KNIGHT

IDEX
IDEX CORPORATION

Multi-Flow
Installation & Programming
Instruction Manual

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⚠ CAUTION: The Multi-Flow laundry system has high voltage connected to the pump circuit board. Always disconnect main power when servicing the unit.

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INTRODUCTION

Please read this manual before attempting to program the dispenser — it will save you time.

The Multi-Flow dispenser features a user-friendly remote control, 16 formula capability, and available pump flow rates of 8 oz/min, 23 oz/min, 40 oz/min, 155 oz/min and 226 oz/min. Many other outstanding features, including integrated Flush mode, Drain mode, Relay mode and automatic programming, make this dispenser a good choice for any small or large volume laundry.

Before connecting signal wires to the Multi-Flow, always check the schematic of the washwheel controller. These schematics can be obtained in the instruction manual of the machine or by the machine manufacturer.

SYSTEM OVERVIEW

The Multi-Flow is a two component system, with each component performing a specific function. The circuit board located inside the pump housing, receives the supply signals from the washmachine. Signals are then routed to the Remote (hand-held) Control, which is responsible for all timing and programming functions. Pump run times and delay times are activated, based on what formula number has been selected — the pumps then run for the correct amount of time (or volume). Accessories for installation and other optional components, such as flush manifolds, are available. Contact your nearest Knight location for details.

OPERATION

❑ **NORMAL OPERATION:** The system is capable of 16 user selectable formulas with each formula having unique run times and delay times for each pump. Signals from the washer trigger the pumps, then the Multi-Flow's microprocessor takes control to count down delay times and run times with up to 3 individual "levels" (explained below) for each pump. The supervisor of the facility, or the machine operator, will select the formula using FORMULA ⇧ or FORMULA ⇩ buttons to choose the appropriate wash formula.

Programming "levels" allows a pump to inject different amounts of chemical for multiple signals to the same pump during a formula. For example, pump 1 could inject 8 ounces of chemical on its first signal, then later inject 12 ounces of chemical on its second signal. Up to three levels are available for any pump on any formula, except for the load count pump. ONLY 1 LEVEL CAN BE PROGRAMMED FOR THE LOAD COUNT PUMP (and any other pump that may be signaled simultaneously with the load count pump's signal). The level feature can also be used to "skip over" an injection. Simply do not program any volume or delay time for that level.

When a formula begins (after the RESET button has been pushed <u>or</u> the "Load Count" pump has been triggered from the previous formula) the first signal to a pump will activate level 1. The signal has to be present for at least the signal qualify time to be recognized. The second signal to the pump during the formula will activate level 2. The third signal to the pump during the formula will activate level 3. Any further signals will be disregarded once level 3 has been activated. The load count pump signal must be received to reset levels in preparation for the next formula.

❑ **DRAIN MODE OPERATION:** This mode is similar to normal operation but requires only one signal source from the washer and works by counting the number of drains during a wash cycle. When programming the Multi-flow dispenser for Drain Mode, each chemical pump is assigned a specific drain occurrence to inject product on. This feature only affects how the pumps are triggered – all other functions such as pump run times, delay times, and flush mode, will still operate in their normal fashion.

During a wash formula, each drain signal is counted and the pumps inject chemical according to the drain number they are assigned. Drain mode is similar to normal operation, in that the pumps are programmed with run times (and delay times if necessary) and the flush mode works the same way it does in normal operation.

The "multiple level" feature works slightly different in drain mode, because of the way drain mode counts the number of signals to pump #1 input. If a second injection level is required, it should be programmed to inject on a later drain number (occurrence) than the first level for that pump.

- Using signal lockout is not recommended for drain mode operation.
- During a formula, when pumps are idle, the display will show the current drain count and the formula name.
- The reset button can be used to reset the drain count.
- Auto Formula Select works with drain mode, but chart mode is not recommended.
- Auto Formula Select resets drain count.

