



Published Document Number: BIIFSP01

- Specified Date: 20031023
- As-of Date: 20031023
- Access Date: 20031023

- Applicability: 42032F7R 42032F7S
- Language Code: ENG01, Purpose: publication, Format: 1colA

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Instructions for Retrofit Kit KMWRACLR01- Speed Limiting for 4232 F7S/R Staph-Guard Washer-Extractors

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1. What the Accelerometer and Balance Board Does

As the machine accelerates to extract speed the balance board monitors accelerometer amplitude inputs and photo-eye timing inputs to detect the rapid excursions which occur when a machine is out of balance. If the balance board determines that inputs exceed the predetermined limits, the board signals the microprocessor to limit machine speed. For additional information see “BICWPF02...Speed Limiting on 42032 F7S and 36030 F8S Open-pocket Staph-Guard®Models,” in the reference manual. These instructions explain how to install the accelerometer and balance board then complete the required electrical connections.

2. Preparations

This retrofit kit contains one electronic balance board and plastic shield, one accelerometer, one 15' length of shielded, four connector wiring harness, three pre-wired and stamped MTA connectors, along with three MTA pins, an empty four pin MTA connector and mounting hardware for the accelerometer and balance board.

Technicians installing this kit must be able to read Milnor wiring diagrams, thread a harness through conduit, and make electrical connections.

3. Procedure

This retrofit kit requires personnel to work inside electric boxes of both high and low voltage. Make machine safe for personnel prior to starting procedure.



WARNING 1: Electrocution and Electrical Burn Hazards—Contact with high voltage will electrocute or burn you. Power switches on the machine and the control box do not eliminate these hazards. High voltage is present at the machine unless the main machine power disconnect is off.

- Lock out and tag out power at the main machine disconnect before servicing, or in accordance with factory service procedures.
- Do not service machine unless qualified and authorized.

1. **Lock out and tag out power** at the wall disconnect box.
2. Verify that the software chips in the balance and processor board are the latest versions (Table 1). See “BICWPF02...Speed Limiting on 42032 F7S and 36030 F8S Open-pocket Staph-Guard™ Models,” for software chip locations and troubleshooting information.

Table 1: Required software versions

Machine Model Number	Microprocessor Software	Balancing Board Software
36030F8S	WUF8WE2000H	WUBAL7/20002
36030F8R		
42032F7S	WUF8WE2000H	WUBAL6/20001
42032F7R		

