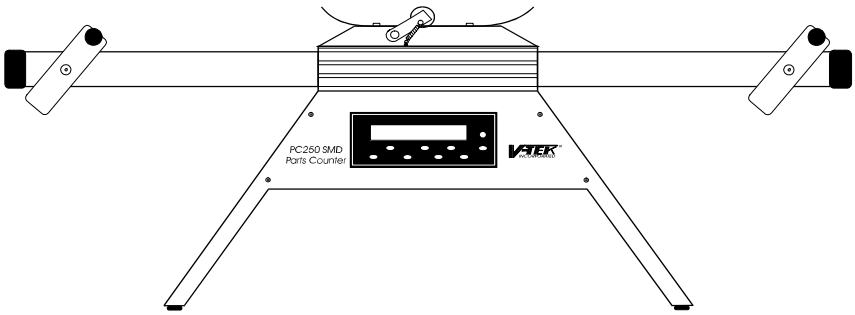
PC-250

SMD Taped Parts Counter Operator's Manual



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Dear Customer:

All of us at V-TEK appreciate your purchase of a Quality V-TEK product for use in your manufacturing or service business.

Since 1985, V-TEK has been listening to customers like you and has tried to respond to your requests for equipment that will fulfill your needs for simple, accurate, and long lasting solutions to your production requirements.

Our emphasis on customer satisfaction has also led us to continually improve our automation solutions. V-TEK Automation is devoted to developing custom applications of our existing machines to suit the needs of each customer. If you have a special component processing need in your facility, V-TEK will find the solution that best satisfies that need.

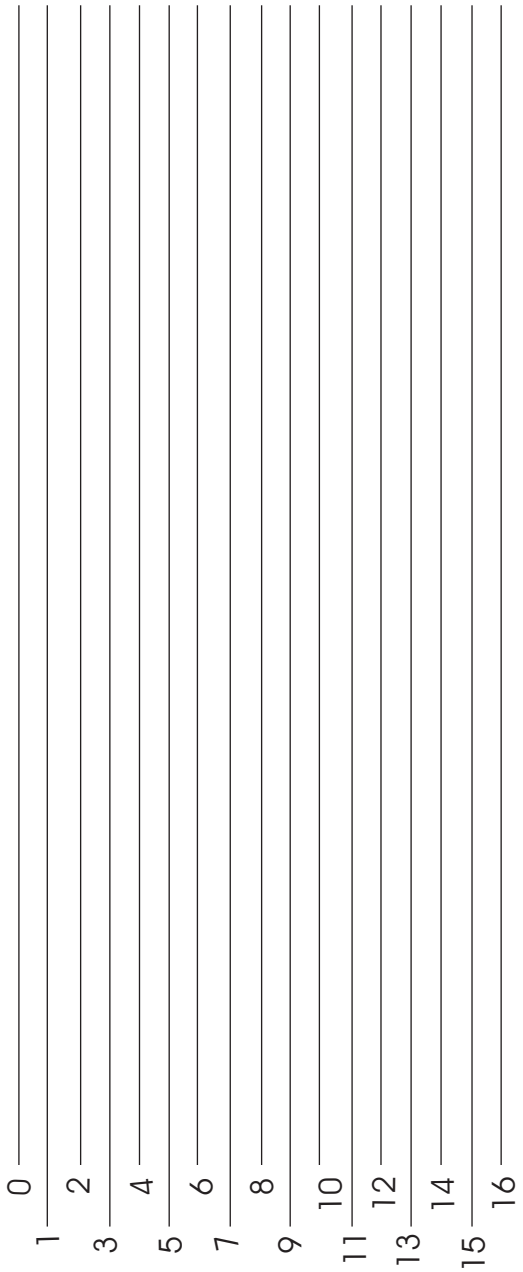
I invite you to visit our website at www.vtekusa.com for more information regarding the services, equipment, and supplies V-TEK has to offer. Thank you again for your order.

Best Regards,

Dennis K. Siemer
CEO

Machine Pitch Setting Guide

1. Make a copy of this page and place at machine for quick reference.
2. Take carrier tape and place the holes in pockets on the designated lines.
3. Make sure that one pocket hole lines up with the line marked 0 (zero).
4. Using the hole in the second pocket, follow the line down from the hole and read the number that is below the line. This number is the pitch of the carrier tape.
5. Refer to the table to the right of the Machine Pitch Setting Guide to program the counter.



