

OHIO Dealer Manual

Installation Supplement

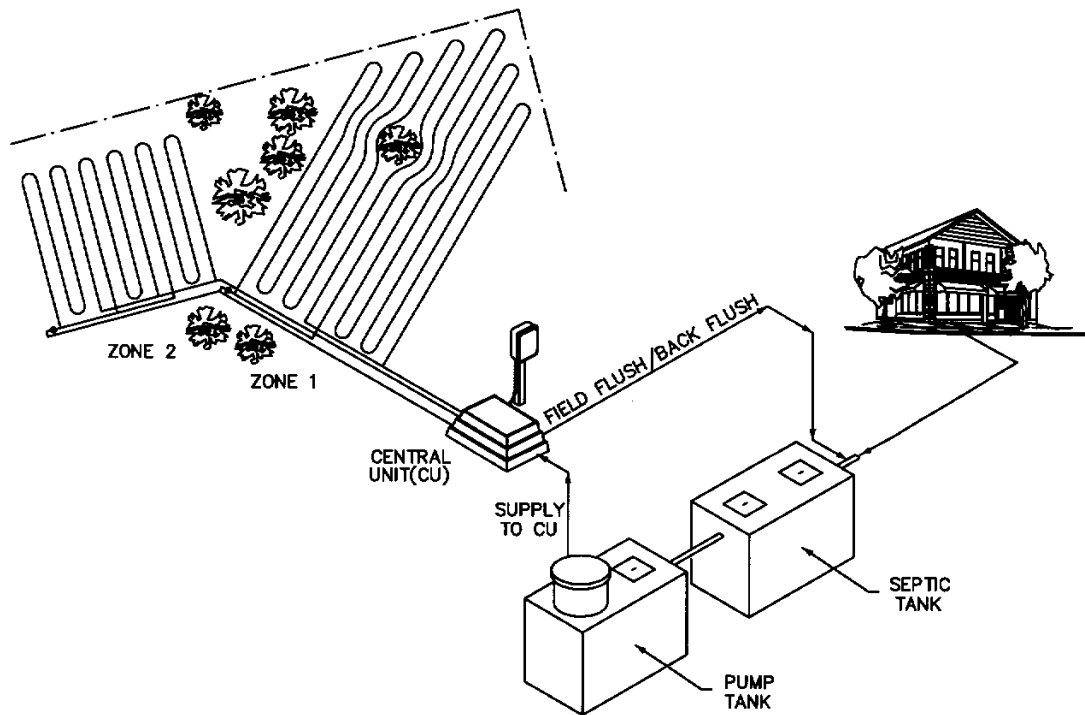
AMERICAN "PERC-RITE"[®]

WASTEWATER DRIP SYSTEMS

2 ZONE or 4 ZONE
SIMPLEX or DUPLEX

SEPTIC or
SECONDARY

PATENT NO. 5,200,065 ; 5,984,574 ; 6,261,452B1



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IMPORTANT NOTICE

This Dealer Manual is intended to give general information and guidance to authorized dealers and other qualified installers. The installer must determine the suitability of an American Manufacturing Company Septic Drip Disposal System for sewage disposal regarding basic design and layout and how the system functions in a specific site. The final decision as to the suitability of a system must be made by the designer. Suitability should be based on consideration of the general standards and information contained herein as well as other applicable waste disposal reference materials, specific topography, soil characteristics, space limitations, and other factors associated with a particular project. Consequently, American Manufacturing Company, Inc., a Virginia corporation, shall not be held liable in any manner to design engineers and other designers or installers of sewage disposal systems for claims arising from the use of the information contained herein nor actions arising from the reliance upon the accuracy of such information.

Additionally, unless American Manufacturing Company, Inc. or its employees are primarily responsible for a particular project, American Manufacturing Company, Inc. assumes no responsibility regarding, and shall not be liable to, any purchaser of a System in any manner for any of the following:

- a. any decision regarding the suitability of a Drip Disposal System
- b. the design and/or installation of a Drip Disposal System for any particular project, nor
- c. the utility or functioning of a Drip Disposal System for the project.

Purchaser's rights are set forth in the limited warranty and the Equipment Purchase Contract (invoice) in the event that the equipment itself is defective.

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DEALER RESPONSIBILITY

PURPOSE

The purpose of this section is to outline the responsibilities of the Dealer regarding the installation, monitoring, maintenance and warranty of the drip dispersal system as part of an on-site sewage treatment system.

INSTALLERS SCHEDULE OF DUTIES

1. The Dealer shall be responsible for the entire installation and shall only sell and install systems according to approved plans and permits.
2. The Dealer shall be responsible for insuring proper electrical installation and startup including recording startup date and initial meter readings.
3. The Dealer will meet standards for operation and maintenance per the jurisdictional health department.
4. The Dealer shall assure that all employees who work on the American Drip System are trained, understand and can perform operation and maintenance per the Drip System manufacturer manuals.
5. The Dealer is responsible for informing the owner within the first month of operation of the type of system installed and the owners responsibilities.
6. The Dealer is responsible for the first annual inspection after the 3rd month of operation.
7. The Dealer is responsible for one visit after first year of operation. The visit to include the following:
 - Sludge Judge the septic tank blanket
 - Inspect the drip system hardware for operation
 - Inspect system with operational checklist
 - Check landscaping for interference with system
 - Check water usage and evaluate usage compared to design

The inspection frequency should be set based on the first year's evaluation. Future inspections should be at a minimum once per year. If high strength waste is suspect, take sample for BOD,SS, and FOG.

