAC PRO, SmartPAC 2, and Original SmartPAC," page 3, for more information). Wiring diagrams at the back of the manual show pin connections for the different SmartPACs.

This chapter presents the troubleshooting messages that are generated as a result of a Waddington servo feed being interfaced with Wintriss products.

This chapter deals only with the SFI. If you need more assistance in using the Wintriss product, have the actual user manual handy.

IMPORTANT

This manual mentions any communications fault conditions that occur when the Wintriss products lose contact with your Waddington servo feed. It does not, however, explain the Waddington-generated error messages in any detail. Refer to your servo feed manual for more information.

SmartPAC Troubleshooting

IMPORTANT

Power Up Servo Feed First or at the Same Time as SmartPAC

Power up the servo feed before or at the same time you power up SmartPAC.

IMPORTANT

SMS Servo Feed must be homed and AUTO/MAN/JTL switch must be set to MAN

Be sure you have homed the feed and set the AUTO/MAN/JTL switch to MAN. Otherwise, you cannot read any feed information under the feed control menu. See your servo feed manual.

Terminal Mode Screen Appears at Startup (Waddington SMS)

This is normal when your SmartPAC is connected to an SMS servo feed. To exit this screen and go to the SmartPAC screens, press RESET. (See page 14.)

Cannot Read SmartPAC Screens on Powering Up (Waddington SMS)

This happens when you power up the SmartPAC before you power up your servo feed. Power down both units. Power up both units at the same time or power up the servo feed first, and then power up SmartPAC.

Cannot Read SmartPAC Feed Control Menu (Waddington SMS)

Home the feed as instructed in your SMS feed manual and be sure the AUTO/MAN/JTL switch on the servo feed in the MAN position.

Lost Communications Between SmartPAC and Feed Control

Whenever SmartPAC and the feed control unit are not successfully communicating, the following message will appear on the LCD.

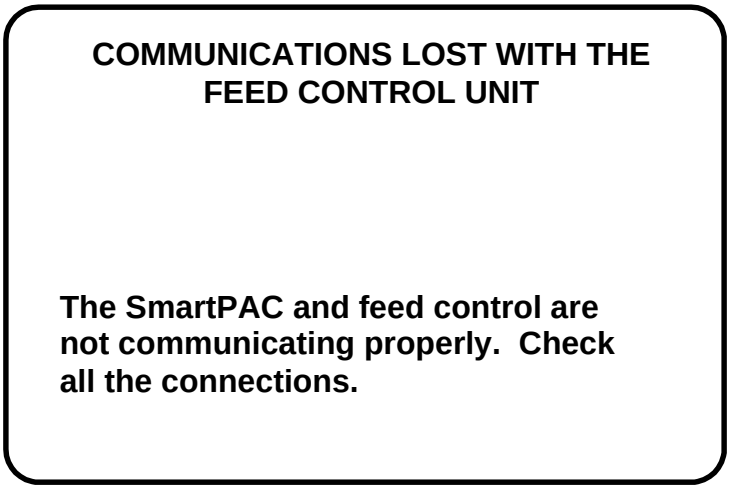

Figure 6-1. Communications Fault Message

Check that all wiring connections are intact. Refer to Chapter 2 to verify correct installation if necessary. Also refer to the next section, "Viewing Communications Between Feed Control and SmartPAC," to look at communications. Contact Wintriss Tech Support for troubleshooting assistance. Once communication is restored, you will no longer see this fault message.

Viewing Communications Between Feed Control and SmartPAC

To look at the communications between SmartPAC and your servo feed, follow these steps:

1. Select POSITION SENSOR from the Main Initialization menu (see page 22). The Position Sensor screen appears (see top figure on page 67).
2. Press **F4** (VIEW COMMUNICATIONS). The Communication Data Viewer screen appears (see center figure on page 67).
3. Select PORTR 1 (SFI). The Communications screen appears (see bottom figure on page 67).

