TRANSCELL TECHNOLOGY, INC.

PR-3000 Series

Pallet Jack Digital Scale

Operation Manual

Version 1.1
September 25, 2002

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CHAPTER 1: INTRODUCTION TO THE PALLET RUNNER 3000 PALLET JACK SCALE

The PALLET RUNNER 3000 Series Scale is a general purpose, industrial grade pallet weighing scale. Featuring complete portability utilizing 2-6 Volt internal batteries, push button tare, and an easy to use piece-counting function.

The display type, enclosure type and scale capacity information can be found in Table 1-1.

All PALLET RUNNER 3000 model scales are factory tested and calibrated prior to delivery. Therefore calibration is not required after unpacking the scale. A small amount of preparation is necessary before the scale can be used. You will find this information in Chapter 2. Please read these instructions carefully and completely, prior to using the scale.

Prior to using the scale, please read this user's guide carefully and completely. Store the manual in a safe and convenient place so it will be available if you have questions concerning the operation of the scale.

MODEL	DISPLAY TYPE	ENCLOSURE TYPE	CAPACITY / GRADUATION
PALLET RUNNER 3000	LCD (liquid crystal display), 0.8" tall	Carbon Steel NEMA 12 rated	3000 x 1 lb

TABLE 1-1: PALLET RUNNER 3000 Information

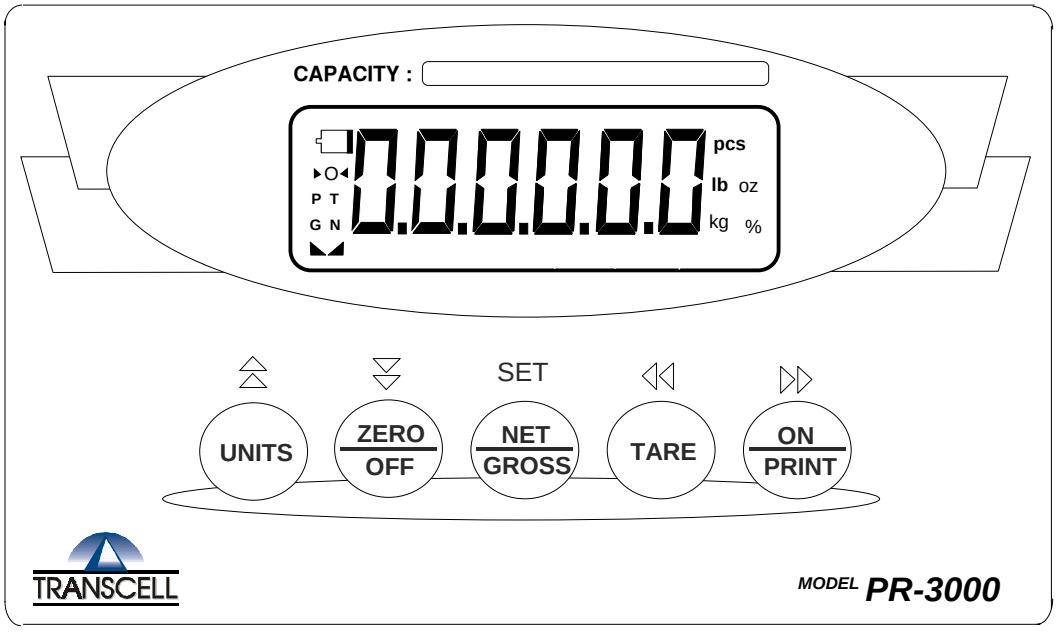


FIGURE 1-1: PALLET RUNNER 3000 Front Panel

CHAPTER 2: GETTING STARTED

After unpacking the scale, a small amount of preparation is required before the scale can be used. All PALLET RUNNER 3000 models are factory tested and calibrated prior to delivery.

1. Remove all packaging from scale.

2. Position the scale on a firm, flat surface.

3. Lower the forks by squeezing the hand control upwards. The hand control is located at the top of the swivel handle.

4. Turn the scale's power ON to begin use. (If the display is not at a zero weight reading, press the Zero key).

5. Slide the Pallet Runner forks under any standard pallet. (For optimum weighing accuracy, the forks must be at least ¾ of their length under the pallet to be weighed).

6. Engage the lift mechanism by lowering the hand control. It may be necessary to hit the release button before doing so.

7. Lift the pallet by cranking the handle in an UP/DOWN direction a minimum of 3 complete cycles. Now view the display for the weight value.

NOTE: Your PALLET RUNNER 3000 will automatically shut off after five minutes of non-use. To change this setting, see Chapter 5.