8. Removal, replacement or alteration to this system must be in compliance with all applicable current county health department requirements, governing sewage treatment regulations and the manufacturer.

OWNER'S RESPONSIBILITIES

1. Acknowledge receipt and comply with instructions of the owner's manual provided. Reference owner's responsibilities in manual.
2. Notifying the Dealer or the designated agent immediately of any problems with the sewage treatment system.
3. Keeping the monitoring / access covers free of obstructions at all times.
4. Granting Installer / Operator and health department personnel access to the owner's property to service or inspect the sewage treatment system at any time during warranty period.
5. If system fails, owner will notify operator, manufacturer, and local health department.
6. Pumping the septic tank or other costs associated with the treatment system is not covered under any warranty. Pumping is required from time to time (frequency) varies by jurisdiction just like in conventional systems due to the production of solids during the treatment process.
7. Failure to make any payments when due shall be considered a breach of warranty and the operator may terminate warranty work without notice.

Specifications

DISC FILTERS - Disc Filters shall be an oblique filter, entirely of plastic, with two 3/4" male end connections to NPT schedule 40 pressure PVC. The filter elements shall consist of grooved rings, mounted on a spine, forming a cylindrical filter body. The rings are to be kept together by a spring seated at the bottom of the filter cover. The out-in filter shall be of the screw in type with nitrilic rubber o-ring seal. The body materials shall be polyester, the spine and rings shall be polypropylene, and the spring shall be stainless steel. The nominal filtration capacity of the filter shall be 115 microns.

DRIPPER TUBING - The dripper tubing shall be Netafim Bioline pressure compensating dripperline for wastewater. The tubing shall be nominal 0.61 gallons per hour (+/- 5% flow rate from 7 to 60 psi). The tubing shall function as a turbulent flow emitter between 0 and 7 psi, ensuring that the nominal design flow is not exceeded at system start-up. The tubing shall be polyethylene 120 psi rating. Tubing end connections and splice connections shall be manufactured specifically for the tubing and for connection to standard schedule 40 NPT adapters.

AUTOMATIC CONTROL VALVES - The automatic control valves shall be solenoid activated diaphragm valves by Bermad. The body and cover shall be reinforced nylon. The metal parts shall be stainless steel, the diaphragm shall be nylon-fabric reinforced poly isoprene. The seals shall be Buna-N. These valves shall operate electrically using hydraulic pressure to open and to close.

RETURN PRESSURE ASSEMBLY FOR ZONE RETURN CONTROL VALVE - The automatic zone return valve shall, in the event the drip zones are over 8 feet in vertical elevation above the hydraulic unit, have installed a "return pressure assembly". The assembly is to be used to prevent the line from draining after or during each dose. See standard detail.

GRAVITY PIPING - All gravity piping shall be schedule 40 PVC DWV as a minimum. Fittings shall be Schedule 40 PVC suitable for underground installation. All joints shall be solvent welded with the use of primer and PVC Glue.

NON-DRIPPER LINE PRESSURE PIPING - All non-dripper line pressure piping shall be PVC schedule 40 pressure rated. Rigid piping shall be standard ASTM 1120 for use with solvent welded Schedule 40 fittings. Flex piping shall be schedule 40 PVC flex pipe for use with pressure fittings.

FLOAT SWITCHES - Float switches for level indication and control shall be encapsulated mercury or mechanical differential switches. The switches shall be provided by American Manufacturing, or equal.

GENERAL VALVES - All gate, ball, globe and check valves shall be Schedule 40. Check valves shall be of the swing check design of metallic bronze with corrosion resistant metal hinge pin for use in wastewater.

PIPING DISCONNECTS - Piping disconnects shall be PVC schedule 80 unions.

AIR RELEASE VALVES - Air release valves shall be resilient seat "pop-up" type air release valves for use with filtered effluent (nominal filtration size of 115 microns.)

WIRE SPLICES - Field wire splices shall be installed in suitable wire splice pull boxes with waterproof connections for access to splice connections. The boxes shall have structural capacity for in ground installation and light vehicle yard care traffic.