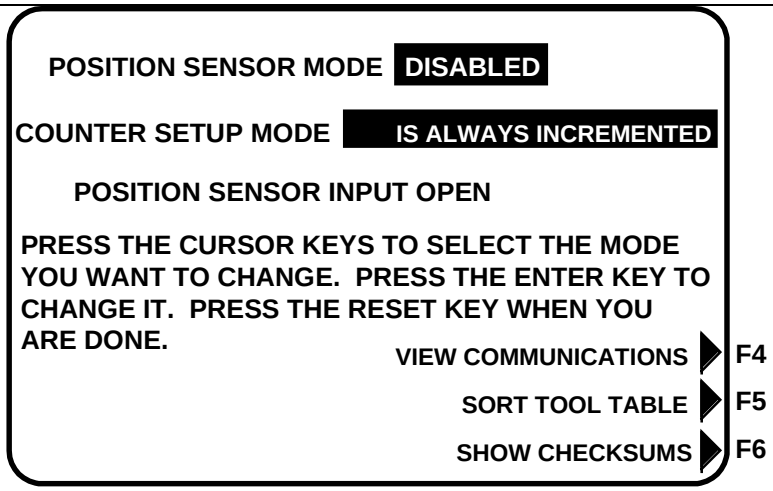

Figure 6-2. Position Sensor Screen

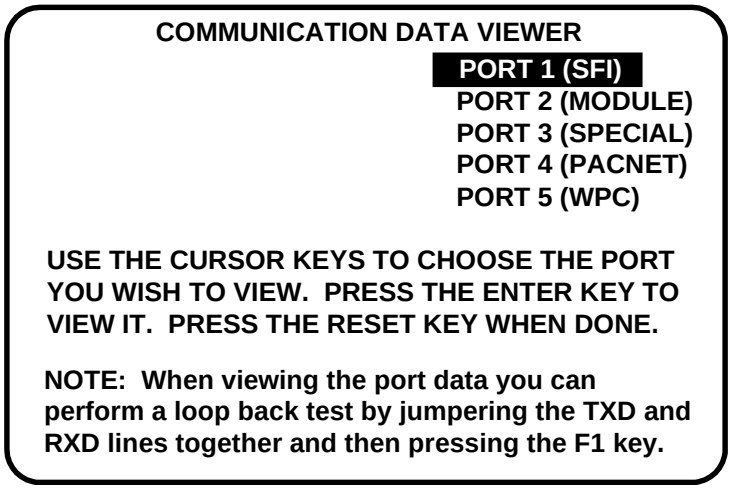

Figure 6-3. Communication Data Viewer Screen

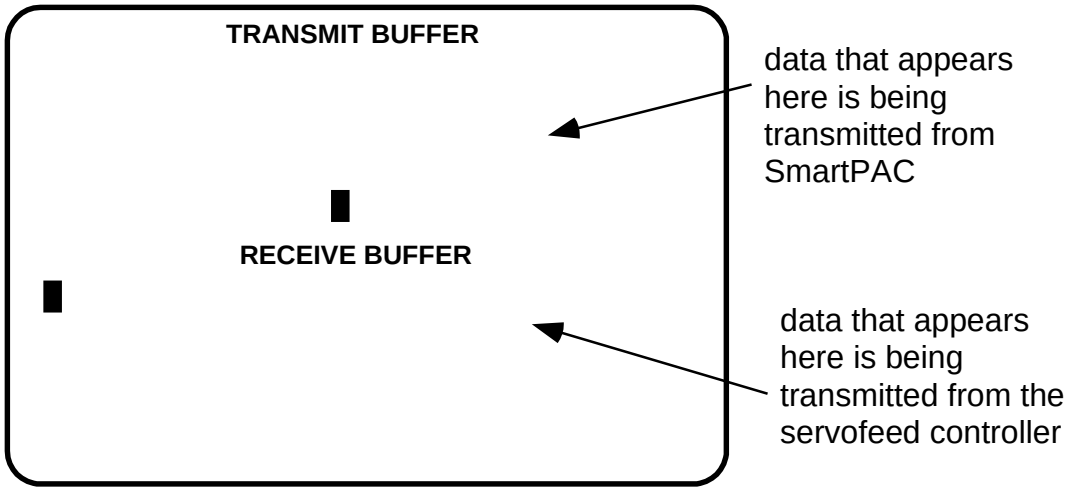

Figure 6-4. Actual Communications

If communications are operating normally between SmartPAC and the servofeed controller, you should see some text (data) in both the "transmit buffer" and "receive buffer" locations

on the above screen. If you do not see any data (or only partial data), this means that SmartPAC and the servofeed controller are not communicating properly.

