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# TC-15T Terminal Crimping Machine. Operation Manual



Version A2.0 Software version V2.1.0 (HMI 2.2.3)

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# TABLE OF CONTENTS

SAFETY REGULATIONS AND PRECAUTIONS	1
CONNECTIONS	2
CONTROL PANEL	3
MACHINE OPERATION	4
PREMIUM / OPTIONAL TC-15T UTILITIES	5
TROUBLESHOOTING	6
TECHNICAL DATA	7

# 1 - Safety Regulations - English

## 1. Product description

The TC-15T machine is an electronically controlled, loose piece terminal crimping system designed to be mounted on a production table and used to semi-automatically terminate wires into loose piece terminals of various types according to the specifications in section 7 of this manual. The operator or production engineer selects various operational modes and parameters to suit the type of terminal being processed.

## 2. Responsibilities

The operator/engineer/owner of the machine bears the responsibility for ensuring that every person who works with or within proximity to the TC-15T receives precise instruction from the operating instructions provided (safety, set-up, operation, maintenance). The training of the operation personnel must include the following points:

- Intended use of the machine.
- Danger areas.
- Safety requirements.
- Operation of the machine in accordance with the operating instructions provided.

## 3. Personal qualifications

In order to that all the instructions be understood, the training must take place in the language of the operating personnel. Consequently, the following personal qualifications are required:

- All operators, maintenance personnel and persons receiving instruction for this equipment shall be at least 16 years of age.
- Any person undergoing training and being left responsible for the equipment shall fully understand this manual in English language.
- Any person carrying out maintenance on this equipment should be fully trained by the manufacturer – Production Technology Limited.

## 5. Danger areas

- Please pay attention to the following danger areas with particular care:
  - Crimping Jaws – Object / body part crush hazard – do not exceed or bypass the safety protection shield.
  - Internal TC-15T internal control system console, electricity hazard – do not access the internal machine parts without proper training and experience.

## 6. Safety Guard

This equipment is equipped with a safety protection device that surrounds the crimping jaw area. This is called the safety guard.

Although the safety guard is interlocked in the machines electronic operation and software systems, it is important that the safety protection is not bypassed, removed, or modified in any way to facilitate the operation of the machine without the necessary safety protection.

# 2 - Connections

## Caution – Mains electricity connections.

The TC15-T system requires a 220-240VAC 50/60hz mains electricity connection.

The main electrical connection to the machine is made using a standard IEC three pin female lead wire. NOTE – This equipment must be connected using an earthed electrical connection lead wire. Only use the electrical lead wire supplied with the machine.

**Footswitch** – There is a circular connection port on the rear of the machine to connect a footswitch, this will operate the machine when pressed.

**Computer** (optional) – There is a 9 way “D-Type” data port on the rear left hand side of the machine (looking from the rear of the machine) to connect a computer.

Caution – only connect an original Production Technology data cable to this port. Do not insert any other object into this port.

- The footswitch will activate the cycle of the crimping jaws when pressed.
- The footswitch will enable operation in either terminal hold or single cycle terminal crimping modes.
- During any part of the machine cycle of crimping jaw movement, the footswitch position is monitored. If the footswitch is released during the machine cycle the crimping jaws will return to their open position.

**Barcode Reader** (optional) – There is a 9 way “D-Type” data port on the rear right-hand side of the machine (looking from the rear of the machine) to connect a compatible barcode reader. Caution – only connect an original Production Technology data cable or barcode reader to this port. Do not insert any other connector or object into this port.

# 3 - Control Panel

The TC-15T features a touchscreen control panel situated on the top of the machine.

**CAUTION** – Should the touchscreen control system become damaged or unresponsive at any point during the machine operation please switch off the machine and consult our technical helpline.

**!! Do not use the machine if there is a fault !!**

The touchscreen control panel allows the machine to be started, motor power to be applied, and the machine system to be configured for correct operation.

It is important that the following section “MACHINE OPERATION” is fully understood before using the control panel and operating the TC-15T machine.

The control panel should be pressed lightly but positively in the area that is critical to the operation/parameter to be selected. Do not exert excessive force onto the touch panel. Do not spill liquids, conductive matter, or other contaminants onto the control panel.

An additional and very convenient switch is positioned at the bottom of the front panel of the machine, this switch is identified as “RESTART”. The function of this switch is to allow the resetting of the crimping jaws to an open and “reset” position, During the terminal hold operation of the machine, the restart button will allow fast and trouble free repositioning of the terminal in the jaws to their open state.

# 4 – Machine Operation

The TC-15T machine is operated as per the instructions in this section. Safety precautions should be observed at all times.

- [Powering on the system.](#)

Once the machine is situated according to the specifications in this manual, connect the main power lead wire (IEC connector fig 1.0) and the footswitch (Circular connector fig 1.1) to the rear panel of the machine. Switch on the machine using the main power switch (fig 1.2)



Fig 1.0

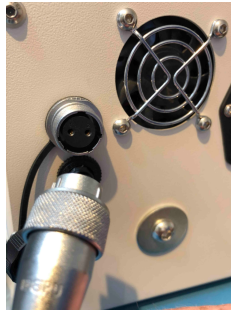


Fig 1.1



Fig 1.2

The control panel will show the “splash screen” identifying the manufacture details and technical help contact points. No motor power has been applied yet and the footswitch has no function at this point.