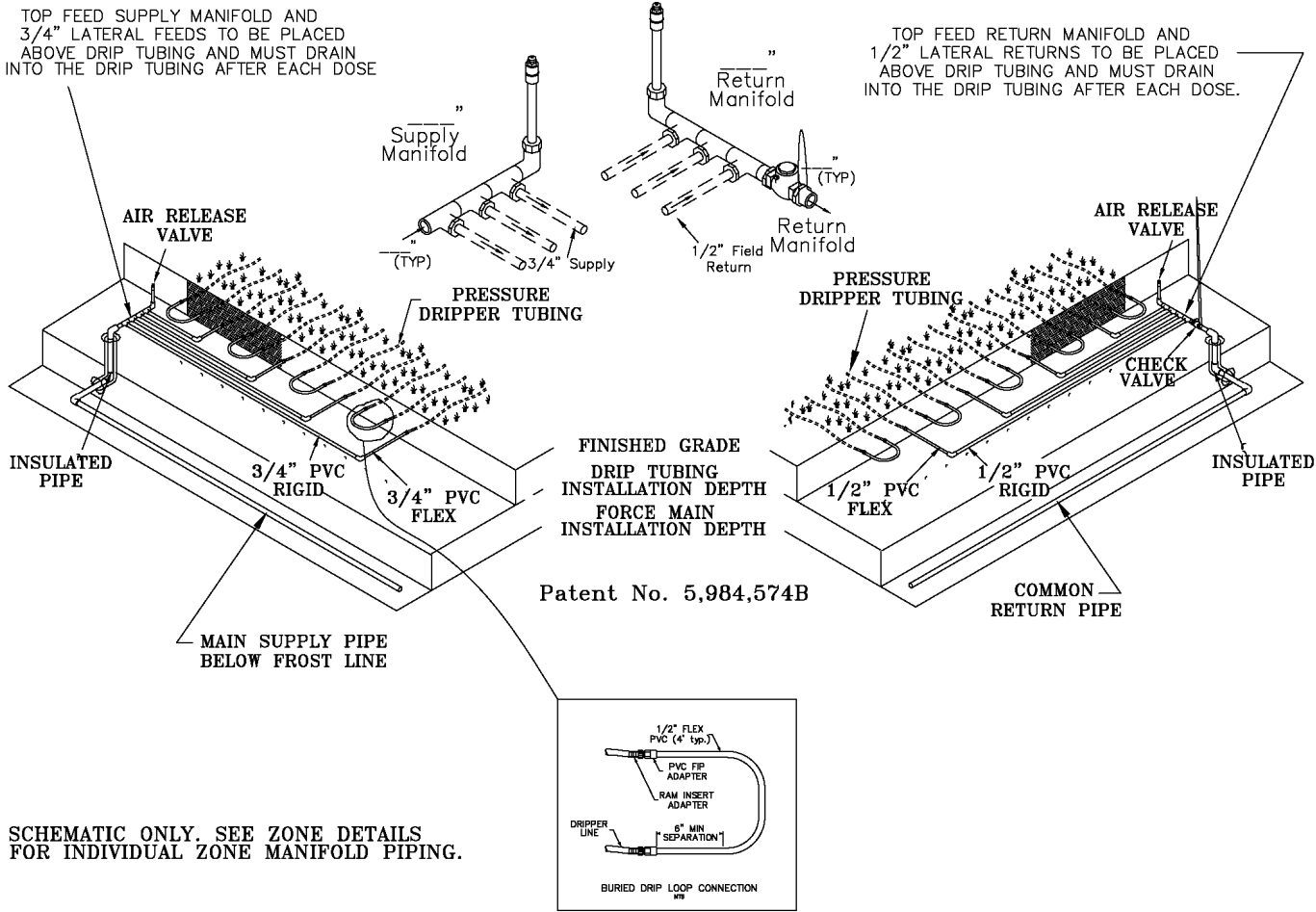
SPECIAL DRIP EQUIPMENT - All non-specified drip equipment shall be as supplied by American Manufacturing Company, Inc. including the controls, drip hydraulic unit, pumps, and specialty fittings.

PIPE BEDDING - In ground piping shall be installed according to local codes. Piping shall be installed on original soil or suitably compacted fill or gravel bedded excavations on original soil. Free standing piping shall be schedule 40 PVC and assembled with restrained joints.