In this case, a problem exists and you can perform a loop-back test to check communications, as follows:

1. Connect (jumper) the TXD (transmit) and RXD (receive) lines together. Refer to the Figure 5 wiring diagram at the end of this manual for loop-back wiring.
2. Press **F1** to check communications. This causes SmartPAC to receive the data it is transmitting. This test is useful when verifying the accuracy of the transmit and receive hardware and wiring.

For assistance, contact Wintriss Tech Support.

1500 Series Troubleshooting

Whenever either ProCam 1500 or DiPro 1500 and the feed control unit are not successfully communicating, the following message will appear on the LCD. Check that all wiring connections are intact. Refer to Chapter 2 if necessary. Once communication is restored, you will no longer see this fault message.

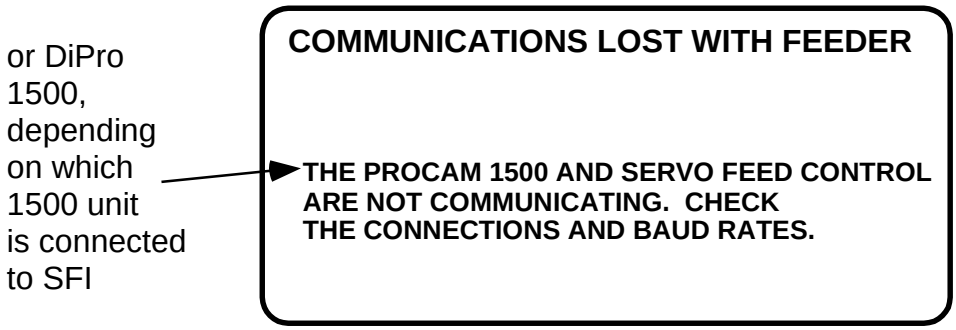

Figure 6-5. Communications Fault Message

NOTE

If yours is a SMS servo feed, the Terminal Mode screen (Figure 2-3) appears when you power up the SmartPAC. Press RESET to go to normal SmartPAC operation.

