BATCHER

For The 225 Weight Indicator

Installation, Setup and Operation Manual

INTRODUCTION

The Batcher feature has been designed to control the filling or discharge of up to 15 ingredient/bins automatically. The Batcher feature controls relays in an external enclosure and adds a number of features to the 225 indicator.

LOGIC LEVEL OUTPUTS

Your Model 225 indicator has logic level outputs that can be used to control peripheral devices used to signal when the weight is within preset limits. Note that these outputs are at logic level and cannot drive external devices directly. Solid-state relays can be used to accept the logic level output from the 225 and in turn, drive the external device.

Output Cable Installation

1. If the rear panel of the indicator has been removed, proceed to step 2. Otherwise, remove the 14 acorn nuts securing the rear panel to main housing

2. Loosen a gland connector for the cable.

3. Slip the cable through the gland connector and into the enclosure.

4. Remove 2 inches of the cable outer insulation jacket

5. Next, remove 1/4 inch of insulation from each of the wires.

6. Connect each of the wires to the Remote Outputs terminal block (P19 or P18).

7. To terminate a wire, use a small flat blade screwdriver and press down on the release bar for the terminal. Insert the wire into the terminal opening. Remove the screwdriver, allowing the release bar to return to its original position, locking the wire in place.

8. Repeat procedure until all wires are in place.

AC Output Relay Board(s)

The AC Output Relay Boards are mounted in an external junction box for use with the 225 Indicator. The RB4-ACOUT contains one board and supports four outputs (jumper selectable). The RB8-ACOUT contains two boards and supports eight outputs. The relay board used in both is (Cardinal p/n 8539-C062-0A). Connect the devices to be controlled as shown in Figure No. 1 and Figure No.2.

The individual relays can be configured to be on (closed) or off (open) at weights under the preset weight then switch at the preset weight from on-to-off or off-to-on by setting the under weight condition to on or off during setup and calibration or setup review.

OUTPUT (closed)	28-240VAC @ 3A maximum for each plug-in relay
CONTROL INPUT	5VDC @ 12mA from the 225 main pc board assembly P8
CONNECTION	Removable plug-in screw terminals for up to 14 AWG wire

NOTE: All relays are the normally-open type that will open when power to indicator is lost.

AC Output Relay Board(s), Cont.

225 Indicator – P19

	225 Indicator – P19	
1	+SRC	1
2	RELAY 1	2
3	RELAY 2	3
4	RELAY 3	4
5	RELAY 4	5
6	RELAY 5	6
7	RELAY 6	7
8	RELAY 7	8
9	RELAY 8	9
10	GND	10

Relay Box Assembly RB4-ACOUT or RB8-ACOUT

Figure No. 1

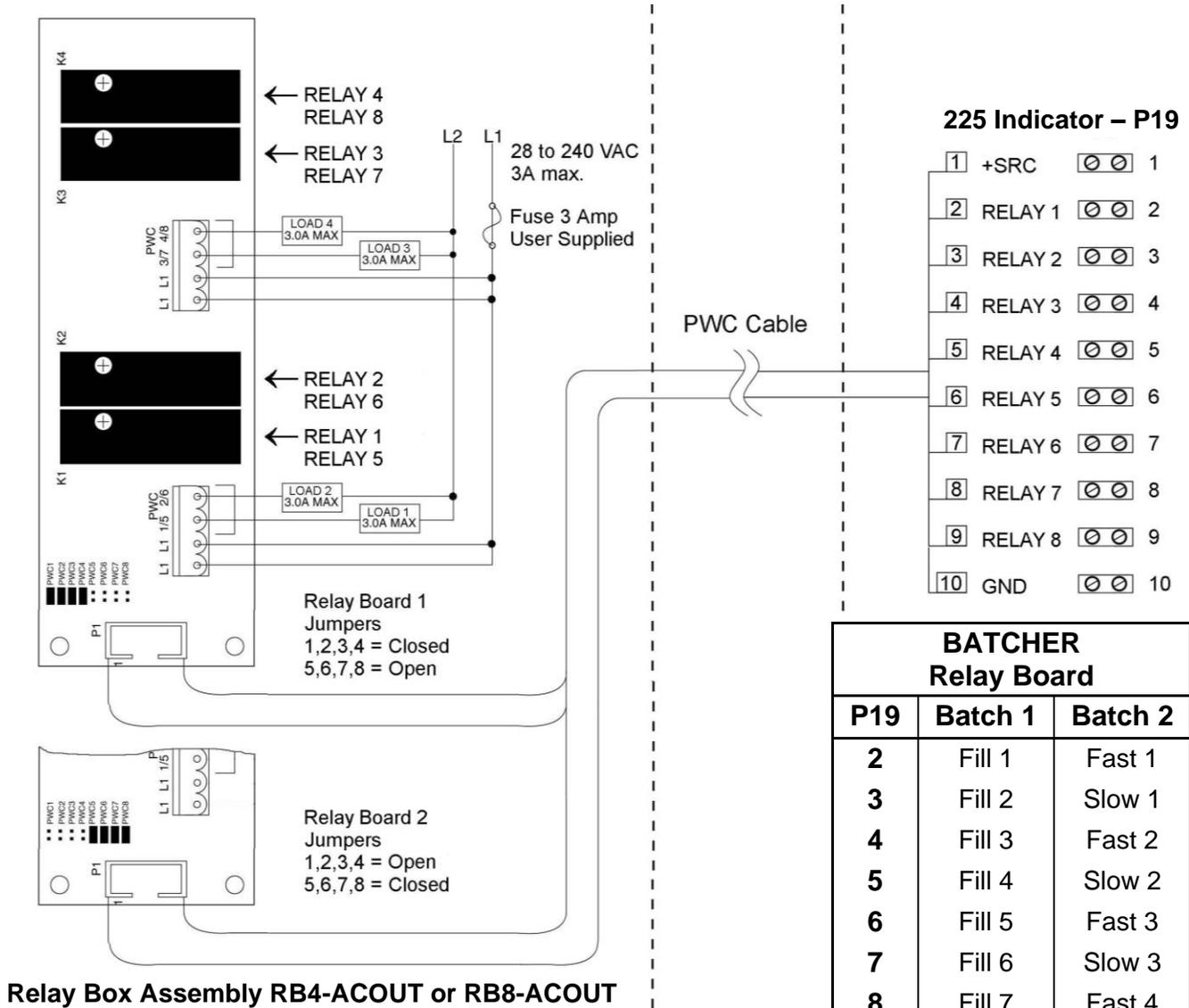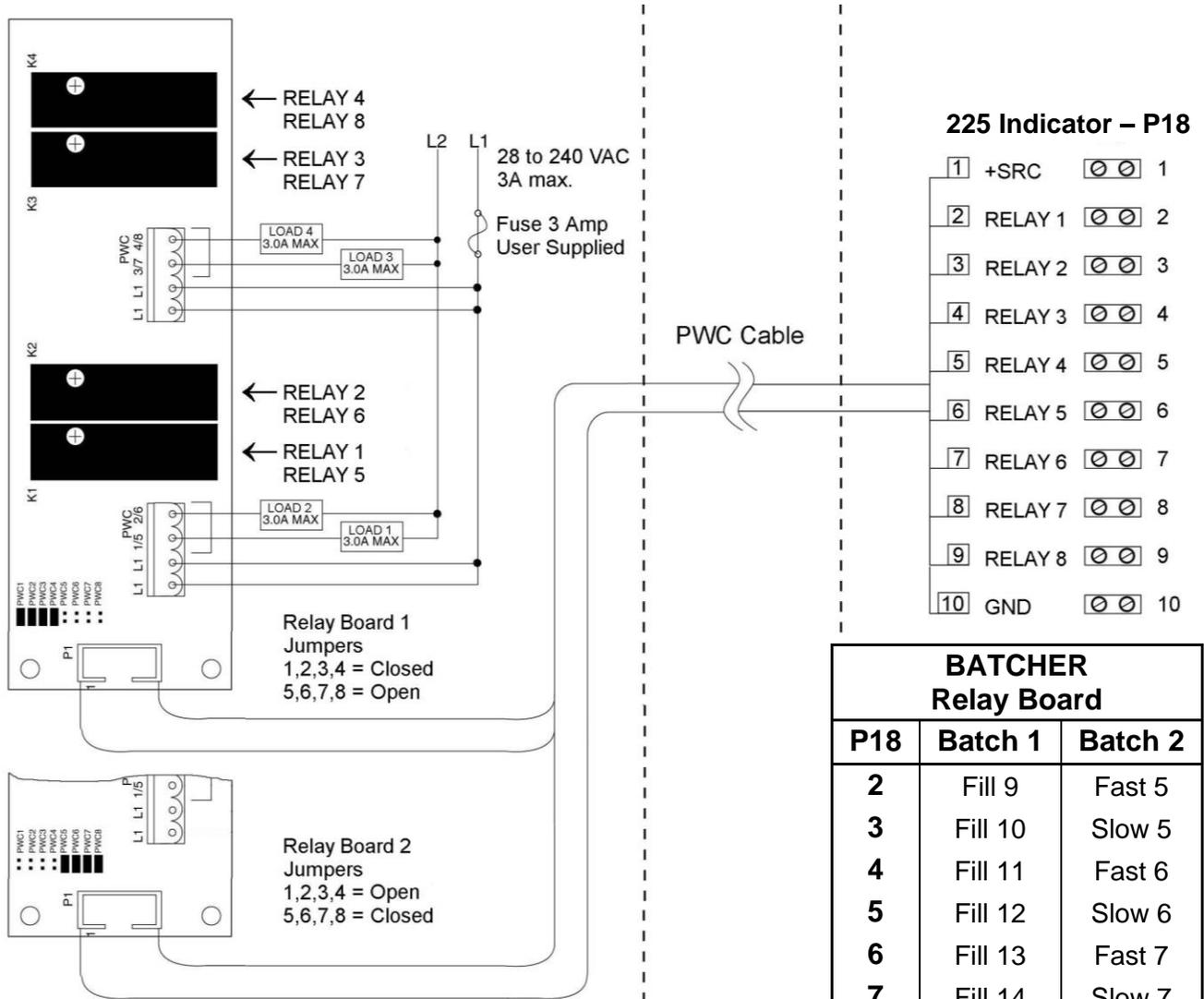| BATCHER Relay Board		
P19	Batch 1	Batch 2
2	Fill 1	Fast 1
3	Fill 2	Slow 1
4	Fill 3	Fast 2
5	Fill 4	Slow 2
6	Fill 5	Fast 3
7	Fill 6	Slow 3
8	Fill 7	Fast 4
9	Fill 8	Slow 4