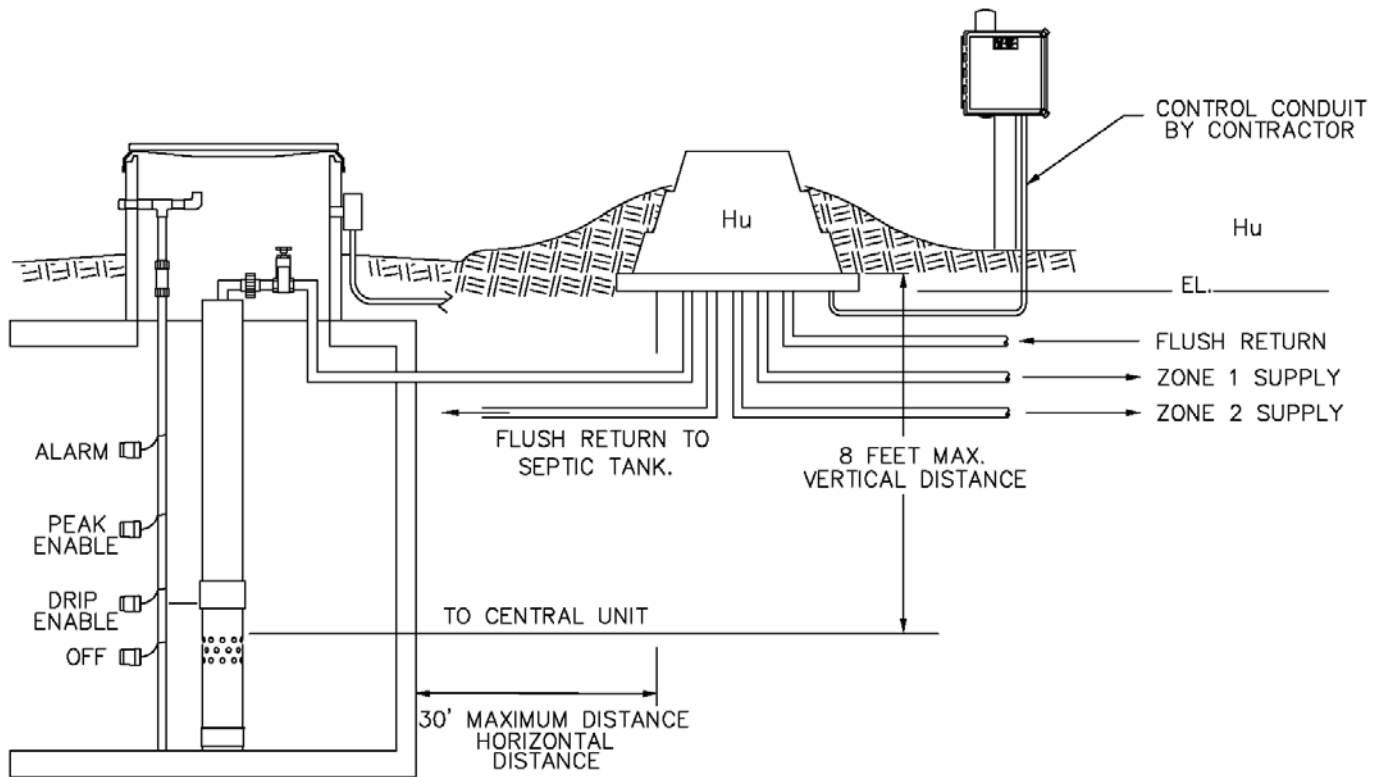
STANDARD DETAILS

REMOTE ZONE VALVE

The remote zone valves are typically used on larger systems with more than four zones or when the zones are below the elevation of the pump chamber. On slopes greater than 5% a bentonite clay plug should be installed three feet up contour from the valve box to prevent effluent from piping down the manifold and filling the valve box.



SCHEMATIC ONLY. SEE ZONE DETAILS FOR INDIVIDUAL ZONE MANIFOLD PIPING.



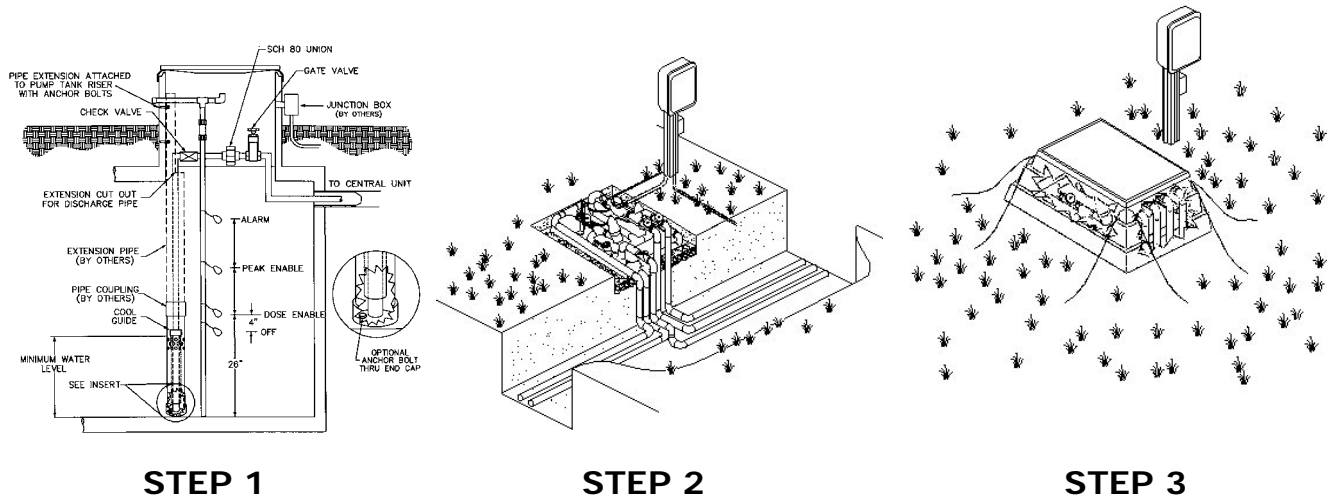
PUMP CHAMBER AND FILTER UNIT REQUIREMENTS

The filter unit (HU) must be close to the pump chamber as shown. The limiting factor is the backflushing sequence for the disc filters. The (HU) must be within 30 feet horizontal and 8 feet vertical distance for the pump to have enough TDH to complete backflushing.

The return line to the septic tank must have gravity flow back to the septic tank. The 1-1/2" line must have a 2% slope to drain back or a check valve should be placed at the (HU) to prevent backpressure on the backflush valves. If longer distances are used, the line size should be increased to 2".

