
KNIGHT

IDEX

IDEX CORPORATION



Chem-Trak

System Programming

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CAUTION: Wear protective clothing and eyewear when dispensing chemicals or other materials. Observe safety handling instructions (MSDS) of chemical mfrs.



CAUTION: To avoid severe or fatal shock, always disconnect main power when servicing the unit.



CAUTION: When installing any equipment, ensure that all national and local safety, electrical, and plumbing codes are met.

FOREWORD

This manual covers programming (only) of the Chem-Trak System. Please refer to the Chem-Trak Installation & Operation manual for diagrams and definitions of system components, as well as how the system works.

You will find the content of this manual geared for programming specifically at the host and slave LFP keypads. While the system can be programmed from a PC (using WinReporter software) it is important to understand what the various settings and functions do. Additionally, certain functions must be performed at the host and slave keypads, and are not practical to perform using WinReporter.

Should you encounter any technical problems with the system, please refer to the Chem-Trak Troubleshooting & Maintenance manual, or contact our Technical Support Team at 800-854-3764.

KEYPAD DIAGRAM



KEYPAD DESCRIPTIONS



The MENU (UP) and MENU (DOWN) keys allow you to move through the menu selections and pick what you want to do. Operators will use them to select formulas on slave units.



The SCROLL keys allow you to move through a particular menu screen, and pick one of several items to change (like characters on a screen, etc).



The YES and NO keys allow you to pick whether you want to do something or not. The NO key doubles as a “alarm mute” key (host only) which will temporarily shut off alarms that occur due to system errors, warnings, etc.

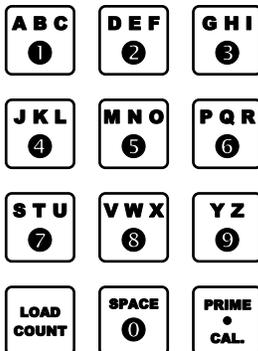


The RESET key performs a number of functions. From any main menu heading, pressing the RESET key allows you to exit the programming mode and returns the screen to the main display. From any selection *within* a main menu, pressing the RESET key takes you back to *that* menu's heading.

Subsequently, RESET can be used to halt pump operation; as desired or in an emergency situation. If pressed, the system will prompt you if you wish to abort the current job. A YES/NO response will direct the system what to do.



The ENTER key acknowledges input data and logs it into memory. It also takes you into a menu for programming.



The alphanumeric keys allow you to input numbers and letters. By repeatedly pressing any key, any of the letter characters (as well as the numeric character) can be entered into the menu selection you are working on.

The LOAD COUNT key (lower left corner) appears on slave units only, and shows how many times the load count pump was signaled.

The PRIME/CAL key (lower right corner) is used during priming, calibrating, and test functions for the chemical pumps.

HOST DISPLAY WINDOW

```
00      CHEM-TRAK      00
DATE 09/05      TIME 16:53:50
W3 BLEACH      010.0 OZ 16:51
W1 DETERG      025.0 OZ 16:47
```

The host display window shows the status of chemical injections, and warns of any system error conditions that could cause potential problems with product delivery. To the left is an example of what the display might look like during typical operation.

- Top line: Left side shows the step number, which is a reference point for what the system is doing (i.e. flushing, checking POD sensor, etc). Right side shows the job number, which is a reference to each LFP product request.
- Second line: Shows the date and time when idle, otherwise will show what system activity is taking place, such as the status of a chemical injection in progress.
- Third line: Shows the most recent chemical request history. Number to the left shows the washer that requested chemical, followed by the chemical name and dosage pumped, then the time the job started.
- Bottom line: Same as above. New information is pushed down the list incrementally.

SLAVE DISPLAY WINDOW

```
FORMULA 01
DATE 02/05 TIME 10:54:20
```

The slave display window shows the current formula selected (by name). During normal operation, the date and time are also shown unless load weight display has been selected...

```
FORMULA 01
ENTER LOAD WEIGHT 000 LB
```

..if load weight display has been selected, the programmed load weight for the current formula will be shown. Operators can over-ride the displayed weight and input the *actual* weight using the number keys, then pressing ENTER (before the formula begins).

Once the formula begins, the load weight is "locked in" and will be used for data-tracking purposes. See slave menu #3 for more details on programming load weights and choosing the load weight display.

```
FORMULA 01
PUMPING PRODUCT
```

When there is pump activity, or a feed request, the display will show the status of what the system is doing. When the system activity is finished, the display will return to its previous appearance.

PROGRAMMING THE SYSTEM

Chem-Trak programming is done through the use of menu selections. Any menu can be entered by pressing the ENTER button, or exited by pressing RESET (or in some cases MENU ↓ or ↑). Its that simple! Each of the main menu headings give an idea of what information can be found, entered, or changed. Within each main menu selection are several screen "prompts" that walk you through the complete programming process step-by-step.

From the main display screen, you must enter an access code to get into the programming menus. The Chem-Trak system has two access codes for protection:

- The "main" access code, allows entry into ALL of the menus and functions of the system.
- The "user" access code restricts access to only certain menus without the ability of changing programmed information. The user access allows entry into the Prime Routines menu (host) as well as Pump Test Routines and Diagnostic Routines menus (slaves).

Systems are shipped from the factory with both access codes set to zero. Only a person with the "main" access code can change the "user" access code (changing codes is explained later in this manual). If desired the two access codes can be the same, however the user will then have access to ALL of the functions of the system, including the ability of changing programmed information.

IMPORTANT NOTES

- Before programming, refer to the Chem-Trak Installation & Operation manual to install the system and thoroughly familiarize yourself with how the system works.
- Make sure that the vessel level sensor settings are completed before calibrating pumps (host menu #5).
- It is recommended to clear the memory of the host or slave prior to initial programming. See the MEMORY FUNCTIONS menu in the host and slave programming sections for details.

TO ENTER PROGRAMMING MODE...

**ENTER ACCESS CODE
THEN PRESS ENTER**

To enter the programming mode and access the menus for either a host or slave, press the ENTER button on the keypad. The screen at left should appear. If the screen at left does not appear, wait 2 seconds, press RESET, then press ENTER again.

When you see the screen at left, type in the access code and press ENTER. Remember, for a new system, the access code will be zero (until you change it later).

Once you are in the programming mode, follow the menus for host or slave, starting on the next page.

00	00	00	00	00	00
00	00	00	00	00	00

This display will appear at the host only, immediately after gaining access to the system. The numbers show the percentage of wear for each squeeze tube. Press any key to continue into programming mode.

Top line: pumps 1 - 6 (from left to right).
Bottom line: pumps 7 - 12 (from left to right).

NOTE: The squeeze tube wear status is also displayed when logging onto the Chem-Trak System from your PC (using WinReporter software).

HOST MENU MAP

1 *** DISPENSER *** MEMORY FUNCTIONS

- Restore default settings
- Clear error report memory
- Update slaves setup
- Set external memory module ID
- Clear external memory module

2 *** DISPENSER *** SETUP ROUTINES

- Change ID and main access code
- Set date and time
- Select unit of measure
- Setup flush parameters and air push
- Set recalibration interval
- Set transfer time
- Set POD parameters
- Set level sensor status
- Set flush between status
- Select number of POB's
- Set LFP status
- Sensor mode
- Pump type

3 *** DISPENSER *** REPORT SETUP ROUTINES

- Change user access code
- Setup report name
- Change chemical names and costs

4 *** DISPENSER *** MAINTENANCE SCHEDULE

- Date dispenser installed
- Date tubes last changed
- Date tubes last lubed

5 *** DISPENSER *** PROGRAMMING ROUTINES

- Enable maintenance hold
- Prime pumps
- Calibrate vessel
- Calibrate pumps
- View pump flow rates