Relay Box Cable Wire Number to Relay Number Table

The relay box cable wire numbers correspond to the 225 indicator P19 terminal connections.

CABLE WIRE NUMBER	RELAY NUMBER (Set Proper Jumpers)	CABLE WIRE NUMBER	RELAY NUMBER (Set Proper Jumpers)
1	+SRC (For AC Input Relays)	6	5
2	1	7	6
3	2	8	7
4	3	9	8
5	4	10	GND

AC Output Relay Board(s), Cont.

Relay Box Assembly RB4-ACOUT or RB8-ACOUT

Figure No. 2

BATCHER Relay Board

P18	Batch 1	Batch 2
2	Fill 9	Fast 5
3	Fill 10	Slow 5
4	Fill 11	Fast 6
5	Fill 12	Slow 6
6	Fill 13	Fast 7
7	Fill 14	Slow 7
8	Fill 15	
9	Dump	Dump

Relay Box Cable Wire Number to Relay Number Table

The relay box cable wire numbers correspond to the 225 indicator P18 terminal connections.

CABLE WIRE NUMBER	RELAY NUMBER (Set Proper Jumpers)	CABLE WIRE NUMBER	RELAY NUMBER (Set Proper Jumpers)
1	+SRC (For AC Input Relays)	6	5
2	1	7	6
3	2	8	7
4	3	9	8
5	4	10	GND

OPTICALLY ISOLATED REMOTE INPUTS

The Model 225 has seven (7) programmable inputs that may be used to remotely (up to 100 feet) initiate various functions within the indicator. These inputs are accessed via a terminal block (P17) on the back of the Main PC board. The 7 inputs are defined on the following page.

Remember that the input must be connected to GND to initiate the function.