Index

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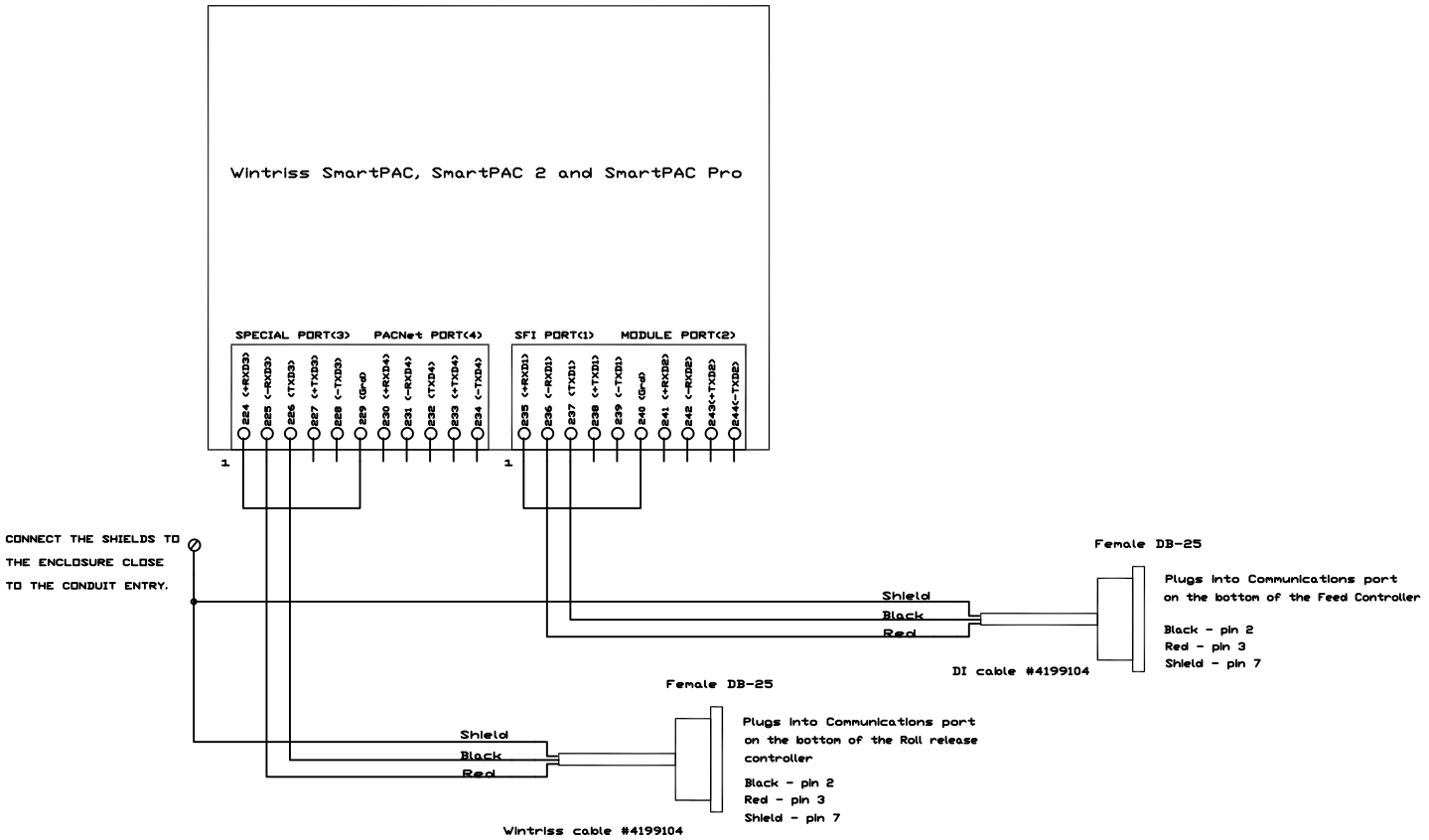
REVISIONS			
REV	DESCRIPTION	DATE	APP'D



DRAWN ADB	DATE 5/24/18	WINTRISS CONTROLS GROUP
CHK.		
APPROVALS		TITLE SmartPAC to Waddington MiniFeed Pac Scl 450 with Servo Roll Release
ENG.		
MFG.		
FILENAME		CODE IDENT NO. / SIZE C / DRAWING NUMBER FIGURE 1 / REV
REL		SCALE / SHEET OF

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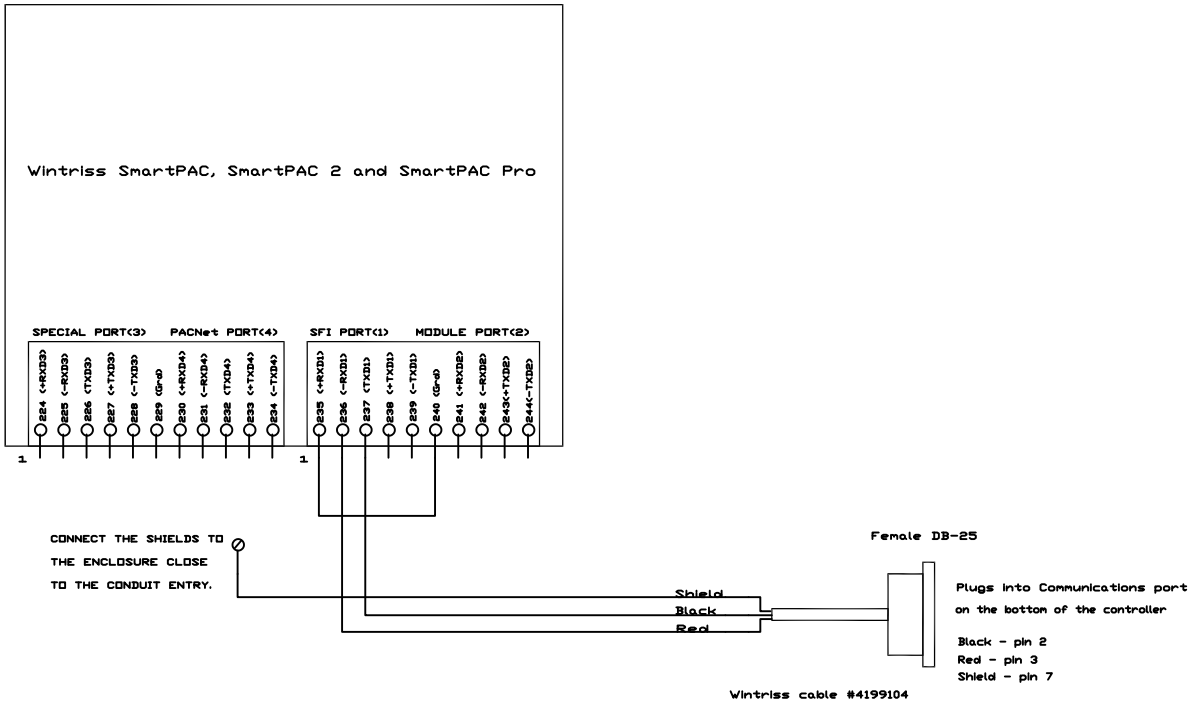
REVISIONS			
REV	DESCRIPTION	DATE	APP'D



