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TECHNICAL SERVICE BULLETIN

Number: TSB-FC-2014-027

Symptom: Unable to set ECOFLEX Detergent Ratio on Condor

Date: 9/15/2014

Urgency: General

Author: Matt Herr

Urgency:

☐ **HIGH:** Rework needs to be done immediately	☐ **MEDIUM:** Rework needs to be done by next possible occasion	☐ **LOW:** Rework to be done if necessary	☒ **GENERAL:** General information

SYMPTOM:

On some Condor models shipped after November 2013, users are unable to set the detergent ratios using instructions from the included operators manual

PRODUCTS:

Condor with ECOFLEX

SYSTEM:

Control System

ISSUE:

A feature update to the control board has increased the detergent ratio setting selections, but the instructions in the current operators manual do not work for selecting the desired ECOFLEX detergent ratios

CAUSE:

An updated manual was not available, users unsuccessfully trying to set detergent ratio using the old method and incorrectly believed board was defective.

ECO / ODM #:

A-09698

PRODUCTION CORRECTIVE ACTIONS:

Condors with enhanced ECOFLEX ratio settings have been implemented. An updated user manual with the new ECOFLEX detergent ratio selection instructions will be shipped with new machines in the near future.

PRODUCTION SOLUTION IMPLEMENTATION DATE and / or SERIAL NUMBER:

First production machine with new version of the operators manual as Standard equipment:

Implementation Shipping Date: **TBD, Please use attached instructions in the interim**

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FIELD CORRECTIVE ACTIONS:

Operators should reference updated instructions in new operators manual or directions listed in this TSB if they experience issues setting detergent ratios on new Condor Scrubbers. Also, when replacing failed control boards with new board that has “REV E.” listed on the labeling they should use the updated settings.

COMPONENT LOCATIONS / PICTURES:

REV E Serial Number Tag On Control

REV E Serial Number Tag On Control

DETERGENT SYSTEM PREPARATION AND USE (ECOFLEX MODELS ONLY)

The Detergent Cartridge **(29)** is located behind the Side Access Panel **(27)**. Fill the detergent cartridge with a maximum of 2.2 gallons (8.32 Liters) of detergent.
SERVICE NOTE: Remove the detergent cartridge from the detergent box prior to filling to avoid spilling detergent on the machine.
It is recommended that a separate cartridge be used for each detergent you plan to use. The detergent cartridges have a white decal on them so you can write the detergent name on each cartridge to avoid mixing them up. The system should be purged of previous detergent when switching to a different detergent. When installing a new cartridge, remove the Cap **(AA)** and place the cartridge in the detergent box. Install the Dry Break Cap **(BB)** and detergent hose as shown.
The system should be purged of previous detergent when switching to a different detergent. **SERVICE NOTE:** Move machine over floor drain before purging because a small amount of detergent will be dispensed in the process.

To Purge When Changing Detergents (SCRUB AND SOLUTION SYSTEMS MUST BE OFF):

1 Disconnect and remove the detergent cartridge.
2 Turn the Key Switch **(A)** ON. Press and hold the Solution Switch **(F)** and the Detergent Switch **(J)** down for 3 seconds. Release the switches when the detergent purge icon **(K10)** appears on the display and the Detergent Switch Indicator **(J1)** starts flashing. **NOTE:** Once activated the purge process takes 10 seconds. See illustration on next page for Detergent System indicators. Normally one purge cycle is adequate to purge the system.

To Purge Weekly (SCRUB AND SOLUTION SYSTEMS MUST BE OFF):

1 Disconnect and remove the detergent cartridge. Install and connect a Cartridge filled with clean water.
2 Turn the Key Switch **(A)** ON. Press and hold Solution Switch **(F)** and the Detergent Switch **(J)** down for 3 seconds. Release the switches when the detergent purge icon **(K10)** appears on the display and the Detergent Indicator **(J1)** starts flashing. **NOTE:** Once activated the purge process takes 10 seconds. See illustration on next page for Detergent System indicators. Normally one purge cycle is adequate to purge the system.

When the detergent level is nearing the bottom of the cartridge it is time to refill or replace the cartridge.
SERVICE NOTE: Follow the "To Purge Weekly" instructions above if the machine is going to be stored for an extended period of time or if you plan to discontinue use of the detergent system.

Detergent Ratio (<u>SCRUB SYSTEM MUST BE ON</u>):

No detergent is dispensed until the scrub and detergent systems are enabled and the Drive Pedal **(8)** pushed forward.

- The detergent icon **(K4)** will always be displayed when the detergent system is on.