Input Cable Installation
1. If the rear panel of the indicator has been removed, proceed to step 2. Otherwise, remove the 14 acorn nuts securing the rear panel to main housing
2. Loosen a gland connector for the cable and slip the cable through the gland connector and into the enclosure.
3. Remove 2 inches of the cable outer insulation jacket and then remove 1/4 inch of insulation from each of the wires.
4. Connect each of the wires to the Remote Input terminal block (P17).
5. To terminate a wire, use a small flat blade screwdriver and press down on the release bar for the terminal. Insert the wire into the terminal opening. Remove the screwdriver, allowing the release bar to return to its original position, locking the wire in place.
6. Repeat procedure until all wires are in place.
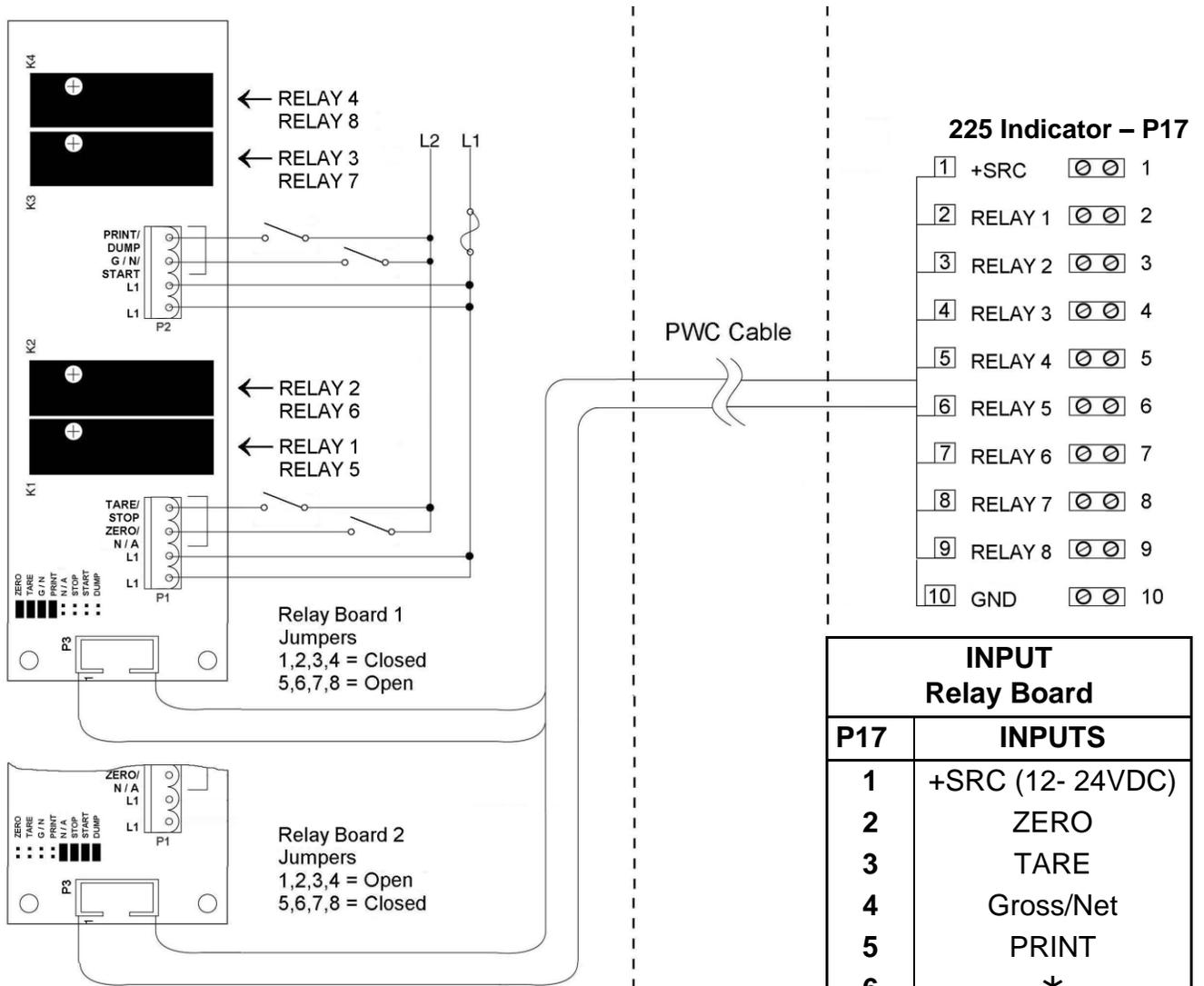
AC Input Relay Board(s)
The AC Input Relay Board(s) are mounted in an external junction box for use with the 225 Indicator. The RB4-ACIN (115 VAC) or RB4-ACINV (230 VAC) contain one board and supports 4 inputs (jumper selectable). The RB8-ACIN (115 VAC) or RB8-ACINV (230 VAC) contain two boards and supports seven inputs that are jumper selectable. The relay board used in the 115 VAC versions is Cardinal p/n 8200-C324-0A. The 230 VAC version uses relay board Cardinal p/n 8200-C324-1A. Connect the devices as shown in Figure No. 3.

INPUT RELAY TYPE IAC-5	90 to 140 VAC @ 6mA maximum for each plug-in relay
INPUT RELAY TYPE IAC-5A	180 to 280 VAC @ 6mA maximum for each plug-in relay
OUTPUT	5VDC @ 12mA from the 225 main pc board assembly P9 12VDC @ 12mA maximum from external source
CONNECTION	Removable plug-in screw terminals for up to 14 AWG wire

**NOTE: AC INPUT RELAYS ARE VOLTAGE DEPENDENT.
A DIFFERENT RELAY IS REQUIRED FOR 115 VAC AND 230 VAC!**

AC Input Relay Board(s), Cont.

225 Indicator – P17

1	+SRC	1
2	RELAY 1	2
3	RELAY 2	3
4	RELAY 3	4
5	RELAY 4	5
6	RELAY 5	6
7	RELAY 6	7
8	RELAY 7	8
9	RELAY 8	9
10	GND	10

Relay Board 1
Jumpers
1,2,3,4 = Closed
5,6,7,8 = Open

Relay Board 2
Jumpers
1,2,3,4 = Open
5,6,7,8 = Closed

Relay Box Assembly RB4-ACIN or RB8-ACIN
Relay Box Assembly RB4-ACINV or RB8-ACINV

Figure No. 3

INPUT Relay Board	
P17	**INPUTS**
1	+SRC (12- 24VDC)
2	ZERO
3	TARE
4	Gross/Net
5	PRINT
6	$*$
7	STOP
8	START
9	DUMP
10	GND/SHIELD

Relay Box Cable Wire Number to Relay Number Table

The relay box cable wire numbers correspond to the 225 indicator P17 terminal connections.

CABLE WIRE NUMBER	RELAY NUMBER (Set Proper Jumpers)	CABLE WIRE NUMBER	RELAY NUMBER (Set Proper Jumpers)
1	+SRC (For AC Input Relays)	6	5
2	1	7	6
3	2	8	7
4	3	9	8
5	4	10	GND

MAIN PCB

CAUTION! This board contains static sensitive components. Improper handling can result in damage to or destruction of the components or board. Such actual and/or consequential damage IS NOT covered under warranty.

Figure No. 4

MAIN PC BOARD, CONT.

Main PCB Jumpers

J1 (TEST) – B.L. TEST
When installed, this jumper will turn the backlight on, ignoring the BACK LITE═ setting.

J2 (AUTO ON) – AUTO-ON
When installed, this jumper will cause the indicator to power on automatically whenever power is applied to the power input connector. If power is lost momentarily and then reapplied, the indicator will turn on without pressing the **ON** key.

J3 AND J4 – RS-232/USB PORT
These jumpers control whether COM3 is RS-232 and uses Serial I/O P16 (pins 10, 11, and 12) or USB and uses the USB-B header, P13 or USB-B port, P14.

J6 (PWC1-8) and J7 (PWC9-16) – REMOTE OUTPUT SRC (SOURCE)
When installed, these jumpers allow the 225 indicator to supply (source) 5 VDC (VCC) or 15VDC (VP) to a solid-state relay or other load of 200 ohms or greater. To operate from the 5 VDC (VCC) or 15VDC (VP) source, the positive connection from the relays must be connected to P18 (P19) pins 2 through 9 and the negative wire from the relays to P18 (P19) pin 10 (GND). See Figure No. 4 for the location of connector P18 and P19.

   For completely isolated outputs, J6 (J7) must be open (on one pin only or removed) and the user must provide 5 to 24 VDC to P18 (P19) pin 1 (+SRC) and a ground return to the load. The load must still be 200 ohms or greater and P18 (P19) pin 10 (GND) is not connected.

