Versa-Bale V4

By PSI Waste Equipment Services, Inc.
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Introduction

- The purpose of this manual is to provide the installer and owner with the necessary information to install our Versa-Bale Control system. Refer to equipment manufacturer's manual for additional information.
- PSI Waste shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the features and options in the use of this product. The installer shall ensure, upon installation, the combination of features and options used are safe for the application and operational environment.
- Installer and user shall read and understand ANSI Standard Z245.5 (Baler Safety), OSHA 29 CFR, Part 1910.147 (Lock out/ Tag out), and the OEM baler operation, maintenance, and installation manual.
- If you are not fully qualified to install the Versa-Bale system safely, please stop and return it for a full refund!

Installation

Before installing

- Get familiar with the Versa-Bale system by studying the drawings and documentation included. It will save you a lot of time. Refer to it frequently.
- Spend a few minutes watching our YouTube videos at www.versa-pak.net . These videos are specifically for our Versa-Pak Compactor system, but navigation and concept are the same. You'll learn a lot! Average video length is 3-1/2 mins. Videos are easy to watch on your smart phone too.
- Please do not leave your manual behind when heading out to install our control system in the field! If you do forget it, please go to www.versa-bale.net to download one. If you don't have a smart phone, find a computer, download a manual, and print it out.
- Make sure your baler control panel has a transformer that provides 120V power. Most balers do.
- Please leave all documentation in the control panel. If you need extra copies you can download them or call us and we'll send you a set, free of charge.

Compatibility

- There are balers out there with two stage pumps, additional valves, etc. that may NOT be compatible with our control system. If you are not sure, take a few pics and email us. We'll steer you I the right direction.
- Some Marathon machines shut off when the ram opens the gate- This is ok but you need to install a Ram UP limit switch and set parameter #0 to 02.00.
- Prox switches that use 2 wires may need to actuate a relay to get the input. Call us and we'll help you out.

Install- PLEASE, DON'T FORGET YOUR MANUAL!

1. We have included a manual, schematic decal, motor data tag decal, wire ties, tie pads, screws, wire nuts etc. to ensure you can install the Versa-Bale system in a professional manner. Please do so.
2. Remove control system and terminal blocks. Leave only the transformer and starter.
3. Remove all wires from contact blocks on the control buttons.
4. Start button and Up button should have (1) N.O. contact block. E-Stop should have (1) N.C. contact block.
5. Wire all limit switches N.O. so they are: Door- closed when closed, Gate- closed when closes, Ram home- closed when ram is all the way up, Ram/Gate- closed when ram is lifting gate. Bale sizing limit is not used.
6. Install control system and wire according to diagram included.
7. Set pressure switch. We typically set the pressure switch 150-250psi below relief pressure.
8. Set relief pressure. Most Balers should be set to 2000psi or so.
9. Set Timers T0 (Down Time), T1 (Full Time), T3 (Set for twice as long as T0), and T4 (set for same time as T0).
10. Enable other features as required.
11. Install data decal and schematic decal.
12. Give us a call if you have any problems.

A few things to remember
- The Versa-Bale controller has a decal on the front to indicate the program version.
- You will use |ESC 0|, |OK 1|, |▼ 2|, |◄ 3|, |► 4|, and |▲ 5|buttons to navigate the menu. You can always go back by using the |ESC 0| button.
- All settings are in PARAMETERS. If you are asked for a password, you are in the wrong place. Hit |ESC 0|.
- When changing settings or navigating through PARAMETERS you will use |OK 1| a lot. |OK 1| indicates you want to change the setting or parameter or you are done changing the setting or parameter.
- You change digits <u>not</u> numbers. In other words, if the number is 10 and you are on the zero and press down one time it will be 19 because the 0 will turn into a 9, 1 will stay the same.
- The loading gate MUST be opened at least 1 time between cycles. This is a safety feature to prevent the interlock from being bypassed. In situations where the gate is not used, this can be bypassed. See page 3.
- The UP button is momentary. When you let go, unit shuts off. Up can be used anytime.
- There is no "Auto/ Manual"- It's not needed- simplifies operation and troubleshooting (less is more!).
- Ram must be all the way up to Start the cycle. This prevents operators from "beating up" the machine by hitting down repeatedly to get a tighter bale.