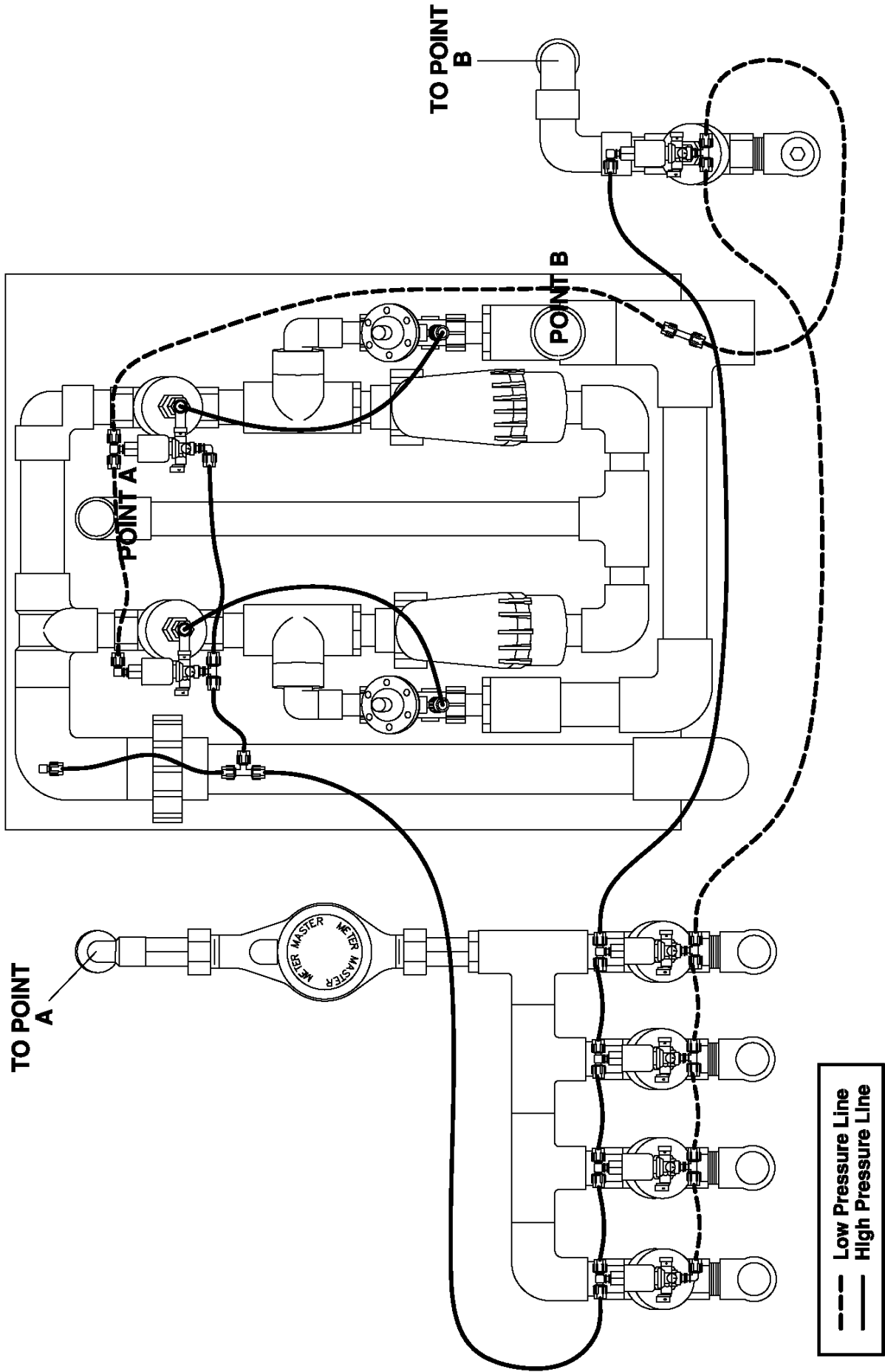
The pump should be placed as shown, secured on the floor of the pump. The pump discharge pipe must have **NO WEEP HOLE** . The pump is to be hard wired into a junction box.

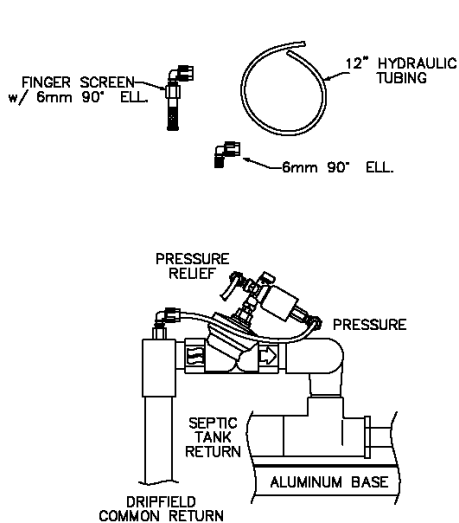
1. Recommend half to full day storage between drip enable and high level alarm.
2. Recommend at least one-quarter day storage between alarm and inlet of tank.
3. Peak selector switch is located on circuit card and should initially be left in "Pump & Alarm" to educate owner on water management.



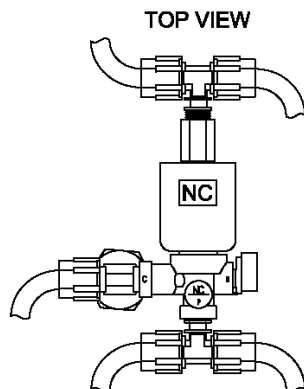
FILTER UNIT INSTALLATION STEPS

1. Install pump and floats as shown. The pump must NOT be installed with a weep hole due to the high pressure. Pump must be "hard wired" to maintain warranty. A disconnect should be provided next to a suitable outdoor rated junction box.
2. Dig a side trench to set the hydraulic unit. The area must be free from groundwater or rainwater infiltration. (If below original grade more than 4" the unit enclosure must have a positive drain.) Center the unit on a gravel bed with the pipes slightly over the edge. Connect the supply and return piping. Install the control panel on a 4"x4" (minimum) pressure treated post with at least 3 feet of clearance from the bottom of the control panel to the ground. The electrician shall provide three sources of power to the control panel per the schematic enclosed in the control enclosure. The control wire shall be run through conduit to the control with no splices and connected to the terminal strip provided. Connect the heater, floats and pump(s) to the control panel.
3. Install the insulated enclosure and backfill the area making sure not to damage any piping or electrical components. Provide positive drainage from around the central unit to insure no excessive rainwater will enter and rainwater which does enter will drain out. Provide a minimum of 4" of backfill above the bottom edge of the enclosure to help enclosure heater maintain temperatures above freezing. Additional mounding is preferred for freeze protection and aesthetics.