❑ **RELAY MODE OPERATION:** This type of operation is typically used with a microprocessor controlled washer. When set to relay mode, the Multi-Flow system will run its pumps as long as their respective signals are present. To accomplish this, the system "by-passes" its run time and delay time capabilities for the chemical pumps, however bleach defeat and flush mode are still available, with no change in the way they're set or used. Choosing a load count pump is still required — load counts are tallied as a cumulative number and viewed in the typical manner.

PRE-INSTALLATION

Before the equipment is installed, you should survey the installation site thoroughly. At the very least, your survey should include the following:

(1) Check to make sure that all functions of the laundry machine are operating properly. Such functions may include: drain valve, hot/cold water solenoids, flush down valves, water level switch, card reader or timer, and machine motor.

(2) Check the proposed location for a 115 or 230 VAC power source.

(3) Check the signal voltage output from the laundry machine. Measure the voltage between control signal and signal common, NOT control signal and case ground.

(4) Measure the distance(s) from chemical supply container to pump housing and from pump housing to injection point inside the washmachine.
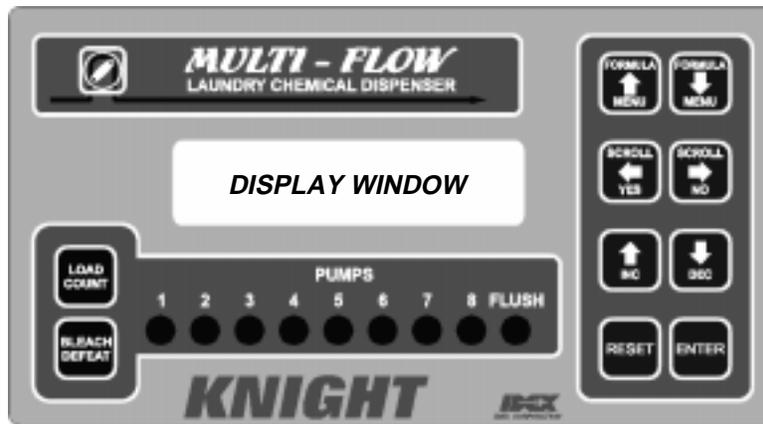
INSTALLATION

(1) Mount the injector in a convenient location on a wall near the supply containers — no higher than 8' above, and within 10' horizontally, of the supply containers. This location is usually near the washmachine, however, dispenser can be mounted as a remote pumping system.

(2) Mount the Remote Control using the included bracket. The Remote Control should be mounted to the front of the washer, near the washer's controls where the operators can access it easily.

(3) Ensure that the voltage of the system matches the main power voltage.

(4) It's very important to measure signal voltage between the signal wire and signal common (NOT case ground). This measurement must be taken when the washmachine is operating and when products are being called for.

If the washmachine has 2 commons for product signals, the Multi-Flow can accommodate this by removing a resistor to "split" commons A and B on the circuit board (see the wiring diagram on page 18 for details).

(5) BEFORE CONTINUING, DISCONNECT ALL ELECTRICAL CONNECTIONS TO THE WASHMACHINE, CARD READER (IF SO EQUIPPED), AND INJECTOR. VERIFY THIS WITH A VOLTMETER.

(6) Run all electrical wires through suitable conduit. Check any applicable electrical wiring codes.

(7) Inspect the wiring diagram of the washmachine and card reader (if so equipped). They are available from the manufacturer upon request.

(8) Insert one end of the suction tube into the left side of the squeeze tube in the peristaltic pump(s).

(9) Cut suction tube to length and insert other end into the appropriate supply container using PVC pipe as a support.

(10) Insert one end of the discharge tubing into the right side of the squeeze tube in the peristaltic pump(s).

(11) Form an anti-siphon loop (with the loop pointing "down") with the other end of the discharge tubing and insert the end into the supply pocket of the machine.

(12) Connect the 115 VAC or 230 VAC supply voltage to the system.

(13) Program the system via the PROGRAMMING instructions in this manual.

(14) Make any adjustments to programming which can be due to product viscosity, distance pumped, etc.

(15) Energize washmachine and card reader (if so equipped). The system should now be operational and service free.