You may now select the machine language by pressing on the corresponding country flag at the bottom of the touch screen (fig 1.3).



Fig 1.3

## Operating the machine -

**IMPORTANT!!** Before operating the machine for the first time after power-up, it is important that the machine understands the fully closed position of the die sets you are going to use. This is a simple automated process to automatically calculate the position of the jaw mechanism for you, and record this information to the CPU memory.

This is done by following the on-screen instructions after power-up;



Install a die set that is compatible with the machine and press the “PRESS HERE TO START” button in the centre of the screen. The jaws will go through their self-calibration process and if a successful reading has been obtained the production screen will be shown. If the calibration fails due to a die-set not being installed you will be required to install a die-set and repeat the operation. The machine will not operate until the calibration routine has been successfully carried out.

To recalibrate the jaw system at any point please see the section “Manual Mode” below (Page 20) and follow the instructions for Automatic “Tool Zero Position”. Failure to do this could result in poor crimping results and potentially long-term machine damage / premature wear.

**TIP : every time a die set is changed, carry out the automatic tool zero measurement. This will ensure the machine is working to the best of its capabilities.**



- Operating the machine – single cycle.

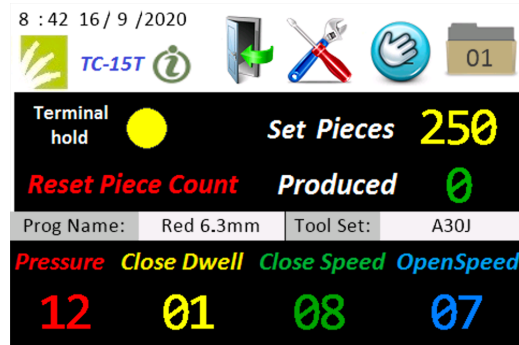
The touchscreen will display a safety warning and an option to “Continue” pressing and acknowledging this warning, will result in the motor power being applied. (see note 1a below).

(fig 1.4).

Fig 1.4



Fig 1.5

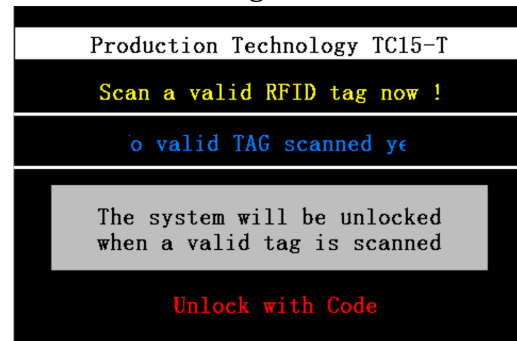


\*\*\*Note 1a. If your machine has the optional RFID login system installed, you will be prompted to apply your personalized RFID card or TAG to the illuminated **PRO-red** reader unit on the right-hand side of the machine. (fig 1.6) During the time when the machine is looking for a valid RFID device there will be a sequence of audible tones and the display will show a scrolling “scanning for RFID tag” message (fig 1.7) hold your RFID device to the upper part of the **PRO-red** reader.

Fig 1.6



Fig 1.7




Providing the RFID card used is valid for the TC-15T machine model access will be granted to the system and the motor control power will be enabled.

The production screen will be shown (fig 1.5).

The production piece total is automatically set to 250 pieces, and the produced pieces value will be zeroed. If you require a production volume different to the default of 250 pieces, touch the “set pieces” value and enter a new value.

The bottom of the production screen shows the current and last saved production values for ;

**PRESSURE – TIME DWELL – CLOSE SPEED – OPEN SPEED**

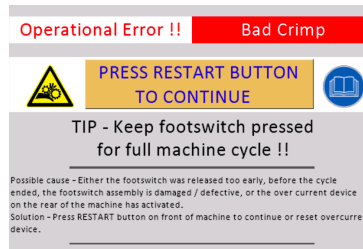
The top of the screen shows an  icon for “System Information”, the time and date, and icons for the setting and manual operation selection (fig 1.5).

In the horizontal center of the production screen you will notice an area for operator and production program data. The “Prog Name” data area will show the current loaded production job, and if there is tool set information this will be displayed in the “Tool Set” data area. Once a program is loaded the program number is displayed on the file icon in the top right hand corner of the screen. On power up there is no program loaded on the machine. If the “Prog Name” field displays “F/S not active” the file save/load option has not been purchased.

### Crimping a terminal – Single cycle

The terminal and wire combination can be applied into the tooling area, and with one positive press of the footswitch the jaws will close and crimp the wire/terminal combination. Please Note : If the footswitch is released at any point during the closure operation of the jaws this will trigger an error and immediately stop the machine operation.

The screen will now display the message in the picture below;



Follow the message on the screen and reset the jaw mechanism to prepare for another terminal by pressing the “Restart” button on the front panel.

The piece counter will not have incremented since this is a bad crimp cycle!

Once the jaws have fully closed the footswitch may be released. The jaws will open after the DWELL TIME has elapsed.

The piece counter will have incremented by one, and the machine will be ready to accept the next crimping operation.