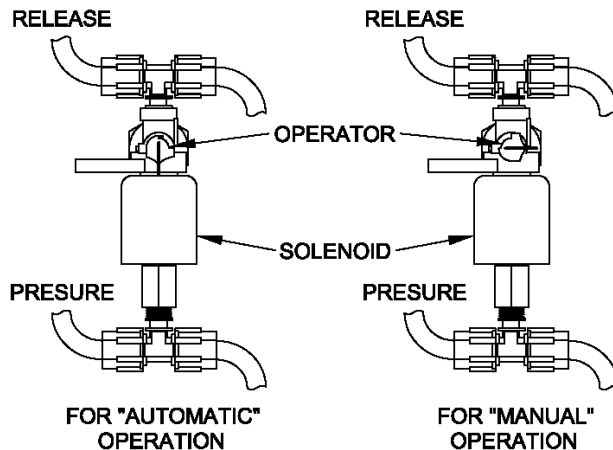




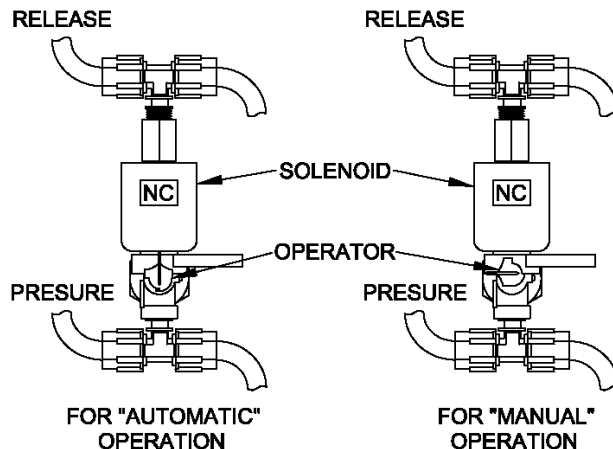
RETURN PRESSURE ASSEMBLY
NTS



**SOLENOID FOR NORMALLY
CLOSED DIAPHRAGM VALVE**



**SOLENOID FOR NORMALLY
OPEN DIAPHRAGM VALVE**



NOTES:

1. The hydraulic unit above is shown in an explosion view on the next page.
2. The "normally closed" zone valves and zone return valves have "normally open" solenoids (typically unmarked). These valves are supplied pressure through the solenoid which, when not activated, places pressure on the diaphragm.
3. The "normally open" supply valves have "normally closed" solenoids. The pressure is supplied through the operator and the connection. With the solenoid not activated, pressure bleeds off the diaphragm.
4. **OPTIONAL - RETURN PRESSURE ASSEMBLY FOR ZONE RETURN CONTROL VALVE:**
In the event the drip zones are over 10 feet in vertical elevation above the hydraulic unit, install a "return pressure assembly". The assembly is to be used to prevent the return line from draining after or during each dose. Remove the zone return connection and reinstall a short 1" nipple in the return valve. Install assembly as shown to the right. The hydraulic tubing providing pressure for the rest of the unit must be plugged and the new tubing from the assembly connected to the pressure side of the solenoid.

Installation Procedure Summary

1. Prepare field location for installation.
2. Set septic and pump tanks.
3. Dig header ditch for field manifold.
4. Install dripper tubing.
5. Install loops (flex tubing).
6. Dig ditches for conveyance lines.
7. Place Central Unit and mount control panel.
8. Dry fit pressure lines and field manifolds.
9. Set switch tree in pump tank.
10. Glue all fittings and place valve boxes.
11. Install electrical (and phone line if applicable).
12. Check power supply and power up unit.
13. Provide one day volume of clean water for startup.
14. Pressure check all fittings and lines.
15. Inspection of field and loops.
16. Flush all fields through the air release valves.
17. Set run time for Central Unit.
18. Check setup values against calculated values.
19. Find leaks and repair.
20. Backfill once lines and fields are determined to have no leaks. Back filling is to be controlled to prevent the damaging of pipes or fittings.
21. Grade and seed site.

Log data registers and startup values.

BLOWER FAIL OPTION

In normal operation, power is supplied from a blower panel to the specified terminals in the Perc-Rite® control panel. The American Perc-Rite® controller is dependent on that power from the blower for dosing operations. If the blower fails, or is turned off the central unit will stop all automatic dosing functions.

Wires shall run from power terminals of the blower (115V Standard in Perc-Rite® Control) to the terminals of the central unit labeled "DVC" (Direct Voltage Cutout). Polarity is not a factor during this operation but voltage of blower and voltage of cutout relay (115V Supply & Neutral) must match.

Startup Procedures - *AMERICAN SEPTIC DRIP*

This procedure outlines the startup procedures for the drip dispersal field tubing system. The process includes flushing dirt, pipe shavings and other possible construction debris out of the tubing and checking dosing rates in a three step process. First, flush through air release valves, second flush through normal flushing process (while checking flow rate), and finally checking final dose flow rate.

I. System Flushing Air Release Valves Off

- a. Be sure pump chamber is full of clean water. Check lights on controller for float activation. The "Off" float and "Standard Enable" float should be in the up position before starting field flush. Continue to fill tank to "alarm" float. It should take one days' flow of clean water to flush tubing.
- b. Place all toggle switches, on the inner door, in the "Off" position and place filter backflush switch in the "Auto" position.
- c. Remove air release valves, attach piece of 1/2" black flex PVC (5' maximum) to 1/2" white PVC with dry coupling (do not glue) and place end to direct discharge away from excavation.
- d. Switch pump to "Hand" position. Pump should dead head with no flow meter movement.
- e. Place filter backflush to filter #1 position. Note blue valve opening. Backflush for 15 seconds, Place filter backflush switch to the "Auto" position.
- f. Place disc filter backflush to filter #2 position. Note blue valve opening. Backflush for 15 seconds, Place filter backflush switch to the "Auto" position.
- g. Turn zone #1 to hand position to allow a manual field flush. After water starts discharging from flex PVC, continue to flush for at least three (3) minutes or until no debris (dirt, PVC shavings, etc.) is noted, whichever is greater.
- h. Repeat item "e" & "f".
- i. Repeat "g" & "h" for each additional zone.
- j. Place all toggle switches, on the inner door, in the "Off" position and place filter backflush switch in the "Auto" position.
- k. Remove black PVC hose, dry, and glue coupling with air release valves.