KEYPAD DIAGRAM

FORMULA MENU ↑ **FORMULA MENU ↓**	Allows you to choose the desired formula (unless using RELAY mode) for operation. When programming the system, allows you to navigate through the various menu selections.
SCROLL ← YES **SCROLL → NO**	Allows you to move (SCROLL) the cursor position left or right within certain menu selections to choose items you wish to change. Also acts as YES or NO when prompted for a yes/no response within a menu selection.
↑ INC **↓ DEC**	INCreases or DECreases the value of a particular character (i.e. pump number, formula name, etc). A blinking "cursor" indicates which character will be changed by these buttons. Press repeatedly to advance through all available letters and numbers.
RESET	Locks you out from access when finished programming. From any selection within a menu, RESET will take you back to that menu's heading. Can also be used to halt pump operation and to reset the drain count. (When using Drain Mode)
ENTER	Allows you to access the system from the main (default) display. Takes you into the menus for programming. Logs data into memory when programming.
LOAD COUNT	Shows load counts in the display window. Press once to show *total* load counts for all formulas, or relay mode. Press repeatedly to advance through individual load counts for each formula (individual load counts do not apply to relay mode). Press MENU ⇩ to return to the default display when finished viewing load counts. **Note:** Load counts are cleared in menu 4.
BLEACH DEFEAT	Allows you to enable or disable the bleach defeat function. When enabled, the "bleach defeat" pump (see DISPENSER SETUP menu for details) will bypass operation until the load count pump is signaled. This feature also works in relay mode, and Drain Mode.

DISPLAY WINDOW

The display window shows various information about the dispenser during normal operation (i.e. when the Remote Control is not being programmed). The following examples will illustrate:

DISPLAY NAME FORMULA 01	When there is no pump activity, the display window shows the display name and current formula (or "RELAY MODE" if used). If using Drain Mode, the drain count will appear during the formula and will return to the normal display when the formula is finished.

FORMULA 01 P1 DLY 023 SEC	When a pump delay time is active, the display window shows the count-down in seconds.

FORMULA 01 P1 VOL 017.0 OZS	When a pump is running, the display shows the count-down as a volume (with your selected unit of measure) or as a time, in seconds. See DISPENSER SETUP menu for details on choosing volume or time display.

DISPLAY NAME NO BLEACH	When the bleach defeat function is enabled, the bottom line of the display will flash alternately between NO BLEACH, and the current formula name (or "RELAY MODE" if used). See page 7 for details on how bleach defeat works.

LOAD COUNT 00000 LOADS	Shows total load counts for all formulas (or if using RELAY mode). Individual formula load counts can also be viewed. See page 7 for details on viewing load counts.

ACCESS CODES

When working with a Multi-Flow system, there are two levels of protection for the system. The "main", or programmer level, allows the programmer to enter all of the menus and functions of the Multi-Flow system. The "user" level allows only a few basic on-site functions without the possibility of changing programmed information.

All systems are shipped from the factory with the main and user access codes set at 000. Changing the access codes is explained later in this manual. **To get started, press ENTER (from the main display window).**

ACCESS CODE 000 THEN PRESS ENTER	Use the SCROLL and INC/DEC buttons (not necessary if code has not yet been changed from factory default of 000) to input the access code, then press ENTER. If the "main" access code is entered, all functions of the system are then accessible.

If the "user" access code is entered, menu availability is limited to only the functions in the USER MENU. All other menu headings are still visible in the display window, however they cannot be entered.

| **1** | **DISPENSER SETUP** | IMPORTANT: The dispenser memory must be cleared when programming a new dispenser. |

| **CLEAR SETTINGS ? YES OR NO** | This selection allows you to clear pump volumes, flow rates and formula names in the dispenser and will reset the system to the factory default setting. |

| **CLEARING MEMORY ....** | If you pressed YES, this message will appear, indicating that the dispenser memory is actively being cleared. |

| **BLEACH PUMP = X INC/DEC   ENTER** | This selection shows which pump will be defeated if the BLEACH DEFEAT button is pressed. Use the INC/DEC buttons to choose the number, then press ENTER. Press MENU ⇩ to continue. |

| **LOAD COUNT P= X INC/DEC   ENTER** | This selection shows which pump is being used to count loads. Always enter the last pump in the system that will receive a signal. Use the INC/DEC buttons to choose the number, then press ENTER. Press MENU ⇩ to continue. |

IMPORTANT: The load count pump must receive a signal on every washcycle for the system to operate correctly (even if the load count pump will not actually dispense chemical for the formula selected).