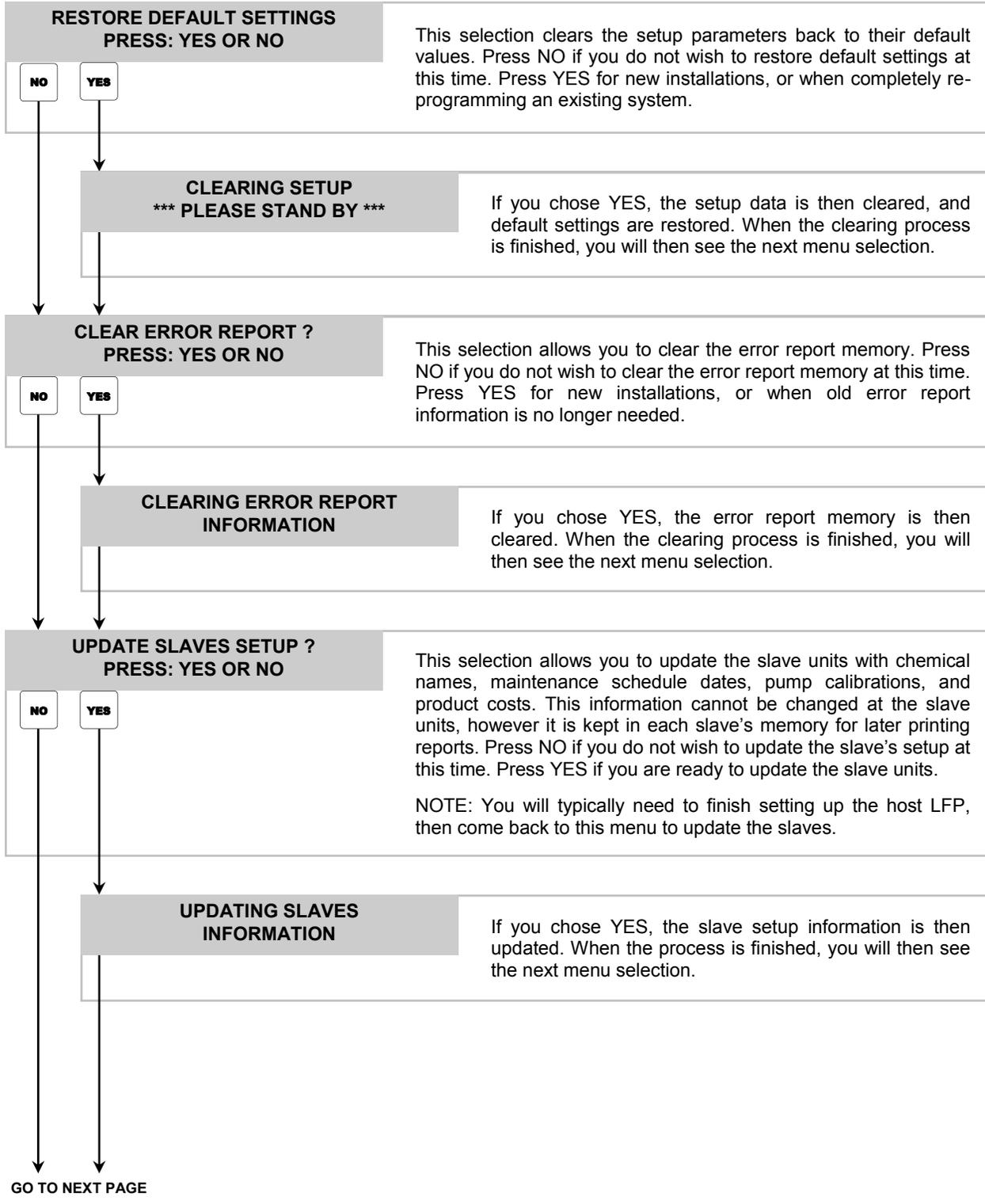
6 *** DISPENSER *** PUMP PRIME ROUTINES

- Enable maintenance hold
- Prime pumps
- Test vessel

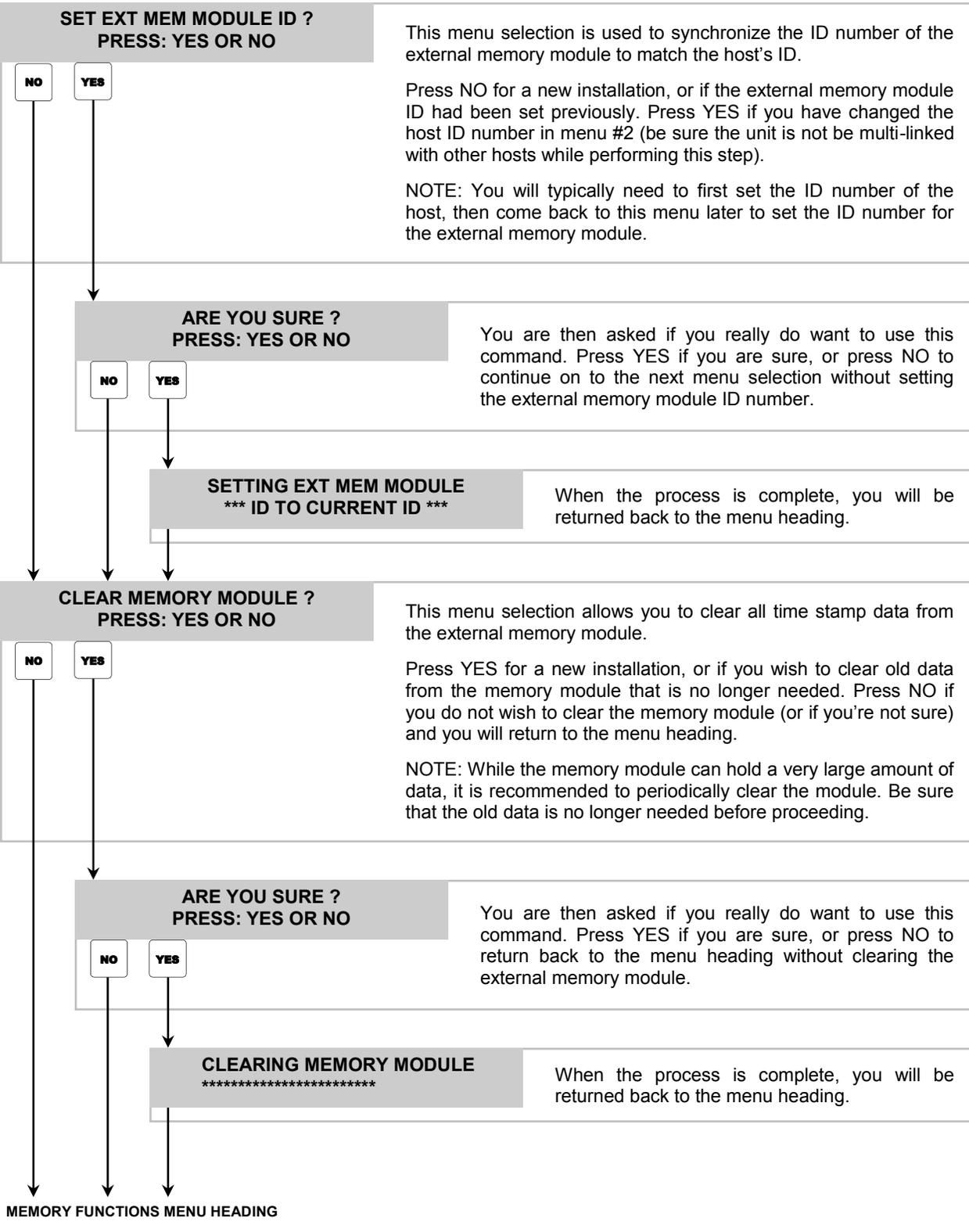
1

*** DISPENSER *** MEMORY FUNCTIONS

- Restore default settings
- Clear error report memory
- Update slaves setup
- Set external memory module ID
- Clear external memory module



