

**KNOWLEDGE BASE**

Article Type: Instructions

1224 Splitter Quick Reference Guide, Standard & Encoder

Description:

Instructions on “How to” 1224 Splitter Quick Reference Guide #388.2.1 for Standard and Encoder style splitters using “DL” Direct Logic PLC’s. Blade alignment and removal, switch layout, hydraulic pump and valve layout information, panel information, overall view, and flow chart.

WARNING

Never work on, clean or service this unit, control panel or any machine or open or remove any protective cover, guard, grate, door, or maintenance panel until the power or energy sources has been turned off, locked out / tagged out, and all moving parts have come to a complete stop and or blocked to prevent movement. Machinery is dangerous - avoid personal injury and or death by following manufacture, Local, and OHSAs safety procedures. Contact Columbia Machine for safety decals, guards, horns and beacons.

QUICK REFERENCE GUIDE

MODEL 1224 BLOCK SPLITTERS STANDARD AND WITH ENCODER

Columbia Machine, Inc., a manufacturer of selected concrete products making equipment, have incorporated built-in factors in accordance with acceptable standards indicated by the Occupational Safety and Health Act (OSHA). Columbia complies in general to these standards, however, Columbia declines responsibility in every instance due to the fact that OSHA applies to location; use and operation conditions are interpreted by individual OSHA affiliated state agencies.

This document is intended to be a quick reference guide only. It is to be regarded as a supplement to, not a replacement for, the information contained in the specific instruction manuals for the equipment listed above. If you do not have the specific instruction manual for your Columbia equipment, please contact Columbia immediately. In addition, all affected operators and authorized maintenance personnel are required to totally familiarize themselves with the many cautions, warnings, guarding devices and other instructional decals, labels and located on the machine as well as related lockout-tagout procedures.

Columbia Machine, Inc.

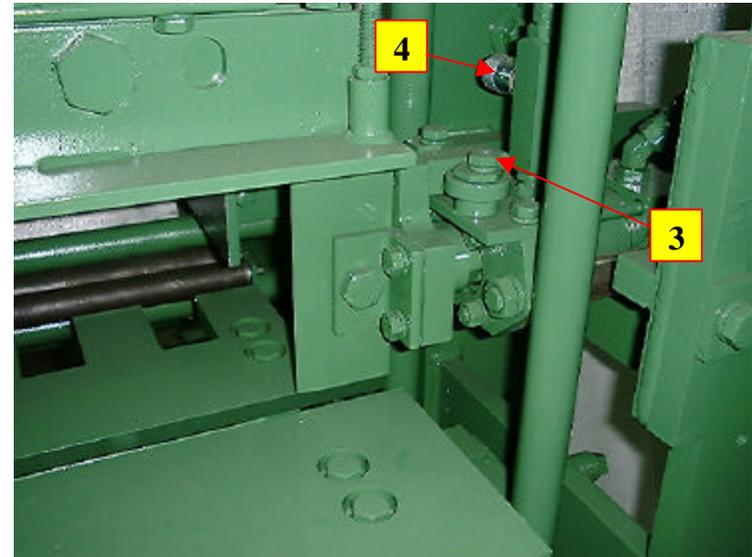
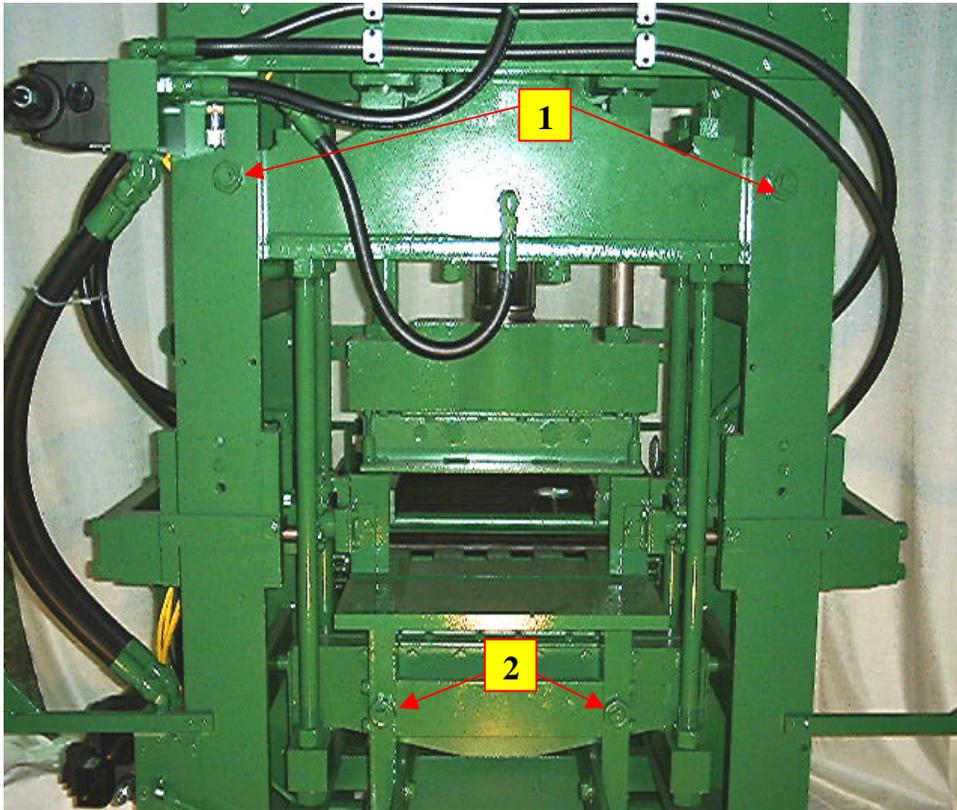
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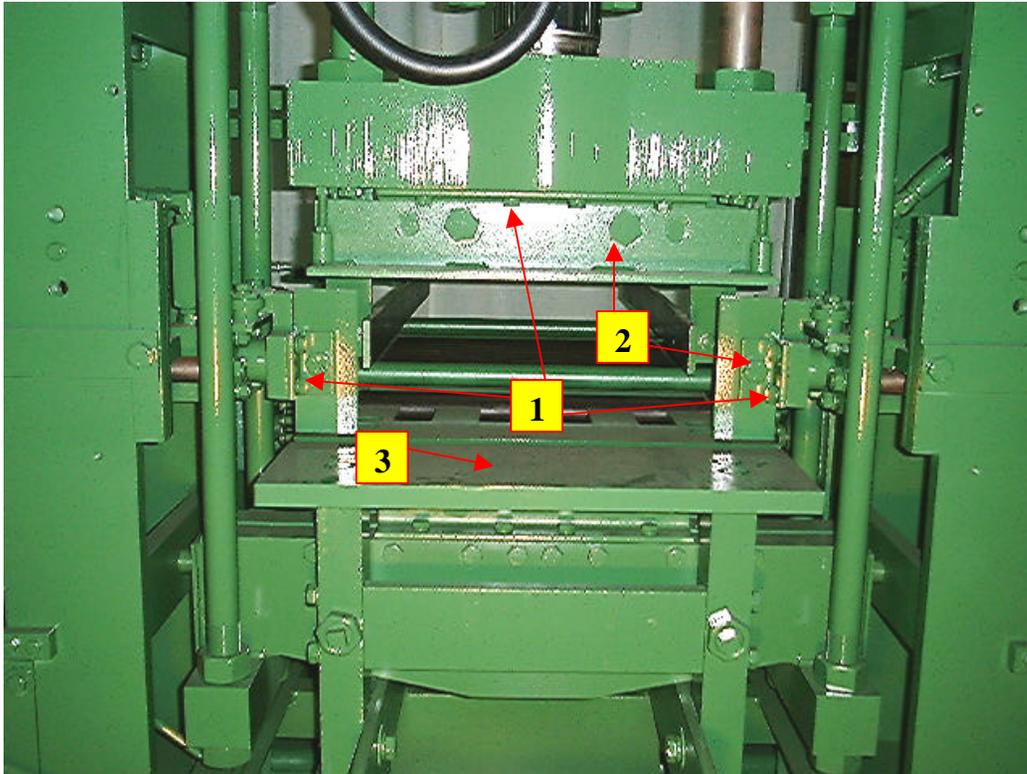
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Part # 388.2.1