Figure 1: Accelerometer Installation, 42032F7

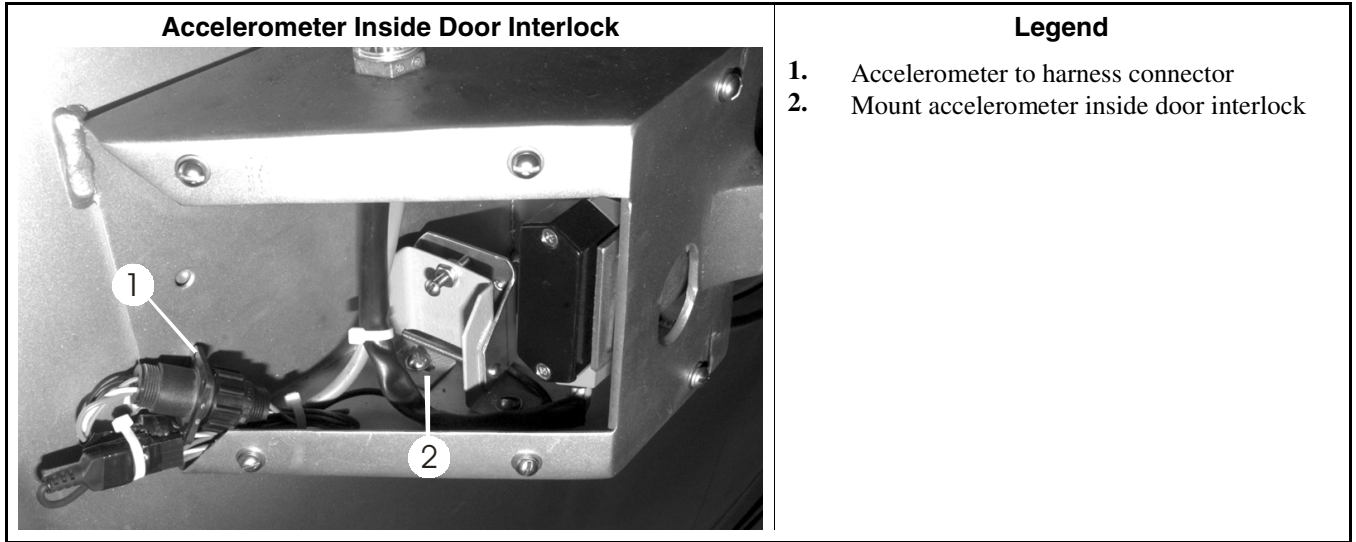


Figure 2: Rear Electric Box Connections

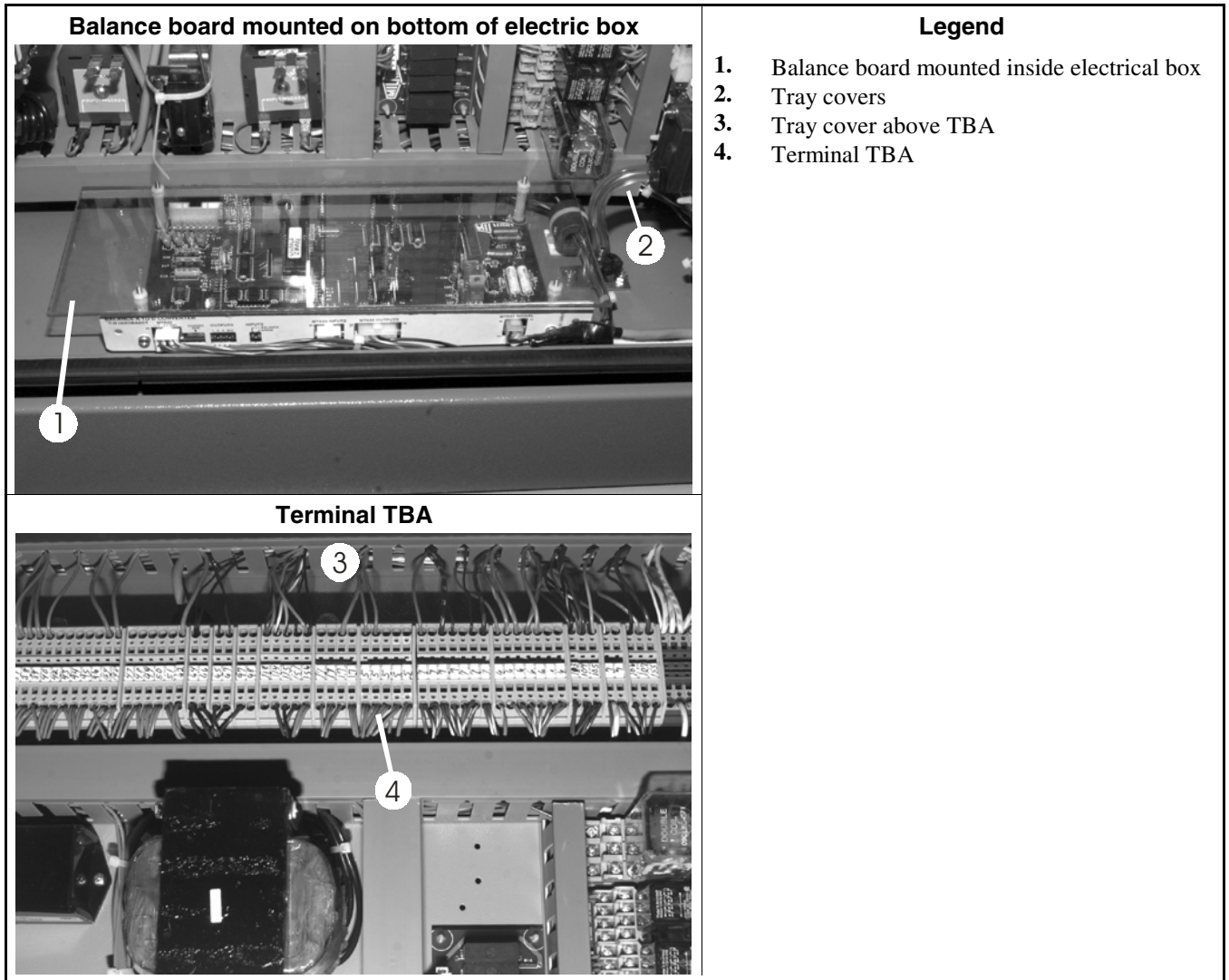
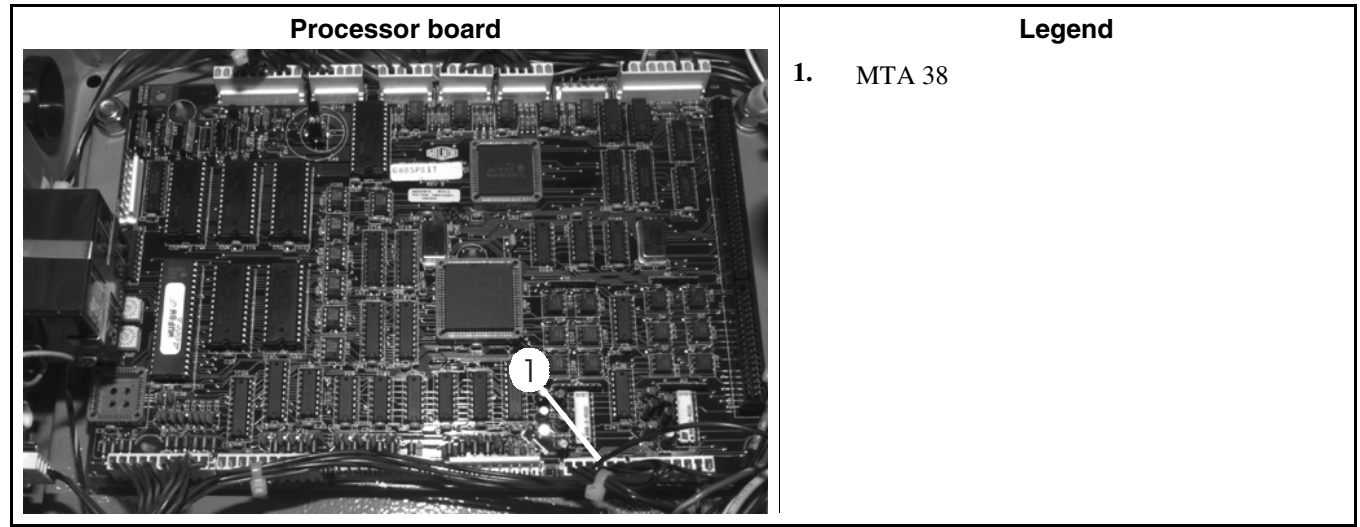


Figure 3: Processor Board Electric Box



3. Remove the door interlock cover.



CAUTION [2]: Machine Damage Hazards—Dropping, striking or bumping accelerometer will destroy it.

- Handle and install accelerometer with great care.

4. Position the accelerometer inside of the door interlock housing so that the face is pointed towards the door glass and is square to the shell front (Figure 1).
5. Using the accelerometer bracket as a template, mark and drill two 13/64" holes. Mount accelerometer using 10 - 24 machine screws, washers and nyloc nuts.
6. Locate the 15' length of shielded four connector wiring harness. This harness has a pre-wired round connector at one end.
7. Connect the pre-wired connector on the wiring harness to the accelerometer wire connector.
8. Open the rear electric box door.
9. Thread the wiring harness through the existing conduit that runs from the door to the rear electric box.