For best results, be sure to follow these general guidelines:

- If using the AC adapter, do not share an AC outlet with electrical noise producing equipment, such as refrigeration units. This includes products with electrical motors and/or relays.

- Do not place the scale in an area with changing ambient temperature and/or high humidity.

- Do not place the scale in an area with vibrating equipment.

- You may obtain a weight reading while moving, however for the best accuracy a static weighment is advised.

CHAPTER 3: OPERATION

3.1 DISPLAY

The PALLET RUNNER 3000 utilizes a 6 digit LCD (Liquid Crystal Display) to display the weight and system information Table 3-1 summarizes the display annunciators.

3.1.1 LIQUID CRYSTAL DISPLAY (LCD)

Figure 3-1 shows the display detail of the PALLET RUNNER 3000 LCD.

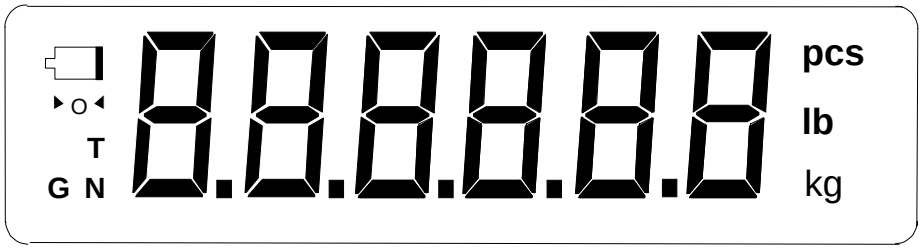


FIGURE 3-1: PALLET RUNNER 3000 LCD Detail

LCD Annunciator	MEANING
→0←	Better known as the "Center of Zero" annunciator, this light is active whenever the displayed weight is within ± 0.25 divisions of true zero.
N	Indicates that the scale is displaying net weight.
G	Indicates that the scale is displaying gross weight.
T	Indicates that a tare weight has been established in the system.
lb, kg, pcs	Indicates the unit of the displayed weight. .
◣◢	This light is on whenever the scale is stable.
▭	Indicates that the battery voltage is too low for normal operation. Use the AC adapter to re-charge the battery.

TABLE 3-1: PALLET RUNNER 3000 Annunciator Definitions

3.2 KEYBOARD

The keyboard is composed of five function keys. Refer to Figure 3-2 for the overall layout and key locations.

FIGURE 3-2: Function Keys Layout

3.2.1 FUNCTION KEYS

Units – This key toggles the scale among the available weight units. Available weight units as shipped from the factory include lb, kg and pieces.

Zero/OFF – When held for three seconds, powers the scale OFF. Otherwise, this key sets the scale to display zero provided the following conditions are met:
1. The scale is displaying Gross weight.
2. The scale is not in motion.
3. The scale is not in overload (see Appendix C for error codes).

Net/Gross - This key toggles the scale between Gross weight and Net weight only if a Tare has been established.

Tare - This key is used to establish a Tare provided the following conditions are met:
1. The scale is not at or below Gross zero.
2. The scale is not in motion.
3. The scale is not in overload (see Appendix C for error codes).

ON/Print – This key is used to turn the scale ON. (The Print function is not available on this model).

3.3 GENERAL SCALE OPERATION

3.3.1 WEIGHING AN ITEM

1. Select the desired weighing unit by pressing the UNITS key until that unit is indicated on the display.
2. If necessary, press the ZERO key to obtain a weight reading of zero.
3. Raise the object to be weighed off the floor and allow the weight indication to stabilize. If the item weight exceeds the scale's weight capacity, it displays "❒❒❒❒❒❒".
4. Read the weight shown on the display.

3.3.2 TARING AN ITEM

To weigh an item in a container or on a pallet, the weight of that container or pallet must first be subtracted from the overall weight to obtain an accurate weight reading. This is known as taring.

1. Select the desired weighing unit by pressing the UNITS key until that unit is indicated on the display.
2. If necessary, press the ZERO key to obtain a weight reading of zero.

3. Raise the empty container or pallet off the floor and allow the weight indication to stabilize.
4. Press the TARE key. The display shows zero weight and turns the NET annunciator on.
5. Place the material to be weighed on the container or pallet, raise it off the floor and allow the weight indication to stabilize.
6. Read the weight shown on the display.
7. You may toggle between the gross weight and the net weight by pressing the NET/GROSS key.

CHAPTER 4: ADVANCED FEATURES AND OPERATION

4.1 PIECE COUNTING

This mode is used to indicate the number of pieces of an item you have placed on the scale's forks and is accessed by pressing the UNITS key. To ensure accuracy, the parts you are counting must be consistent in weight.