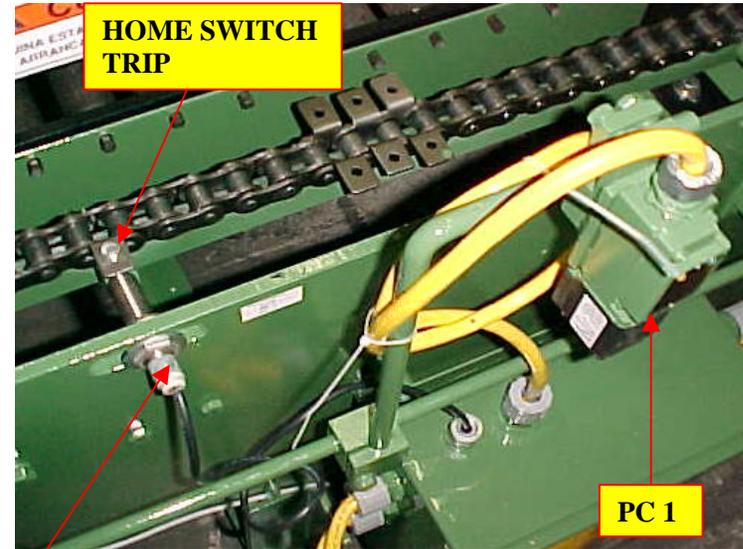
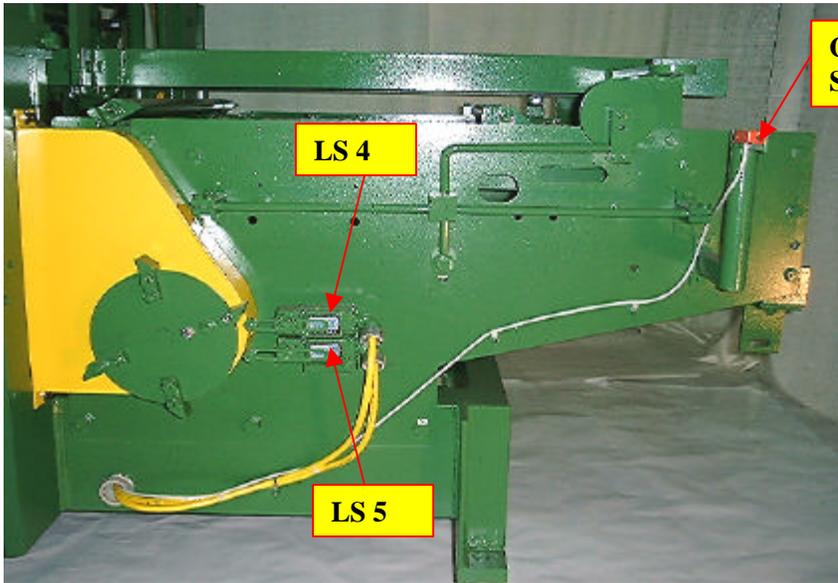
BLADE ALIGNMENT

1. The adjustment for the top blade alignment is located on the front, both sides, and rear of top beam.
2. The adjustment for the bottom blade alignment are also located on the front, both sides, and the rear of bottom beam.
3. Adjustment for the side blade alignment.
4. Flow control adjustment for side blades.