- [Operating the machine - Terminal hold.](#)

If your application requires a dual cycle / or terminal hold operation, then the “terminal hold” radio button can be pressed to activate this mode (fig 1.5). You will hear an audible “beep” to signal the mode change. Press again to deactivate this mode.

In terminal hold operation mode, the jaw system of the machine will close slowly onto a terminal placed into the jaw tooling. The closure position of the jaw is pre-set (see hold position in “settings - page 2 - hold position”, in this manual).

The footswitch can be released one the terminal hold position is reached. The wire can now be precisely inserted into the terminal held in the tooling and the footswitch pressed again to complete the cycle.

The piece counter will have incremented by one at the end of the cycle, and the machine will be ready to accept the next crimping operation.

Press the terminal hold radio button a second time to disable this operational mode and return to single cycle mode.


- Pieces reached.

Once the actual produced pieces counter reaches the production set limit. The machine will sound a completion audible notification and the produced pieces value will be shown in **RED** the machine will not allow any more production operations until this counter is reset to zero, or a new production quantity is set. The “**Reset Piece Count**” area on the touch screen can be pressed to return the production piece counter to zero (fig 1.5).

Alternatively if a new program is loaded, or the operator logs off and a fresh login attempt is successful, the actual produced piece counter is reset, the actual piece value will return to zero and production can be started again.

- Load Job file utility.

Pressing the “Load Job” icon — (please note the footswitch is disabled and has no function in Load Job mode).

The load Job icon  in the top righthand corner of the touchscreen is used to access the load Job utility (fig 1.8).







1	Test PG1	10	
2		11	
3		12	
4		13	
5		14	
6		15	
7			Test PG1
8			
9			

Fig 1.8


You will see in the load program utility screen (fig 1.8). There is a list of possible program locations for you to select.

Page one shows program locations 1-15, pressing the  icon allows you to access page 2 of the save program locations 16-30.

You can easily switch between page 1 & 2 by pressing   icons on screen.

In the Load Job utility you can select from a list of pre-saved production jobs. Each job has a number and a user definable text label (see “Save Job” section of this manual) of up 10 characters.

The user must select a job number from the list on the page. (selection of the production job is done by pressing the number adjacent to the job name), and on doing so the job number and label are transferred in to the selection area.

Pressing the Open Job  icon loads the selected job and returns to the production screen.

If for example the data onboard for the job you want to load either does not exist or is corrupt, there will be a succession of 6 beeps and the load job information box will show “load error” – please note that if this is the case the default job (1) will be loaded instead.

In the Load Job screen there is also an exit icon allowing the user to return to the production screen without loading a new program.

**\*\*Please note - The Load / Save Job utility screens are only accessible if the machine has been configured with the Datalogging/file operations option. Otherwise these icons have no function.**

- [Settings mode.](#)

Pressing the “SETTINGS” icon (please note the footswitch is disabled and has no function in settings mode).



at the top of the screen switches to the settings mode screen (fig 1.5).

In settings mode the user can program the main functional parameters;

**PRESSURE** – **TIME DWELL** – **CLOSE SPEED** – **OPEN SPEED**

Additionally the Date / Time can be set and the LCD backlight can be adjusted by pressing the relevant menu buttons on the touch screen (fig 1.9).

Pressing the green next icon allows access to the second settings page.

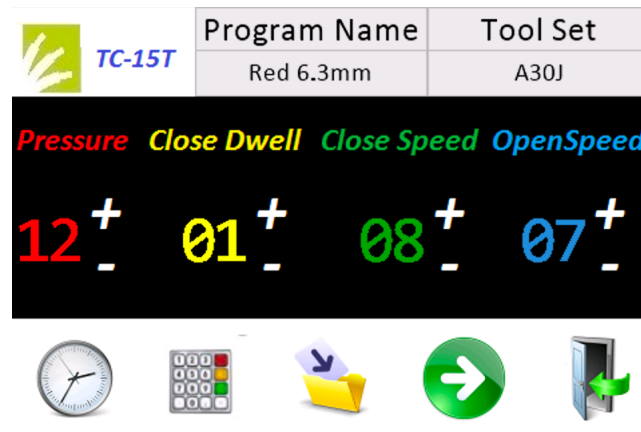
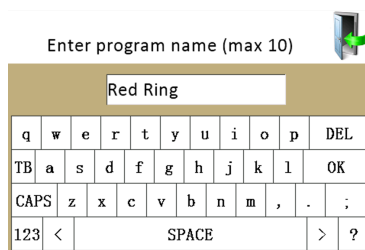


Fig 1.9

There are two fields at the top of the screen containing the program or product name, and the tool set information. By pressing on either the name of the program or tool set opens up a dialogue box to enter this information. An example of this is in the screenshot below;



- [Settings mode – Program name.](#)

Pressing the area under “program name” allows you to enter a name for the program you wish to save/modify. An on screen keyboard appears and program name entry can be made (up to 14 characters).

- [Settings mode – passcode.](#)

In settings mode there is an option to set / change an access passcode.

If a passcode has been set, this passcode must be entered to allow access to the settings screen. By default the passcode is disabled.

To enable the passcode press the keypad icon along the bottom of the screen and using the numerical input keypad enter a four digit passcode and press enter. This passcode will be required to access the settings screen in future **\*\*\***. If you do not want a passcode setting for access to the settings screen then press the keypad icon and enter 0 (Zero) and press enter.