The scale uses the sampling method to determine the average piece weight (APW) of the items you wish to count. When sampling items, always count the parts in your hand and place them on the scale all at once. If the APW of the items is too light or the total weight of the sample is too light, accuracy cannot be guaranteed. You will get an error message, but piece counting will still be allowed.

1. Press the UNITS key until "PCS" is indicated on the display. If a previous sample has not been taken, the scale will display "10 0". If a previous sample has been taken, the scale will display the current number of pieces on the platform.
2. If the items you will be counting require a container or pallet, you must first tare the container or pallet off by pressing the TARE key.
3. If the screen does not show "10 0", press the TARE key once. The scale is prompting you to place ten identical items on the scale's forks.

   NOTE: If you wish to change the sample number, simply press the NET/GROSS key repeatedly until the desired sample number appears. Available choices are 5, 10, 25, 50 and 100.
4. Place the sample items on the scale's forks all at once and allow the weight indication to stabilize. Once this is done, the zero indicated after the sample number will change to a "–". For example, "10 –".
5. Press the NET/GROSS key to take the sample. If the sample size is large enough, the scale now displays the number of pieces on the forks. If it does not, the scale briefly displays "Add" and automatically increments the sample size. Repeat Step #4 with the new sample size.

   NOTE: If the scale continues to display "Add" even after sampling 100 pieces, the unit weight of the items you wish to count is too light for your scale to process accurately.
6. To exit the piece count mode, press the UNITS key. The APW will remain in scale memory until you repeat Steps # 2 or #3.

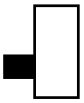
CHAPTER 5: SCALE CONFIGURATION

5.1 SCALE CONFIGURATION OVERVIEW

The scale contains two main setup menus: The User (“A”) menu - which configures the serial communication port and enables some user options - and the Factory Setup (“F”) menu. The only menu you should access for this scale is A15, which configures the automatic turn off period.

5.2 USER (“A”) MENU

5.2.1 ENTERING THE USER MENU

1. Power off the indicator by pressing and holding the down ZERO/OFF key for 3 seconds.
2. Remove the top digital display cover and find the black switch. The switch is located on top of the silver canned A/D converter. (Refer to Figure 5.1 for switch location)
3. Place the switch in the down position as shown at right. 
4. Power on the indicator by pressing the ON key. The indicator shows ” F 1” to indicate that you are in Setup Menu mode.
5. Press the TARE key twice to maneuver to A15.

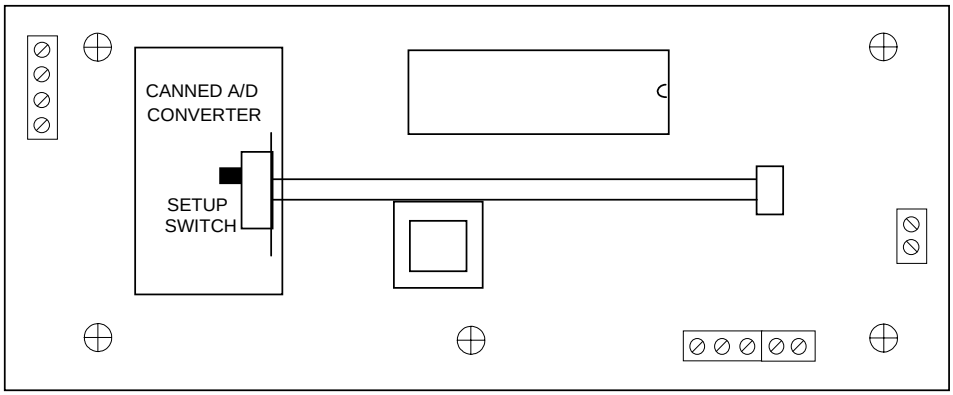


Figure 5-1: PALLET RUNNER 3000 Main Circuit Board Overview

5.2.2 NAVIGATING IN THE A15 USER MENU

Use the directional keys shown in Figure 5-2 to move around in the A15 User Menu Chart shown in Figure 5-3 on the following page.

1. To move to the selection level, press the ZERO/OFF (down) key once. The current saved selection is shown.
2. To view the available selections for A15, use the TARE (left) or ON/PRINT (right) key to move through the selection field.
3. To save a new selection, press the NET/GROSS (Save) key .To exit without saving, press the UNITS (up) key to return to the A15 heading.