DRAWN ADB	DATE 5/24/18	WINTRISS CONTROLS GROUP	
CHK.			
APPROVALS		TITLE SmartPAC to Waddington MiniFeed Pac Sci 450 Wiring Diagram	
ENG.			
MFG.			
FILENAME		CODE IDENT NO.	SIZE C / DRAWING NUMBER FIGURE 2 / REV
REL		SCALE	SHEET OF

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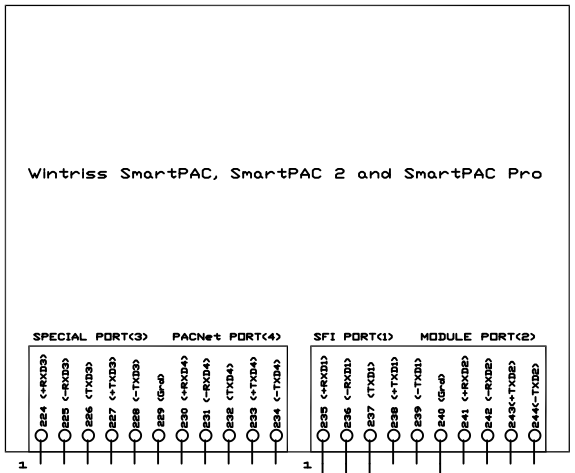
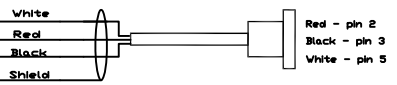
REVISIONS			
REV	DESCRIPTION	DATE	APP'D



CONNECT THE SHIELD TO THE ENCLOSURE CLOSE TO THE CONDUIT ENTRY.



Male DB-9

Red - pin 2
Black - pin 3
White - pin 5

THIS CONNECTOR PLUGS INTO J51 SERIAL PORT ON THE FRONT OF THE SERVO CONTROL UNIT.

Wintriss cable #4199106

DRAWN ADB	DATE 5/24/18	WINTRISS CONTROLS GROUP
CHK.		
APPROVALS		TITLE: SmartPAC to Waddington SMS feed control Wiring Diagram
ENG.		
MFG.		
FILENAME		CODE IDENT NO. / SIZE C / DRAWING NUMBER FIGURE 3 / REV
REL.		SCALE / SHEET OF