II. Field Flush Flow Test

- a. Determine each zone flushing GPM by multiplying the number of lateral connections by 1.6 and adding to the dosing GPM. (see "a" in step III) Resultant should not exceed 15 GPM for the two disc filter rack.
- b. Switch pump to "Hand" position. Pump should dead head with no flow meter movement.
- c. Place filter backflush switch to filter #1 position. Note blue valve opening. Backflush for 15 seconds. Place filter backflush switch to the "Auto" position.
- d. Place filter backflush switch to filter #2 position. Note blue valve opening. Backflush for 15 seconds. Place filter backflush switch to the "Auto" position.
- e. Turn switch for "Zone #1" and the "Zone Return Valve" to "Hand" position to allow a manual flush. After water starts flowing through zone return valve, flush for three (3) minutes, check flow rate and compare with design flushing flow rate.
- f. Place all toggle switches, on the inner door, in the "Off" position and place filter backflush switch in the "Auto" position.
- g. Repeat item "b", "c", "d" & "e" for each additional zone.
- h. After flushing the last zone leave the pump and zone valve in the "Hand" position and close the zone return valve "Off". After the flow rate stabilizes and compares to design flow rate, see next section.

III. Field Dose Flow Test

- a. Determine each design zone dosing Gallons Per Minute (GPM) by the following formula: (If installed as designed refer to calculation sheet.)
$$\frac{\left(\frac{\text{Length of Tubing}}{2}\right) \times 65 \text{ Gallons per Hour}}{60 \text{ Minutes per Hour}} = \text{Gallons per Minute Dosing}$$
- b. Determine dosing flow rate in the last zone flush tested. The rate should be close to value calculated in "a" above. Check for leaks and repair as necessary.
- c. With all toggle switches in the "off" position, backflush filters as described above in step II's "b", "c", & "d".
- d. Move the next zone switch to the "Hand" position and make sure the Zone Return switch is in the "off" position, watch flow meter slow as system fills. When pressurized, measure flow rate with watch. The rate should be close to value calculated in "a" above. Check for leaks and repair as necessary.
- e. Repeat for each additional zone.
- f. Place all switches in the "Auto" position.

IV. Zone Return Pressure Assembly Flow Test

- a. In some cases when the drip field is around 10' in elevation above the hydraulic unit or when it is significantly above the unit the valve will not close properly and continue to recycle wastewater back to the septic tank. If this condition occurs, follow the following steps.
- b. Remove the zone return connection and reinstall a short 1" nipple in the return valve.
- c. Place the "return pressure assembly" in the return line as per standard detail on page 19.

V. Timer Adjustment / Automatic Mode

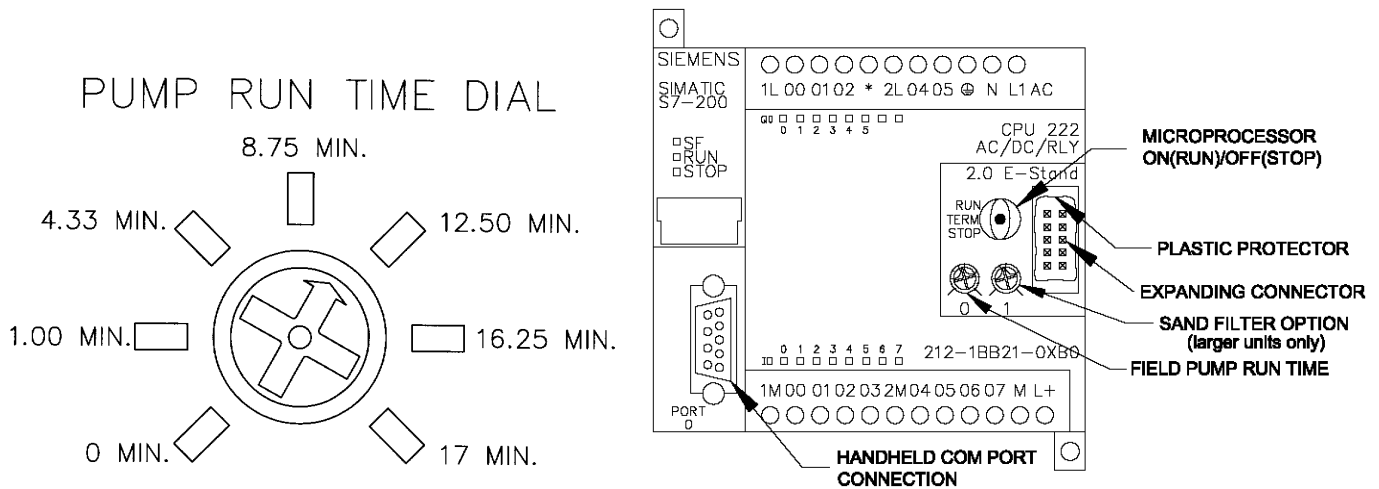
(Note: Timer Enable float must be up for automatic operation)

- a. Write down gallons from flow meter and target total gallons dose for all Zones.
- b. Place pump and Zone #1 in auto position, all other zones "off". Adjust timer screw setting to the approximate calculated value for total gallons per zone. Press "reset" button and hold for 5 seconds. System will automatically backflush filters and dose next zone. Start stop watch when meter begins flow. Record the time it takes to deliver calculated volume. Adjust timer to that actual time (not the calculated time).
- c. Repeat for each additional zone, no adjustment should be necessary even if zone is of a different size. High or Low volume values indicate a possible leak or obstruction.
- d. Leave all zones in use switched to automatic.