Pitch	Enter into Counter
1	1.000
2	.5000
3	.3334
4	.2500
5	.2000
6	.1667
7	.1429
8	.1250
9	.1111
10	.1000
11	.0909
12	.0833
13	.0769
14	.0714
15	.0667
16	.0625

PC-250

Table of Contents

PC-250

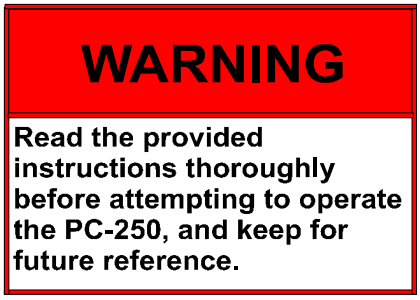
Safety Instructions

These pages describe the procedures you must follow to safely operate the PC-250. Read all instructions before operating the PC-250, and keep for future reference.

Safety Introduction

In these instructions you will find:

- Important definitions of safety markings
- Important safety guidelines to follow when operating the PC-250



The intended use of the PC-250 Taped Parts Counter is to count surface mount components placed in carrier tape. Use of this equipment in any other fashion may lead to personal injury.

The safety guidelines provided on the following pages are intended to educate the user on all safety issues in order to operate the PC-250 safely.

Pay close attention to these statements as they contain important information on avoiding potential hazards to yourself or to the equipment.

Safety Marking Definitions

Attention

This mark is placed on the equipment near the adjustment or danger zone.

Dangerous Voltage

This mark indicates potential hazards arising from dangerous voltage.

High Temperature

This mark indicates a hot surface.

Crushed Hand

This mark is placed near areas that can cause personal injury or equipment damage if unsafe practices are used.

Open Book

Refer to the Operator's Instructions before performing maintenance procedures on the PC-250.

Safety Marking Definitions

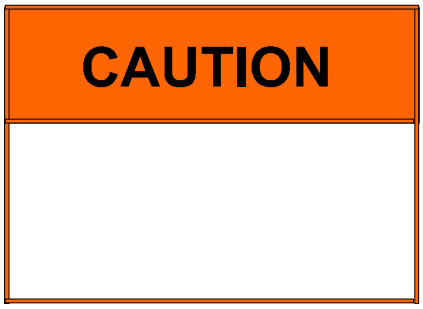
All safety information is coded according to the following scheme.

Warning

Used when there is a risk of physical injury to people around the PC-250.

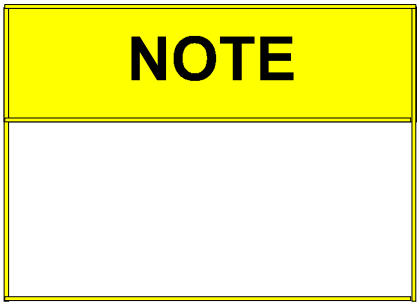
Caution

Used when there is a risk of damage to the PC-250.



Note

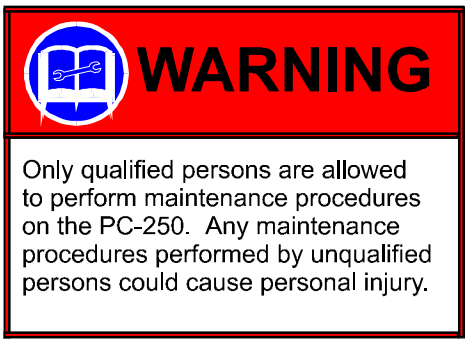
Used to call your attention to important information.

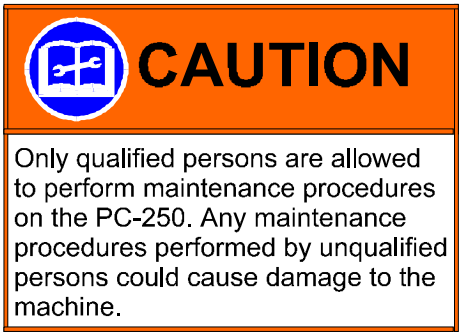


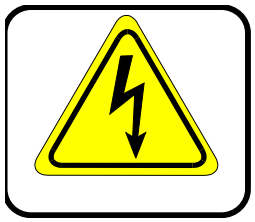
Maintenance of the PC-250

If your organization intends to provide its own service and maintenance to the PC-250 Taped Parts Counter, only qualified personnel are to perform those procedures. To be considered qualified, personnel must have the proper technical training, have experience working on this type of equipment, and have an awareness of the hazards to which they will be exposed. The Operator's Instructions are intended to be a supplement to training, **NOT A REPLACEMENT** for training.