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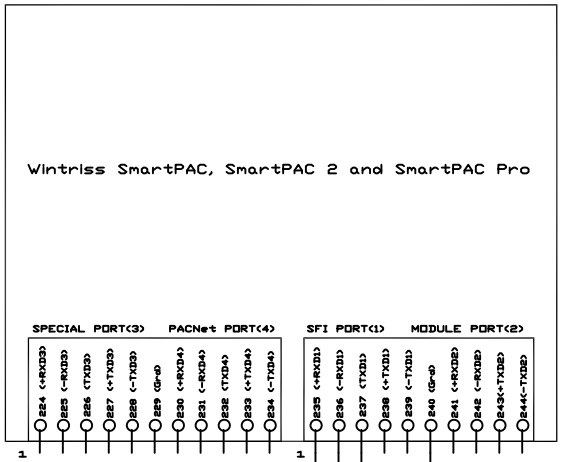
REVISIONS			
REV	DESCRIPTION	DATE	APP'D



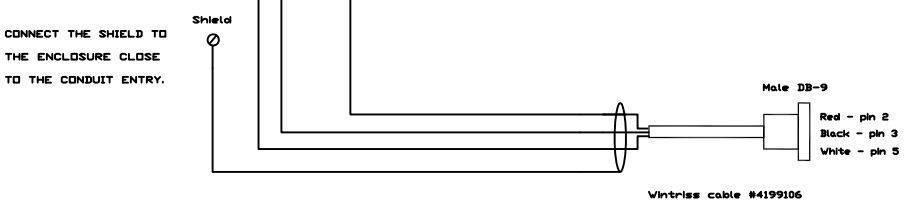
THIS CONNECTOR PLUGS INTO THE FEMALE DB-9 END OF A WADDINGTON SUPPLIED SERIAL CABLE THAT PLUGS INTO PORT C3 ON THE FRONT OF THE DANAHER SERVO DRIVE. THIS CABLE CONVERTS THE HIGH DENSITY DB-15 PORT TO A RS-232 FEMALE DB-9 CONNECTOR.

PINOUT FOR DB-15 TO DB-9 CABLE:

C3/8 SIGNAL GND ------ DB9/5

C3/9 RS232 RXD --------- DB9/3 (Feed receives on this line)

C3/10 RS232 TXD -------- DB9/2 (Feed transmits on this line)



CONNECT THE SHIELD TO THE ENCLOSURE CLOSE TO THE CONDUIT ENTRY.

Wintriss cable #4199106

DRAWN ADB	DATE 5/24/18	WINTRISS CONTROLS GROUP	
CHK.			
APPROVALS		TITLE SmartPAC to Waddington CR DB9 feed control Wiring Diagram	
ENG.			
MFG.			
FILENAME		CODE IDENT NO.	SIZE C / DRAWING NUMBER FIGURE 4 / REV
REL		SCALE	SHEET OF

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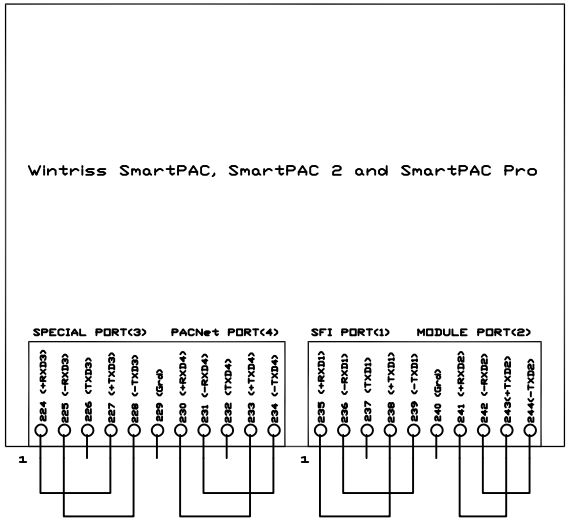
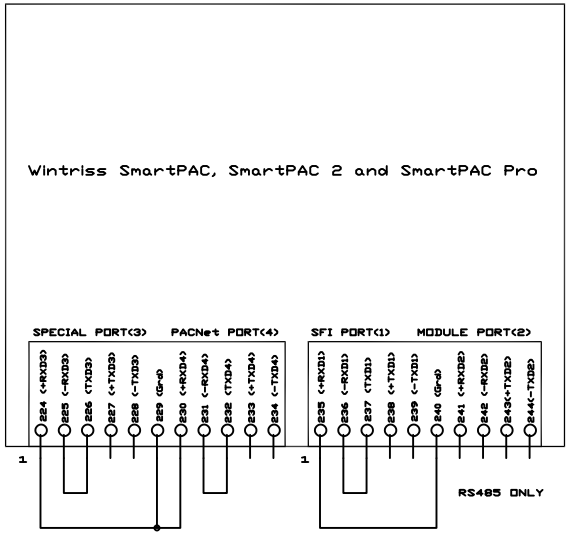
REVISIONS			
REV	DESCRIPTION	DATE	APP'D