When the load count pump receives a signal, the load counter is incremented as well as resetting bleach defeat, formula levels, and signal lockout in preparation for the next washcycle.

This setting is critical when using Drain Mode to maintain proper injection sequence. Normally you will set the load count pump to correspond with the last drain signal that will be received during the formula, however there may be additional drain signals that occur after the last pump has injected. In this situation, a fictitious pump can be assigned to act as a load count pump.

| **UNITS = US INC/DEC** | This selection allows you to choose between US, Metric, or Imperial units of measure. Use the INC/DEC buttons to choose the desired setting, then press MENU ⇩ to continue. |

| **DELAY UNITS=SEC INC/DEC** | This selection allows you to choose seconds or minutes as the delay time unit of measure. Use the INC/DEC buttons to choose the desired setting, then press MENU ⇩ to continue. |

Some injections only need to be delayed for a few seconds while others need much longer times. Choose the setting best suited for your particular installation.

SIG LOCKOUT=OFF **INC/DEC**	This selection allows you to select whether you want "erroneous" signals to be ignored by the system. Typically, erroneous signals are generated by some washers when a water level goes low and a fill valve activates. Use the INC/DEC buttons to choose the desired setting, then press MENU ⇩ to continue.
	The signal lockout feature is by-passed when the system is operating in relay mode, as the pumps are directly controlled by the signals from the washer's controller.

SIG LOCKOUT TIME = 00 **INC/DEC ENTER**	This selection sets the time (in minutes) that signal lockout will disregard incoming supply signals. The setting applies to all pumps except the load count pump. Use the SCROLL and INC/DEC buttons to choose a lockout time between 0 and 99 minutes, then press ENTER. Press MENU ⇩ to continue.

SYS LOCKOUT = 00 **INC/DEC ENTER**	This selection sets the time (in minutes) that the system will be "locked-out" to all incoming supply signals. The lock-out time is started by a signal to the load count pump. Use the SCROLL and INC/DEC buttons to choose a lockout time between 0 and 99 minutes, then press ENTER. Press MENU ⇩ to continue.

AFS = ENABLED **INC/DEC**	This selection enables the Automatic Formula Select feature. This feature allows the washwheel controller to send signals to the Multi-Flow dispenser and automatically select the correct wash formula. Washroom personnel no longer select formulas, thereby eliminating potential mistakes. Use the INC/DEC buttons to make your choice, then press MENU ⇩ to continue.

AFS MODE = MICRO **INC/DEC**	This selection allows you to choose which AFS mode will be used to select formulas. See the notes below for details on how the modes work. Use the INC/DEC buttons to make your choice, then press MENU ⇩ to continue.
	MICRO: Typically used with microprocessor controlled washers that can send a signal of exact duration to the Multi-Flow unit. The Multi-Flow interprets the duration of the signal as the formula number requested, based on the AFS SIGNAL TIME explained in the next menu selection.
	CHART: Typically used with card-reader type machines. Uses a combination of signals to pick the formula in a "binary" numbering format. The auto formula select signal must be applied for a minimum of 30 seconds.

AFS SIG TIME = 1 **INC/DEC**	This selection is used with AFS micro mode to establish a time "increment" for selecting formulas. The signal duration will be divided by the number selected to choose the formula. The available signal time increments (in seconds) are 1, 2, or 5. Example: If AFS signal time is set for 2, a 20 second signal from the washer would choose formula 10 on the Multi-Flow.