Operation
With the ram in the fully up position, bale door shut, feed gate closed, press START. Ram will go down. Ram will continue to go down until either: a) T0 times out or b) Pressure switch senses pressure for 2 seconds. The ram will then go up until the UP LIMIT is reached. When the bale gets bigger the ram will eventually shift before T1 times out. When this happens the baler will shut off and the full light will come on. Time to make a bale! Once the bale is made (following the OEM instructions), and you are ready to eject the bale, use the UP button to eject the bale. Reset the system by using the E-STOP button- push and pull to reset.

Setting Parameters
We have a great YouTube video for setting parameters. Stop, if you can, and go to www.versa-pak.net to watch our 3-1/2min video. It will show you how to navigate the parameters. FYI- the YouTube videos are for our compactor version but the navigation is the same.
To get to HOME screen turn power off and back on or press |ESC 0|. From HOME screen press |OK 1|▼ 2| ▼ 2|. PARAMETERS should be blinking on and off. Press |OK 1|. Now you will see the 0 of T0 blinking on and off. Press |▼ 2|. You should be on Down time. Press |OK 0| to change. Use |▲ 5|▼ 2|► 4|◄ 3|to change each digit. You can set Forward times down to the 1/100th of a second. Once the times are set press |OK| to save. Then navigate up to the parameter T0. To go to a different parameter press |OK| then use |▲ 5| to go to T1. Press |OK|.
To get to a parameter other than "T" then instead of |▲ 5| to go to T1, press |◄ 3|and then |▲ 5|to go to #0.

Status Screen
The Status Screen lets you know the program version and operational status. To switch to the status screen, press the |ESC 0| button. To change back to the home screen, press |ESC 0| again.
Use the status screen to check for the following.
- Program version will be displayed on line 1
- Bale Ready status and Open Close Gate will appear on line 2.
- Error Status. If unit shut down because of an error, the error will be displayed on lines 3 and 4

Buttons
Buttons on the front of the Versa-Bale controller perform multiple functions. In addition to setting parameters you can operate the compactor using these buttons. Before attempting this, make sure you know where the power disconnect is. Press the indicated combination of buttons below to perform the listed task. FYI- the buttons still navigate the menu screen so after each command hit the |ESC 0| button to exit the menu so you don't accidently change a parameter or something.
- Press |ESC 0|and |OK 1| to START compactor.
- Press |ESC 0|and |▼ 2| to STOP compactor.

Basic Timers

Parameter Default	Parameter Name	Function	Notes
T0 (S) 30.00	Down Time	Ends down stroke. Set for the time it takes the ram to go from all the way up to all the way down less about 1 second or so.	This prevents the baler from pressuring up on every cycle, decreasing wear and tear on the machine. Once the bale gets above this level, the baler will shift on a pressure delay.
T1 (S) 25.00	Bale Ready Time	Shuts baler off when bale is complete.	Typically, the time it takes for the ram to get to the top of the door + 3 seconds. Decrease time for bigger bale.
T3 (S) Default 60.00 (Set for twice as long as T0)	Max Run Time	Shuts baler down if it runs too long.	Reset with E-stop, key switch, or main power.
T4 (S) Default 35.00	Max Up Time	Shuts baler down if it takes too long to go up.	Reset with E-stop, key switch, or main power.

Other Timers

Parameter Default	Parameter Name	Function	Notes
T5 (S) 00.01/02.00	Ram Home Delay	Delays shut off of ram home delay.	If you are installing this system in a baler that uses the gate interlock to shut the unit off (e.g. Some Marathon Balers), set this timer to 02.00 and make sure the gate releases after the limit is reached but before the cylinder bottoms out.
T7 (S) 02.00	Pressure Delay	Delays pressure switch shifting	This allows full compaction of cardboard without extensive deadheading. If you are having power issues this can be lowered to as low as 00.50 (1/2 second) to reduce deadhead time.
T9 (S) 00.01/01.00	Down Delay	Delays shift of down solenoid at beginning of cycle.	Requires tandem center valve (typical for most balers). Allows motor to start under a no-load condition.
#0 (MM:SS) 00.10/99.59	Open Close Timer	Once the baler runs this long, it will not start another cycle until the gate is opened and closed.	If this feature is not compatible with the way you are planning to use the baler you can bypass the feature by setting the time to 99.59.