J8 (REMOTE IN) – REMOTE IN SRC (SOURCE)
When installed, this jumper allows the 225 indicator to supply (source) 5 VDC to a remote input circuit. Connecting P17 pins 1 through 9 to P17 pin 10 (GND) through a switch will cause the selected action. See Figure No. 4 for connector P17 location.

   For completely isolated inputs, J8 must be open (on one pin only or removed) and the user must provide 5 to 24 VDC to P17 pin 1 (+SRC) and a ground return to the switch connected to P17 pin 2 through 9. Note that P17 pin 10 (GND) is not connected.

J9 (-SEN) and J11 (+SEN) – SENSE JUMPERS
If the sense leads are NOT used, you must install jumpers at J9 and J11 (near the P20 and P21 terminal blocks). These jumpers connect the sense leads to the excitation leads. If sense leads ARE used (as in motor truck scales), these jumpers should be open (on one pin only or removed).

J10 (DLB) – DEAD LOAD BOOST JUMPER
For very low dead loads (less than 10% of the combined load cell capacity), connect J8, the DLB (dead load boost) jumper on the printed circuit board.

MAIN PC BOARD, CONT.

P8 (CAL) – CALIBRATION INHIBIT JUMPER

When installed, this jumper inhibits (prevents) calibration of the 225 indicator.

When removed, CAL will be shown on the display (to indicate calibration is allowed) and calibration of the 225 indicator can be performed.

RE-INSTALLING THE REAR PANEL

After all terminations have been made,

1. Remove the excess cable from the instrument enclosure and securely tighten each of the cable gland connectors.

    • Do not over-tighten these connectors but make certain they are snug.

    • **DO NOT USE TOOLS!** Finger-tighten only!

2. Ensure any unused gland connectors are plugged and replace the rear panel.

3. Secure the rear panel with the 14 acorn nuts removed earlier.

4. Follow a diagonal pattern when tightening the acorn nuts.

SETUP
Batcher (Mode of Operation = 5)

The 225 Batcher is a single or dual speed batching system that can automatically control the filling or discharge of up to 15 ingredient/bins (single speed) or up to 7 ingredient/bins (dual speed). The Batcher operation features are selected in the Batcher Menu. To access the setup menus:

1. Press the **SHIFT** key and then the **RED SQUARE** navigation key.
2. The display will change to show the SETUP/REVIEW MENU.
3. Press the **1** key and then the **ENTER** key.
4. The display will change to show SETUP MENU #1.

With SETUP MENU #1 displayed, the current setting for the 10. MODE OF OP=X parameter will be shown. Press the **1** and **0** keys and then the **ENTER** key. The display will change to show the MODE OF OPERATION MENU. Press the **5** key and then the **ENTER** key to select 5. Batcher. The display will change to the Batcher Menu.

The Batcher Menu shows the selections for the Batcher setup parameters.

```
            Batcher Menu
1.   SPEED=X           6.  DUMP GATE=XXX
2.   GATE SEQ=X XXXX   7.  AUTO DUMP=XXX
3.   AUTO TRIM=XXX     8.  DECUMLATE=XXX
4.   BIN COUNT=X
5.   AUTO PRINT=XXX
Enter Selection:   0   EXIT
```

1. SPEED=X - SINGLE OR TWO SPEED OPERATION
The 225 Batcher may be configured for either single speed (SPEED=1) or two speed (SPEED=2) batching operation.

If the current setting is acceptable, continue to 2. GATE SEQ=X XXXXX.

To change the current setting, press the **1** key and then the **ENTER** key. SPEED=X will be displayed at the bottom of the display. Using the numeric keys, enter the new setting, then press the **ENTER** key to save it. Allowable values are 1 or 2.

If **SINGLE SPEED OPERATION** is selected (SPEED=1), proceed to the 3. AUTO TRIM section to continue setup. 2. GATE SEQ=X XXXXX will display as 2. GATE SEQ=N/A (Not Applicable).

If **TWO SPEED OPERATION** is selected (SPEED=2), proceed to 2. GATE SEQ=X to continue setup.

SETUP, CONT.

2. GATE SEQ=X XXXXX – GATE SEQUENCE

IMPORTANT! This selection requires two speed operation (SPEED=2).

To help the user best accomplish the batching operation, three different gate sequences are provided, as described below.

If the current setting is acceptable, continue to 3. AUTO TRIM.

To change the current setting, press the **2** key and then the **ENTER** key. GATE SEQ=X will be displayed at the bottom of the display. Using the numeric keys, enter the new setting and then press the **ENTER** key to save it. Allowable values are 1, 2 or 3.

GATE SEQ=1 AB->B
The GATE SEQ=1 AB->B selection will begin the operation with both outputs on until the weight reaches the FAST= value. At that weight, the "A" (fast) output will be turned off. The "B**"** (slow) output will remain on until the SLOW= (final preset wt.) weight minus the TRIM= weight is reached. At that weight, the "B" (slow) output will be turned off.

GATE SEQ=2 A->B
With A->B selected, the operation will begin with only the "A" (fast) output on until the weight reaches the FAST= value. At that weight, the "A" (fast) output will be turned off and the "B" (slow) output will be turned on. The "B" (slow) output will remain on until the SLOW= (final preset wt.) weight minus the TRIM= weight is reached. At that weight, the "B" (slow) output will be turned off.

GATE SEQ=3 CHTR (Chatter)
The Chatter Gate selection and will control one relay. It begins the operation with the "A" (fast) output on until the weight reaches the FAST= value. At that weight, the "A" (fast) output will be turned off. The "A" (now as slow) output will then be turned on for a preset time (CHATTER=, 0 to 99.9 seconds, set at the BATCHER PRESET PARAMETERS MENU). The "A" (slow) output will be turned off and the weight value will be compared to the SLOW= (final preset wt.) value less the TRIM= value. This will be repeated until the weight is equal to or greater than the SLOW= (final preset wt.) value less the TRIM= value.

SETUP, CONT.

3. AUTO TRIM=XXX – AUTO TRIM WEIGHT COMPENSATION

The trim weight is a weight value used to compensate for material that will continue to flow after a "stop" action has been initiated. The stop action will be initiated at the preset weight value minus the trim weight value. A manual trim value for the material can be entered, after exiting SETUP, by pressing the **PRESET** key and selecting 3. TRIM= XXXXXX. If auto trim is selected (AUTO TRIM=YES), trim weight compensation will be automatically adjusted after each fill, based on the difference between the preset weight and the weight actually filled. If automatic trim is not selected (AUTO TRIM=NO), the manually entered trim weight value will not be automatically adjusted after each fill.

The display will show 3. AUTO TRIM=XXX where XXX is the current value. If the current setting is acceptable, continue to 4. BIN COUNT=X.

To change the current setting, press the **3** key and then the **ENTER** key.
AUTO TRIM=XXX will be displayed at the bottom of the display. Using the **YES** or **NO** key, select the new setting and then press the **ENTER** key to save it.