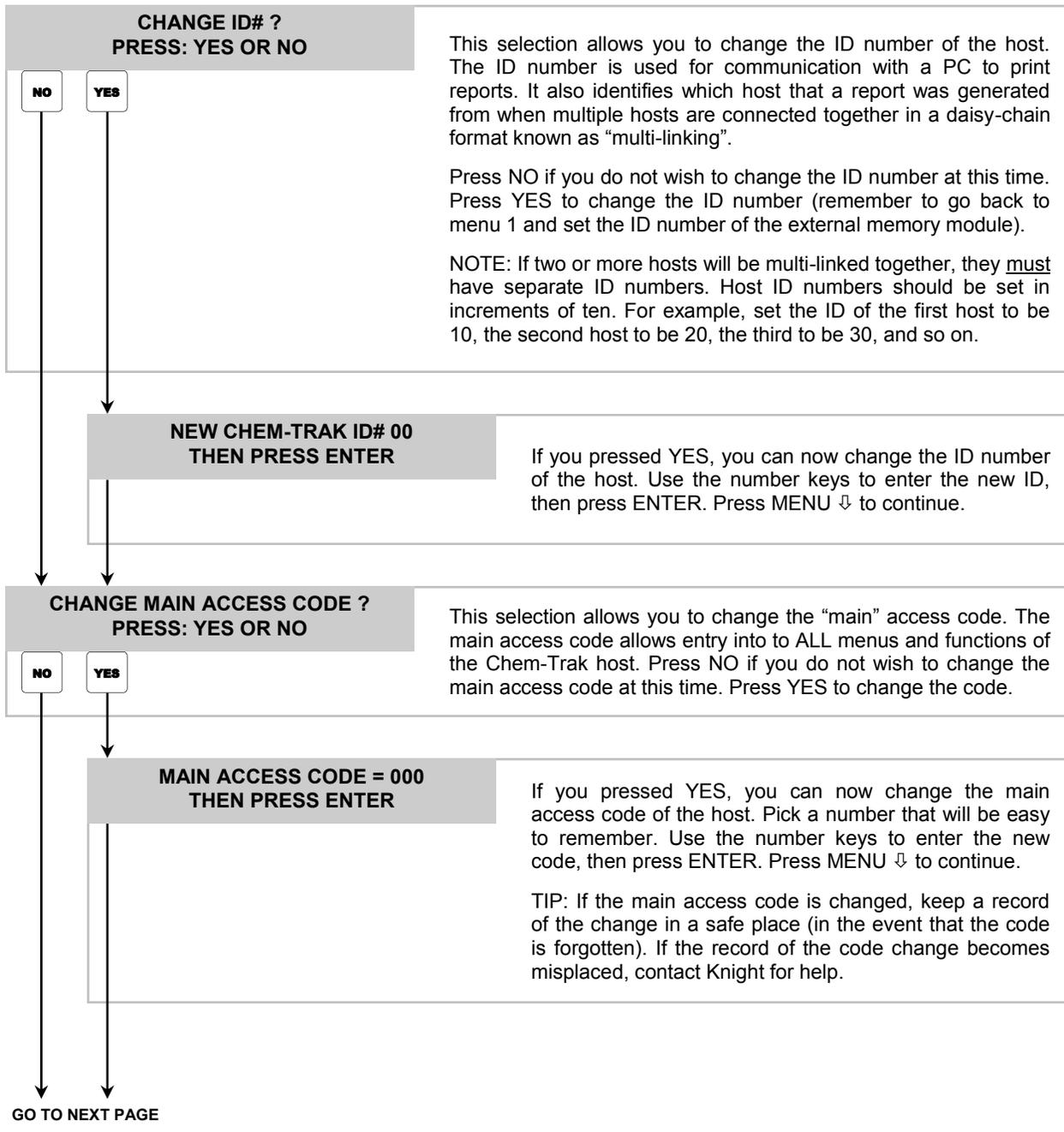
HOST

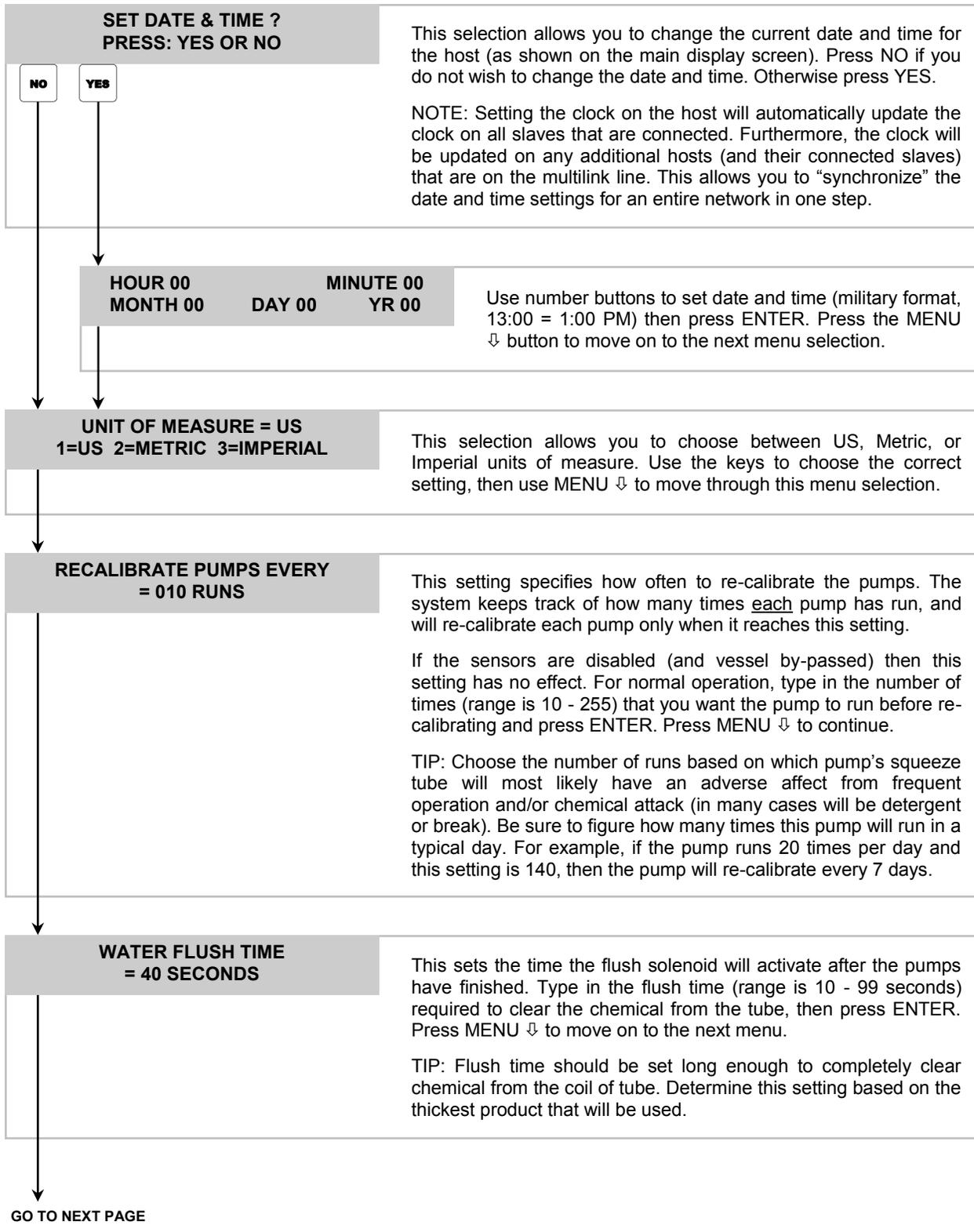


2

*** DISPENSER SETUP ROUTINES ***

- Change ID and main access code
- Set date and time
- Select unit of measure
- Setup flush parameters and air push
- Set recalibration interval
- Set transfer time
- Set POD parameters
- Set level sensor status
- Set flush between status
- Select number of POB's
- Set LFP status
- Select sensor mode
- Set pump type





TRANSFER TIME
WASHER 1 25 SECONDS

This selection sets the amount of time that the transfer pump will activate, after the flush time expires, to deliver product to the washer. Type in the washer number and transfer time (range is 0 - 99 seconds) then press ENTER. Repeat for each transfer pump/washer in use. Press MENU ↓ to continue.

TIP: The transfer time should be set long enough to deliver all chemicals to each respective washer (based on washer distance and product viscosity). Determine this setting based on the thickest product that will be used.

NOTE: The water reservoir is required for this feature to work properly. If a water reservoir is not used, set this feature to zero.

AIR PUSH TIME
WASHER 1 00 SECONDS

NOTE: This feature is not available at this time (leave at zero). The content provided below is for future reference.

This selection sets the amount of time that the optional air push feature will activate to clear the delivery line to the washer (after the flush time and transfer time expire). Type in the washer number and air push time (range is 0 - 99 seconds) then press ENTER. Repeat for each washer. If air push will not be used, leave this setting at zero. Press MENU ↓ to continue.

TIP: The air push time should be set long enough to clear the line to each respective washer (based on washer distance and product viscosity). Determine this setting based on the thickest product that will be used.

PUMP FLUSH TIME
PUMP 01 00 SECONDS

This selection sets an additional amount of time that will be added to the normal flush time during transfer. Each pump can have its own flush time if desired (range is 0 - 99 seconds). The purpose of this setting is to add extra flush time for pumps that have very viscous products. This helps to ensure that no chemical residue is left in the flush line.

NOTE: If two (or more) pumps run together and each one has a flush time, then the longest flush time will be used during transfer.

POD SHUTDOWN = ENABLE
1 = ENABLED 2 = DISABLED

1

2

This selection allows you to choose if you wish to shut down the system in the event of a POD (Proof of Delivery) error. One of the many benefits in using this feature is to alert washroom personnel of delivery problems, such as low chemical supply containers. Missed chemical injections can then be immediately addressed. Choose enabled or disabled, then press MENU ↓ to continue.

GO TO NEXT PAGE

**P.O.D. ERROR DELAY
PUMP 01 = 05 SEC**

This selection sets a time allowance for each pump to dispense before causing a POD error (from the moment the pump starts until the sensor detects flow). Lack of chemical flow will not satisfy the sensors within the allowed time and the system regards this as a POD error. Type in the pump number and error time (range is 0 - 99 seconds) then press ENTER. Press MENU ↓ to continue. Be sure to set an appropriate time for each pump.

TIP: Choose the POD error delay time carefully based on typical pump run times and product viscosity. Setting the error time too short can cause false alarms, whereas setting the error time too long may cause the system to miss a true POD occurrence. Improper calibration of the sensors, or malfunctions with sensor operation, can also cause POD error problems.

NOTE: Some dosages may be small enough that the water level in the vessel will not reach the first sensor. Also consider that some dosages will not run the pump long enough to surpass the error delay. In this case, the system will not be able to detect a POD error from the vessel sensor.

**LOW AIR SHUTDOWN = OFF
1 = ON 2 = OFF**

1

2

This selection allows you to choose if you wish to shut down the system in the event of a low air pressure condition. Choose ON or OFF, then press MENU ↓ to continue.

NOTE: Air pressure is detected by a pressure switch in the control box. The system requires a minimum of 60 PSI air pressure.

**LEVEL SENSORS = ENABLED
1 = ENABLED 2 = DISABLED**

1

2

This selection allows you to disable the level sensor (mounted on top of the vessel) in the event that the sensor is not working properly, or if you wish to manually enter pump flow rates to quickly setup the system for operation. If the sensor is disabled, the automatic re-calibrate feature will be turned off and the system will also not detect POD errors.

While disabled, the vessel will be by-passed, however chemicals will still be pumped using the most recent calibration data (or the pump flow rates that are manually entered in menu #5). Make your choice, then press MENU ↓ to continue.

**FLUSH BETWEEN PUMPS = OFF
1 = OFF 2 = ON**

1

2

This selection allows you to choose if the system will add flush water between chemical injections before transferring all chemicals to the washer. This provides a barrier of water between non-compatible chemicals in situations where the washer signals its slave LFP to call for multiple chemicals at the same time.

Make your choice, then press MENU ↓ to continue.

GO TO NEXT PAGE

**NUMBER OF POBS = 1
USED IN SYSTEM 1=1 2=2**

1 2

This selection allows you to set the number of POB's (Pump Output Board) that are used. A second POB is only required when running more than 10 chemical pumps. Choose the correct number for your application, then press MENU ↓ to continue.

NOTE: When set for 2 POB's, the second POB will act as pumps 7 - 12. For example, pump 1 on the second POB will now be pump 7, pump 2 will be pump 8, pump 3 will be pump 9, etc. See the Chem-Trak Installation/Operation manual for wiring details.

**LFP ENABLE 0 = EN 1 = DIS
LFP 01 ENABLE 0**

0 1

This selection allows you to set which slave LFP's are connected to the host. Be sure to enable all slaves that are connected.

- To check the status of a slave LFP, type in the LFP number and press ENTER (while the cursor is still on the LFP number). The enable/disable status for that LFP will then be shown.
- To change the status of a slave LFP, use SCROLL to move the cursor to the right, then choose 0 (enable) or 1 (disable) and press ENTER. Press MENU ↓ to continue.

After enabling or disabling any of the slave LFP's, you must cycle power (off, then back on) for the new settings to take effect.

TIP: A slave LFP can be disabled while its still connected to the system, such as when the washer is having maintenance done. This will prevent the system from mistakenly calling for chemical.

**SENSOR MODE
1 = LEVEL 2 = SWITCH**

1 2

This setting allows you to select the type of vessel sensor used. Systems built after October 2010 will have the LEVEL type of sensor (black and blue color). Older systems built prior to this date will have the SWITCH type of sensor (black and yellow color). Choose the correct number for your application, then press MENU ↓ to continue.

**0 = PERISTALTIC 1 = OTHER
PUMP 01 TYPE = 0**

0 1

This setting bypasses the automatic recalibration feature for non-peristaltic pumps (e.g. air pumps or EDP). Choose the correct number for each chemical pump in the system, then press MENU ↓ to continue.