Errors/ Status

Versa-Bale shuts down the baler if it detects certain errors or status of operation.   In this event the status will be displayed on line 2 of the Status Screen or error will be displayed on lines 3 and 4 of the Status Screen. Check the Status Screen before clearing the error and correct the issue before continuing to operate the baler. To clear error either press and release the E-Stop, turn the key switch off then back on, or turn power off and back on.

Error/ Status Parameter	Common Causes	Possible Solution
Bale Ready T1 default 00.25 (Full feature OFF)	Baler is Full Baler is Jammed If bale is not ready, too small, T1 is set too high	Make Bale and reset with E-Stop Remove Jam See page 3, decrease T1 time.
OpenCloseGat	The gate must be opened and closed between cycles. Feed gate interlock is bypassed Feed gate interlock is out of adjustment Feed gate interlock is bad	 Un-bypass feed gate Adjust Replace
Ran Too Long T3 default 01.05 (Set for twice as long as T0)	T3 (Auto Shut Down) is set too low Other multiple causes	Correct timer setting. Should be twice as long as T0 setting. Check for proper operation, pressure and timer settings.
Max Up Time T4 Default 00.35 (Set for Same as T0)	T4 is set too low. Up limit switch error Directional valve is sticking, not shifting all the way Cylinder or pump is bad	Setting should be same as T0 Check Up limit switch for issues Clean directional valve, change oil Check cylinder for bypass, pump for flow.
HomeLimitErr	The ram home limit switch must be release within 3 seconds of the start of the cycle. Limit switch is hung up (maybe cardboard interfering with it) Limit switch is stuck Limit switch is bad Limit switch striker is bent or missing	 Remove material that is interfering with limit switch Lube or replace limit switch Replace limit switch Repair/ Replace striker

Motor Power Issues (including 208volt, 10HP/1Ph, Motor Drives)

If you are having issues with poor power, you should always make sure to check the following and correct any issues you find.

- Proper wire size for circuit (consider length of run too).
- Good connections (including motor junction box)
- Proper breaker and fuse sizes
- Proper motor wiring
- Disconnect, breaker, starter, etc. are in good working order and properly sized.
- Size of pump vs motor size. Generally speaking- the GPM of the pump should be no higher than the HP of the motor. So a 10HP/ 1Ph motor should have no more than a 10GPM pump. Smaller is better. At pressures higher than 2000psi you'll want a smaller pump.