Place the PC-250 on a stable, flat surface before operating!



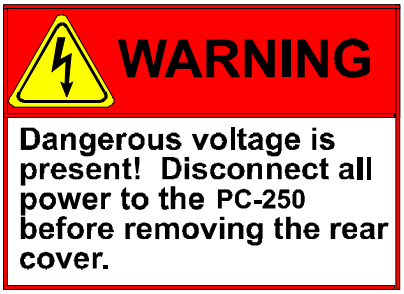




Rear Cover

Danger:
Dangerous voltage is present. Follow the procedure below before removing this cover for service or maintenance.

1. Turn the power switch to the OFF position.
2. Disconnect the incoming power cord to the PC-250.



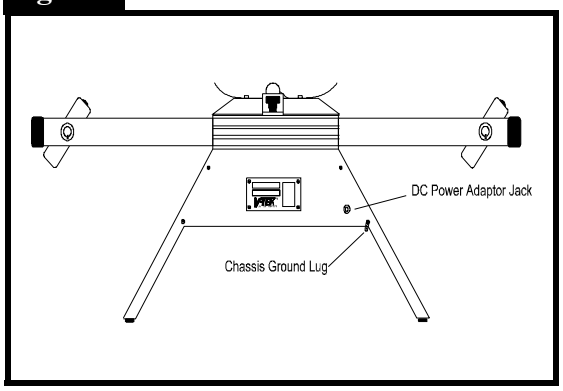
PC-250

Operator's Instructions

These instructions describe the operation of the PC-250. Read all instructions before using the PC-250, and keep for future reference.

Operation

Figure 1



Initial Power-Up

1. Attach an ESD ground wire between the workbench and the ground lug (Figure 1) located on the rear of the unit.

2. Power is applied to the PC-250 using a DC power adaptor (12VDC, 500mA), by inserting the female plug of the DC power adapter into the jack located on the rear panel.

NOTE

Always insert this end of the plug before plugging the adapter into a 115VAC outlet.

Plug the adapter into a standard 115VAC outlet.

NOTE

There is no power switch on the unit, so the PC-250 will remain ON as long as the unit is plugged in.

CAUTION

Remove the DC power adapter from the AC outlet prior to inserting or removing the adapter plug from the jack on the PC-250.

Operation

Figure 2

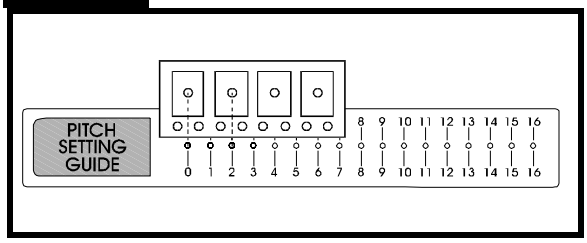


Figure 3

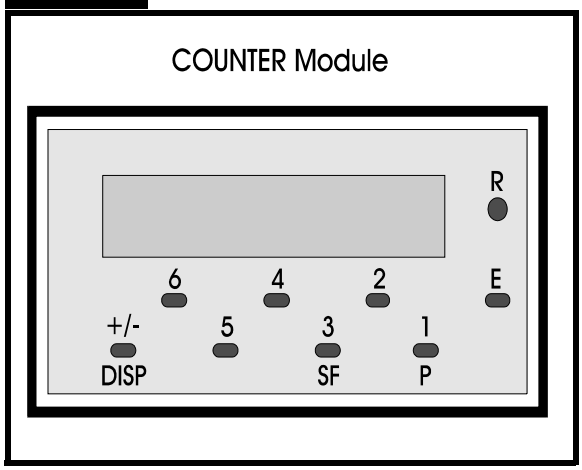
PITCH	ENTER
1	1.0000
2	0.5000
3	0.3334
4	0.2500
5	0.2000
6	0.1667
7	0.1429
8	0.1250
9	0.1111
10	0.1000
11	0.0909
12	0.0833
13	0.0769
14	0.0714

Located on the base of the machine.