AFS PUMP = 0 **INC/DEC ENTER**	This selection sets which pump signal input will be used for the auto formula select feature. Choose an "unused" pump input (one that is not used to trigger a chemical injection). NOTE: Chart mode can only use pump 6, 7, or 8 as AFS pump.

FLUSH = DISABLED **INC/DEC**	This selection allows you to select if you want to use flush mode. Use the INC/DEC buttons to choose if the flush will happen *with* any pump, *after* any pump, or if this feature will be disabled (off). Make a selection, then press MENU ⇩ to continue.
	If you chose "with", the flush will activate simultaneously during the operation of any pump(s). When the pumps finish running, the flush will remain active and begin counting down it's own programmed run time. If you chose "after", the flush will not activate until the pumps finish running, then the flush will then begin counting down it's own programmed run time.

FLUSH TIME = 000 **INC/DEC ENTER**	This selection allows you to set the flush time for all formulas, or if using RELAY MODE. To set the flush time (in seconds) use the SCROLL and INC/DEC buttons to establish the desired time, then press ENTER. This is the amount of time that the flush will stay active when a pump finishes injecting.

RELAY MODE = OFF **INC/DEC**	This selection allows you to select if you want to use relay mode. See the operation section of this manual for details on how the relay mode works. Use the INC/DEC buttons to choose the desired setting, then press MENU ⇩ to continue.

DISPLAY = TIME **INC/DEC**	This selection allows you to choose how the main display will show pump activity counting down. Use the INC/DEC buttons to choose "time" or "volume", then press MENU ⇩ to continue.

FORMULA 01 **FORMULA 01**	This selection allows you to customize formula names (up to 14 characters). Use the SCROLL and INC/DEC buttons to choose the formula number on the top line, then press ENTER ... the current name of that formula will appear on the bottom line. Press SCROLL to move the cursor down to the bottom line, then use the SCROLL and INC/DEC buttons to establish a formula name ... press ENTER to log the data into memory. Repeat this step for other formulas, then press MENU ⇩ to continue.

ACCESS CODE=000 **INC/DEC ENTER**	This selection allows the "main" access code to be changed. Use the SCROLL and INC/DEC buttons to establish the new code number, then press ENTER to log the data into memory. Press MENU ⇩ to continue.

USER ACCESS CODE **=000 INC/DEC ENT**	This selection allows the "user" access code to be changed. Use the SCROLL and INC/DEC buttons to establish the new code number, then press ENTER to log the data into memory. Press MENU ⇩ to continue.

	If access codes are changed, keep a record of the changes in a safe place, in the event that access codes are forgotten. If the record of code changes becomes misplaced, contact Knight.

DISPLAY NAME	This selection allows you to change the display name that shows in the window of the Remote Control (up to 14 characters). Press SCROLL to move the blinking cursor down to the bottom line, then use the SCROLL and INC/DEC buttons to establish the new display name ... press ENTER to log the data into memory.

PMP 7 & 8 = DISABLE **INC/DEC**	Check the dispenser circuit board to determine if there are output connections for pumps 7 and 8. If there is, choose ENABLE using the INC/DEC buttons. If the circuit board does not have connections for pumps 7 and 8, make sure this menu selection is set to DISABLE.

DRAIN MODE = ON **INC / DEC**	This selection allows you to turn the drain mode ON or OFF. Use INC/DEC to make your selection, then press MENU ⇩ to continue.

DRAIN SIG = NORMAL **INC / DEC**	This selection allows you to select if the drain signal is to be NORMAL or INVERTED. Use INC/DEC to make your selection, then press MENU ⇩ to continue.

DC PUMP COMP=OFF INC / DEC	This feature is designed for applications where the Multi-Flow remote control is used with an On-Premise (OP) or On-Premise Plus (OPP) pump unit. It allows the Multi-Flow control to compensate for multiple pumps running simultaneously. This overcomes the slight drop in pump speed, and ensures that the programmed dosages are properly injected.
	This feature is available for use with normal operation or drain mode only (not used with relay mode). It is not necessary to re-program the dispenser, and all other pump functions will still work in their normal manner. The software will automatically extend the run time of the pumps in the following ways:
	1 pump running — no effect, the pump will run its normal time.
	2 pumps running — the run time counting down on the display will appear normal, but the *actual* time that the pumps run will be increased by 10%.
	3 pumps running — the run time counting down on the display will appear normal, but the *actual* time that the pumps run will be increased by 20%.
	This feature only affects the pumps <u>while they are running simultaneously</u>. For example, if two pumps begin running at the same time, but one finishes before the other, then the pump that is still running will finish its remaining time without compensation.
	Use INC/DEC to turn this feature on or off, then press MENU ⇩ to continue.