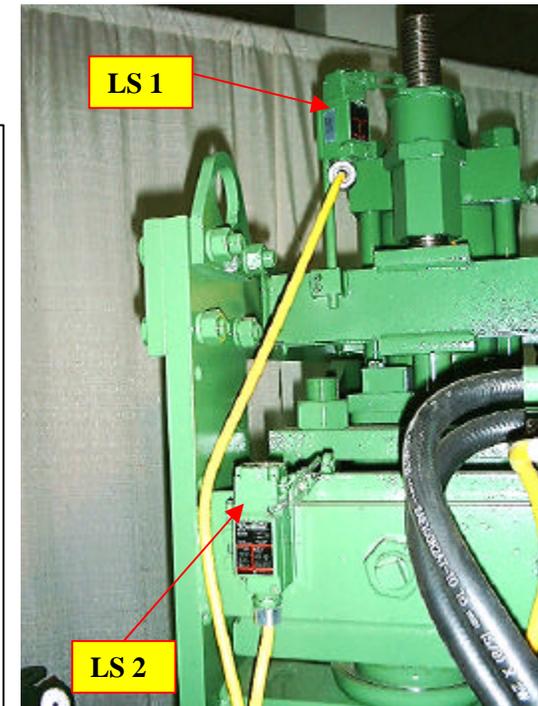
SPLITTER BLADE REMOVAL AND REPLACEMENT

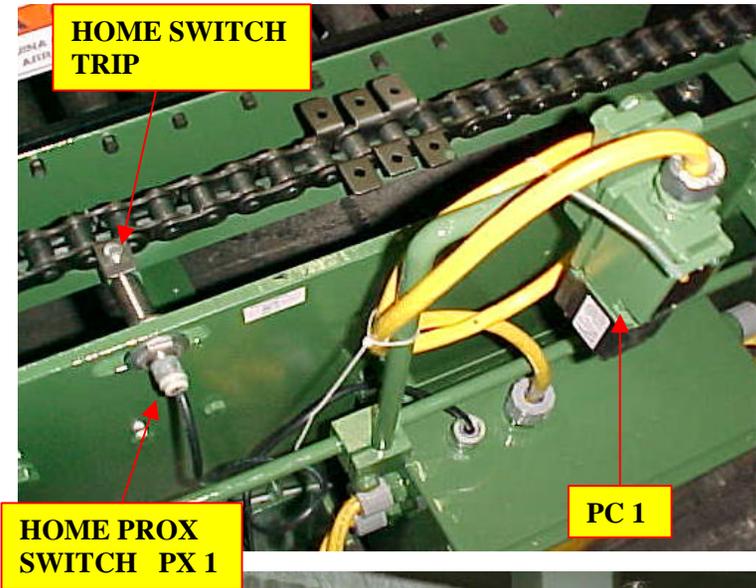
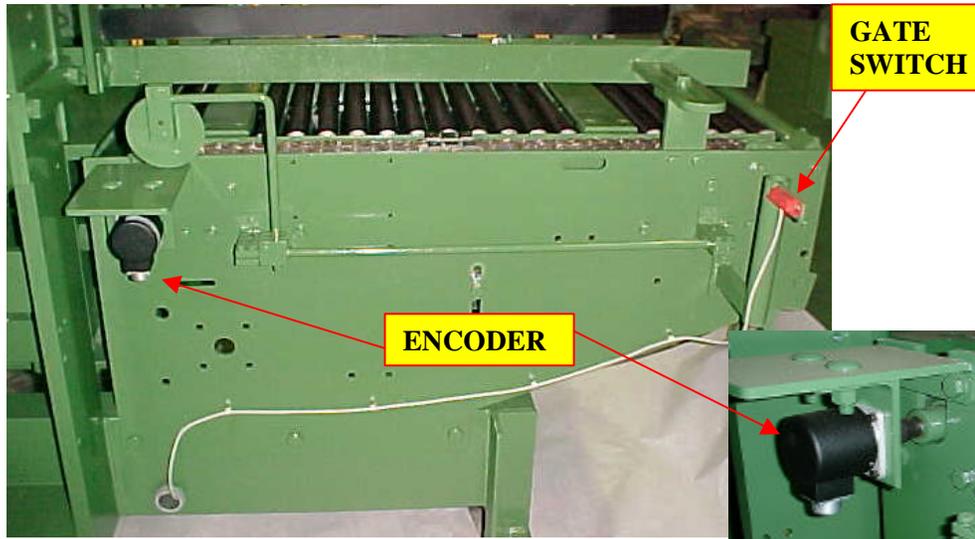
1. Loosen bolts in angle bracket.
2. Remove the large bolt and remove the blade. Place the large bolt through the mounting angles. Tighten the bolt, then loosen up $\frac{1}{2}$ of a turn for adjustment purposes. Tighten the smaller bolt in angle bracket first. When tightening the large bolts, don't over tighten the self-locking nut. The blade must be able to move to allow adjustment for uneven products.
3. To change the bottom blade, first remove the splitter table (item # 3) then follow instructions # 1 and # 2 above.



STANDARD SPLITTER

- PC 1** As product is fed to the splitter by the meter belt, the leading edge of product will block the light source PC 1. This stops the meter belt and reverses the belt for a time duration. The flight bar then starts forward and, after a time delay, the meter belt will start forward again.
- LS 5** The flight bar travels forward at fast speed until the switch trip on the timing cam activates LS 5, which causes the flight bar to move at slow speed.
- LS 4** When LS 4 is activated, the flight bar stops and reverses for a timed duration and the splitting cylinders are activated.
- LS 2** LS 2 is activated as the bottom beam rises to split the product.
- LS 1** LS 1 is activated as the top beam moves up. This signals the flight bar to start moving fast again until it repeats LS 5 and LS 4.
- PX 1** PX 1 is activated when the flight bar is in the home position and waiting for a signal that PC 1 is blocked and the meter belt has reversed.





ENCODER SPLITTER

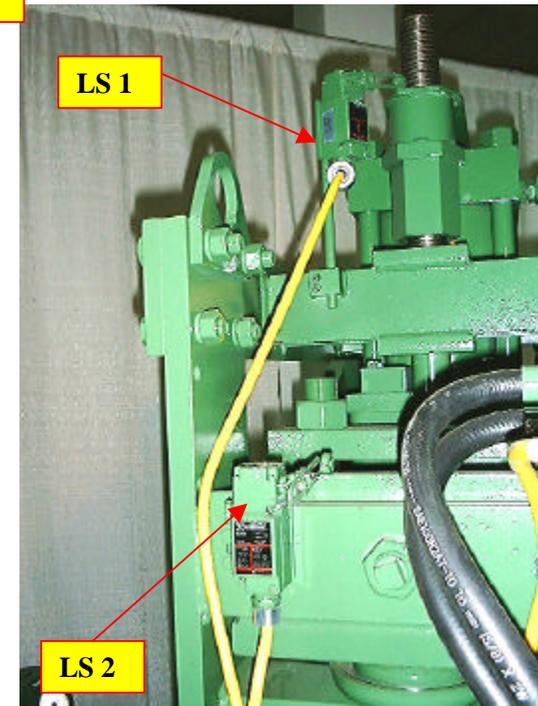
PC 1 As product is fed to the splitter by the meter belt, the leading edge of product will block the light source PC 1. This stops the meter belt and reverses the belt for a time duration. The flight bar then starts forward and, after a time delay, the meter belt will start forward again.