**\*\*\*** (CAUTION - If you forget your passcode you will need to contact Production Technology or your nearest service representative to resolve this).

- [Settings mode – Date / Time.](#)

In settings mode there is an option to set / change the current data and time. Use this utility to configure the date and time to your current local data and time settings. Press exit to store the date and time.


- [Settings mode – Save File.](#)



The Save icon in settings mode will allow access to the save program utility (providing this option is configured in the machine).

In order to save your program efficiently, carry out the following programming sequence;

- Press NEXT and set calibration value and hold positions then press "back".
- Set the program name by pressing the program name text at the top of the screen see (fig 2.0).
- Press the "Save File" button in the setting screen.

You will see the save program utility screen (fig 2.0). There is a list of possible program save positions for you to save your program.

Page one shows program locations 1-15, pressing the  icon allows you to access page 2 of the save program locations 16-30.

You can easily switch between program page 1 & 2 by pressing the   icons on screen.





1	Test PG1	10	
2		11	
3		12	
4		13	
5		14	
6		15	
7			Test PG1
8			
9			

Fig 2.0

Select the program number by pressing the appropriate number in the list. The program number will be transferred to the save program area. Pressing the file  save icon will save the program to the number you selected. Next press the exit icon to return to the settings screen.

Please note – any changes to your current program that are saved to the program memory of the machine, will not be automatically available in production until the program is re-loaded from the load program utility.

- [Settings – Page 2.](#)

Pressing the green “next page” icon in the settings menu (fig 1.9) displays the Tool zero position, terminal hold, dwell force, audio signal, lighting controls and RFID/Datalogger options (\*\*Note 1b. RFID and Datalogger options available on premium machine versions only – if these options are not enabled, they will not be present on the screen).



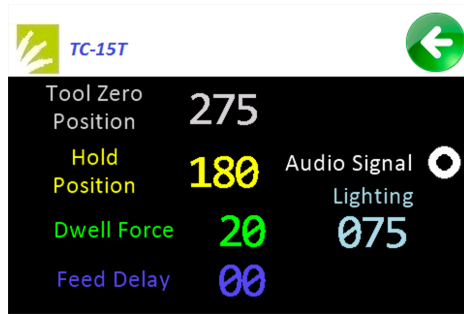


Fig 2.1

- [Settings – Page 2 – Tool Zero Position](#)

The tool zero position of the machine is for indication only and therefore coloured in gray text. Under normal operational conditions it is not possible to adjust the tool zero position of the machine. However, under certain circumstances this value can be changed manually – please contact your local service representative for more information.

- [Settings – page 2 - Terminal hold value.](#)

The terminal hold value is the relative position of the top jaw stop position during the first part of the “terminal hold” mode of operation.

The terminal hold value can be set dynamically in the “Manual mode” screen, or alternatively you can enter the terminal hold position in this screen by pressing the terminal hold numerical value area and then entering the value that corresponds to your terminal and application. Please note that a value equal to or exceeding that of the tool zero position will result in an automatic setting of 25 counts less than the current tool zero position.

Press the green “back” icon to return to the first settings page, when you have completed the adjustment of parameters, press the exit door icon to save the settings and return to the production page.

Depending upon the configuration of the machine, in the area at the top right of the screen there may be two icons. Datalogger utility and RFID utility can be accessed by pressing the relevant icon (please see section datalogger / RFID utility).

- [Settings – Page 2 – Dwell Force.](#)

Pressing the Dwell Force parameter, allows the user to input a value from 0 – 50 for the dwell force power. Dwell Force can be used to maintain a given amount of force to the terminal during the final part of the crimping cycle when the “Close Dwell” timer is running.

**CAUTION** – an excessive amount of Dwell force on a very small terminal may result in over crimping on some terminal and die set types. Additionally, if the dwell force is too low when using larger terminals, the required crimp height / compression may not be achieved.

- [Settings – Page 2 – Feed Delay.](#)

“Feed Delay” is reserved for machine with the optional TORUS hardware installed and has no function on machines without this feature.


- [Settings – Page 2 – Audio Signal.](#)

Touching on the radio button for “Audio Signal” either switches on, or off, the audio feedback of the machine.

- [Settings – Page 2 – Lighting.](#)

If you have the optional die set lighting system installed, you can touch the lighting parameter on the screen and input a brightness value from 0 (completely off) to 100 (full brightness)

- [Production Screen - Log out.](#)

By pressing the Log out  icon on the production screen (fig 1.5). The motor control power is disabled and the machine returns to the initial splash (power up) screen allowing either another user to log-in, a different language to be selected, or to regain access to the system with a different RFID card or TAG (if the RFID option is enabled), or for the system language to be changed.

**\*\*Please note - The RFID login function is only accessible if the machine has been configured with the RFID option.**

- [Manual Mode.](#)



Manual operation mode can be accessed by pressing the manual mode icon on the production screen. The footswitch is disabled and has no function in manual mode. The manual operation screen is as fig (2.2).