PITCH	ENTER
1	1.0000
2	0.5000
3	0.3334
4	0.2500

Located on the top of the machine.

Figure 4



Determining Tape Pitch

1. Always wear a properly grounded ESD wrist strap.

2. Hold the free end of the tape next to one of the pitch setting guides and observe the spacing interval between the pocket center holes of the carrier tape (Figure 2).
The center of the first pocket should be positioned over the (0) mark. The numbered line appearing in the center of the second pocket is the PITCH of the carrier tape.

Setting Counter Prescale

1. Locate the PITCH/ENTER charts (Figure 3) on the base and top of the PC-250. Find the PRESCALE number under the ENTER column that corresponds to the tape PITCH.

2. Push the SF (3) button (Figure 4). The current PRESCALE setting will be displayed on the counter. Input the new PRESCALE number into the counter by pressing the buttons (1), (2), (3), (4), & (5) as many times as required to obtain the proper value. Each numbered button is positioned directly underneath its corresponding counter display digit. Pressing a numbered button will increment its corresponding digit by one. The DISP (+/-) and (6) buttons are not used.

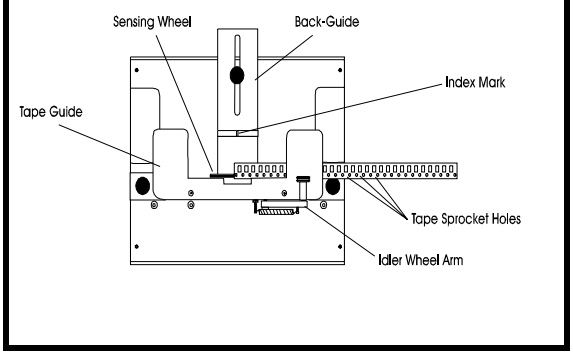
NOTE

The counter display will return to the count mode if more than 5 seconds elapse before the next button is pressed.

3. After the proper value has been set, press the enter (E) button to enter the data. The Counter is now set to the proper pitch. To verify this value at any time, press the (SF) button and the selected pitch will be displayed.

Operation

Figure 5



NOTE

The reels must be placed on the PC-250 so that the tape sprocket holes will pass over sprocket pins of the sensing wheel.

Setting Up a Reel to be Counted

1. Loosen the back-guide adjustment knob and slide the back-guide toward the rear of the unit allowing enough room for the width of the carrier tape (as shown in Figure 5).

2. Place the empty take-up reel on the left-hand spindle and the reel of taped parts on the right-hand spindle.

3. Feed the tape underneath the right side of the tape guide and position the tape sprocket holes so that they pass directly over the sprocket of the sensing wheel. (The idler wheel arm can be pulled back to facilitate the loading of tape onto the sensing wheel sprockets).

4. When the tape is positioned properly, lower the idler wheel into position so that the tape is held down on the sensing wheel.

5. Slide the back-guide up to the rear edge of the tape. The back-guide should be adjusted so the tape can move freely through the assembly when it is pulled through.

Counting Parts

1. Position the tape with the leading edge of the first component lined up to the index mark on top of the back-guide (Figure 5).

2. Press the reset (R) button on the counter module.

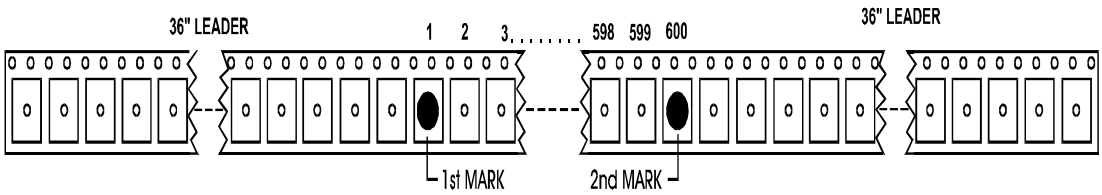
3. Attach the leading end of the tape to the empty reel.

4. Advance the tape until the trailing edge of the last component reaches the index mark on the back-guide. The number of parts that have passed the index mark will show on the counter module.

5. When finished with parts counting, rewind the tape onto the original reel.

Counter Calibration Procedure

Figure 6



Making a Calibration Reel

Two reels of known quantity must be made to use as a calibration standard. The recommended calibration standards are two reels of empty carrier tape, 600 pockets in length. It is also recommended that two calibration reels be prepared with different pitch settings.