4. BIN COUNT - NUMBER OF INGREDIENT BINS

Due to the 16 available output controls in the 225, the batcher may have 1 - 15 ingredients if single speed (SPEED=1) was selected in setup or 1 – 7 ingredients if dual speed (SPEED=2) was selected in setup. Once the batcher has been enabled during setup, the BATCHER PRESET PARAMETERS MENU will prompt for the ingredients and bins (ING X BIN=X). Any number less than one or greater than seven (if dual speed) or greater than fifteen (if single speed) will cause the 225 to indicate an error.

The display will show BIN COUNT=X, where X is the current value. If the setting displayed is acceptable, continue to 5. AUTO PRINT=XXX.

To change the current setting, press the **4** key and then the **ENTER** key.
BIN COUNT=X will be displayed at the bottom of the display. Using the numeric keys, enter the new setting and then press the **ENTER** key to save it.

5. AUTO PRINT - AUTOMATIC PRINT

The automatic print feature will cause an optional printer to automatically record the individual ingredient weight and total weight of the fill at the conclusion of the fill. The time and date is printed when the first ingredient is printed and is included in the printed record.

The display will show 5. AUTO PRINT=XXX where XXX is the current value. If the setting displayed is acceptable, continue to 6. DUMP GATE =XXX.

To change the current setting, press the **5** key and then the **ENTER** key.
AUTO PRINT=XXX will be displayed at the bottom of the display. Using the **YES** or **NO** key, select the new setting and then press the **ENTER** key to save it.

SETUP, CONT.

6. `DUMP GATE` – DUMP GATE ENABLE

This feature is used when control of the weigh hopper gate is required. The optional dump gate can be manually, automatically or remotely controlled. Note that output 16 is used to activate the dump gate and that display annunciator 16 will turn on when the dump is active.

The display will show `6. DUMP GATE =XXX` where XXX is the current value. If the setting displayed is acceptable, continue to `7. AUTO DUMP`.

To change the current setting, press the **6** key and then the **ENTER** key `DUMP GATE=XXX` will be displayed at the bottom of the display. Using the **YES** or **NO** key, select the new setting and then press the **ENTER** key to save it.

7. `AUTO DUMP` - AUTOMATIC DUMP MODE

Selection of this feature will cause the completed batch to discharge automatically.
`DUMPING        16` appears in the weight display to signal the operator that the batch discharge is taking place. The discharge will continue until the scale weight returns to a value within the `ZERO TOL=XX` range.

If the automatic dump feature was not selected `AUTO DUMP=NO`, the indicator will halt after the weigh hopper receives the last enabled ingredient, the **DUMP** key will appear on the display and the indicator will wait for the manual discharge of the material after which the next batch will be automatically initiated.

The display will show `AUTO DUMP=XXX` where XXX is the current value. If the setting displayed is acceptable, continue to `8. DECUMLATE=XXX`.

To change the current setting, press the **7** key and then the **ENTER** key.
`AUTO DUMP=XXX` will be displayed at the bottom of the display. Using the **YES** or **NO** key, select the new setting and then press the **ENTER** key to save it.

8. `DECUMLATE` – DECUMULATIVE OPERATION

In a decumulative batching operation, the weigh hopper is filled first until the required amount of material has been placed in the hopper. When the operation is started, the material is dumped until the proper amount has been discharged.

The display will show `8. DECUMLATE=XXX` where XXX is the current value. If the setting displayed is acceptable, batcher setup is complete. Press the red square navigation key four times to exit setup and enter the normal weight display mode.

To change the current setting, press the **8** key and then the **ENTER** key.
`DECUMLATE=XXX` will be displayed at the bottom of the display. Using the **YES** or **NO** key, select the new setting and then press the **ENTER** key to save it.

BATCHER OPERATION

The 225 Batcher has been designed with single or two speed relay control outputs that can automatically control the batching and discharge or decumulative batching of up to 15 single speed and 7 dual speed ingredient(ING)/bins. The Batcher adds a number of operation features to the indicator. Those features include:

Start Validation

Pressing the **START** key changes the display to $\mathtt{START=YES}$ to verify you are sure you want to start the batching operation. To start the batching operation, press the **ENTER** key. To abort the batching operation, press the **NO** key and then the **ENTER** key. Note that when using the remote start input, verification is not required.

Single or Two Speed Operation

The single speed operation provides a single output control for each bin.

The two speed operation provides a two relay (fast and slow) output control for each bin.

The two speed operation without chatter gate control, depending on the gate sequence ($\mathtt{GATE\ SEQ=1,2,}$ or $\mathtt{3}$) setting at setup, can begin the fill operation with one or two relay output controls (fast and slow) on until the weight reaches the $\mathtt{FAST=}$ value. At that weight, the fast output will be turned off and only the slow output will remain on until the $\mathtt{SLOW=}$ weight less the $\mathtt{TRIM=}$ weight value is reached. At that weight, the slow output will be turned off and the batching operation, for the current ingredient, is complete.

Two Speed Operation with Chatter Gate

The two speed operation with Chatter Gate uses two modes for the fast relay control output. It will begin the fill operation with the fast relay control output on and cycle the fast relay from continuous on to chatter (on/off cycle) when the weight reaches the $\mathtt{FAST=}$ weight value. At the $\mathtt{FAST=}$ weight, the fast relay will be turned on for the preset chatter time (**CHATTER=**, 0.1 to 99.9 seconds) and then turned off. When the weight reading becomes stable, the weight value will be compared to the $\mathtt{SLOW=}$ value less the $\mathtt{TRIM=}$ value. If the weight is less than the preset $\mathtt{SLOW=}$ value less the $\mathtt{TRIM=}$ value the fast relay will again be turned on for the preset chatter time (**CHATTER=**, 0.1 to 99.9 seconds) and then turned off. This will be repeated until the container weight is equal to or greater than the $\mathtt{SLOW=}$ value less the $\mathtt{TRIM=}$ value.

BATCHER OPERATION, CONT.

Auto Dump

Selection of this feature is disabled if `6. DUMP GATE =NO`.

If `7. AUTO DUMP=YES`, the completed batching operation will immediately discharge and `DUMPING          16` will appear in the weight display to indicate that dumping is taking place and the dump control output 16 is on. The discharge will continue until the scale weight returns to zero within the `ZERO TOL=XXXXX` value.

If `7. AUTO DUMP=NO`, the indicator will halt after filling and will wait for the **DUMP** key to be pressed (or a remote manual dump command) before the material is discharged and the next batching operation can be started.

Auto Trim
Auto Trim option is a feature that will automatically adjust the trim weight value after every ingredient is batched to achieve accurate fill weights. For example, if the preset `SLOW=` weight is set at 5000 lbs and the `TRIM=` is set at 100 lbs, the cut-off will be at 4900 lbs. If the actual weight of the trim is 50 lbs, the total weight of the material discharged will be 4950 lbs, not 5000. With Auto Trim enabled, starting with the next operation, the `TRIM=` value will be gradually adjusted until the 5000 lbs preset weight total is achieved. Depending on how much difference there is between the programmed trim and the actual trim, it may take several operations before the full preset weight amount is reached.