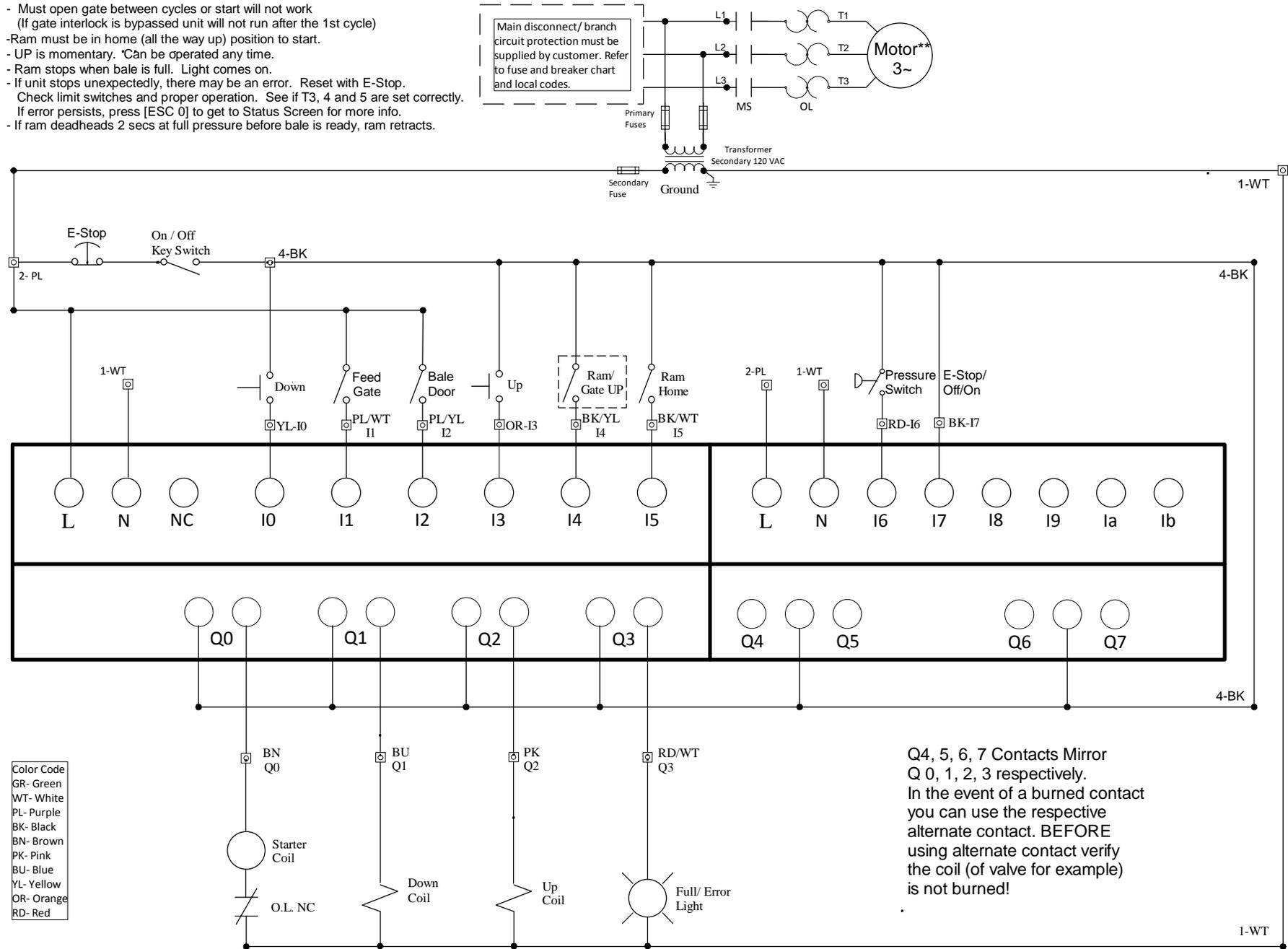**Versa-Pak Features that can help-** see appropriate section in manual to use feature
- Smart Shift (Page 5)- Prevents long periods of high pressure. Reduce time setting.
- Down Delay (Page 5)- Starts motor with valve in center position so that motor never starts under a load.

Notes:
- Must open gate between cycles or start will not work
  (If gate interlock is bypassed unit will not run after the 1st cycle)
- Ram must be in home (all the way up) position to start.
- UP is momentary. Can be operated any time.
- Ram stops when bale is full. Light comes on.
- If unit stops unexpectedly, there may be an error. Reset with E-Stop.
  Check limit switches and proper operation. See if T3, 4 and 5 are set correctly.
  If error persists, press [ESC 0] to get to Status Screen for more info.
- If ram deadheads 2 secs at full pressure before bale is ready, ram retracts.

**For single phase jump T2 to L3 on starter, connect motor to T1 and T3

Main disconnect/ branch circuit protection must be supplied by customer. Refer to fuse and breaker chart and local codes.

L1   T1
L2   T2   Motor**
L3   T3   3~

MS   OL

Primary Fuses

Transformer Secondary 120 VAC

Secondary Fuse   Ground

1-WT

E-Stop   On / Off Key Switch   4-BK

2- PL   4-BK

1-WT

Down   Feed Gate   Bale Door   Up   Ram/ Gate UP   Ram Home   2-PL   1-WT   Pressure Switch   E-Stop/ Off/On

YL-I0   PL/WT I1   PL/YL I2   OR-I3   BK/YL I4   BK/WT I5   RD-I6   BK-I7

L   N   NC   I0   I1   I2   I3   I4   I5   L   N   I6   I7   I8   I9   Ia   Ib

Q0   Q1   Q2   Q3   Q4   Q5   Q6   Q7

4-BK

BN Q0   BU Q1   PK Q2   RD/WT Q3

Q4, 5, 6, 7 Contacts Mirror Q 0, 1, 2, 3 respectively.
In the event of a burned contact you can use the respective alternate contact. BEFORE using alternate contact verify the coil (of valve for example) is not burned!

Color Code
GR- Green
WT- White
PL- Purple
BK- Black
BN- Brown
PK- Pink
BU- Blue
YL- Yellow
OR- Orange
RD- Red

Starter Coil

O.L. NC

Down Coil

Up Coil

Full/ Error Light

1-WT

Versa-Bale V4 Schematic. For support go to www.versa-bale.net or call 352-742-4774.