1. Mark one pocket of an empty carrier tape about 36” in from the end (Figure 6).

2. Manually count 600 pockets, including the marked pocket, and put a mark in the 600th pocket.

3. Have someone else manually verify the count. DO NOT USE THE COUNTER FOR THE VERIFICATION!

4. Trim the tape off about 36” past the second mark.

5. Wind the tape onto a reel and label the reel as a Counter Calibration Reel of 600 Pockets.

Initial Setup

1. Turn the counter ON.

2. Place a calibration reel (see Figure 6) on the right tape spindle and an empty reel on the left spindle.

3. Run the leader of the tape through the counter and attach it to the empty take-up reel.

Set the Counter Module

1. Find the prescale value (as described in the Operator’s Instructions) for the calibration reel.

2. Press the (SF) button on the counter module.

3. Enter the prescale value found for the calibration reel.

4. Press the enter (E) button.

Counter Calibration Procedure

Figure 7

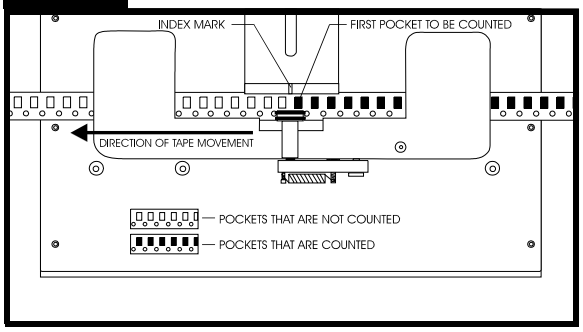
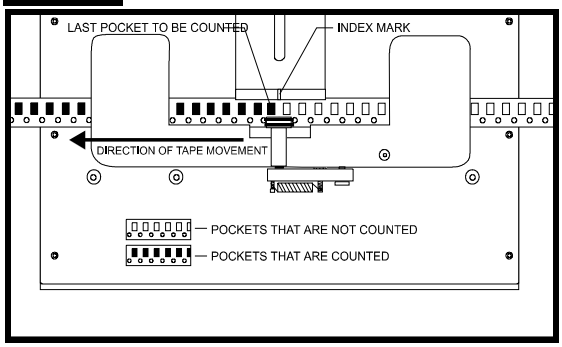


Figure 8



NOTE

The exact relationship of the index mark to the last pocket counted may change for different carrier tapes. The final count will be valid when the index mark falls anywhere between the center of the last pocket to be counted and the center of the next pocket.

Align the First Pocket to be Counted

1. Position the carrier tape in the counter so the first pocket mark is just to the right of the index mark (Figure 7).
2. Press the reset (R) button on the counter module.

Determine the Count

1. Advance the carrier tape through the counter until the 2nd mark, indicating the last pocket to be counted, comes to the index mark.
2. Position the carrier tape (Figure 8), with the last pocket just to the left of the index mark.
3. The count showing on the counter module should be the exact count of the calibration reel.

Certify Calibration

The counter module must display the exact value of the calibration standard for calibration to be successful.

If calibration is successful, the counter should be marked with a calibration sticker in accordance with the policies of the company performing the calibration. This should apply to both calibration reels.

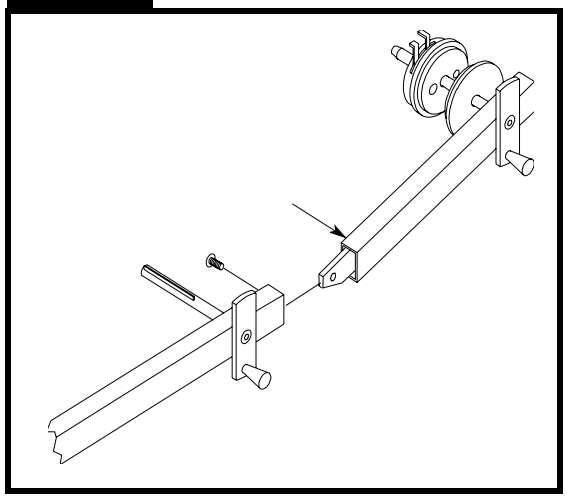
Errors

If the displayed value is incorrect, perform the calibration procedure again to verify there was no error in the first procedure. If the value is still incorrect, manually recount the calibration standard to verify there is no error in the value of the standard. If an error is found, perform the calibration procedure again.