SETUP ROUTINES MENU HEADING

3***** DISPENSER ***
REPORT SETUP ROUTINES**

- Change user access code
- Setup report name
- Change chemical names and costs

**H
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S
T****CHANGE USER ACCESS CODE?
PRESS: YES OR NO****NO** **YES**

This selection allows you to change the user access code. The user access code allows access to only the prime routines menu within the Chem-Trak host, or printing only when using WinReporter PC software. Pressing NO allows you to move through this menu selection.

**USER ACCESS CODE = 000
THEN PRESS ENTER**

If you entered YES, you will be prompted for a new user access code. Use the keys to enter the new data, and press ENTER when done. Press MENU ↓ to move through this menu selection.

**CHANGE REPORT NAME ?
PRESS: YES OR NO****NO** **YES**

The report name is what is printed on the report heading. Pressing NO allows you to move through this menu selection.

█

If you entered YES, you can change the report name (use the SCROLL and lettered keys to enter the new data, and press ENTER when done). Press MENU ↓ when finished to move through this menu selection.

TIP: Entering the report name in the center of the display window will center it at the top of the report.

**CHANGE CHEMICAL NAMES
PRESS: YES OR NO****NO** **YES**

This is the type of chemical for each pump on the system. Pressing NO allows you to move through this menu selection.

**PUMP 01
PUMP-01**

If you entered YES, you can change the chemical name for each pump (using the SCROLL and lettered keys to enter the new data). Press MENU ↓ to move through this menu selection.

TIP: First select the pump number on the top line and press ENTER...the current name for the pump you selected will be displayed on the bottom line. Then change the information on the bottom line and press ENTER again to lock-in the new pump name.

GO TO NEXT PAGE

**CHANGE PRODUCT COSTS ?
PRESS: YES OR NO**

This menu selection allows you to change costs for each product. Pressing NO allows you to move through this menu selection.

NO **YES**

PUMP 01 \$00.00 /GALS

If you entered YES, you can change the cost for each chemical (using the SCROLL and number keys to enter the new data). Press MENU ↓ to move through this menu selection.

TIP: First select the pump number on the left side of the display and press ENTER...the product cost for the pump you selected will be displayed on the right side. Then change the information on the right side and press ENTER again to lock-in the new product cost.

**SQUEEZE TUBE WARNING
= 00 %**

This menu selection allows you to set the point at which a squeeze tube warning will occur. The system keeps track of the re-calibration data and calculates the percentage of wear based on the reduction in flow rate from when the squeeze tube was last changed. The status of the tube wear (and warnings, if any) will appear when logged onto the system from WinReporter.

Use the number keys to enter the percentage (range is 0% - 50%) then press ENTER. Press MENU ↓ to return to the menu heading.

TIP: This setting is based largely on customer preference. You may wish to start off with a nominal setting of 25%, then monitor the wear patterns of the squeeze tubes throughout their usage. After developing a trend history, you can adjust this setting for exactly when you want the warning to occur.

REPORT SETUP ROUTINES MENU HEADING

4

***** DISPENSER ***
MAINTENANCE SCHEDULE**

- Date dispenser installed
- Date tubes last changed
- Date tubes last lubed

**DISPENSER INSTALLED
00/00/00**

This selection allows you to enter the date that the system was installed. (Use the SCROLL and number keys to enter the new data, and press ENTER when done). Press MENU ↓ to move thru this menu selection.

**SQUEEZE TUBES CHANGED
PUMP 01 00/00/00**

This selection allows you to enter the date that the squeeze tubes were last changed. (Use the SCROLL and number keys to enter the new data, and press ENTER when done). Press MENU ↓ to move thru this menu selection.

NOTE: The squeeze tube changed date will be automatically updated when calibrating pumps (in menu #5) and responding "YES" when prompted if you are using a new squeeze tube.

**SQUEEZE TUBES LAST LUBED
PUMP 01 00/00/00**

This selection allows you to enter the date that the squeeze tubes were last lubricated. (Use the SCROLL and number keys to enter the new data, and press ENTER when done). Press MENU ↓ to move on to the next menu.

MAINTENANCE SCHEDULE MENU HEADING

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*** DISPENSER *** PROGRAMMING ROUTINES

- Enable maintenance hold
- Prime pumps
- Calibrate vessel
- Calibrate pumps
- View pump flow rates

ENABLE MAINTENANCE HOLD ? PRESS: YES OR NO

This feature allows you to halt the washers and chemical feed while performing maintenance. Choose YES or NO to continue (if "SYSTEM BUSY" appears, wait 30 seconds then try again).

MAINTENANCE HOLD ENABLED HIT RESET KEY TO RESUME

This display (slaves will also display hold status) shows that the system is on maintenance hold. If a feed request is received from a slave, its washer will be halted (by the SIB or Interrupt Module) and the request will be put in the queue for later delivery. Press RESET to end the hold and resume normal operation. Or press MENU ↓ to advance to the next step and continue the hold.

SEND PRODUCT TO WASHER PRESS ENTER 1

Choose the washer that you want product sent to during the priming and calibration process, then press ENTER.

PRIME PUMPS ? PRESS: YES OR NO

This allows you to prime chemical pumps (necessary for proper calibration). This function can also be used to expel air pockets from the discharge tubing. Choose YES or NO to continue.

PRIME PUMP 01 PUSH PRIME TO START/STOP

Choose the pump you wish to prime, then use the PRIME/CAL button to start and stop the pump. Hold the discharge line above the pump to expel any air pockets.

TRANSFER TO WASHER ? PRESS: YES OR NO

You can choose if you wish to transfer the product to the selected washer. Choose YES or NO.

EMPTYING VESSEL

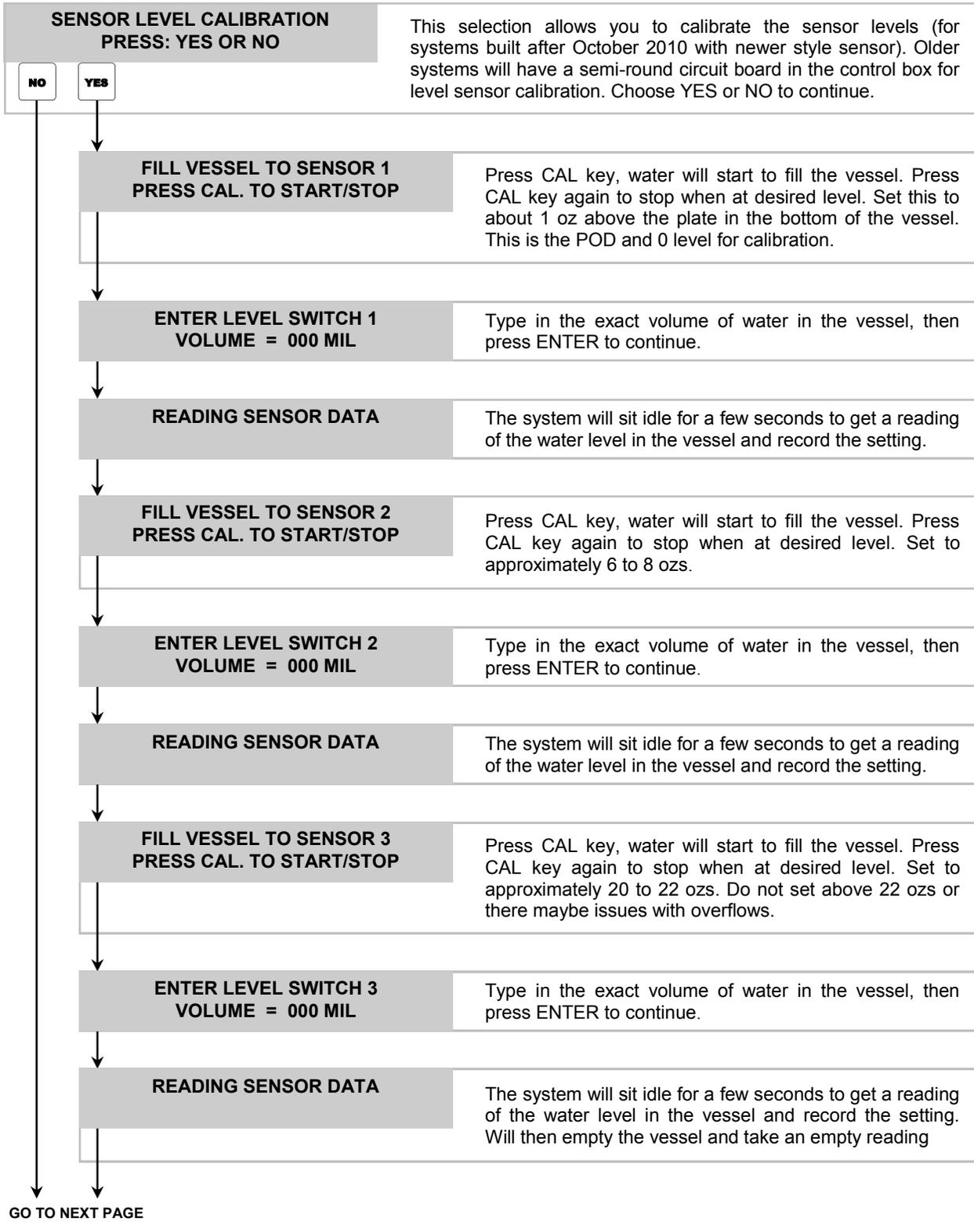
If you chose YES, then the vessel will be emptied in preparation for transferring to the washer. When the sensor detects that the vessel is empty, you will see the following...

TRANSFERRING-WASHER1 060

Chemical will transfer to the washer and the display will count down the remaining time till the process is finished. The count down is a sum of flush time, transfer time, and air push time (if used) and will be activated in this order.