SIGNAL QUALIFY =005 SEC (1-255)	This selection allows you to determine the appropriate length of a valid supply signal from the washer. Supply signals must be of a duration that matches the minimum setting to activate any pump in the system, or start a pump delay.
	Use the SCROLL and INC/DEC buttons to choose a signal qualify time of 1 to 255 seconds, then press ENTER. Press MENU ⇩ to continue.
	NOTE: The factory default setting is 5 seconds.

2 **CALIBRATE PUMPS**	

PRIME PUMP 1 **ENT = START/STOP**	This selection allows you to prime pumps. Use INC/DEC to choose the pump number, then press ENTER to start pump. Press ENTER again to stop pump. Press MENU ⇩ to continue.

CALIBRATE=VOLUME **INC/DEC ENTER**	This selection allows you to choose "volume" or "time" pump calibration — see the following notes. Use INC/DEC to make your selection, then press ENTER. Press MENU ⇩ to continue.

VOLUME: Pump flow rates are set by actually running the pump and dispensing product. This allows the system to calculate true flow rates. Use a large container with volume markings, such as a beaker or graduated cylinder, for the calibration steps below.

TIME: Setting pump flow rates is not necessary. Pumps simply run for a specific time as programmed in each formula. See the FORMULA SETTINGS menu for more details.

CALIBRATE P 1 **INC/DEC**	This selection appears if you chose "volume" calibration. Choose the pump you wish to calibrate using the INC/DEC buttons, then press MENU ⇩ to continue.

DISPENSE 000 OZS **ENT = START/STOP**	Use SCROLL and INC/DEC to set a volume amount you wish to calibrate with (4 oz, 6 oz, 12 oz, etc). Ensure that the pump is primed, then position your container below the pump output. Press ENTER to start the pump. When the container is filled to the volume you specified, press ENTER again to stop the pump. The flow rate is automatically calculated and you will see the following...

FLOW RATES/MIN. **P-1 =000.0 OZS**	To view existing flow rates, use INC/DEC to choose the pump (ensure that the "cursor" is blinking on the pump number) then press ENTER . If you know the exact flow rate and want to enter it manually, use SCROLL and INC/DEC to establish the volume (ensure that the "cursor" is blinking on the volume) and press ENTER. NOTE: The cursor position determines whether data is *read from* or *written to* memory.

Press MENU ⇧ to calibrate other pumps. If desired, you can get to the above display without having to run pumps by simply pressing MENU ⇩ when entering CALIBRATE PUMPS menu.

3	**FORMULA SETTINGS**	NOTE: Programming formula settings is not necessary for "relay mode" operation (pumps run for as long as their signal is present in RELAY MODE). See Relay Mode section for more details.

If you chose VOLUME (from CALIBRATE PUMPS menu)...

FORM O1 L 1 P 1 **V 000.0 OZS D000**	To view existing data, use the SCROLL and INC/DEC buttons to choose the desired formula/level/pump, then press ENTER while the blinking cursor is on the top line. To input new data, repeat the previous step, then use the SCROLL and INC/DEC buttons to establish the volume and delay time, then press ENTER while the cursor is on the bottom line. Press MENU ⇩ to continue.

If you chose TIME (from CALIBRATE PUMPS menu)...

FORM 01 L 1 P 1 **ENT = START/STOP**	Use the SCROLL and INC/DEC buttons to choose the formula, level, and pump number, then press ENTER to start the pump. When the desired amount of product has been dispensed, press ENTER again to stop the pump. The run time is tracked automatically and the display below will appear… NOTE: You can get to the following display <u>without</u> having to run pumps by pressing MENU ⇩ from this menu selection.