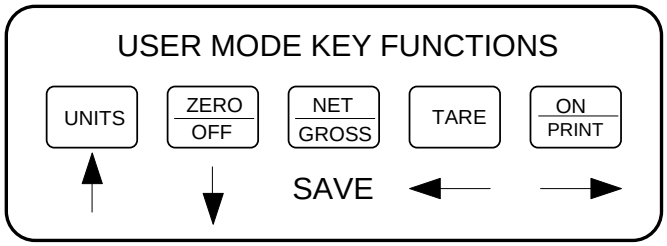


Figure 5-2: User Menu Key Assignments

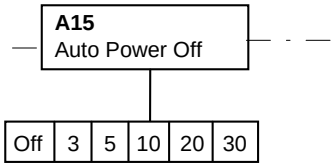


Figure 5-3: User Menu Chart

5.2.3 NOTES ON THE USER MENU

1. Detailed descriptions of the user menu parameters can be found in Table 5-1. Factory-set defaults are shown in bold with a checkmark (√).

NAME/CODE	DESCRIPTION	CODE/VALUE
A15 Auto Power Off Period	Selects the auto off time period in minutes. Scale must be idle during this period to shut off automatically. "OFF" = Feature Disabled	OFF 3 **5√** 10 20 30

Table 5-1: User Menu Chart

5.2.4 EXITING THE USER MENU

1. Power off the indicator by pressing and holding the down ZERO/OFF key for 3 seconds.
2. Move the Setup/Calibration Switch back to its original position.
3. Power on the indicator by pressing the ON/PRINT key. The display will go through a digit check, then settle into Normal Operating mode. All front panel keys will now return to their normal mode of operation.

5.3 FACTORY SETUP (“F”) MENU

This menu is covered in a separate service document.

CHAPTER 6: SCALE CALIBRATION

6.1 SCALE CALIBRATION OVERVIEW

The PALLET RUNNER 3000 scale may be calibrated with any precision test weight between 30 pounds and 3000 pounds. The recommended test weight is 2000 pounds, but in general the larger the test weight, the more accurate the scale will be.

Before you can calibrate the scale, you must enter the Setup Menu. See Section 5.2.1 for instructions on how to do this.

6.2 ZERO CALIBRATION (F16)

1. While in the Setup mode, scroll to "**F 16**", then scroll down once using the ZERO/OFF key to enter zero calibration menu. The display will momentarily show "**C 0**" followed by a value. This value is the internal A/D count and can prove useful when trying to troubleshoot setup problems.
2. After making sure that there are no test weights on the platform, press the ZERO/OFF key again to zero out the displayed value.
3. Press the NET/GROSS key to save the zero point value. The display will show "**EndC0**" momentarily, then revert back up to F16. At this time, proceed to the F17 span calibration to complete indicator calibration.

6.3 SPAN CALIBRATION (F17)

1. While in the Setup mode, scroll to "**F 17**", then scroll down once using the ZERO/OFF key to enter span calibration menu.
2. The display will momentarily show "**C 1**" for the span calibration, followed by a value with one flashing digit. Place the test weight on the weighing mechanism.
3. Use the four directional keys (shown in Figure 6-1 below) to adjust the displayed value to the actual test weight value. Increase the flashing digit by pressing the UNITS key. Decrease the flashing digit by pressing the ZERO/OFF key. Pressing the ON/PRINT key or the TARE key will change the position of the flashing digit.

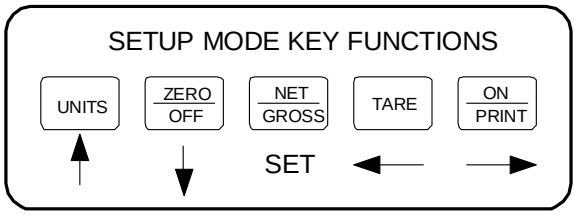


Figure 6-1: Setup Menu Key Assignments

4. After setting the exact value, press the NET/GROSS key to save the value.
5. If the calibration was successful, the display will show "**EndC1**" momentarily, then revert back up to F17.

6. If the calibration was *not* successful, one of the error messages below will appear. Take the indicated action to correct the problem, then perform a new calibration.

   "**Err0**" - The calibration test weight or the adjusted keyed-in weight is larger than the full capacity of the scale. Change the calibration test weight or check the input data.

   "**Err1**" - The calibration test weight or the adjusted keyed-in weight is smaller than 1% of the full capacity of the scale. Change the calibration test weight or check the input data.

   "**Err2**" – The calibration test weight does not match the keyed-in weight. This could also be due to an internal fault and/or damaged load cell. Or you could have simply forgotten to place the test weight on the scale before pressing the NET/GROSS key.