There are 4 modes of EcoFlex operation:

1. *Plain Water Cleaning Mode* - During scrubbing, the detergent system can be turned off at any time by pressing the Detergent ON/OFF Switch **(J)** to allow scrubbing with water only. Detergent Indicator **(J1)** will be OFF.
2. *Minimum Concentration Detergent Mode* – Burst of Power Indicator **(G1)** ON (Activated by momentarily pressing Burst of Power Switch **(G)** when in maximum concentration detergent mode). See below the steps "To program the Minimum Detergent Level".
3. *Maximum Concentration Detergent Mode* – Burst of Power Indicator **(G1)** OFF (Activated by pressing and holding Burst of Power Switch **(G)** for 2 seconds). See below the steps "To program the Maximum Detergent Level". Do not use a concentration level exceeding the detergent manufacturer's recommendation.
4. *Burst of Power Cleaning Mode* – Press the Burst of Power Switch **(G)** to increase the detergent ratio for one minute to the pre-programmed "maximum concentration" detergent level (as noted in programming instructions below). This will also cause the solution flow rate to increase to the next level and the scrub pressure to increase to the next level. Burst of Power Indicator **(G1)** will blink for one minute.

To program the Maximum Concentration Detergent Level

1. Press the OneTouch™ Scrub switch **(D)** to activate the scrub system.
2. Press and hold the Burst of Power Switch **(G)** for approximately 2 seconds until the indicator **(G1)** is OFF (maximum concentration detergent mode).
3. Press and hold the detergent switch for approximately 2 seconds until the indicator **(J1)** flashes.
4. While the indicator is flashing, pressing and releasing the detergent switch will cycle through the available ratios (400:1, 300:1, 256:1, 200:1, 150:1, 128:1, 100:1, 64:1, 50:1, 32:1).
5. Once the desired ratio is displayed on the screen **(K9)**, stop and it will save the setting after 3 seconds.
6. Whenever the maximum concentration detergent setting is set to a lower concentration than the current minimum programmed concentration setting, the minimum concentration default setting will be equal to the maximum concentration setting until changed by the operator.

To program the Minimum Concentration Detergent Level

1. Press the OneTouch™ Scrub switch **(D)** to activate the scrub system.
2. Ensure the Burst of Power Indicator **(G1)** is ON (minimum concentration detergent mode).
3. Press and hold the detergent switch for approximately 2 seconds until the indicator **(J1)** flashes.
4. While the indicator is flashing, pressing and releasing the detergent switch will cycle through the available ratios (Note: only ratios that are a lower concentration or equal to the maximum detergent setting will be available.
5. Once the desired ratio is displayed on the screen **(K9)**, stop and it will save the setting after 3 seconds.

Once set, the detergent flow rate automatically increases and decreases with the solution flow rate, but the detergent ratio remains the same.

DETERGENT SYSTEM PREPARATION AND USE (ECOFLEX MODELS ONLY)