FORM 01 L1 P1 **T 000 SEC D000**	To view other formula/level/pump information, use the SCROLL and INC/DEC buttons to pick your choice, then press ENTER while the blinking cursor is still on the top line. If you wish to change the data, or input it without running pumps, repeat the previous step, then use the SCROLL and INC/DEC buttons to establish the run time and delay time, then press ENTER while the blinking cursor is on the bottom line.

MAX VOLUME **IS 255 SEC**	If this message appears, it indicates an attempt to program a volume that exceeds the run time limit of 255 seconds (as calculated by the flow rate of the pump).

MAX DELAY **IS 255 SEC**	If this message appears, it indicates an attempt to program a delay time that exceeds 255 seconds (or minutes, as selected in the DISPENSER SETUP menu).

FORM 01 L 1 P1 **DRAIN COUNT = 000**	This selection is for use with drain mode <u>only</u> and allows you to enter the drain assignment for each pump and formula. Use the SCROLL and INC/DEC buttons to choose formula, level, and pump numbers, then use the SCROLL button to move the cursor to the bottom line to change the drain assignment. Then press ENTER while the blinking cursor is still on the bottom line. Repeat this for each pump on every level in each formula used.

4	**USER MENU**	This menu is always available if the "main" access code is used, however, this is the ONLY menu that is available if the "user" access code is used.

CLEAR LOAD COUNT YES OR NO	This selection allows you to clear the load count memory.

CLEARING LOAD COUNTS	If you pressed YES, this message will appear, indicating that the all load counts are actively being cleared.

PRIME PUMP 1 ENT = START/STOP	This selection allows you to prime pumps. Use INC/DEC to choose the pump number, then press ENTER to start pump. Press ENTER again to stop pump. Press MENU ⇩ to continue.