APPENDIX A: SPECIFICATIONS

CONSTRUCTION:
Pallet Jack: High Tensile Steel
Indicator: A-36 Carbon Steel

DISPLAY:
6 digit, 7-segment LCD

KEYPAD:
5-key Tactile Keypad

OVER CAPACITY ANNUNCIATION:
103% of Full Scale Capacity

OPERATING TEMPERATURE RANGE:
14°F to 104°F
(-10°C to 40°C)

POWER SOURCE:
2 internal 6V lead acid batteries
AC Adapter, 12VDC, 800 mA (Also acts as charger)

CHARGER: See “Power Source” above
Charge Period: See Appendix D

WEIGHT:
Net Weight: 300 lb (136kg)
Shipping Weight: 330 lb (150 kg)

DIMENSIONS:
Forks: 42” x 27” x 3”

APPENDIX B: SERIAL PORT INFORMATION

APPENDIX B is not applicable to this scale product.

APPENDIX C: DISPLAYED ERROR CODES

CODE	MODE	MEANING / POSSIBLE SOLUTION
❒❒❒❒❒❒	Normal Operating Mode	Gross Overload. A weight greater than the rated capacity has been applied to the scale. Remove the weight from the platter or try re-calibrating the scale. Otherwise, check for a bad load cell connection or possible load cell damage due to overloading.
Err 0	Span Calibration Mode (F17)	Keyed-in weight value is less than 1% of full-scale capacity. Use a larger test weight or check keyed-in value.
Err 1	Span Calibration Mode (F17)	Keyed-in weight value is larger than full-scale capacity. Use a smaller test weight or check keyed-in value.
Err 2	Span Calibration Mode (F17)	There is not enough load cell signal to produce the internal counts necessary to properly calibrate the scale. First check all load connections. Use F16 mode to view internal counts. See Appendix C for more information.
Err 3	All Modes	Non-volatile memory read error. One or more setup parameters have been lost.
Err 4	All Modes	Non-volatile memory write error. Indicator needs service.
Err 7	Initialization	No reading from the ADC. Could indicate a damaged load cell.
Err 9	Normal Operating Mode	Span calibration value has been lost. Re-calibrate the scale.
Err 10	Initialization or Setting Code Entry	Indicator cannot read serial number. Indicator must be returned for service.
Err 11	Initialization	Serial number mismatch. Re-enter setting code from product ID tag.
Err 12	Initialization or Setting Code Entry	Invalid setting code. Re-enter proper setting code from product ID tag.
Err 13	Setting Code Entry	Non-volatile memory is in write-protect mode. Toggle position of Setup/Calibration Switch (See Chapter 5).

Note: Contact Service Department at Transcell for instructions on how to re-enter setting code.

APPENDIX D: NOTES ON RECHARAGEABLE BATTERY

D.1 OVERVIEW

Your scale contains two internal lead-acid rechargeable batteries connected in parallel. Before using the scale for the first time, please charge the battery overnight.

The scale's battery should operate for about 40 hours if left on continuously. Therefore, greater usage times can be achieved by selecting an appropriate Auto Power Off Period under **A15** of the User Menu.

The battery can be charged while ON or OFF and the scale can be operated while it's charging.

D.2 WHEN TO CHARGE THE INTERNAL BATTERY

1. The best time to charge the sealed lead-acid type battery is any time the scale is not in use. You do not have to wait for the Low Battery Indication – in fact it's best you don't. Charging the battery when the scale is not in use keeps the battery "fresh" and is the recommended way to manage your scale's battery.

2. When the battery needs to be charged, the Low Battery Indicator will appear in the upper left-hand corner of the display. The scale may be used for an additional 15 to 30 minutes without damage to the internal battery. ***If the scale is used for more than 30 minutes after a low battery indication, permanent damage may occur to the battery and/or the battery may not accept a charge.***

NOTE: When a low battery indication occurs, the scale automatically shuts off after 5 minutes of idle use.

D.3 HOW TO CHARGE THE INTERNAL BATTERY

1. Connect the charger (AC Adapter 12 VDC, 800mA) to the scale, and then plug the charger into an AC outlet. ***Make sure that the AC voltage appearing at the wall outlet matches the input voltage marked on the AC adapter.***
2. After the charging period expires, unplug the charger from the AC outlet, then from the scale. The scale is now ready for use under its own battery power.

NOTE: The charger may be left connected to the scale indefinitely without damage to the internal battery.

D.4 HOW LONG TO CHARGE THE INTERNAL BATTERY

In general, the battery should be allowed to charge a minimum of 1.5 hours for every hour of use.

If you discharge the battery below 50% and do not allow the proper time for charging, you may notice a decline in the usage period. This is due to the battery's reluctance to accept a charge.