GO TO NEXT PAGE

HOST



**CALIBRATE PUMPS
PRESS: YES OR NO**

NO YES

Calibrating pumps is necessary for accurate product delivery and tracking. Manual calibration is recommended for new installations, or after replacing a squeeze tube. Afterwards, the system automatically re-calibrates itself during normal operation.

Ensure that the level sensor is setup properly prior to calibration (previous step in this menu). Choose YES or NO to continue.

NOTE: If the sensor is disabled (and vessel by-passed) the pump flow rates can be manually entered. If you choose to setup the system this way, be sure that you know the exact flow rate of each pump.



**SELECT LEVEL SENSOR
PUMP 01 SENSOR 0 0,2,3**

If the sensor is disabled (and vessel by-passed) you will not see this display, and will go directly to the pump flow rate display (to manually enter flow rates).

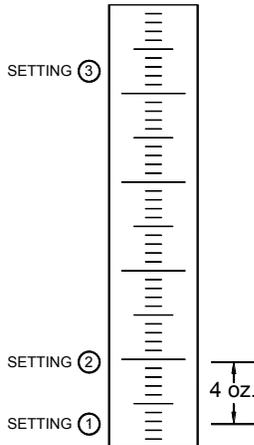
If the sensor is enabled (normal) this selection allows you to choose which sensor settings (0, 2, or 3) on the vessel that each pump will use for calibration. Choose the pump number and which sensor setting you will calibrate it with, then press ENTER. Press MENU ↵ to continue.

NOTE: The vessel level sensor has nominal settings from the factory, however should be set in the field for best results.

NOTE: Choosing sensor 0 will disable the sensor for the selected pump. Only those pumps set for sensor 0 will by-pass the vessel (for calibration and normal operation). For example, if a very thick product is causing false alarms trying to satisfy the POD error time.

NOTE: The distance (volume amount) between sensor settings 1 & 2 (or settings 1 & 3) must be less than the minimum programmed volume for each pump for the auto-recalibration feature to work. For example, in the diagram to the left, let's assume that the volume between sensor settings 1 and 2 is 4 oz. For all pumps that calibrate to sensor setting 2, the minimum formula dosage must be 4 oz to auto-recalibrate. If a pump that was calibrated to sensor setting 2 does not have a formula dosage of at least 4 oz, then that pump will not re-calibrate itself automatically.

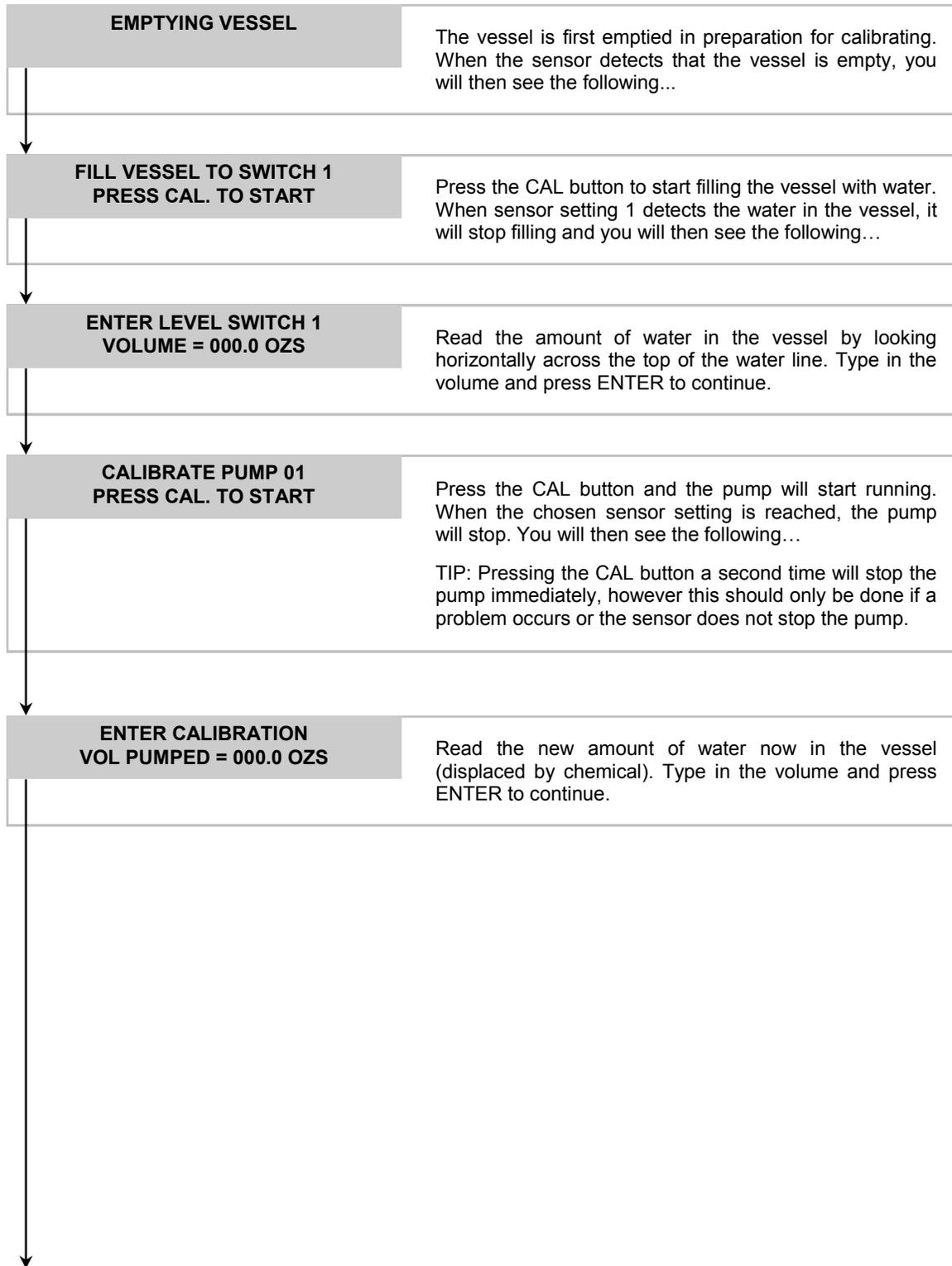
EXAMPLE



GO TO NEXT PAGE

5***** DISPENSER ***
PROGRAMMING ROUTINES**

• Continued

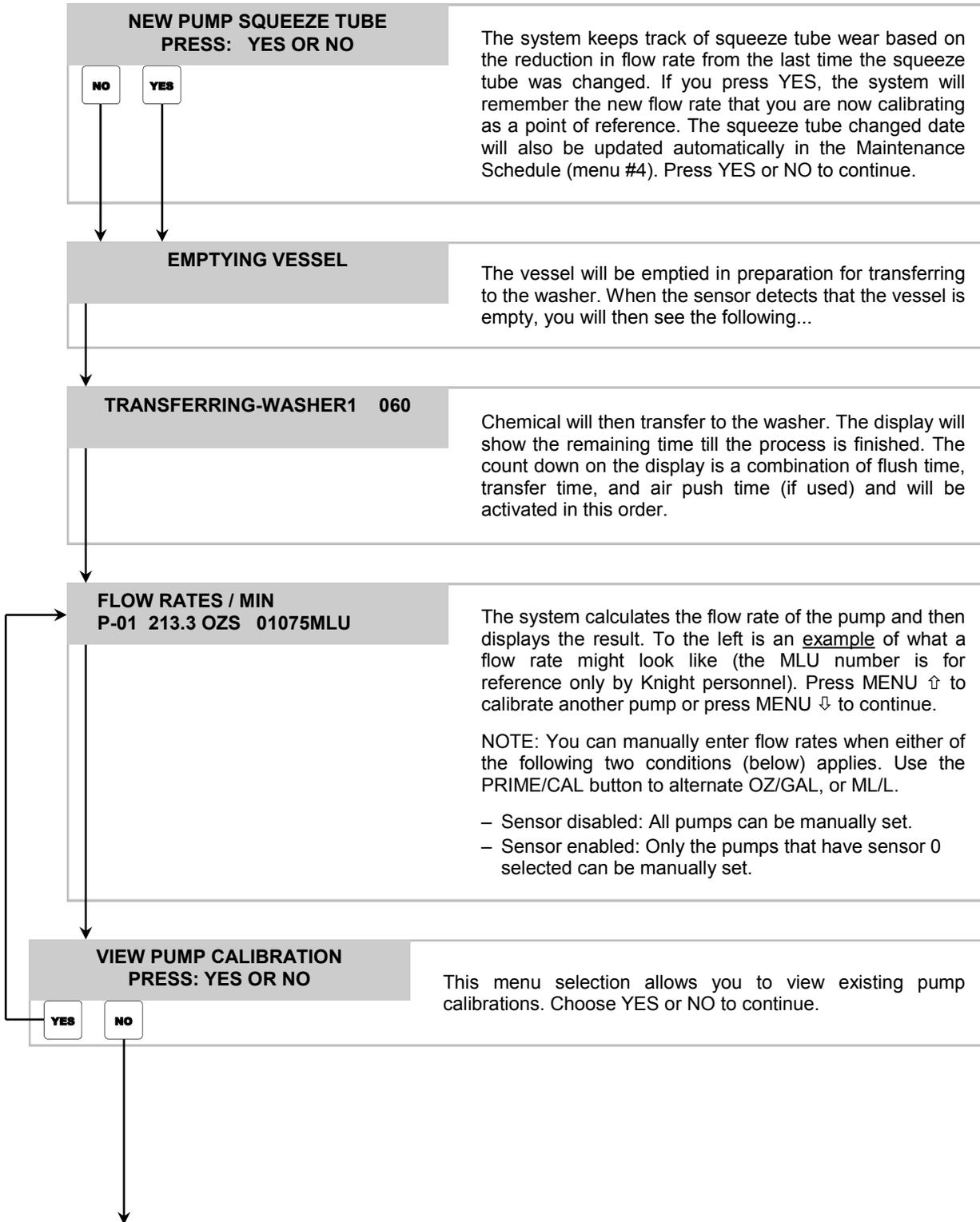
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*** DISPENSER ***
PROGRAMMING ROUTINES