FIGURE 6

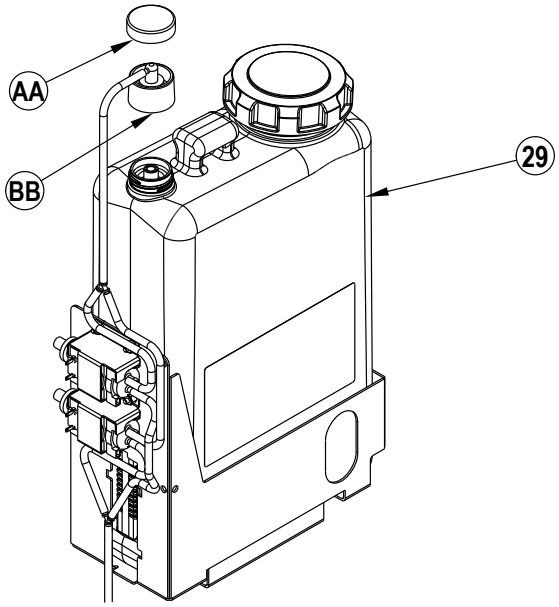
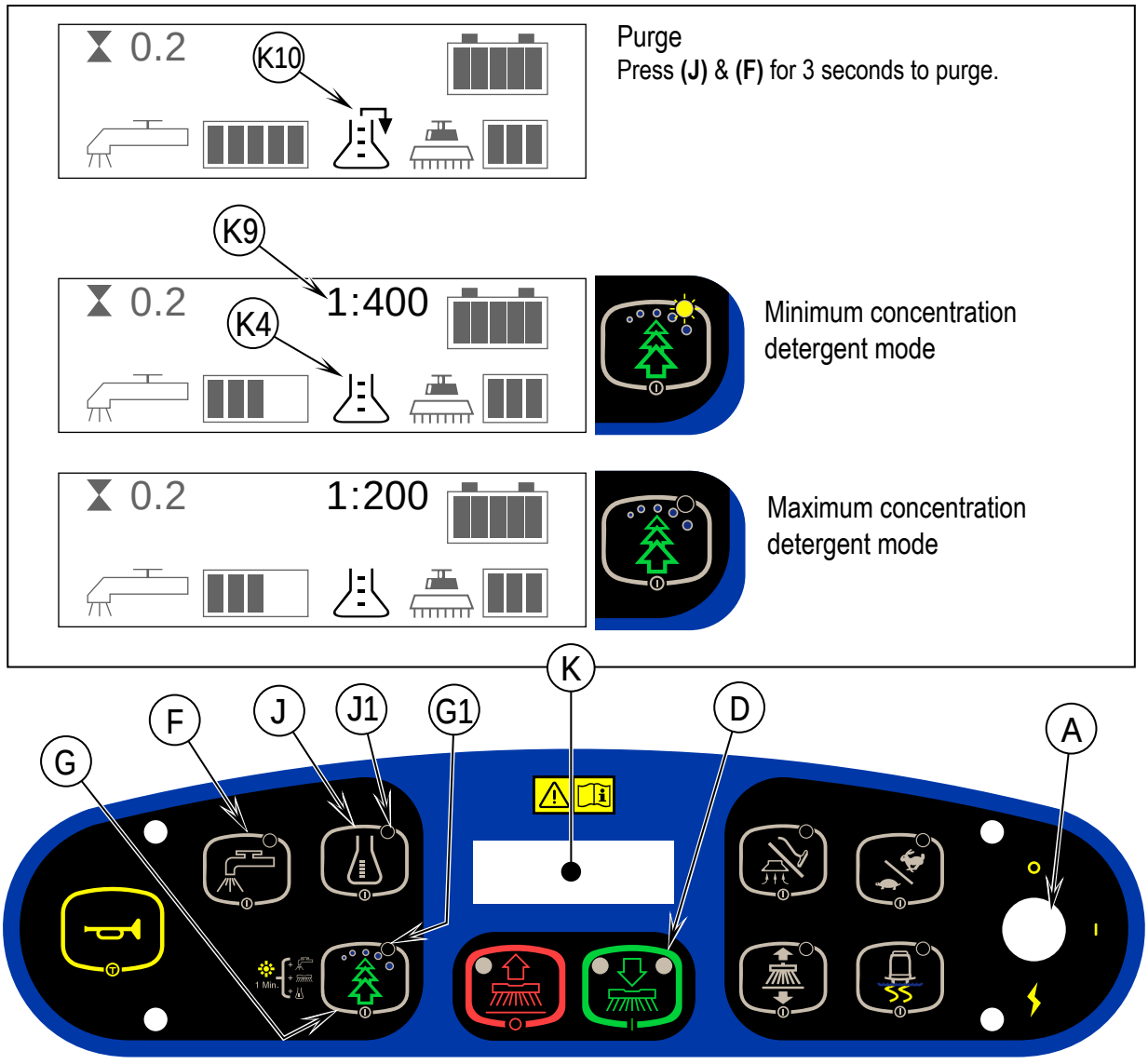


FIGURE 7



OPERATING THE MACHINE

⚠ WARNING!

Be sure you understand the operator controls and their functions.

While on ramps or inclines, avoid sudden stops when loaded. Avoid abrupt sharp turns. Use low speed down hills.

To Scrub...

Follow the instructions in "preparing the machine for use" section of this manual.

1 **See Figure 8.** While seated on the machine, adjust the seat and steering wheel to a comfortable operating position using the adjustment controls **(23)** and **(5)**.

2 Turn the Master Key Switch **(A)** ON (I). This will display the control panel indicator lights. Reference the Battery Condition Indicator **(K5)** and Hour Meter **(K3)** before proceeding.

3 Release the Parking Brake **(6)**. To transport the machine to the work area, apply even pressure with your foot on the front of the Drive Pedal **(8)** to go forward or the rear of the pedal for reverse. Vary the pressure on the foot pedal to obtain the desired speed.

4 Press the Solution Switch **(F)** and hold for 5 seconds to pre-wet the floor. **NOTE:** This will help prevent scarring of the floor surface when starting to scrub with dry brushes. This must be done prior to pressing the Scrub ON Switch **(D)**.