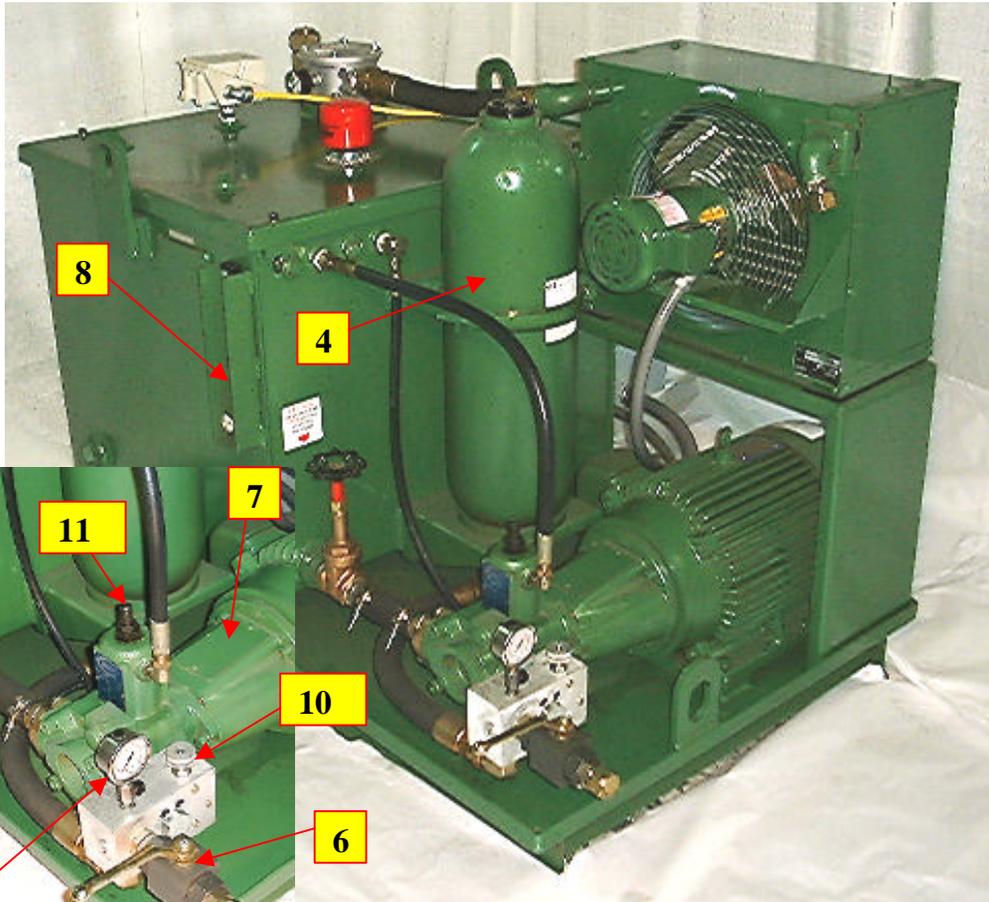
ENCODER The flight bar travels forward at slow speed until the flight bar has meet the block, then it will switch to fast speed until the encoder has reached slow down counts, then it will travel slow until the flight bar reaches the final number of counts at which time the flight bar stops and reverses for a timed duration and the splitting cylinders are activated.

LS 2 LS 2 is activated as the bottom beam rises to split the product.

LS 1 LS 1 is activated as the top beam moves up. This signals the flight bar to start moving fast again until it repeats LS 5 and LS 4.

PX 1 PX 1 is activated when the flight bar is in the home position and waiting for a signal that PC 1 is blocked and the meter belt has reversed.





1. Accumulator charging hose.
2. Accumulator charging access point. Remove the hex cap to reveal the schrader valve.
3. Schrader valve adapter chuck.
4. Accumulator should be set at 2/3 system pressure.
5. Suction line shut off valve.
6. Pressure line shut off valve.
7. Inspection cover plate.
8. Oil sight gauge and oil temperature gauge.

9. Pump pressure gauge.

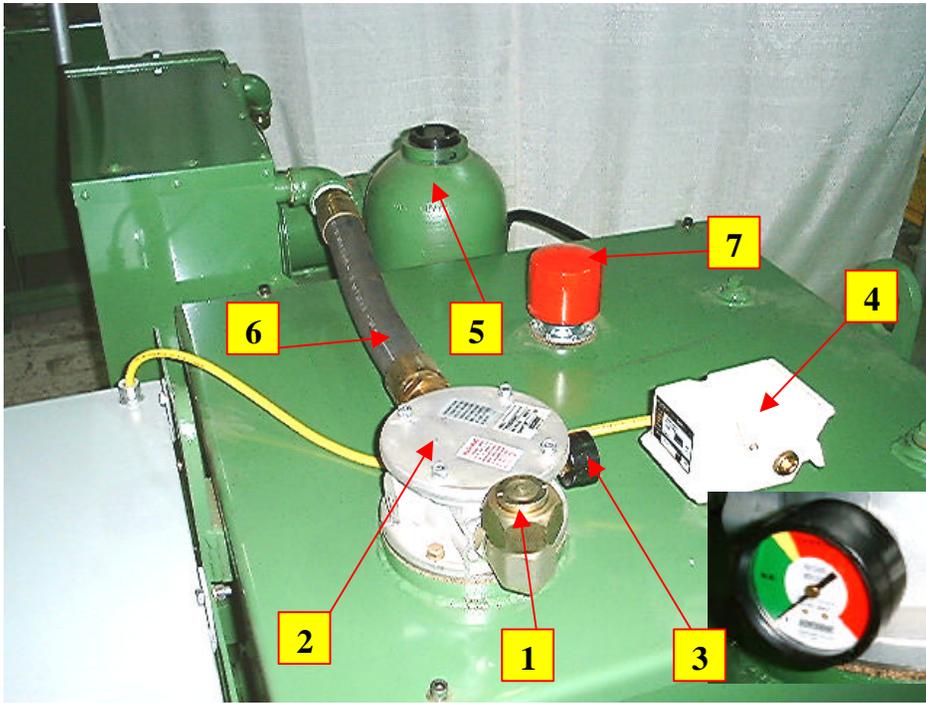
- Oil pressure should be set at 900 psi. A higher pressure can be set if needed, but the accumulator must be changed to accommodate the higher pressure.