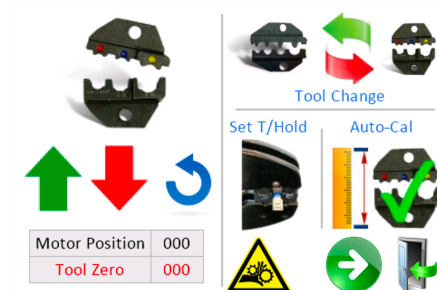




Fig 2.2


Manual operation allows the machine user to;

- Manually close the crimping jaws.
- Manually open the crimping jaws.
- Manually reset the position of the crimping jaws.
- Observe the current motor position.
- Observe the current “Tool Zero Position”.
- Carry out the automatic “Tool Zero Position” function.
- Set the terminal hold position.
- Change the crimp die tooling.

**CAUTION** – Manual mode should be accessed only by trained and experienced personnel. It is possible to damage tooling, property, and inflict bodily injury in manual operation mode.

Pressing the touchscreen red downward facing  soft button, the crimping jaws will close by ten counts of the internal motor encoder.


Pressing the touchscreen green upward facing  soft button, the crimping jaws will open by ten counts of the internal motor encoder.


Pressing the touchscreen blue circular arrow  soft button, the crimping jaws will reset to their fully open position and the motor counter will return to 0 (zero) value.

As each jaw movement button is pressed to either open or close the jaws the position of the jaws will be displayed in real time in the current motor position value on the screen.

- [Manual Mode - Terminal hold – dynamic setting.](#)

The terminal hold value can be set numerically in setting mode (fig 2.1). However it is possible to set this jaw position in manual mode by dynamically positioning the jaws to the desired position and saving the position to memory.

To achieve this, firstly press the blue circular arrow  soft button, to ensure the tooling is at its fully open position.

Carefully and positively, press the jaw close  red downward facing arrow on the touchscreen time after time – the jaws will close step by step until the aperture in the jaws is close to the size of the required un-crimped terminal.

Place a terminal in the jaws and press the jaw close button until the terminal is gripped securely but not crushed or deformed.

Once the terminal is held in the jaws the current position can be set and saved by pressing the terminal hold soft button on the screen. The machine will give an audible confirmation tone.



- Manual mode – Tooling Change.

At the top right of the screen there are a pair of red and green arrows with different die sets, pressing in this area will close the tooling to a convenient preset position to allow the die sets to be



changed.

Once the dies have been changed follow the instructions on the screen by replacing the safety cover and then pressing the RESTART soft button.

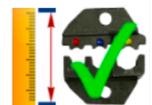
**NOTE : Always perform Automatic Tool Zero – (Auto-calibration) after changing die sets.**



- Manual mode – Automatic “Tool Zero Position”.

Automatic tool zero position, effectively “finds” the absolute closure point of the tooling by slowly closing the tooling until effective resistance is determined. This simple one-touch operation automatically sets the “Tool Zero Position” in the settings – page 2 screen.

To start, make sure the die set is properly secured and aligned in the tooling and that the safety guard is correctly fitted. Check that no foreign objects are in the tooling area and then press the automatic “Tool Zero Position” icon.



The jaws will close, determine the zero position and then re-open again. The zero position will be displayed in the “Tool Zero” text area on the screen.

- [Controls – front panel - RESTART button](#)

On the right hand lower front panel of the machine close to the tooling area, there is a manual tooling reset (jaw reset) button.

The restart button is most useful in terminal hold / dual cycle mode. This button facilitates the unconditional opening of the machine jaws (unless the footswitch is pressed) allowing for the jaws to be fully opened and reset. If a terminal is mis-positioned in “terminal hold” mode the jaws can be opened by pressing the RESTART button saving wasted parts and enabling the production cycle to start again.

- [Controls - Safety guard – removal and installation](#)

The safety guard is mounted on the lower crimping jaw, and wraps around both upper and lower jaws assemblies. It provides protection to the user from inadvertent insertion of body parts into the tooling during machine operation.

The safety guard should only be removed by following these instructions, and only at times to allow the change over of the machine tooling.

The two screws on the lower right hand side of the safety cover (2 x 3mm hex-cap head fig 2.3) can be removed to allow the safety guard to be gently pulled back and away from the machine. When removing the safety guard you will notice a long red plastic “safety key” (fig 2.4) is attached to the guard and withdraws with the guard from the lower tooling area.

Fig 2.3

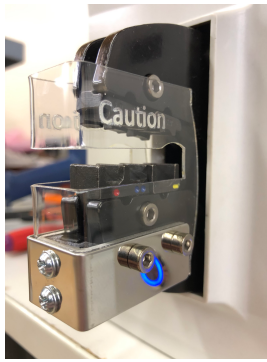
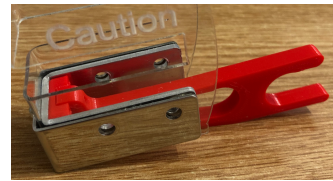


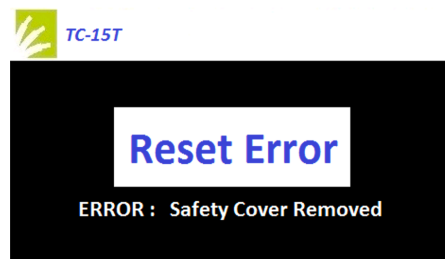
Fig 2.4



It is important not to remove the two pozidriv head screws on the front face of the safety guard these screws secure the safety key to the main guard – removal of these screws can result in the machine becoming unsafe to use.