Auto Print
This feature, when enabled, produces an automatic print of the actual delivered batch weight at the end of each ingredient batching operation. The following is an example of the information printed.

      Printout example: 10:15 10/30/2009 Batch #: 1
                             bin: 1   12000 lb N
                             bin: 1   12000 lb N
                             bin: 1   11990 lb N
                             bin: 2   12000 lb N
                             bin: 2   11990 lb N
                             bin: 2   12000 lb N
                             bin: 3   12000 lb N
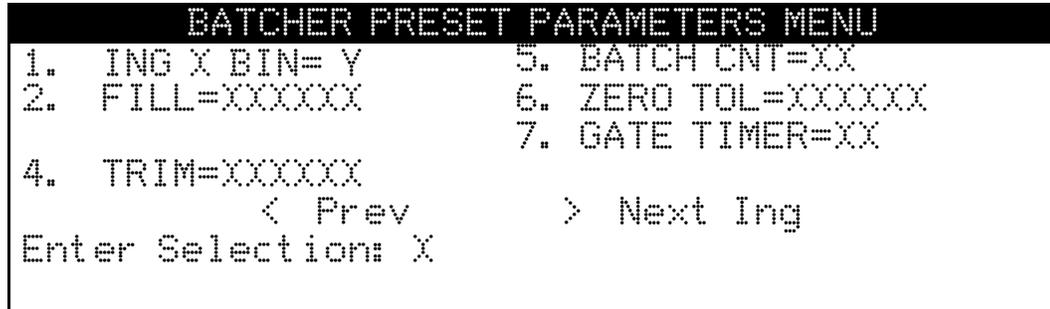   Batch: 83980 lb TOT

Batcher Bin Accumulators
The weight of each ingredient/bin batched is stored in an associated bin accumulator. The accumulator is updated at the end of each batch after the target weight has been reached and the weight reading becomes stable. All bin accumulators can be printed and cleared (set to zero) through keyboard commands (see Batcher Bin Accumulators section).

BATCHER PRESET PARAMETERS MENU

With the indicator showing Gross Weight (Gross annunciator, G on the display), press the **PRESET** key. The display will show the `BATCHER PRESET PARAMETERS MENU`

Single Speed Batching Presets (If `SPEED=1`, was selected in setup)

```
      BATCHER PRESET PARAMETERS MENU
1.   ING X BIN= Y         5.  BATCH CNT=XX
2.   FILL=XXXXXX          6.  ZERO TOL=XXXXXX
                          7.  GATE TIMER=XX
4.   TRIM=XXXXXX
             < Prev           > Next Ing
Enter Selection: X
```

`1. ING XX BIN=Y`, where X is the ingredient (`ING`) number and Y is the `BIN` number. If the ingredient and bin numbers are acceptable, proceed to `2. FILL=XXXXXX`, the prompt for the fill weight.

To change the bin number, press the **1** key, then the **ENTER** key. The display will show `ING X BIN=X` at the bottom of the display. Use the numeric keys to enter a bin number, then press the **ENTER** key to save it.

To change the ingredient number, press the ◄ or ► navigation key and then press the **1**, and **ENTER** keys to change the bin number.

NOTE: Single Speed Operation Allows a Maximum of 15 Ingredients/bin.

`2. FILL=XXXXXX`, where XXXXX is the current value of the stored target weight. If the displayed value is acceptable, proceed to `TRIM=XXXXXX`, the prompt for the trim weight. To change the target weight, press the **2** key and then the **ENTER** key. The display will show `FILL=XXXXXX` at the bottom of the display. Use the numeric keys to enter a new value, then press the **ENTER** key to save it.

`4. TRIM=XXXXXX`, where XXXXX is the current value of the stored trim weight. The trim weight is weight of the material that will continue to flow after the output control is switched to off. The filling will be automatically stopped when the displayed weight equals the `FILL=` weight value minus the trim weight. If the displayed value is acceptable, proceed to `5. BATCH CNT=XX`, the prompt for the batch count. To change the trim weight, press the **4** key and then the **ENTER** key. The display will show `TRIM=XXXXXX` at the bottom of the display. Use the numeric keys to enter a new value and then press the **ENTER** key to save it

Follow the display prompts (`< Prev Ing    > Next Ing`) to repeat menu items 1 to 4 for each ingredient (`ING`) needed.

BATCHER PRESET PARAMETERS MENU, CONT.

Single Speed Batching Presets, Cont.

5.   BATCH CNT=XX, where XX is the current value (0 – 99) of the number of batches to be repeated automatically after the closing of the dump gate. If the displayed value is acceptable, proceed to 6. ZERO TOL=XXXXX, the prompt for the zero tolerance. To change the batch count, press the **5** key and then the **ENTER** key. The display will show BATCH CNT=XX at the bottom of the display. Use the numeric keys to enter a new value and then press the **ENTER** key to save it. Allowable values are: 0 through 99.

  NOTE: If 0 is entered for BATCH CNT=XX**, only one batch operation will take place.**

If DUMP GATE=NO was selected during setup, proceed to 8. CHATTER=XX.X.

If DUMP GATE=YES was selected during setup:

6.   ZERO TOL=XXXXX, where XXXXX is the current value of the Zero Tolerance. Zero tolerance is the maximum weight at which the scale is considered empty. If the displayed value is acceptable, continue to 7. GATE TIMER=XX. To change the current setting, press the **6** key and then the **ENTER** key. ZERO TOL=XXXXX will be displayed at the bottom of the display. Using the numeric keys, enter the new value and then press the **ENTER** key to save it.

7.   GATE TIMER=XX where XX is the current value of the gate timer. The gate timer is used to control the amount of time (in seconds) the gate is left open after the weight falls below the zero tolerance (ZERO TOL=) weight value. If the displayed value is acceptable, continue to 8. CHATTER=XX.X. To change the current setting, press the **7** key and then the **ENTER** key. GATE TIMER=XX will be displayed at the bottom of the display. Using the numeric keys, enter the new value and then press the **ENTER** key to save it. Allowable values are: 0 through 99 seconds.

Follow the display prompts (< Prev Ing   > Next Ing) to repeat menu items 1 to 4 for each ingredient (ING) needed.

BATCHER PRESET PARAMETERS MENU, CONT.

Two Speed Batching Presets (If `SPEED=2`, was selected in setup)

```
        BATCHER PRESET PARAMETERS MENU
  1.   ING X BIN= Y       5.  BATCH CNT=XX
  2.   FAST=XXXXXX        6.  ZERO TOL=XXXXXX
  3.   SLOW=XXXXXX        7.  GATE TIMER=XX
  4.   TRIM=XXXXXX
             < Prev          > Next Ing
  Enter Selection: X
```

`1. ING XX BIN=Y`, where X is the ingredient (`ING`) number and Y is the `BIN` number.
If the ingredient and bin numbers are acceptable, proceed to `2. FAST=XXXXXX`, the
prompt for the fill weight.

To change the bin number, press the **1** key and then the **ENTER** key. The display will show
`ING X BIN=X` at the bottom of the display. Use the numeric keys to enter a bin number
and then press the **ENTER** key to save it.