10. Manual oil heater valve.

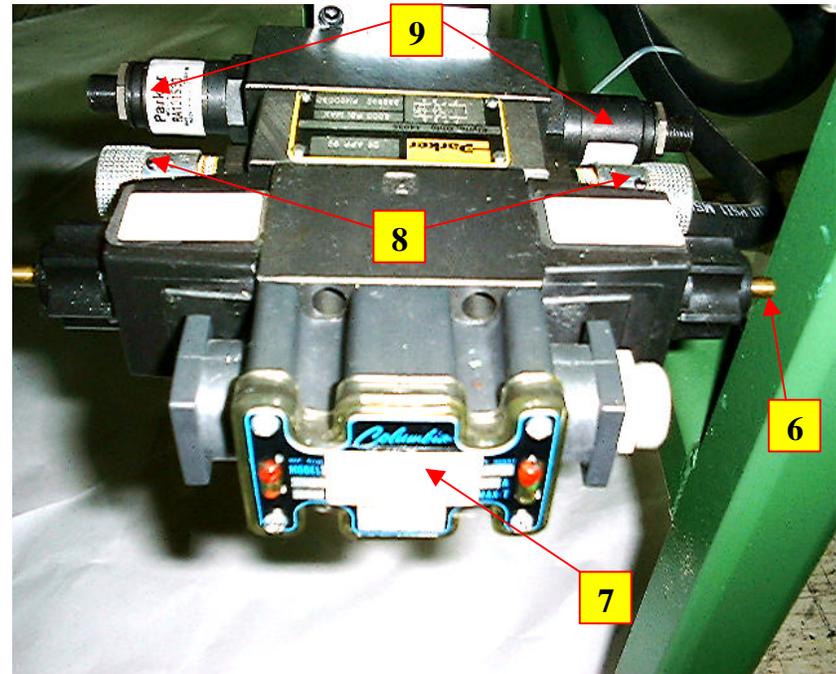
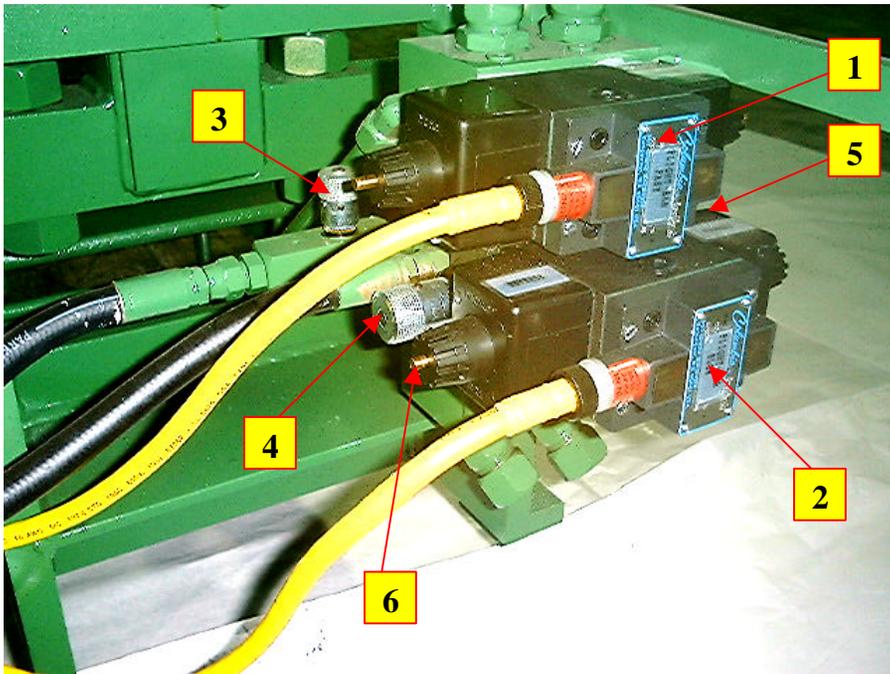
- When oil is cold, open valve and start the pump. When the oil reaches 90 – 100 degrees fahrenheit, turn heater valve off. Never run splitter in automatic or manual with valve open, as this will damage the pump.

11. Pump pressure adjustment.

- Loosen jam nut. Use an Allen wrench to turn adjusting bolt clockwise to increase pressure and counter – clockwise to decrease pressure.

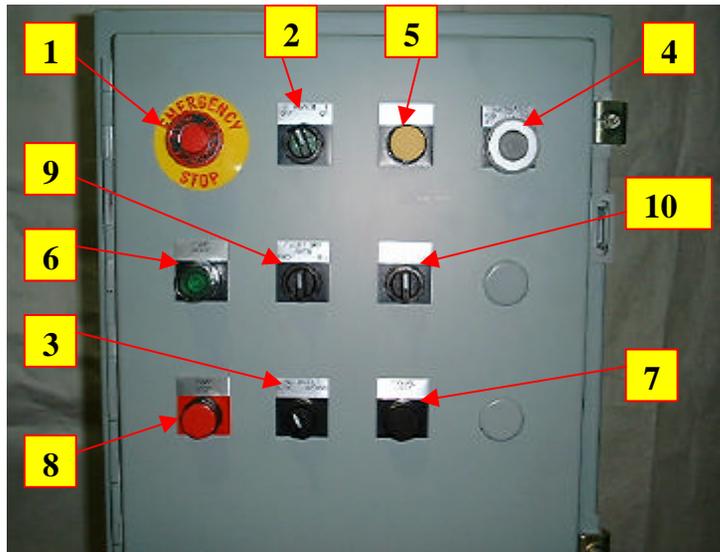


1. Oil tank filling port, this allows the oil to pass through filler before entering tank.
2. Return filter housing.
3. Return filter element sight gauge. monitor daily during operation. **Green indicates filter is OK. Yellow indicates filter is clogged and should be changed. Red indicates the filter has gone into bypass.**
4. Thermostat used to turn on heat exchanger, this can be set by removing the cover and set for desired temperature.
5. System accumulator. This should only be fill with nitrogen to approximately 2 / 3 system pressure.
6. Return line from system.
7. Tank breather filter.
8. Three phase lock out, used to lock out pump and heat exchanger.
9. Heat exchanger. Louvers should be in opened position at all times, this unit should be cleaned with compressed air once a year.
10. Fork lift lifting holes.



1. Flight bar fast valve.
2. Flight bar slow valve.
3. Flight bar fast forward speed flow control valve.
4. Flight bar slow reverse flow control valve.
5. Flight bar forward flow control valve.
6. Detent pin used for manually shifting valve.
7. Meter belt control valve.
8. Flow control valve, used for speed of forward and reversing meter belt.
9. Cross over relief used to take the shock out of the forward and reversing of the meter belt.