• Continued

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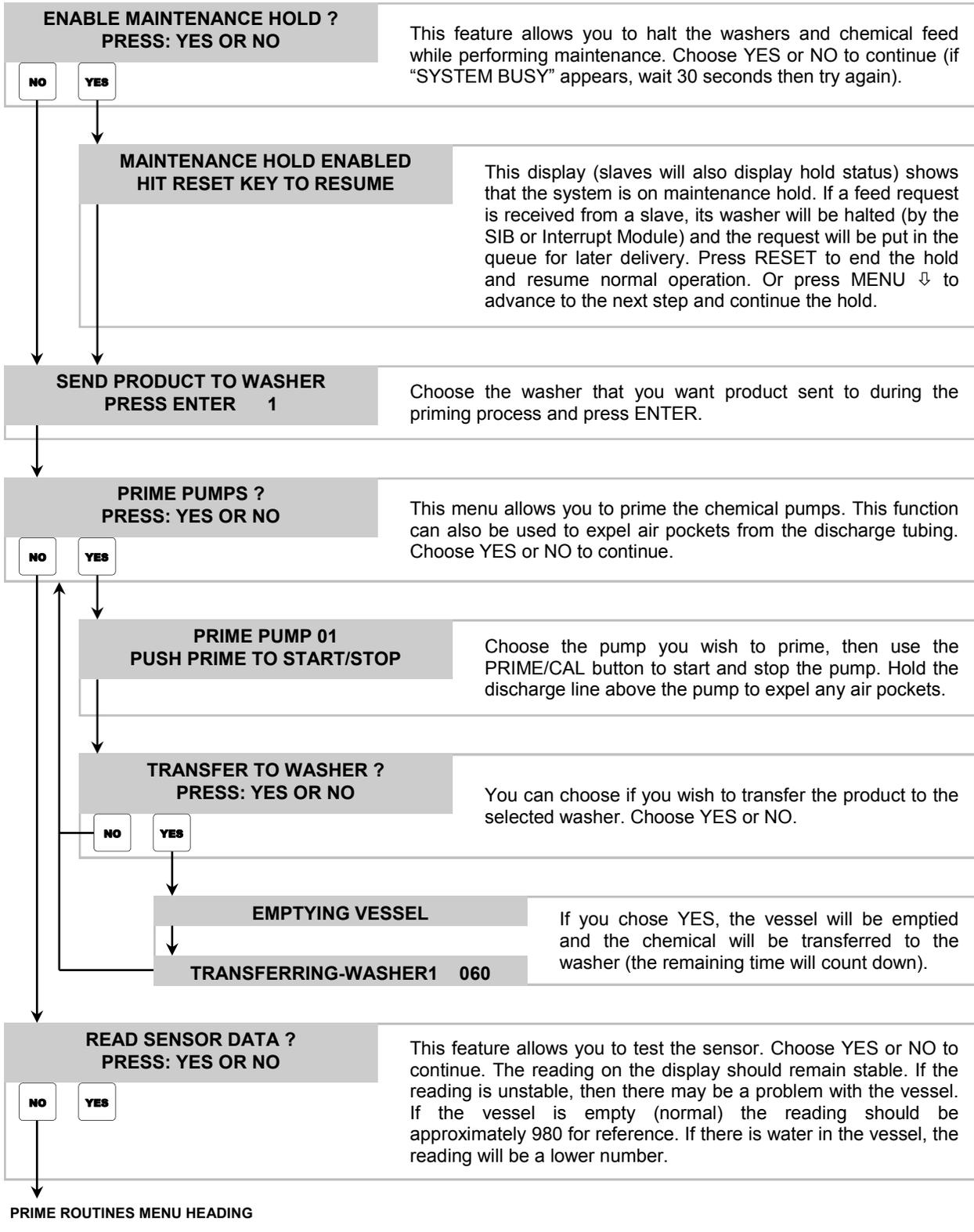
PROGRAMMING ROUTINES MENU HEADING

6

*** DISPENSER ***
PUMP PRIME ROUTINES

- Enable maintenance hold
- Prime pumps
- Test vessel

HOST



SLAVE MENU MAP

1 *** DISPENSER *** MEMORY FUNCTIONS

- Clear pump volumes and delay times
- Clear sum/cycle report memory
- Clear load counter
- Clear setup information

2 *** DISPENSER *** SETUP ROUTINES

- Change ID and main access code
- Set date and time
- Select unit of measure
- Setup auto formula select and auto formula reset
- Select load count pump
- Set delay time units/set signal lockout
- Set halt with injection

3 *** DISPENSER *** REPORT SETUP ROUTINES

- Change user access code
- Setup report name
- Change formula names and weights
- Set shift times and operating zone
- Set washer capacity
- Set signal qualifying time

4 *** DISPENSER *** PROGRAMMING ROUTINES

- Program formula dosages
- Program pump delay times

5 *** DISPENSER *** PUMP TEST ROUTINES

- Simulate signals to pumps

6 *** DISPENSER *** DIAGNOSTIC ROUTINES

- Test SIB signal inputs
- Perform SIB noise test

**S
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A
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E**

1

*** DISPENSER *** MEMORY FUNCTIONS

- Clear pump volumes and delay times
- Clear sum/cycle report memory
- Clear load counter
- Clear setup information

CLEAR PUMP VOLUMES ? PRESS: YES OR NO

This selection clears all formula pump volumes and delay times back to zero. Press NO if you do not wish to clear pump volumes at this time. Press YES for new installations, or when completely re-programming an existing system.

ARE YOU SURE ? PRESS: YES OR NO

If you entered YES, you are allowed to check and make sure that you really do want to clear pump volume information from the slave. Press NO if you are not sure that you want to clear all formula programming.

CLEARING ALL VOLUMES AND DELAY TIMES

If you pressed YES, all volumes and delay times will then be cleared.

CLEAR SUM/CYCLE REPORT ? PRESS: YES OR NO

This selection allows you to clear summary and cycle report memory. Press NO if you do not wish to clear sum/cycle information at this time. Press YES to clear the report memory.

A MUST WHEN YOU ARE READY TO TRACK WASHER AND CHEMICAL INFORMATION! Clearing the sum/cycle report clears:

- Production Summary Report
- Time Stamp Report (Wash Cycle Tracking)

CLEARING ALL SUM/CYCLE INFORMATION

This shows that report memory is being cleared.

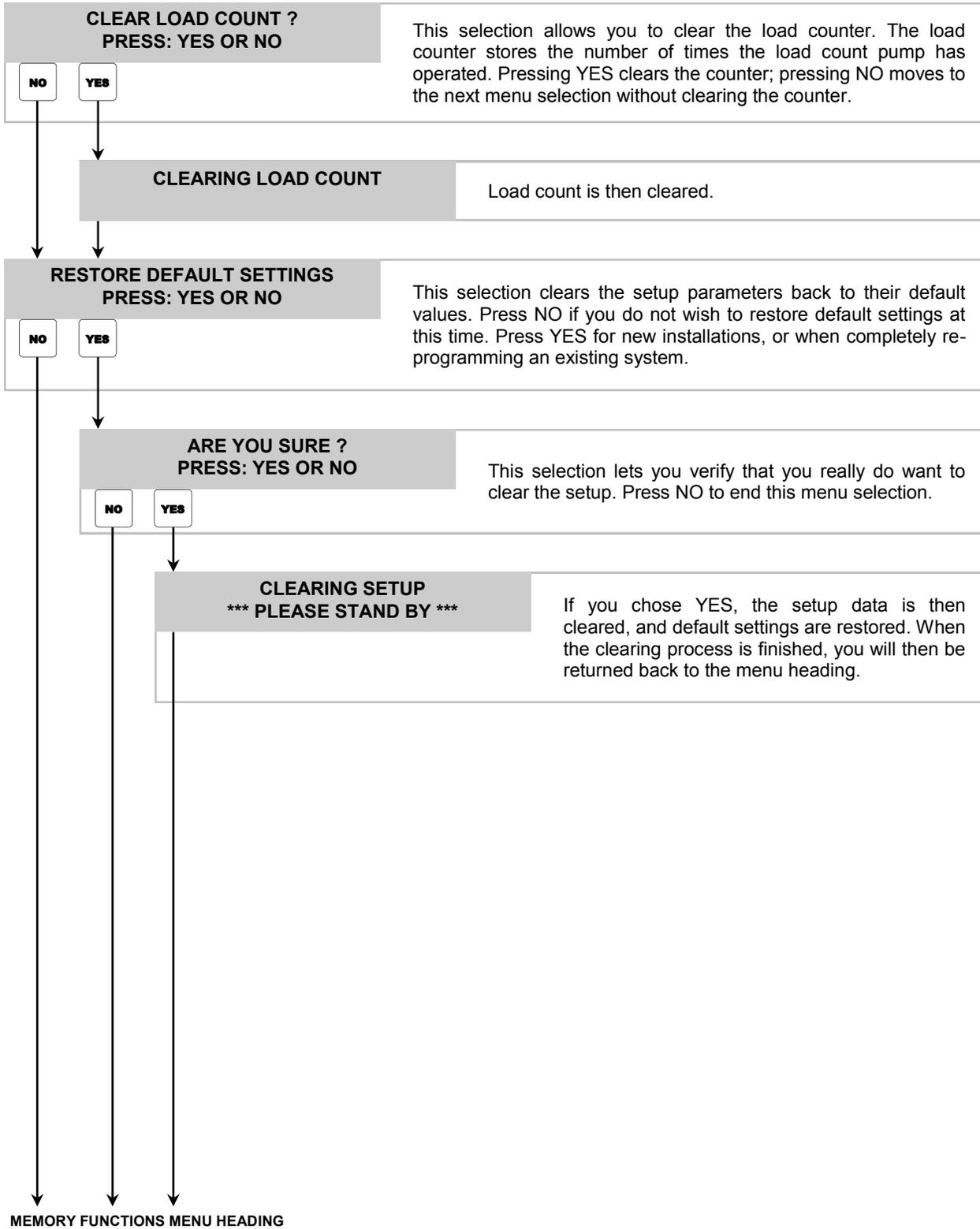
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***** DISPENSER ***
MEMORY FUNCTIONS**

• Continued



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*** DISPENSER SETUP ROUTINES ***

- Change ID and main access code
- Set date and time
- Select unit of measure
- Setup auto formula select and auto formula reset
- Select load count pump
- Set delay time units/set signal lockout
- Set halt with injection

CHANGE DISPENSER ID# ? PRESS: YES OR NO

NO **YES**

This selection allows you to change the ID number of the slave. The ID number is used for communication with a PC to print reports. It also identifies which slave that a report was generated from. This is helpful when multiple systems are connected together in a daisy-chain format known as "multi-linking".