To change the ingredient number, press the ◄ or ► navigation key. To change the bin
number, press the **1** and then the **ENTER** keys.

   **NOTE: Two Speed operation allows a Maximum of 7 Ingredients/bin when
   `GATE SEQ=1` or `2`, or 15 Ingredients/bin if `GATE SEQ=3`.**

`2. FAST=XXXXXX`, where XXXXX is the current stored value of the first cutoff weight. If
the displayed value is acceptable, proceed to `SLOW=XXXXXX`, the prompt for the total
weight desired for this ingredient. To change the target weight, press the **2** key and then the
ENTER key. The display will show `FAST=XXXXXX` at the bottom of the display. Use the
numeric keys to enter a new value and then press the **ENTER** key to save it.

`3. SLOW=XXXXXX`, where XXXXX is the current stored value of the total weight desired
for this ingredient. If the displayed value is acceptable, proceed to `TRIM=XXXXXX`, the
prompt for the trim weight. To change the target weight, press the 3 key and then the **ENTER**
key. The display will show `SLOW=XXXXXX` at the bottom of the display. Use the numeric
keys to enter a new value and then press the **ENTER** key to save it.

`4. TRIM=XXXXXX`, where XXXXX is the current value of the stored trim weight. The trim
weight is weight of the material that will continue to flow after the output control is switched to
off. The filling will be automatically stopped when the displayed weight equals the `SLOW=`
weight value minus the trim weight. If the displayed value is acceptable, proceed to
`5. BATCH CNT=XX`, the prompt for the batch count. To change the trim weight, press
the **4** key and then the **ENTER** key. The display will show `TRIM=XXXXXX` at the bottom of
the display. Use the numeric keys to enter a new value and then press the **ENTER** key to
save it

BATCHER PRESET PARAMETERS MENU, CONT.

Two Speed Batching Presets ,Cont.

5. BATCH CNT=XX, where XX is the current value of the number of batches to be performed. If the displayed value is acceptable, proceed to 6. ZERO TOL=XXXXX, the prompt for the zero tolerance. To change the batch count, press the **5** key and then the **ENTER** key. The display will show BATCH CNT=XX at the bottom of the display. Use the numeric keys to enter a new value and then press the **ENTER** key to save it. Allowable values are: 0 through 99. Note that the next batch will automatically start after closing the dump gate.

NOTE: If 0 is entered for BATCH CNT=XX**, only one batch operation will take place.**

If DUMP GATE=NO was selected during setup, proceed to 8. CHATTER=XX.X.

If DUMP GATE=YES was selected during setup:

6. ZERO TOL=XXXXX, where XXXXX is the current value of the Zero Tolerance. Zero tolerance is the maximum weight at which the scale is considered empty. If the displayed value is acceptable, continue to 7. GATE TIMER=XX. To change the current setting, press the **6** key and then the **ENTER** key. ZERO TOL=XXXXX will be displayed at the bottom of the display. Using the numeric keys, enter the new value and then press the **ENTER** key to save it.

The ZERO TOL= value is used to determined if the hopper weight value is low enough to start and/or stop a batching operation.

7. GATE TIMER=XX where XX is the current value of the gate timer. The gate timer is used to control the amount of time (in seconds) the gate is left open after the weight falls below the zero tolerance (ZERO TOL=) weight value. If the displayed value is acceptable, continue to 8. CHATTER=XX.X. To change the current setting, press the **7** key and then the **ENTER** key. GATE TIMER=XX will be displayed at the bottom of the display. Using the numeric keys, enter the new value and then press the **ENTER** key to save it. Allowable values are: 0 through 99 seconds.

Follow the display prompts (< Prev Ing   > Next Ing) to repeat menu items 1 to 4 for each ingredient (ING) needed.

BATCHER PRESET PARAMETERS MENU, CONT.

Two Speed Batching Presets with Chatter Gate

(If SPEED=2 and GATE SEQ=3 CHTR was selected in setup)

If GATE SEQ=3 CHTR was selected in setup, 8. CHATTER=XX.X will appear in the BATCHER PRESET PARAMETERS Menu for each ingredient.

NOTE: Two Speed operation with Chatter allows a Maximum of 15 Ingredients/bin.

```
          BATCHER PRESET PARAMETERS MENU
1.   ING X BIN= Y          5. BATCH CNT=XX
2.   FAST=XXXXXX           6. ZERO TOL=XXXXXX
3.   SLOW=XXXXXX           7. GATE TIMER=XX
4.   TRIM=XXXXXX           8. CHATTER=XX.X
              < Prev          > Next Ing
Enter Selection: X
```

NOTE: For BATCHER PRESET PARAMETERS 1 through 7, refer to the previous section, **Two Speed Batching Presets** (If SPEED=2, was selected in setup).

8. CHATTER=XX.X where XX.X is the current value of the chatter gate timer. The chatter gate timer is used to control the amount of time (in seconds) the gate is left open after the weight falls below the zero tolerance (ZERO TOL=) weight value. If the displayed value is acceptable, press the ► navigation key to continue to the >Next Ing. To change the current setting, press the **8** key and then the **ENTER** key. CHATTER=XX.X will be displayed at the bottom of the display. Using the numeric keys, enter the new value and then press the **ENTER** key to save it. Allowable values are: 0 through 99.9 seconds.

Follow the display prompts (< Prev Ing   > Next Ing) to repeat menu items 1 to 4 and 8 for each ingredient (ING) needed.

SINGLE SPEED BATCHING OPERATION

1. Press the **START** key. The display will show $\texttt{START=YES}$.

2. Press the **ENTER** key to start the batching operation, *or* press the **NO** key to abort the operation.

3. When the batching operation is started, the indicator will check the Gross weight to be within the $\texttt{ZERO TOL=XXXXXX}$ value. If the Gross weight is outside the $\texttt{ZERO TOL=XXXXXX}$ value, $\texttt{-CHECK ZERO-}$ will be momentarily displayed. When the Gross weight is within the $\texttt{ZERO TOL=XXXXXX}$ value, the Gross weight will be tared off, the display will change to zero Net weight, and show $\texttt{PAUSE}$ and $\texttt{STOP}$. The appropriate fill annunciators and output controls (dictated by the $\texttt{GATE SEQ=X XXXXX}$ setting in setup) will turn on.

4. The batching operation can be paused or stopped by the operator by pressing the **PAUSE** or **STOP** key.
   a. To pause the filling operation, press the **PAUSE** key.
   b. The fill operation will be suspended (paused) and the **PAUSE** key will change to **RESTRT**.
   c. To continue the fill operation, press the **RESTRT** key.
   d. To stop (abort) the fill operation, press the **STOP** key.
   e. The 225 will return to normal operation

NOTE: The fill operation cannot be restarted after a STOP if the material weight is above the zero tolerance.

5. The weight will increase to the $\texttt{FILL=}$ value. When the displayed weight reaches the first ingredient $\texttt{FILL=}$ value minus the $\texttt{TRIM=}$ value, the first relay and the preset (1) annunciator are turned off, the Gross weight is tared off, and zero Net weight will be displayed. The next ingredient relay and preset annunicator will then turn on. This will continue until all preset ingredients have been batched.