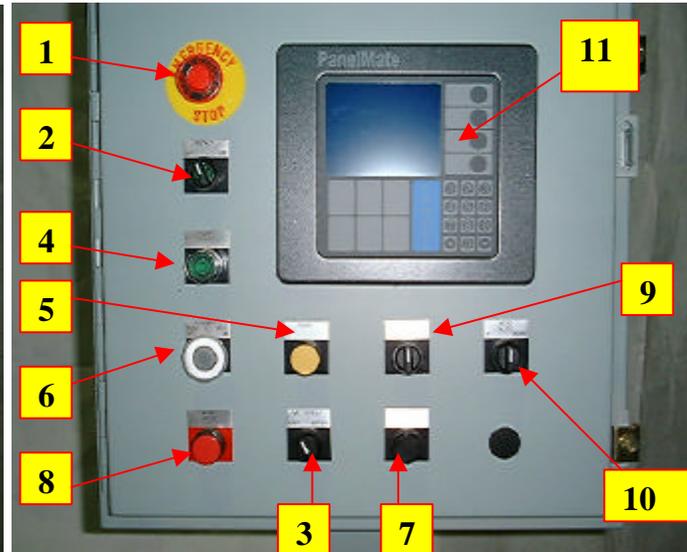
Standard panel



automatic splitter operation

1. Pull emergency stop out.
2. Turn power switch on.
3. Switch number 9, 10 need to be in auto position.
4. Turn meter belt to automatic.
5. Start pump.
6. Clear relays.
7. Pull automatic to "on" position.
For manual split. Push # 6 to "off" position.
Manually position product between splitter blades.
8. Push manual split button.
9. Stop pump.
10. Turn off power "2".

Encoder panel



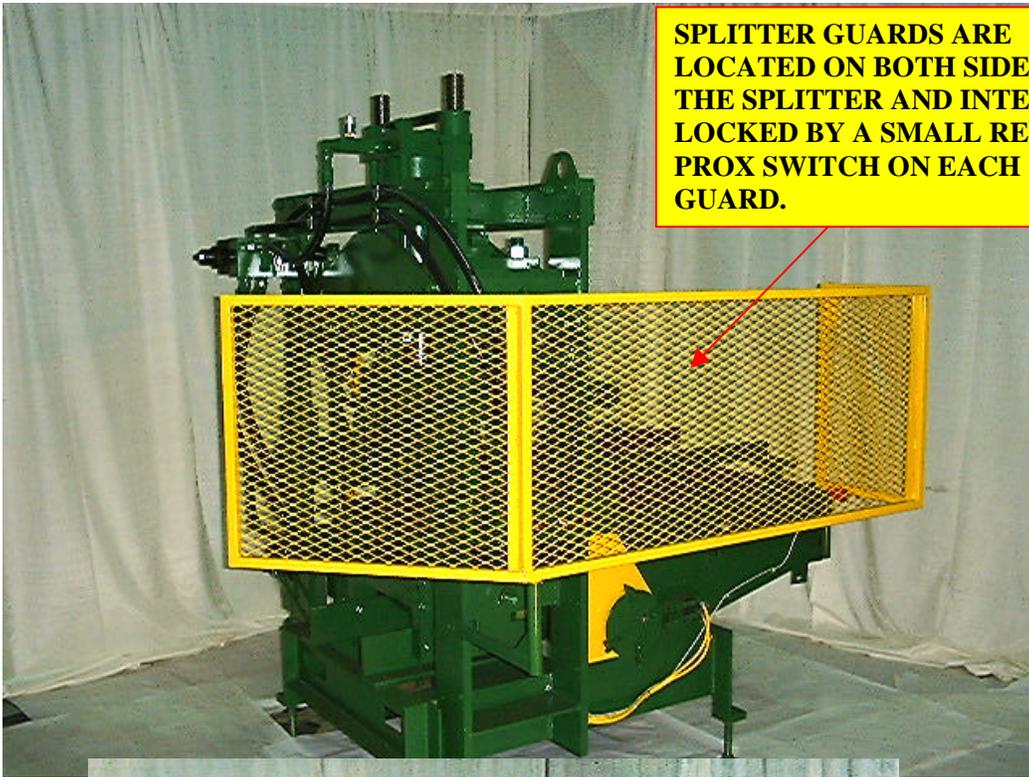
switch locations

1. Emergency stop.
2. Power switch.
3. Meter belt.
4. Pump start.
5. Clear relays.
6. Automatic.
7. Manual split.
8. Pump stop.
9. Flight bar forward, auto, reverse.
10. Head up, auto, down.
11. PanelMate.