Press NO if you do not wish to change the slave ID number at this time. Press YES to change the slave ID number.

NOTE: Slave ID numbers should be set to coincide with the first digit of the host ID number. For example, if the host ID number is 10, then the slave ID numbers should be in the range of 11 - 16 (based on total number of slaves). This is very important if multiple hosts are multi-linked together. For example, if the second host has an ID number of 20, then the slaves connected to that host should have ID numbers in the range of 21 - 24.

NEW DISPENSER ID# 00 THEN PRESS ENTER

If you pressed YES, you can now change the ID number of the slave. Use the number keys to enter the new ID, then press ENTER. Press MENU ↓ to continue.

CHANGE MAIN ACCESS CODE ? PRESS: YES OR NO

NO **YES**

This selection allows you to change the "main" access code. The main access code allows entry into to ALL menus and functions of the Chem-Trak slave. Press NO if you do not wish to change the main access code at this time. Press YES to change the code.

MAIN ACCESS CODE = 000 THEN PRESS ENTER

If you pressed YES, you can now change the main access code of the slave. Pick a number that will be easy to remember. Use the number keys to enter the new code, then press ENTER. Press MENU ↓ to continue.

TIP: If the main access code is changed, keep a record of the change in a safe place (in the event that the code is forgotten). If the record of the code change becomes misplaced, contact Knight for help.

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**SET DATE & TIME ?
PRESS: YES OR NO**

NO **YES**

This selection allows you to change the current date and time for the slave (as shown on the main display screen). Press NO if you do not wish to change the date and time. Otherwise press YES.

NOTE: Setting the clock on the slave will automatically update the clock on the host and all other slaves that are connected. Furthermore, the clock will be updated on any additional hosts (and their connected slaves) that are on the multilink line. This allows you to "synchronize" the date and time settings for an entire network in one step.

HOUR 00 MINUTE 00
MONTH 00 DAY 00 YR 00

Use number buttons to set date and time (military format, 13:00 = 1:00 PM) then press ENTER. Press the MENU ↓ button to move on to the next menu selection.

UNIT OF MEASURE = US
1=US 2=METRIC 3=IMPERIAL

This selection allows you to choose between US, Metric, or Imperial units of measure. Use the keys to choose the correct setting, then use MENU ↓ to move through this menu selection.

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AUTO FORMULA SELECT OFF
1 = OFF 2 = ON

1 2

This selection enables the Automatic Formula Select feature. This feature allows the washwheel controller to send signals to the slave and automatically select the correct wash formula. Washroom personnel no longer select formulas, thereby eliminating potential mistakes. Press 1 or 2 for the operation of your choice, then press MENU ↓.

AUTO FORMULA MODE = MICRO
1 = CHART 2 = MICROPROCESSOR

1 2

Press 1 if the machine is controlled by a chart or card reader, or 2 if the machine is controlled by a microprocessor. After the display shows your selection (CHART or MICRO), press MENU ↓.

AFS TIME
1 SECONDS (1 - 5)

1 2 3 4 5

This selection allows you to select the AFS qualifying time for MICRO mode (only). For a 1 second qualifying time, a 1 second signal equals formula 1, 2 seconds equals formula 2, 3 seconds equals formula 3, etc. For a 2 second qualifying time, a 2 second signal equals formula 1, 4 seconds equals formula 2, 6 seconds equals formula 3, etc. For a 5 second qualifying time, a 5 second signal equals formula 1, 10 seconds equals formula 2, 15 seconds equals formula 3, etc.

Choose 1 through 5 for the qualifying time of your choice, then press MENU ↓.

SELECT AUTO FORMULA
INPUT # 00 PRESS ENTER

This selection allows you to select an available signal input that will be used to enable the Automatic Formula Select feature. Choose an input number (1 - 13) that will not be used for chemical injection. Enter the input signal number and press ENTER. Press MENU ↓ to move through the menu selection.

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AUTO FORMULA SELECT — HOW IT WORKS

MICRO MODE: This is used for Automatically Selecting Formulas with washwheels that have microprocessor controllers.

To operate Micro Mode Automatic Formula Select, choose an available signal output from the microprocessor that will be dedicated to selecting formulas. Connect the signal from that output to the Automatic Formula Select input you designated. Any unused SIB input can be designated for Micro Mode Automatic Formula selection. For a micro processor controlled machine, to change formulas, the FIRST signal to come from the controller must be on the Automatic Formula Select input line. The length of time this signal is applied (based on the AFS time setting) will determine the selected formula.

CHART MODE: This is used for automatically selecting formulas for washers with cards or charts to control the wash formula.

The Automatic Formula Select signal can be connected to any unused SIB input between 8 and 13 only. SIB signals 1 - 7 are used for adding up the correct formula number. Inadvertently choosing the auto formula select input as 1 through 7 of the SIB will result in the slave “defaulting” to input 8.

To operate Chart Mode Automatic Formula Select, choose an available signal track on the chart or card that will be dedicated to selecting formulas. Connect the signal from that track to the Automatic Formula select input you designated.

The FIRST cut in the chart or card must be on the Automatic Formula Select Signal track. Five seconds after the signal is received, the display on the slave will show “AUTO FORMULA SELECT“. Thirty seconds after this cut begins, the dispenser will “look” at signal inputs 1 through 7 and evaluate the formula number selected (any signal combination higher than 99 will revert the system to formula 99).

The LFP display will acknowledge the correct formula. Once the formula select process is finished, pump input signals return to normal operation. All pump signals must turn off for a minimum of five seconds, then retriggered for a pump to operate.

Example: the chart cuts below would automatically select formula #9 after 30 seconds.

←← CHART/CARD DIRECTION ←←

■	SIB PUMP #1 SIGNAL INPUT > ADD 1
	SIB PUMP #2 SIGNAL INPUT > ADD 2
	SIB PUMP #3 SIGNAL INPUT > ADD 4
■	SIB PUMP #4 SIGNAL INPUT > ADD 8
	SIB PUMP #5 SIGNAL INPUT > ADD 16
	SIB PUMP #6 SIGNAL INPUT > ADD 32
	SIB PUMP #7 SIGNAL INPUT > ADD 64
■	AUTO FORMULA SELECT SIGNAL

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**CHOOSE LOAD COUNT
PUMP # 00 PRESS ENTER**

This sets which pump is being used to count loads. Always enter the last pump in the system that will receive a signal. When a cycle is run, the last pump “stamps” the timing data into memory (for reports and other purposes). Enter the number of the load count pump and press ENTER. Press MENU ↵ to continue.

The load count pump must be signaled on every formula for proper wash cycle tracking data. When the load count pump is signaled, all volume levels for that formula are reset to level 1.

**AUTO FORM RESET DISABLE
1=ENABLED 2=DISABLED**

1

2

If enabled, this feature resets the formula number to 00 after the load count pump activates. In cases where automatic formula select is OFF (formulas selected manually), this feature ensures that an operator cannot wash a load with the wrong formula. When a washcycle is finished, the next formula must be manually chosen. Make your selection, then press MENU ↵ to continue.

**DELAY TIME UNITS = SEC
1 = MINUTES 2 = SECONDS**

1

2

This selection allows you to choose the delay unit of measure. Some signals only need to be delayed for a few seconds (i.e. to avoid dumping chemical onto dry linen), others may need longer delay times. Select the delay time unit of measure, then press MENU ↵ to continue.

**5 MIN SIGNAL LOCKOUT OFF
1= OFF 2= ON**

1

2

This feature helps prevent unwanted injections that are caused by “erroneous” signals from the washer (example: when the water level goes low and a fill valve activates). Make your selection, then press MENU ↵ to continue.

**HALT W/INJECTION = OFF
1= ON 2= OFF**

1

2

This feature allows the slave to pause the washer’s operation (halt) while its own chemical injection is taking place. This can be helpful in the following applications:

- Excessive pump run time (due to product viscosity, pump size).
- Far distance to the washer (longer flush and transfer times).
- Low water pressure.

The Chem-Trak SIB has special relay contacts that can be connected to the washer’s controls to halt machine operation. Even if this feature is turned off, the slave will still halt the washer if requesting chemical while the system is busy feeding other washers. Make your selection, then press MENU ↵ to return to the menu heading.

SETUP ROUTINES MENU HEADING

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*** DISPENSER *** REPORT SETUP ROUTINES

- Change user access code
- Setup report name
- Change formula names and weights
- Set shift times and operating zone
- Set washer capacity
- Set signal qualifying time

CHANGE USER ACCESS CODE? PRESS: YES OR NO

This selection allows you to change the user access code. The user access code allows access to only the pump test and diagnostic menus within the Chem-Trak slave, or printing-only when using WinReporter PC software. Pressing NO allows you to move through this menu selection.

USER ACCESS CODE = 000 THEN PRESS ENTER

If you entered YES, you will be prompted for a new user access code. Use the keys to enter the new data, and press ENTER when done. Press MENU ↓ to move through the menu selection.