6. When all motion stops, the batched weight value is added to the NET and bin accumulators and the weight will be printed (if Auto Print is enabled and a printer is attached). The printing will be repeated for each ingredient batched including a total weight of the batch when completed.

      Printout example: 10:15 10/30/2009 Batch #: 1
                                 bin: 1   12000 lb N
                                 bin: 1   12000 lb N
                                 bin: 1   11990 lb N
                                 bin: 2   12000 lb N
                                 bin: 2   11990 lb N
                                 bin: 2   12000 lb N
                                 bin: 3   12000 lb N
                                 Batch: 83980 lb TOT

SINGLE SPEED BATCHING OPERATION, CONT.

7. If `AUTO TRIM=YES` was selected in setup, the trim weight will be recalculated and stored in memory. The displayed weight will be tared off. The display will show zero net weight. The next ingredient batch will begin with the appropriate fill annunciators and output controls (dictated by the `GATE SEQ=X XXXXX` setting in setup) turned on.

8. If `AUTO DUMP=YES` in setup, and the completed batching operation will immediately discharge. The weight display will change from net to gross. The display `PAUSE` and `STOP` will be replaced with `DUMPING    16` to indicate that dumping is taking place. The discharge will continue until the scale weight returns to zero within the

    `ZERO TOL=XXXXXX` value.

9. When the dumping is complete, the display will again show `PAUSE` and `STOP`. The appropriate fill annunciators and output controls (dictated by the `GATE SEQ=X XXXXX` setting in setup) will turn on and the next batch will begin.

10. Steps 3 - 10 will be repeated until all batches entered into the `BATCHER PRESET PARAMETERS` Menu have been completed.

TWO SPEED BATCHING OPERATION

1. Press the **START** key. The display will show START=YES.

2. Press the **ENTER** key to start the batching operation, *or* press the **NO** key to abort the operation.

3. When the batching operation is started, the display will show PAUSE and STOP. The appropriate fill annunciators and output controls (dictated by the

    GATE SEQ=X XXXXX setting in setup) will turn on.

4. The batching operation can be paused or stopped by the operator by pressing the **PAUSE** or **STOP** key

    a. To pause the batching operation, press the **PAUSE key**.
    b. The batch operation will be suspended (paused) and the **PAUSE** key will change to **RESTRT**
    c. To continue the batch operation, press the **RESTRT** key.
    d. To stop (abort) the batch operation, press the **STOP** key.
    e. The 225 will return to normal operation

NOTE: The batch operation cannot be restarted after a STOP if the material weight is above the zero tolerance.

5. The weight will increase to the FAST= value. When the displayed weight reaches the FAST= value, the first relay and the preset (1) annunciator are turned off.

6. When the displayed weight reaches the SLOW= value minus the TRIM= value, the second relay and preset (2) annunciator will turn off.

When all motion stops, the batched weight value is added to the NET and bin accumulators and the weight will be printed (if Auto Print is enabled and a printer is attached). The printing will be repeated for each ingredient batched including a total weight of the batch when completed.

Printout example: 10:15 10/30/2009 Batch #: 1
                      bin: 1   12000 lb N
                      bin: 1   12000 lb N
                      bin: 1   11990 lb N
                      bin: 2   12000 lb N
                      bin: 2   11990 lb N
                      bin: 2   12000 lb N
                      bin: 3   12000 lb N
                      Batch: 83980 lb TOT

7. If AUTO TRIM=YES was selected in setup, the trim weight will be recalculated and stored in memory. The displayed weight will be tared off. The display will show zero net weight. The next ingredient batch will begin with the appropriate fill annunciators and output controls (dictated by the GATE SEQ=X XXXXX setting in setup) turned on.

TWO SPEED BATCHING OPERATION, CONT.

8. If `AUTO DUMP=YES` in setup, and the completed batching operation will immediately discharge. The weight display will change from net to gross. The display `PAUSE` and `STOP` will be replaced with `DUMPING   16` to indicate that dumping is taking place. The discharge will continue until the scale weight returns to zero within the `ZERO TOL=XXXXXX` value.

9. When the dumping is complete, the display will again show `PAUSE` and `STOP`. The appropriate fill annunciators and output controls (dictated by the `GATE SEQ=X XXXXX` setting in setup) will turn on and the next batch will begin.

10. Repeat steps 3 to 10 until all batches entered into the `BATCHER PRESET PARAMETERS` Menu have been completed.

> **NOTE:** The target weights (`FAST=` and `SLOW=`) and the `TRM X=` weight are stored in non-volatile memory.

DECUMULATIVE BATCHING OPERATION

The decumulative batching operation is used when weighing material as it is removed from of a weigh hopper. The preset menu and operation is the same as the single and two speed operation except the batching begins with a filled weigh hopper instead of an empty weigh hopper. The settings for the decumulative batching operation to function properly are as follows: The BATCHER Menu parameters should be:

    DUMP GATE=NO

    DCUMULATE=YES

    CLR TARE=NO

    MODE OF OP=5

To start the decumulative batching operation, the weigh hopper must be filled with material that equals or exceeds the amount of the preset value to be removed; otherwise an error message —`CHECK MATL`— will be displayed. This message indicates that the weigh hopper does not have enough material to meet the requirement of the preset weight value. Either more material has to be added to the weigh hopper or the preset weight value must be reduced.

See the single or two speed batcher preset and operation section for preset and operating instructions.

BATCHER BIN ACCUMULATORS

To view and print a BIN accumulator:

1. Press the **ACCUM** key. The display will show ACCUMULATOR=.
2. Press the **PRESET** key. The display will show BIN=.
3. Input the bin number to be viewed and press the **ENTER** key.
4. BIN1=XXXXXXXX will be displayed or if the accumulator value is greater than (>) 999,999,999, OVERFLOW will be displayed.
5. To print the accumulator for that bin, press the **PRINT** key.
6. Press the **ENTER** key to return to normal operation.

> Example printout: 84000 lb BIN 1

To zero a single BIN accumulator

1. Press the **ACCUM** key. The display will show ACCUMULATOR=.
2. Press the **PRESET** key. The display will show BIN=.
3. Input the bin number to be viewed and press the **ENTER** key.
4. BIN1=XXXXXXXX will be displayed or if the accumulator value is greater than (>) 999,999,999, OVERFLOW will be displayed.
5. Press the **ZERO** key.
6. The accumulator value for the bin number entered will be reset to zero.
7. Press the **ENTER** key to return to normal operation.

To print ALL BIN accumulators

1. Press the **ACCUM** key. The display will show ACCUMULATOR=.
2. Press the **PRESET** key. The display will show BIN=.
3. Press the **PRINT** key.
4. The accumulator values for ALL bins will be printed.
5. Press the **ENTER** key to return to normal operation.

> Printout example: 72000 lb BIN 1
>   59990 lb BIN 2
>   71970 lb BIN 3
>   24000 lb BIN 4
>   23980 lb BIN 5
>   24000 lb BIN 6
>   24000 lb BIN 7