Side View

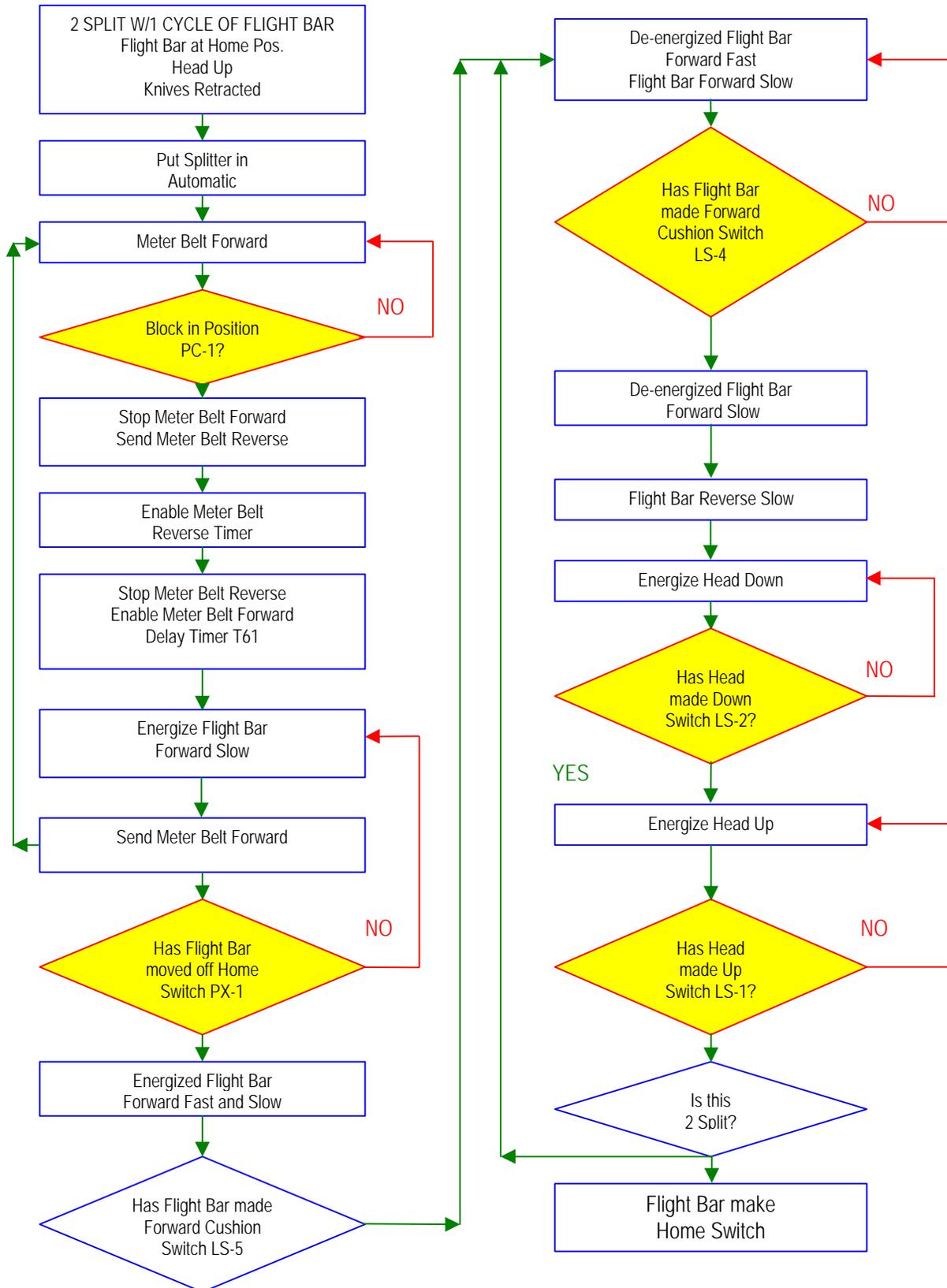
SPLITTER GUARDS ARE LOCATED ON BOTH SIDES OF THE SPLITTER AND INTER-LOCKED BY A SMALL RED PROX SWITCH ON EACH GUARD.



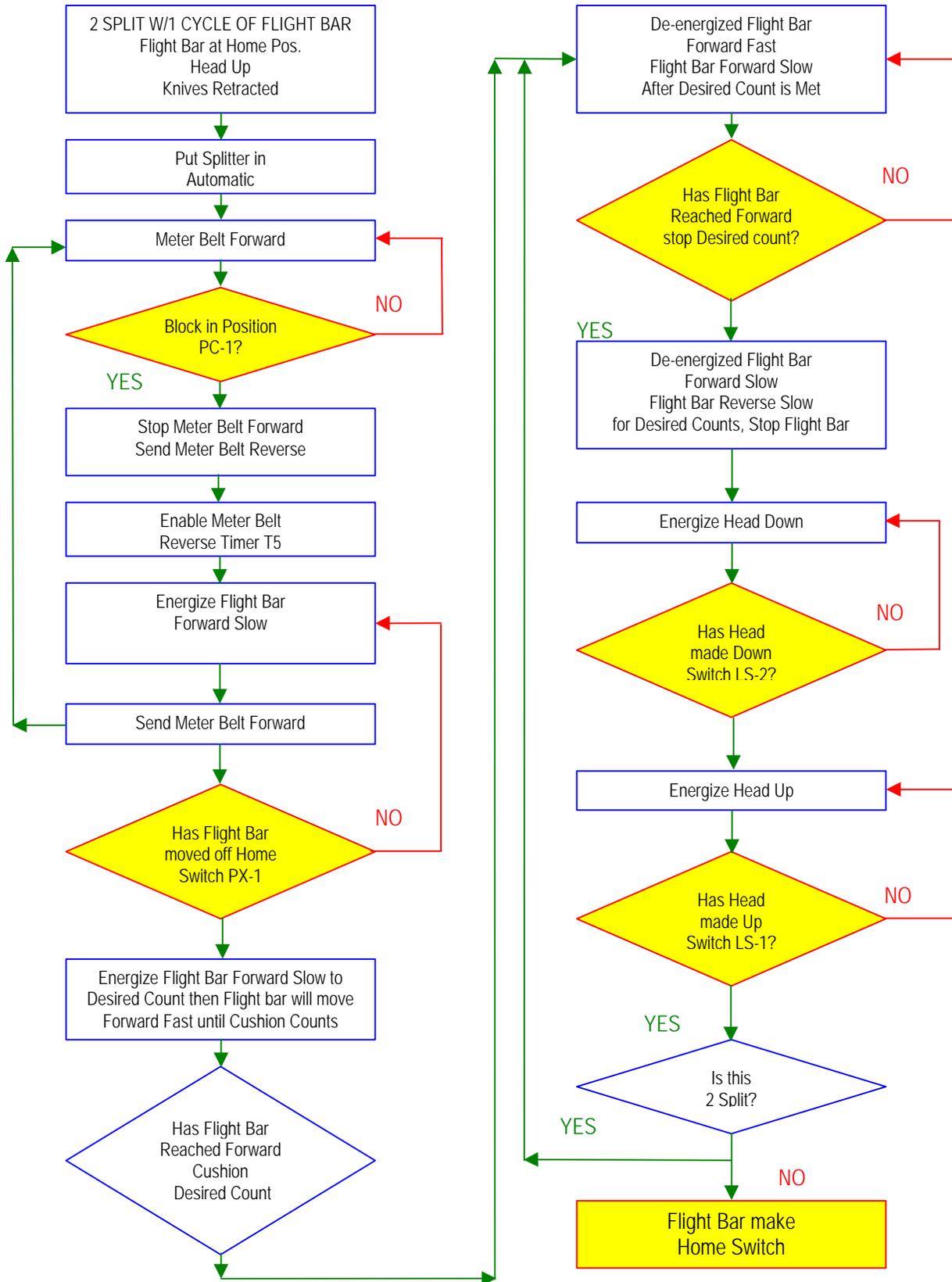
FORK LIFT HOLES

Front view

STANDARD SPLITTER



ENCODER SPLITTER





SPLITTER WITH ENCODER PRODUCT SETUP ENTRY PROCEDURE FOR PANELMATE 1000.