CHANGE REPORT NAME ? PRESS: YES OR NO

The report name is what is printed on the report heading. Pressing NO allows you to move through this menu selection.



If you entered YES, you can change the report name (use the SCROLL and lettered keys to enter the new data, and press ENTER when done). Press MENU ↓ when finished to move through this menu selection.

TIP: Entering the report name in the center of the display window will center it at the top of the report.

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CHANGE FORMULA NAME AND WEIGHT? PRESS: YES OR NO

This menu selection allows you to change the formula names and load weight for each formula. Giving each formula a descriptive name makes the system more user-friendly. Load weights are used for data-tracking purposes to generate reports. Pressing NO allows you to move through this menu selection.

FORMULA 01
FORMULA 01

If you entered YES, you will first change the formula names. When finished changing all formula names, press MENU ↵ to move on to the next display for changing load weights.

TIP: First select the formula number on the top line and press ENTER...the current formula name will appear on the bottom line. Then change the name on the bottom line and press ENTER again to lock-in the new data.

FORMULA 01
LOAD WEIGHT 000 LBS

Now enter the load weight for each formula used. When finished changing load weights, press MENU ↵ to move on to the next menu selection.

TIP: First select the formula number on the top line and press ENTER...the current load weight will appear on the bottom line. Then change weight on the bottom line and press ENTER again to lock-in the new data.

NOTE: Chem-Trak has a priority order for tracking load weight. Highest priority is the load weight manually entered at the slave LFP by the operator. If no load weight is entered, the system will use the programmed formula weight. If no formula weight is programmed, then the programmed washer (machine) weight is used.

WANT TO SET SHIFT TIMES ?
PRESS: YES OR NO

This selection allows you to enter the shift times (the start time for each work shift in the washroom) for the report. Pressing NO allows you to move through this menu selection.

START TIMES **#1 06:00**
#2 11:00 **#3 17:00**

If you entered YES, you can change the start time for each washroom work shift. Use SCROLL and the numbered keys to enter the new data, then press ENTER. Shift times are entered on a 24 hour clock cycle (like military time). Press MENU ↵ to continue.

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*** DISPENSER ***
REPORT SETUP ROUTINES

• Continued

SET OPERATING ZONE ?
PRESS: YES OR NO

NO YES

This selection allows you to select whether or not you wish to establish "on" and "off" times of operation for the slave. The default start and end times (shown below) allow the system to dispense chemical at any time, day or night.

When the slave is out of the operating zone, any trigger signals that are received will be ignored, and chemicals will not be dispensed to that washer. Pressing NO allows you to move through this menu selection.

START TIME 00:00
END TIME 24:00

If you selected YES, you will be prompted to establish the "on" and "off" times of operation for the slave. Use the keys to enter the new data, then press ENTER. Actual time of day is entered on a 24-hour clock cycle, like military time. Press MENU ↓ to continue.

WASHWHEEL LOAD CAPACITY
000 LBS

This selection allows you to enter the load capacity for the wash wheel that the slave is presently connected to. Use the keys to enter the new data, and press ENTER when done. Press MENU ↓ to continue.

LOAD WEIGHT DISPLAY ON
1 = OFF 2 = ON

1 2

If you select ON, the load weight display will replace the time and date on the main display screen of the slave (during normal operation). Choosing this option will allow operators to manually input the actual load weight on the slave keypad to over-ride the programmed load weight for the formula that is selected. Press MENU ↓ to continue.

SIGNAL QUALIFYING TIME
005 SECONDS (1-120)

This selection allows you to set the time required for a supply signal from the washer to be recognized. The supply signal duration must meet or exceed the qualify time setting to activate a pump. Choose a time from 1 - 120 seconds (default setting is 5 seconds) and press ENTER. Then press MENU ↓ to continue.

NOTE: This feature can be used as a "filter" for stray signals (or ghost signals) that erroneously trigger a pump. Determine the normal signal duration from the washer and set the signal qualify time to be slightly shorter than the washer's supply signals. For example, if the supply signals are always 30 seconds in duration, set the signal qualify time to be 25 seconds.

REPORT SETUP ROUTINES MENU HEADING

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- Program formula dosages
- Program pump delay times

FORM 01 LEVEL 1 PUMP 01
VOL 000.0 OZS DELAY 000

This menu selection allows you to enter pump volumes and delay times for the formulas you will use. When finished programming, press MENU ↓ to move on to the next menu.

TIP: This selection can be used to *simply review* programmed formula settings. By entering the formula number, volume level, and pump number, and then pressing ENTER, the programmed volume and delay time will be displayed.

TIP: To *change* the programmed information, first select the formula number, volume level, and pump number on the top line and press ENTER (as mentioned above)...the current settings will be displayed on the bottom line. Then change the information on the bottom line and press ENTER again to lock-in the new data.

PROGRAMMING NOTES

- For US and Imperial units of measure, formula volume settings are programmed in ounces only (the max allowed is 999.9 ounces). For Metric units of measure, formula volume settings are programmed in milliliters only (the max allowed is 9999 milliliters).
- The maximum run time for any pump is 255 seconds. If a formula volume is programmed that will cause a pump to run for longer than 255 seconds (base on that pump's flow rate) the pump will not activate when signaled.
- Delay times can be used when washer signals do not occur at optimum times for chemical dispensing. Maximum delay times are 120 seconds or 120 minutes. Selection of seconds or minutes is done in the Dispenser Setup Routines menu.
- Pumped volumes of up to 4095.9 ounces, or 40959 milliliters will be printed on the cycle report. Pumped volumes over this amount will result in the symbols *VOL? appearing on the cycle report.

MULTI-LEVEL OPERATION — HOW IT WORKS

- Entering multiple volume levels allows a pump to pump different amounts of chemical upon subsequent signals. For example, on a particular formula, pump 1 could pump 8 ounces of chemical the first time it is signaled, and pump 1 could pump 12 ounces of chemical the second time it is signaled. Up to three volume levels (max) are available per pump.
- Multiple volume levels can be used for any pump on any formula, except the load count pump. Only level 1 can be programmed on the load count pump (or any other pumps that are signaled at the same time as the load count pump).
- After the load count pump has been triggered (or RESET button pushed) the next signal to a pump will dispense Level 1 amounts. The next washer signal to the same pump will be Level 2 if there is a run or delay time programmed. If no time is programmed, it will skip Level 2 and go to Level 3. If there is no time programmed on Level 3, it will disregard Level 3 and dispense Level 1 amounts again.
- By using run or delay times on the different levels, you can have a plurality of chemical formulas using multiple signals from the same card or microprocessor. To "use up" a level and NOT dispense product, simply program a "0" volume and a "1" second delay time for that level.

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PROGRAMMING ROUTINES MENU HEADING

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***** DISPENSER ***
PUMP TEST ROUTINES**

- Simulate signals to pumps

**TO SIGNAL PUMP # 01
PUSH PRIME TO START PUMP**

This selection allows you to simulate a signal to a pump. Use the numbered keys to select the desired pump, and push the PRIME/CAL key to start the pump. Press MENU ↓ to continue.

NOTES: When the PRIME/CAL key is depressed, the pump will pump the FIRST level volume amount on the formula selected on the LFP.

Pressing the PRIME/CAL key again will run the SECOND level volume amount, and (when finished with the second run time) pressing PRIME/CAL again will run the THIRD volume amount.

If only one volume amount is programmed, the amount will run every time PRIME/CAL is depressed.

↓
TEST ROUTINES MENU HEADING

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*** DISPENSER ***
DIAGNOSTIC ROUTINES

- Test SIB signal inputs
- Perform SIB noise test

TEST SIB INPUTS ?
PRESS: YES OR NO

This selection allows you to test each of the input signals on the SIB. Pressing NO allows you to move through this menu selection.

APPLY SIGNALS TO TEST

When the display to the left appears, apply a signal to each of the signal inputs on the SIB. Apply only one test signal at a time as the display can only show one signal name. The "name" of each input, when signaled, will appear on the display. Press MENU ↓ to move through this menu selection.

NOTE: Pumps will not run when signals are applied during this test.

SIB NOT RESPONDING
CHECK CABLE CONNECTIONS

If this message appears, carefully inspect the wiring connections between the SIB and the slave. Shorted or loose wires can cause problems with the communication between these components. Press MENU ↓ to continue.

INITIATE SIB NOISE TEST ?
PRESS: YES OR NO

This selection allows you to test the electrical noise of the SIB. Pressing NO allows you to move through this menu selection.

SIB NOISE TEST
PASS ** **FAIL**

An indication of one (*) or two stars (**) next to PASS indicates that the SIB passed the electrical noise resistance test. Press MENU ↓ to move on to the next menu.

NOTE: If the display shows anything other than one or two stars, consult the factory.

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DIAGNOSTIC ROUTINES MENU HEADING

NOTES

DISCLAIMER

Knight LLC does not accept responsibility for the mishandling, misuse, or non-performance of the described items when used for purposes other than those specified in the instructions. For hazardous materials information consult label, MSDS, or Knight LLC. Knight products are not for use in potentially explosive environments. Any use of our equipment in such an environment is at the risk of the user, Knight does not accept any liability in such circumstances.

WARRANTY

All Knight controls and pump systems are warranted against defects in material and workmanship for a period of ONE year. All electronic control boards have a TWO year warranty. Warranty applies only to the replacement or repair of such parts when returned to factory with a Knight Return Authorization (KRA) number, freight prepaid, and found to be defective upon factory authorized inspection. Bearings and pump seals or rubber and synthetic rubber parts such as "O" rings, diaphragms, squeeze tubing, and gaskets are considered expendable and are not covered under warranty. Warranty does not cover liability resulting from performance of this equipment nor the labor to replace this equipment. Product abuse or misuse voids warranty.

FOOTNOTE

The information and specifications included in this publication were in effect at the time of approval for printing. Knight LLC reserves the right, however, to discontinue or change specifications or design at any time without notice and without incurring any obligation whatsoever.

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