Once the machine is ready to be used again replace the guard by aligning the “key” into the lower jaw and firmly pushing home until the holes in the side of the guard align with the screw holes in the lower jaw, making it possible for the securing screws to be inserted and tightened.

If the guard is removed during machine operation the following error is displayed;



Please re-install the safety guard and press “Reset Error”.

# 5 – Premium / Optional TC-15T utilities

- [RFID – TAG / Card reader utility](#)

The premium version of the TC-15T is delivered to the customer with RFID TAG/card read and write utilities.

Using original Production Technology RFID TAG's or cards allows you to read/write machine user information that is collected on boot up of the machine and used to form part of the datalogging system.

To access the RFID utility go to “Settings” and press the “Next” button. If RFID is enabled there will be both an RFID and datalogger utility button at the bottom of the screen (fig 3.0).

Fig 3.0

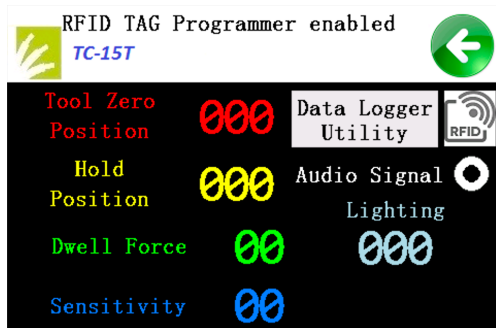
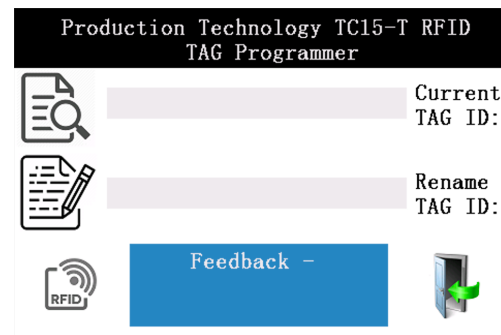




Fig 3.1



Pressing the RFID logo allows access to the RFID utility (fig 3.1).

By holding an original Production Technology RFID device next to the upper part of the **PRO-red** reader on the right hand side of the machine and pressing the device read icon  scans the device and reports the operator/user data into the left of “Current TAG ID:” dialog box.



Pressing in the dialog area to the left of “Rename TAG ID:” invokes an alphanumeric keyboard. Type the new operator/user name (up to 16 characters) and then whilst holding the TAG or card next to the PRO-red reader press the device write icon 

Information relating to the process of reading or writing to the RFID device is displayed in the blue “Feedback” area dialogue box.

When you are finished press the “Exit” button to return back to the settings area of the software. The operation of the new TAG or card can be tested by logging out and then back in to the machine.

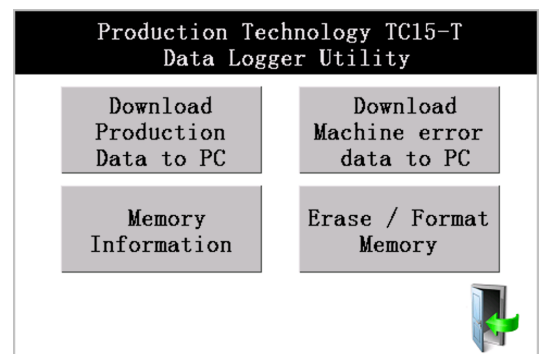
- [Datalogger – Computer download data capture](#)

The TC-15T premium version machine is equipped as standard with an onboard datalogger tracking the following information/events;

- Machine login and logout – Operator ID and date / time information is captured and recorded.
- Machine settings change – Operator ID, data/time, and new settings are recorded.
- Program load / save – Operator ID, program number information is collected
- Machine error data – Any malfunction or, crimping jaw blockage detection is recorded with operator ID and date/time to the datalogger.

A utility screen (fig 3.2) can be accessed by following the “settings” and “Next” button sequence, then pressing the “Data Logger Utility” box.

Fig 3.2



A connection to a compatible computer running a terminal emulator (not included) is required.

\*\*\* Important \*\*\* – The data connection port on the rear of the machine is NOT RS232.

Only use the data connection lead supplied with the machine to connect to a PC or other computer interface. Failure to use the original connection lead will damage the machine and invalidate your warranty.

Terminal emulator connection settings:

Baud Rate – 57600 kbps      Data bits – 1      Stop bits – 0      Parity – None

Once a connection to a computer has been setup, there are four functions to select from the data logger utility.

- Download Production data to PC – Selecting this option sends all of the production data stored on the machine to the computer.
- Memory information – Selecting this option sends the file list contained in the machine to the computer.
- Download machine error data to PC – Selecting this option sends all of the error data only to the computer.
- Erase / format memory – Selecting this option deletes the production data only, all of the other information relating to programs/datalogging is retained. Occasionally deleting the production data frees up space on the internal memory. This should only be done once you are satisfied that your backup of the data is complete.

Selecting Erase / format displays the data deletion passcode input keypad. Enter the passcode for this function and press enter. Should you decide not to delete the data DO NOT press the delete key shown in figure 3.3 below. Instead power off the machine and reboot.