Tip: Removing the wires from the door interlock switch, then removing the door mounted conduit makes it easier to thread harness through the conduit to rear of machine.

10. Reinstall door conduit and reconnect the door interlock switch wires if removed in previous step. Leave the door interlock cover off.
11. Using board as a template, mark and drill four 5/32" holes through bottom of electrical box. Mount balance board on the box floor using 6/32 machine screws (Figure 2). Use standoffs between the box floor and board. Also install standoffs between the board and the plastic shield. Vacuum up metal shavings from bottom of box.
12. Locate and separate the pre-wired MTA connectors referred to below. These MTA connectors provide voltage and signals from the TBA power strip to the MTA connectors on the balance board. Wire colors associated with these connectors are described with the wire color first, followed by the wire stripe color, therefore, a blue/white wire is blue with a white stripe. Install the MTA connectors as follows:

Note 1: Some small connectors may not have sufficient room on them for the full MTA connector and wire designation. In these cases, the designation may appear in a shortened form. For example, a connector called MTA 82 may have M 82 written (or stamped) on the connector.

- a. Plug MTA 82 into the MTA 82 connector on the balance board, remove the wire tray covers, then connect the four individual wires from the connector to the TBA terminal strip as follows:
 - Connect the blue/white wire from MTA 82 - pin 4 to TBA #7 (ground).
 - Connect the blue/red wire from MTA 82 - pin 3 to TBA #103 (+5 V).
 - Connect the blue/orange wire from MTA 82 - pin 6 to TBA #104 (+12 V).
 - Connect the blue/black wire from MTA 82 - pin 5 to TBA #105 (-12 V).
 - b. Plug MTA 84 into the MTA 84 connector on the balance board. This connector has only one blue/black wire. Connect this wire from MTA 84 - pin 4 to TBA #64.
 - c. Plug MTA 85 into the MTA 85 connector on the balance board, then connect the two wires from this connector to the TBA terminal strip as follows:
 - Connect the blue/black wire from MTA 85 - pin 8 to TBA #115.
 - Connect the blue/white wire from MTA 85 - pin 9 to TBA #7.
13. Locate the harness from the accelerometer threaded through conduit to the rear electric box in step 8. Connect this harness to the four pin MTA 83 plug as follows:
- Note 2:** Extra pins are included in case any of the pins on the accelerometer cable are damaged during the threading process.
14. Find the four pin connector labeled MTA 83.
 15. Push each pin into the connector as follows:
 - White wire to MTA 83 - pin 1.
 - Red wire to MTA 83 - pin 2.
 - Black wire to MTA 83 - pin 4.
 - Attach the shielding wire to a machine ground.
 16. Plug the MTA 83 connector into the matching MTA 83 connector on the balance board.
 17. Remove the tray cover from the wire tray above TBA.
 18. Locate the orange/black wire that is taped together with several other spare wires.
 19. Separate this wire from the other spare wires and connect to TBA #115.
 20. Route all loose wires through the nearest wire tray and reinstall the tray covers.
 21. Close rear electric box door.
 22. Open processor box door and locate the orange/black wire that is also taped together with several other spare wires.
 23. Find the orange wire shipped with the kit. This wire has a butt splice connector on one end and a processor pin on the other.
 24. Splice this orange wire to the end of the orange/black wire located in the processor box.
 25. Disconnect the MTA 38 connector from the processor board.
 26. Push the pin on the orange wire through the MTA 38 connector at pin 4.
 27. Reinstall MTA 38 connector on the processor board and close the processor box door.
 28. Restore power to machine.
 29. Set VOM meter to the 0-5 VDC scale (or the closest range on your meter).
 30. Slide meter leads into contact with the black wire pin and the red wire pin at the accelerometer connector.
 31. Verify that voltage is 2.5 VDC. Adjust voltage by turning the screw at the back of the accelerometer.

32. Install door interlock cover.

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