RS 485 CONNECTIONS



RS 232 CONNECTIONS



DRAWN ADB	DATE 7/2/18	WINTRISS CONTROLS GROUP	
CHK.			
APPROVALS		TITLE	
ENG.		SMARTPAC LOOPBACK WIRING CONNECTIONS	
MFG.			
FILENAME		CODE IDENT NO. / SIZE C / DRAWING NUMBER FIGURE 5 / REV	
REL		SCALE / SHEET OF	

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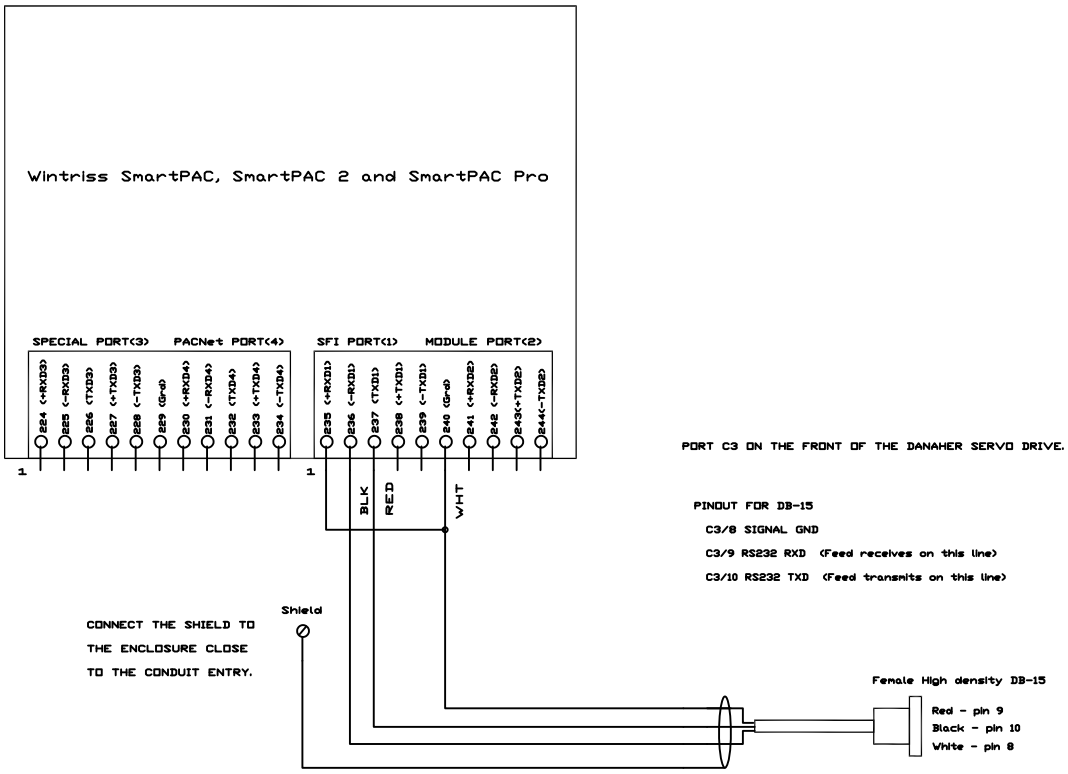
REVISIONS			
REV	DESCRIPTION	DATE	APP'D



DRAWN ADB	DATE 5/24/18	WINTRISS CONTROLS GROUP
CHK.		
APPROVALS		TITLE
ENG.		SmartPAC to Waddington CR
MFG.		DB15 feed control Wiring Diagram
FILENAME		CODE IDENT NO. / SIZE C / DRAWING NUMBER FIGURE 6 / REV
REL.		SCALE / SHEET OF