If the displayed value is still incorrect and no errors are found in the standard or the procedure, the counter must be sent to V-TEK for repair. Contact your V-TEK representative for further information.

Extender Arms

Figure 9



PC-250 Extender Arms

The extender arms are an option for the PC-250 Parts Counter designed to allow counting of bulk carrier tape reels (22 inch). It is a simple process to adapt a standard PC-250 to work with the extender arms.

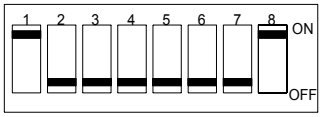
Installation of PC-250 Extender Arms

1. Remove the black rubber cap from the end of the standard PC-250 arm.
2. Loosen the bolt on the extender arm at the location indicated by the arrow (Figure 9).
3. Attach the extender arm (Figure 9), taking care to line up the frames of the two arms and tighten both bolts securely.
4. Repeat this procedure for the other arm.

Gemini Counter Programming

If the counter module has been replaced, or under other special circumstances, the counter may need to be reprogrammed to operate properly with V-TEK equipment. Follow this procedure to set the program to V-TEK factory settings. If special options are desired, refer to the Gemini 1000/2000 Instruction Manual.

Figure 1

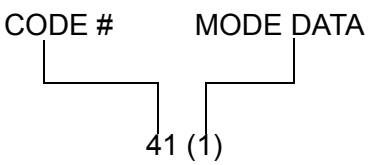


Counter Dip Switch settings

Program Codes

The program consists of a series of code numbers with an accompanying mode data number. The mode data number will determine what action occurs for each mode. Refer to the Gemini 1000/2000 Instruction Manual for more detailed information.

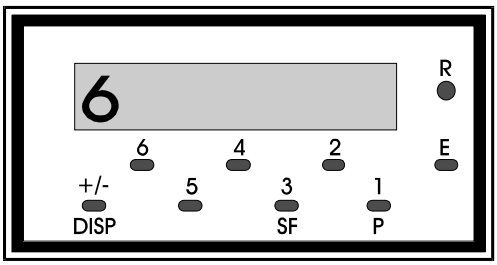
Figure 2



V-TEK FACTORY SET PROGRAM:

41(1)
43(5)
44(1)
45(1)
46(1)
51(1)
52(5)
61(4)
66(3)

Figure 3



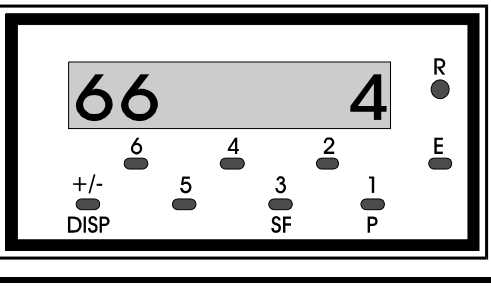
Verify The Program

1. Press the numbered key which matches the first number in the program code.

2. Press the numbered key which matches the second number in the program code.
At this point the mode data number will appear at the right end of the display.

3. Verify that the displayed data number matches the required number. Press the enter (E) button to set the counter back to normal operating mode. Repeat these steps for each code number. If any data numbers do not match, continue with the programming section.

Figure 4



Gemini Counter Programming

Programming

Program Disable

There is a jumper wire located on the counter connector (back side of the counter module) which inhibits changes in the counter program. To make programming changes, the jumper must be removed. Disconnect the end of the jumper terminated at Pin #11.

NOTE: Disconnect power before touching any internal circuitry.

Once the program disable jumper is removed, each program function can be opened and changed if desired. Follow these steps to change any counter function:

1. Press the numbered key which matches the first number in the program code.

2. Press the numbered key which matches the secod number in the program code. At this point the mode data number will appear at the right end of the display.

3. Press the numbered key which matches the third number in the program code (mode data #). At this point, the mode data number will change.

4. Press the (E) button.

NOTE: THE (E) enter button must be pressed within 15 seconds of entering the data value or the display will automatically shift back to the operating mode and the data will not be updated.

5. Repeat these steps for each code number to set the desired program functions. Replace the program disable jumper to lock out further changes to the program.