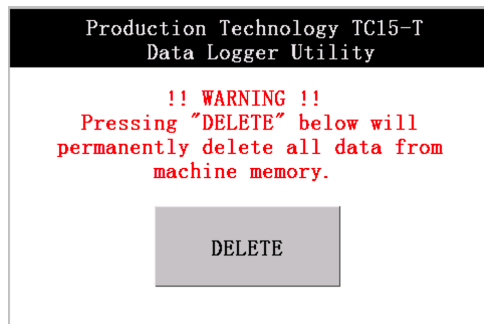


Fig 3.3

- [RFID – Lost RFID TAG's / Cards.](#)

In case of misplacement of your RFID TAG/Cards there is a way to continue to operate the machine on a temporary basis by following the instructions listed below.

RFID can be permanently disabled as can the datalogging / program storage and recall facility by accessing a special service menu. The instructions to enable this menu can be obtained by service agents/distributors as a supplementary document upon request, and are not available as part of this manual.

Instructions to operate the machine without an RFID device;

During the RFID scan (machine audible notification and showing fig 1.7 - page 7 ) press the red text “Unlock with code” and wait for the audible notification to stop. The screen will show a passcode input keypad. Enter the RFID bypass code and press enter. You will be able to use the machine, but logging off and power cycling the machine will require this procedure to be repeated until you have a useable RFID TAG/card.

- [Barcode Reader option.](#)

Connecting a barcode reader to the rear of the machine (left hand side 9-way “D-type” data port – looking from the rear). Allows predefined programs in the machine’s memory to be loaded quickly and automatically, reducing the risk of operational error. The barcode to be scanned can be printed on either a works document or a “quick scan sheet” located near to the machine. The barcode needs to have the number of the program to be loaded included within it. For example, there are programs 1-30 available, so scanning a barcode as simple as,

“1” or “program 1” or “Terminal 1” will load program number one. All text is ignored and the sequence of numbers read by the barcode reader will take priority and be loaded first. Once a valid barcode number is scanned the screen shows the data read from the program memory. This allows the user/operator to quickly verify important information such as program name and operational parameters.

This is displayed as follows in (fig 3.4)

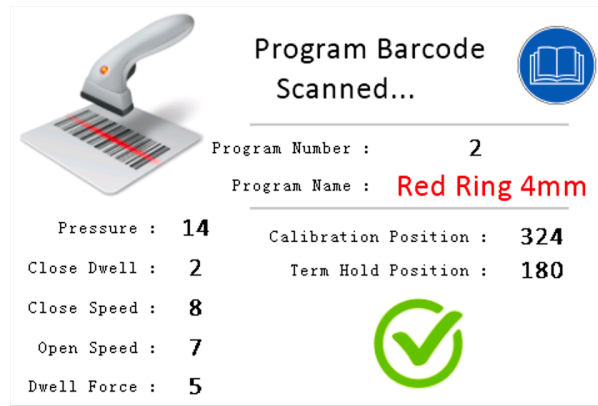
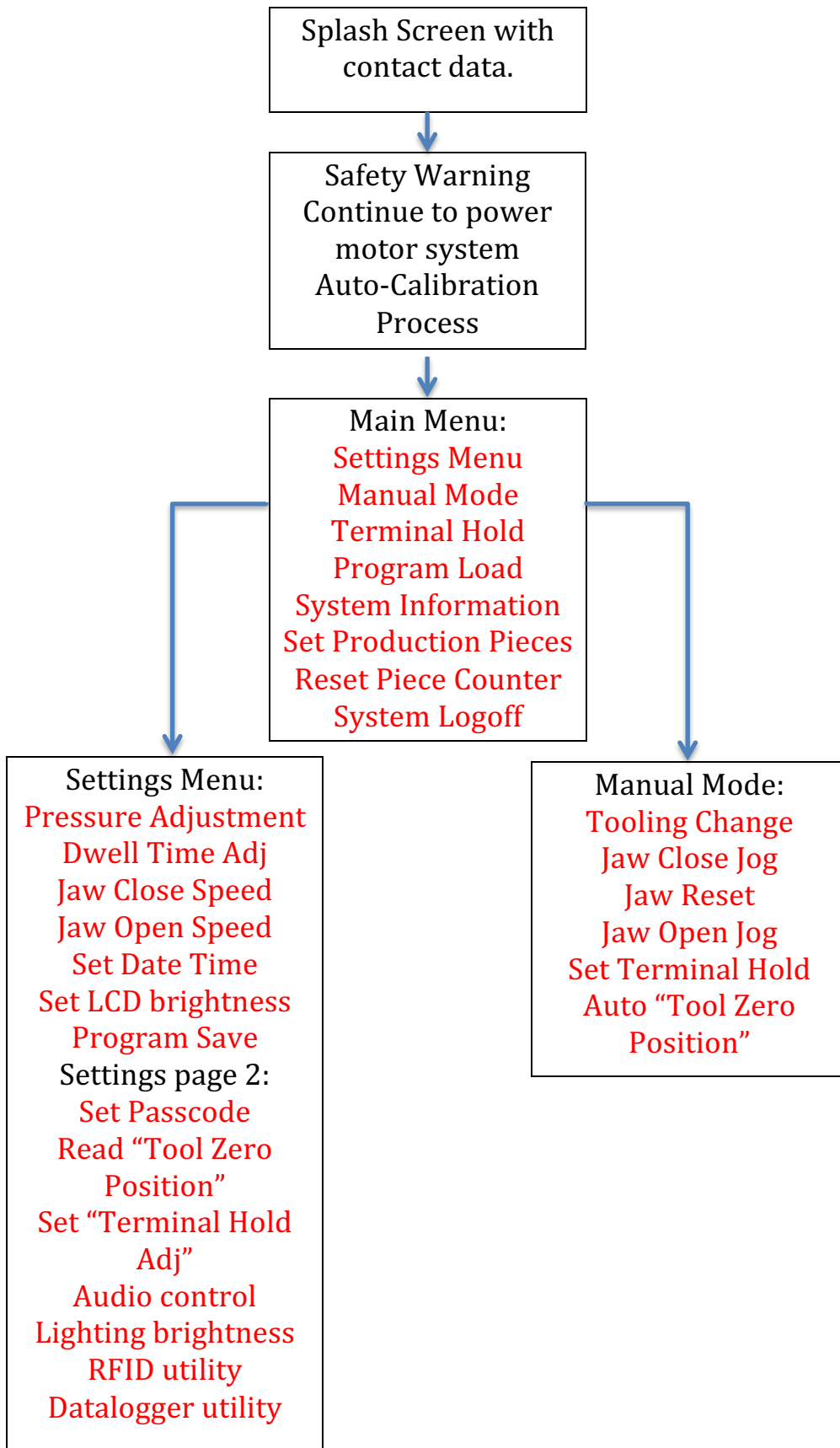