The 1224 splitter is designed to Split concrete blocks up to eight times. The 1224 splitter can store 50 product setups for the operator to choose from. The operator must enter each setup pattern. To enter a setup pattern the 1224 splitter **must be in the Manual mode of operation**. A pencil and paper is needed to record the information to be entered.

TO ENTER SETUP DATA

1. Turn the Power Switch ON.
2. Push the Auto Switch to turn the system into Manual Mode.
3. Start the hydraulic pump. Hydraulic pressure is needed to manually move the flight bar. Manually move the Flight Bar from Home Position forward until it touches the product placed on the Roller Deck by the Meter Belt (or pusher). Then read the count from CURRENT FB POS. This is located on the Panelmate screen "page 0", see figure 1. This is the FB AT FAST POS. Record the count on a sheet paper.

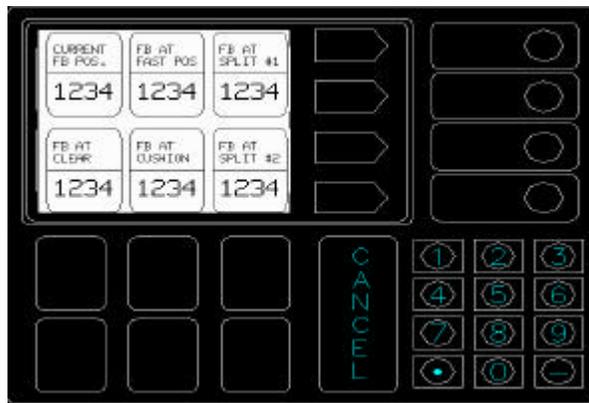


Figure 1

4. After recording the count for Flight Bar Fast position, continue to move the Flight Bar to a position which will be clear for the Meter Belt (or Pushoff) to push the next product onto the rollers. Then read the count from CURRENT FB POS. On page 0 of the Panelmate. Record this count as FB CLEAR PUSH on paper.

CAUTION: The operator must ensure that the flight bar is forward enough such that any product that is pushed or conveyed onto the roller deck of the splitter will not come into contact with the flight bar. Failure to do this can result in damage to the splitter flight bar and/or product.



5. Move Flight Bar to a position about 2 or 3 inches before the product reaches the First Splitting Position. Then from CURRENT FB POS. On page 0 of the Panelmate, record this count as CUSHION COUNT.
6. Move Flight Bar so that the product reaches the First Splitting Position. Then from CURRENT FB POS> on page 0 of the Panelmate, record this count as FB AT SPLIT #1.
7. Subtract CUSHION COUNT from FB AT SPLIT #1, then record the results as FB AT CUSHION.
8. Go to page 3 on the Panelmate and select PRODUCT SETUP ENTRY Control Button.

NOTE: once the operator starts to enter the data into the system the operator must not change Panelmate screens until the setup is saved. If the operator changes screens before the data is saved then all data entered will be lost.

Use the Scroll Down button to highlight the SETUP NUMBER and press the Select Entry button. Then enter the SETUP# to store data to and press the Select Entry again to save the data, see figure 2.

NOTE: The data being entered will appear in the "NEW" column.

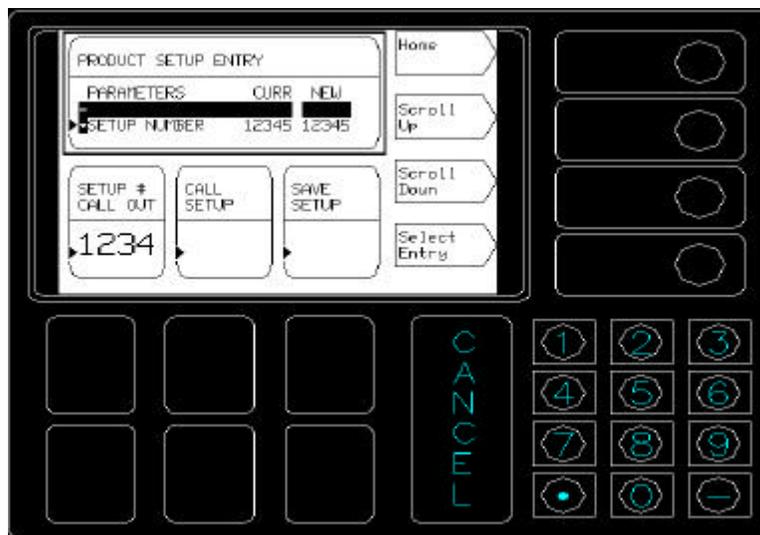


Figure 2

9. Scroll down to the NUMBER OF SPLIT. Press the Enter button and enter the number of split required. Press the Select Entry button and then the Return & Select button to save the data.



10. Scroll down to FB AT FAST POS. Press the Select Entry button and enter the number recorded for the flight bar at fast position. Press the Select Entry button and then the Return & Select button to save the data.
11. Scroll down to FB CLEAR PUSH. . Press the Select Entry button and enter the number recorded for the flight bar clear position. Press the Select Entry button and then the Return & Select button to save the data.
12. Scroll down to FB AT CUSHION. Press the Select Entry button and enter the number *calculated* for the flight bar at cushion position. Press the Select Entry button and then the Return & Select button to save the data.

Warning: The operator must ensure that the flight bar at cushion position is not too close to the splitter head to ensure that the flight bar can stop in position. Failure to do this can result in damage to the product.

13. Scroll down to FB AT SPLIT #1 and press the Select Entry button. Enter the recorded flight bar position for split 1 and press the Select Entry button and then the Return & Select button to save the data. Repeat for splitting positions 2 through 8. If these splitting positions are not being used then enter zeros.
14. Scroll down to CUSH BEFORE HOME and press the Select Entry button. Enter the recorded flight bar position for cushion to home position and press the Select Entry button and then the Return & Select button to save the data.
15. Use the Scroll Up button to check that all entry data is correct.
16. Press the SAVE SETUP button and then press Save Setup.
17. Press CALL SETUP button and then press CALL SAVE.
18. Repeat this process for all other Setup.

TO CALL OUT A PRODUCT SETUP TO USE

1. Press SETUP TO CALL OUT button and enter the Setup number to use.
2. Press the CALL SETUP button, and then press Call Setup.