Figure 5

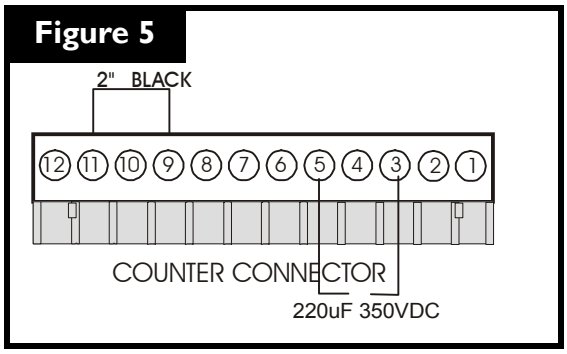


Figure 6

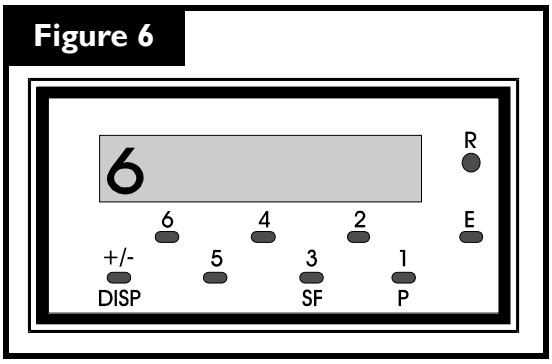


Figure 7

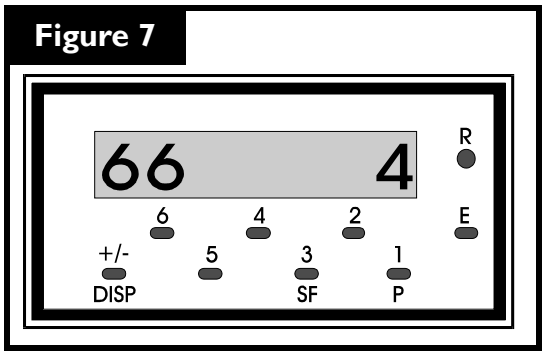
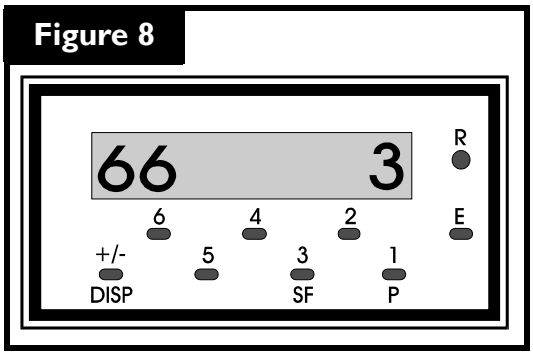
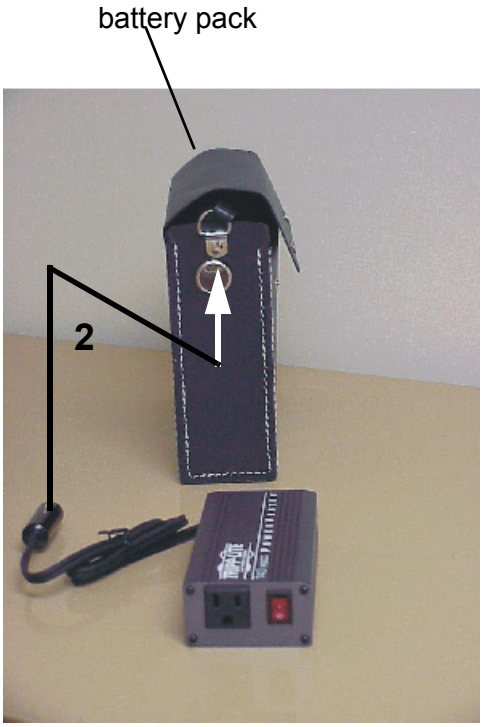