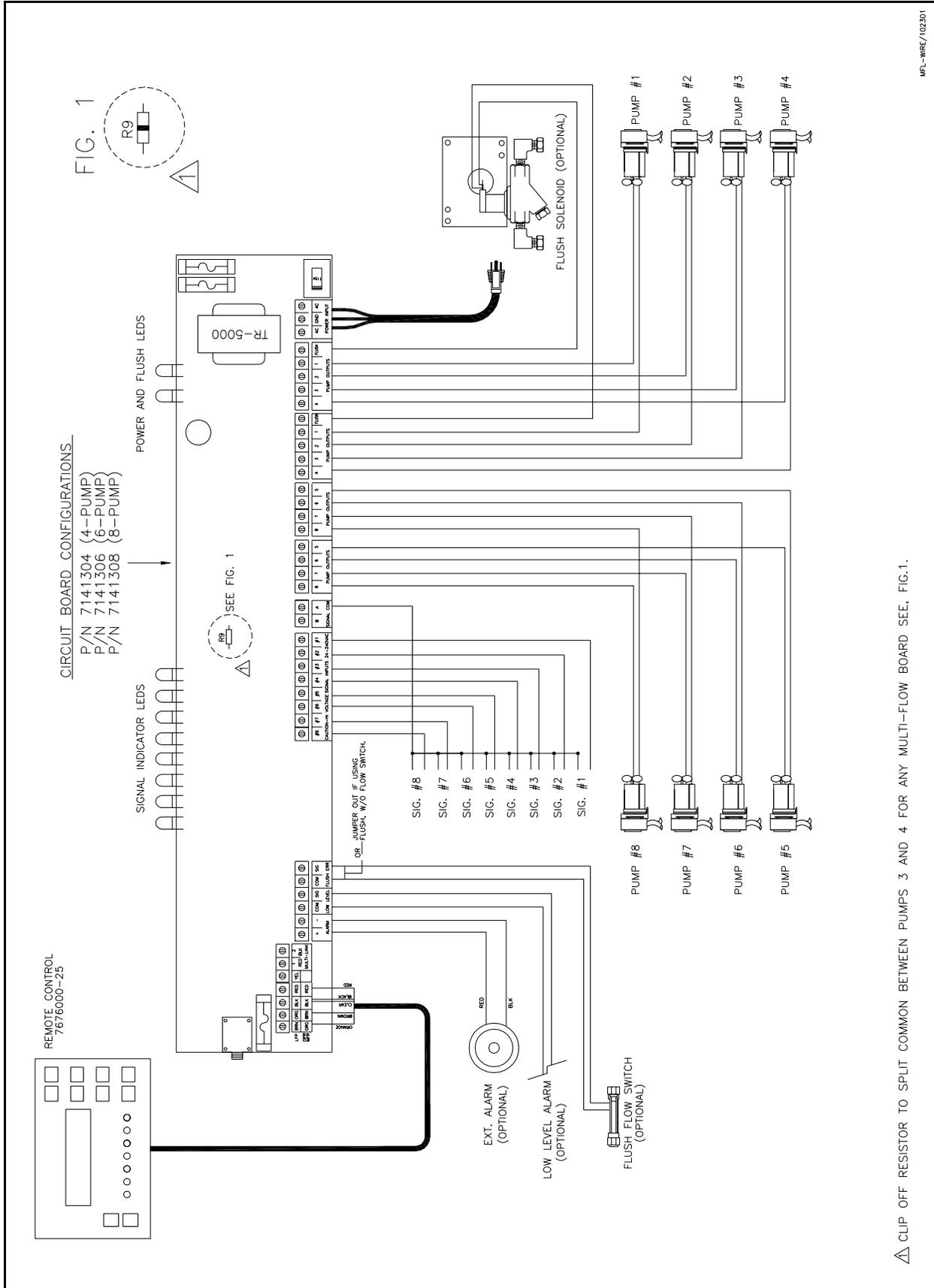| **5**	**DATA TRANSFER**	This menu allows you to copy all dispenser settings from another Multi-Flow Remote Control. The Remote Controls must be connected together with a network cable. Shut off the power to both dispensers before connecting the stereo jack cable. Once the cable is firmly connected to the stereo jacks on both Remote Controls, power may then be re-applied.
		NOTE: You can perform a data transfer with only one of the dispensers powered up (i.e. when carrying a Remote Control that's disconnected from its dispenser for portability). Be sure to shut off the dispenser before connecting the Remote Controls. Once the cable is firmly connected to the stereo jacks on both Remote Controls, power may then be re-applied.

RECEIVE SETUP **PRESS: YES OR NO**	This selection allows you to receive the programmed information from the other Multi-Flow Remote Control.

RECEIVING **SETUP**	If you pressed YES, this message will appear, indicating that the setup is being received from the other dispenser. When the process is finished, you will be returned to the menu heading.

FIG. 1

CIRCUIT BOARD CONFIGURATIONS

P/N 7141304 (4-PUMP)
P/N 7141306 (6-PUMP)
P/N 7141308 (8-PUMP)

POWER AND FLUSH LEDS

SIGNAL INDICATOR LEDS

SEE FIG. 1

TR-5000

FLUSH SOLENOID (OPTIONAL)

PUMP #1
PUMP #2
PUMP #3
PUMP #4

PUMP #8
PUMP #7
PUMP #6
PUMP #5

SIG. #8
SIG. #7
SIG. #6
SIG. #5
SIG. #4
SIG. #3
SIG. #2
SIG. #1

JUMPER OUT IF USING
FLUSH, W/O FLOW SWITCH.
OR

REMOTE CONTROL
7676000-25

EXT. ALARM
(OPTIONAL)

LOW LEVEL ALARM
(OPTIONAL)

FLUSH FLOW SWITCH
(OPTIONAL)

⚠ CLIP OFF RESISTOR TO SPLIT COMMON BETWEEN PUMPS 3 AND 4 FOR ANY MULTI-FLOW BOARD SEE, FIG.1.

MFL-WIRE/102301

NOTES

DISCLAIMER

Knight Inc. 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 Inc.

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.