5 Press the Scrub ON Switch **(D)** once for Regular Scrub, twice for Heavy Scrub or three times for Extreme Scrub mode. Both the solution flow and detergent (EcoFlex models) flow have 3 presets that coincide with the 3 scrub modes (see Control Panel).
NOTE: There is a solution flow rate override function if you wish to increase solution flow without increasing scrub pressure. Hold the Solution Switch **(F)** for 3 seconds (solution indicator will start flashing) and then let go. You then have 3 seconds to set a different flow rate by simply pressing the Solution Switch **(F)** repeatedly until the Solution Flow Indicator **(K1)** shows the rate you desire (1-5 / see Control Panel). Any subsequent scrub pressure adjustments will reset the solution flow rate to default.

6 When the Scrub ON Switch **(D)** is selected, the brushes, squeegee and side brooms (cylindrical models) are automatically lowered to the floor. The scrub, solution, vacuum, detergent (EcoFlex models) and side brooms (cylindrical models) systems are all automatically enabled and will start when the Drive Pedal **(8)** is activated. Any individual system can be turned OFF or back ON by simply pressing its switch at any time during scrubbing.
NOTE: When operating the machine in reverse the squeegee automatically raises.

7 Begin scrubbing by driving the machine forward in a straight line at a normal walking speed and overlap each path by 2-3 inches (50-75 mm). Adjust the machine speed and solution flow when necessary according to the condition of the floor.
NOTE: The maximum scrub speed can be increased by pressing the Scrub Speed Switch **(L)**. The default maximum scrub speed is less than the maximum transport speed. Pressing this switch overrides this default and allows scrubbing at the maximum transport speed.
If scrubbing on a smooth floor surface or double-scrubbing turning on the Traction Control™ button **(B)** regulates the drive wheel torque providing increased control and enhanced traction on the floor.
The side broom height can be adjusted. See the "Side Broom Maintenance" section of this manual.

⚠ CAUTION!

To avoid damaging the floor, keep the machine moving while the brushes are turning.

8 When scrubbing, check behind the machine occasionally to see that all of the waste water is being picked up. If there is water trailing the machine, you may be dispensing too much solution, the recovery tank may be full, or the squeegee tool may require adjustment.

9 The machine defaults to the last cleaning mode used Minimum or Maximum Concentration Detergent (if detergent is installed and was activated). Press the Burst of Power Switch **(G)** to override the current cleaning mode and temporarily increase scrub pressure, solution flow and the detergent ratio (unless in Maximum Concentration). This will cause the indicator to flash for one minute, solution flow rate will increase to the next level, scrub pressure will increase to the next level and the detergent ratio will be at the Maximum Concentration level (detergent system will be turned on if it was off).
NOTE: Pressing and holding the Burst of Power Switch **(G)** for 2 seconds changes between the Minimum and Maximum Concentration operating modes. The EcoFlex system will only function if the scrub system **(D)** has been enabled.

10 For extremely dirty floors, a one-pass scrubbing operation may not be satisfactory and a "double-scrub" operation may be required. This operation is the same as a one-pass scrubbing except on the first pass the squeegee is in the up position (press the Vacuum/Wand Switch **(I)** to raise the squeegee). This allows the cleaning solution to remain on the floor to work longer. The final pass is made over the same area, with the squeegee lowered to pick up the accumulated solution.

11 The recovery tank has a shut-off float **(15)** that causes ALL systems to turn OFF except the drive system when the recovery tank is full. When this float is activated, the recovery tank must be emptied. The machine will not pick up water or scrub with the float activated.
NOTE: All other indicators vanish and a "Recovery Tank FULL" Indicator **(K7)** appears on the Display Panel when the float is activated. If the control repeatedly gives a full indication when the tank is not full, the automatic shut-off feature can be disabled, have a qualified service technician refer to the service manual to perform this function.

12 When the operator wants to stop scrubbing or the recovery tank is full, press the Scrub OFF Switch **(E)** once. This will automatically stop the scrub brushes and solution flow and the scrub deck will raise up. The squeegee will raise up after a brief delay and the vacuum will stop after a brief delay (this is to allow any remaining water to be picked up without turning the vacuum back on).

13 Drive the machine to a designated waste water "DISPOSAL SITE" and empty the recovery tank. To empty, pull the Drain Hose **(19)** from its rear storage area, then remove the plug (hold the end of the hose above the water level in the tank to avoid sudden, uncontrolled flow of waste water). Refill the solution tank and continue scrubbing.

NOTE: Make sure the Recovery Tank Cover **(1)** and the Recovery Tank Drain Hose **(19)** cap are properly seated or the machine will not pick-up water correctly.

When the batteries require recharging the Battery LOW Indicator **(K8)** will come on, the scrub brushes and solution flow will stop and the scrub deck will raise up. The squeegee will raise up after a brief delay and the vacuum will stop after a brief delay. Transport the machine to a service area and recharge the batteries according to the instructions in the Battery section of this manual.