Figure 8

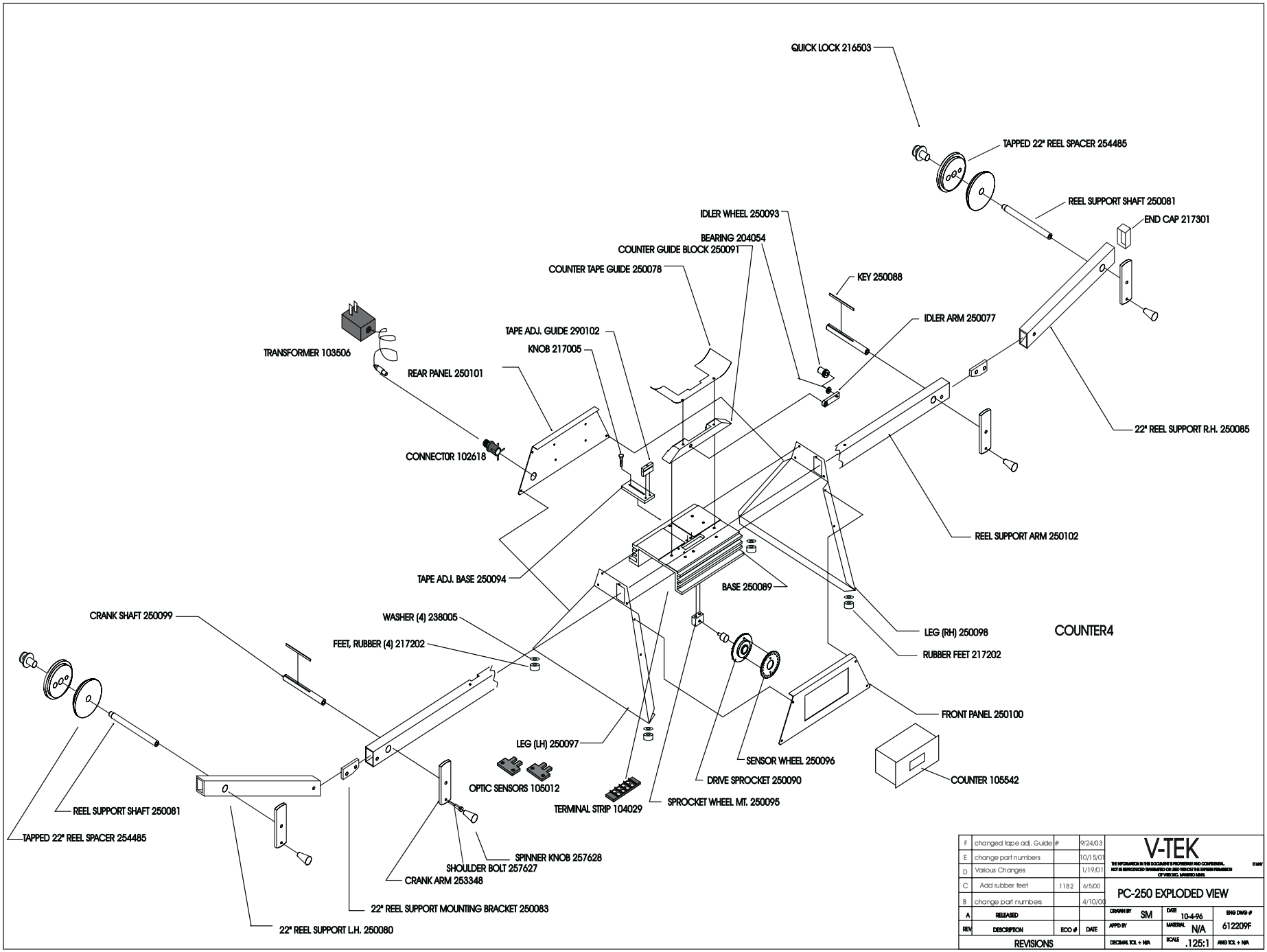


How to Use Optional Battery Pack



1. Charge battery pack according to the instructions provided by its manufacturer.

2. Plug PC-250 into battery pack.



REV	DESCRIPTION	ECO #	DATE
F	changed tape adj. Guide	#	9/24/03
E	change part numbers		10/15/01
D	Various Changes		1/19/01
C	Add rubber feet	1182	6/5/00
B	change part numbers		4/10/00
A	RELEASED		

REVISIONS

V-TEK

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PC-250 EXPLODED VIEW

DRAWN BY	SM	DATE	10-4-96
APP'D BY		MATERIAL	N/A
DECIMAL TOL + N/A		SCALE	.125:1

ENG DWG # 612209F

ANG TOL + N/A

PC-250

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Phone: 507-387-2039
Email: service@vtekusa.com

Please provide the machine model and serial numbers with all inquiries.

To order spare parts, please call:

Phone: 507-387-2039

For tape and reel supplies, please call:

Phone: 507-387-2039 Ask for CPM Sales

NOTES

PC-250 Manual

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