Fig 3.4

Once the data on the screen has been confirmed as correct and corresponds to the data in the program you wish to use, press the green tick on the screen and you are ready to start production (you may want to adjust the piece counter total). If the program was loaded in error, simply press the tick and repeat the process scanning the correct barcode this time, confirm the data again and you are ready to produce.

Production Technology approved barcode readers are guaranteed to work with the TC-15T machine. Other barcode readers may not work well if at all, and may damage the machine when connected. Please consult Production Technology or your nearest service representative if you have any questions regarding compatibility.

# 5 – Software Summary



# 6 – Troubleshooting

The TC15-T machine has no operator serviceable parts. Should a problem develop that cannot be easily resolved by following the troubleshooting chart below, please call our customer support department to have the issue resolved.

Fault	Possible Cause / remedy
Machine does not power on.	Check mains electricity supply. Check main switch on rear panel. Check fuse in mains connector on rear panel. Otherwise call customer support.
Machine powers on but touchscreen unresponsive.	Possible internal communications fault or power supply issue – Call customer support.
Machine powers on but the footswitch has no response.	Check the footswitch cable is connected to the rear panel of the machine. Check the footswitch cable is not damaged. Check the jaw system is fully open – if not press the restart button on the front panel. Otherwise call customer support.
The jaws close but the terminal falls of the end of the wire.	Use the automatic calibration feature to set the correct zero position. Check that the dwell time / force is sufficient – increase if required. Check the pressure setting in the settings menu.
The error message “safety guard removed” is constantly displayed.	Check the safety guard switch activator is not broken. Listen for a click when the guard activator is inserted into the bottom jaw.
The safety guard is removed and the machine continues to operate.	Immediately power off the machine and call customer support – the machine should not be used in this case.
The jaws do not fully close and there is a strange noise coming from the machine.	Switch off the machine immediately, as the tooling is probably inserted incorrectly. There may be a foreign object in the tooling area.
The machine is working too slowly.	Increase the jaw closure speed.
The jaws crush the terminal too excessively causing terminal damage.	Reduce the pressure setting in the settings menu. Check you have the correct Die/Terminal combination.
The jaws close and then immediately open.	The calibration value is too excessive causing the safety sensor to be activated – recalibrate the machine using the automatic calibration feature.
The jaws do not open fully to their original gap.	Possibly an issue with the sensor system internal to the machine – Call customer support.

# 7 – Technical Data

The following information relates to the technical specifications of the TC15-T version A2.0 terminal crimping machine software version V1.6.3 – Specifications subject to change without notice.

## Technical Specifications:

- Precision loose piece terminal crimping system.
- Operating voltage 220 - 240VAC 50Hz
- Power consumption 180 VA.
- Maximum crimping pressure 10KN.
- Programmable crimping pressure.
- Programmable die open/close speed.
- Programmable terminal hold position.
- Automatic “Tool Zero Position”.
- Crimping time 0.5s - 1.5s programmable .
- Material max cross sectional area 35mm.
- HMI LCD screen with status display, manual mode, and diagnostics.
- Tooling – quick release see separate brochure.
- Removable interlocked safety guard.
- No volt reset for motor power control.
- Industrial grade safety footswitch included.
- Weight approx. 10kg..
- Dimensions LxWxH 355mm x 155mm x 230mm.
- Optional RFID reader/writer system using dedicated access cards.
- Optional Datalogging system for machine setup data recording.
- Optional program file save and recall to internal memory.
- Optional integrated production environment protocol.