The "pump run time dial" will adjust the pump run time from zero minutes to 17 minutes. This run time, when two 900 linear feet zones are in use, will dispose of 216 gpd when dosed with the "Standard Dose Enable" float switch up and 360 gpd when dosed with the "Peak Enable Float" switch up (typical 3 bedroom house).

Use a small phillips screw driver to adjust the "pump run time dial". After adjustment, press and hold the reset button until a pump event is initiated (approx. 5 seconds). Time the pump run time after backflush to determine if the setting is adjusted where wanted. Readjust if necessary. The gallons per day can be set by first determining the gallons per minute in each zone, then the rest time between doses and then adjusting the pump run time as necessary.

NOTE: THE HOMEOWNER ASSUMES FULL RESPONSIBILITY FOR CONDITIONS OR MALFUNCTIONS DUE TO CHANGES IN PUMP RUN TIME BY ANYONE OTHER THAN A QUALIFIED SERVICE REPRESENTATIVE.



TIMER SETTING

The timer may be easily set with the use of a hand held control adapter. Customers that purchase an optional hand held unit will have the ability to view exact run timer settings as the dial is manually turned. See page 9 of this manual for instructions. The only other way to set the timer is by trial and error. Start an automatic cycle, time the field dose, then adjust up or down to get close to desired time.

DEALER NOTES;

DATA REGISTERS AND THE HAND HELD PROGRAMMING & MONITORING UNIT

Dealers may purchase the optional hand held programming & monitoring unit (hand held unit) in order to see the timer settings and counter values as listed on the Data Monitoring Table on the next page. The device is the size of a hand held calculator and will easily fit into the standard installers service kit. The table may be copied to log in data from a specific site for a specific date and time.

The hand held unit may be plugged into or removed from the microprocessor at any time. Even in the middle of an operation the control will only divert back to automatic operation. The use of the hand held is not necessary to operate the unit. It only makes setting of the run time easier and proportioning of the run time possible. In most cases however the proportioning is not necessary and the timer settings can be tested with a stop watch.

Data Registers - **AMERICAN PERC-RITE® DRIP**

Counters are used to provide delay time for doses and flushing sequences. Counters may be adjusted to start cycles. Different dose times for each zone may be set. Registers are field adjustable with a hand held unit only. The following table shows which registers can be viewed and adjusted.

Data Registers - **AMERICAN SINGLE TANK SANDFILTER DRIP**

There are registers available for use with a **SINGLE TANK SANDFILTER DRIP** system. Detailed information for this system is available from American at our web site.

TO START HAND HELD

- Plug hand held unit with matching plug shape to socket
- Press "F1" for main menu (main menu should already be on screen)

Note: If you press "esc" another menu may be seen, do not operate from this menu. Press "esc" again to return to the main menu.

"Main Menu"

MAIN	DATA	VIEW	EDIT
F1	F2	F3	F4

TO CHECK TIMER AND COUNTER REGISTERS

- Press "F2" to view data - Pump and Zone Counters & ETM's
- Press "F3" to view timers and counters - Run & Rest times during operation
- Press "F4" to edit timers and counters - Operational setup values

TO EDIT (CHANGE) REGISTER VALUES

- Press "F4" to edit timers and counters
- Use small phillips screwdriver (on field pump run time screw) to adjust pump run times
- Use arrows to move left flashing cursor on register that you want to change
- Press "ENTER", cursor will highlight the number of that register you want to change
- Use arrows to change value to desired number, then press "ENTER". For screens with multiple values, press "ENTER" repeatedly until screen changes.

Note: After thirty seconds of inactive viewing of a register, the hand held will return to the top of the function register in use. After four minutes of inactivity, the hand held will return to the main menu.

DATA MONITORING TABLE

NAME: _____
 Address: _____

DATE: ___ / ___ / ___
 Time: ___ : ___ AM PM

Press (F1) to return to main menu at any time. Press the noted (F2,F3) to review and (F4) to edit the referenced registers. After thirty seconds of inactive viewing of a register, the hand held will return to the top of the function register in use. After another four minutes of inactivity, the hand held will return to the main menu.

Legend: (m) minutes, (h) hours, (t) tenths of a second. All rest times are in minutes

Scr. No.	(F2) DATA RECORD	VALUE	Scr. No.	(F3) VIEW STATUS	VALUE	Scr. No.	(F4) EDIT SETTINGS	VALUE
1	Zone 1 Dose Counter		1	Current Zone		1	Zone 1 Run Time (t)	1,500-11,700
	Zone 1 Dose ETM (m)			Target Run Time (t)			Zone 2 Run Time (t)	1,500-11,700
2	Zone 2 Dose Counter			Elapsed Run Time (t)			Zone 3 Run Time (t)	1,500-11,700
	Zone 2 Dose ETM (m)		2	Zone Rest Target			Zone 4 Run Time (t)	1,500-11,700
				Elapsed Rest Time		2	Zone 1 Dose %	100
3	Zone 3 Dose Counter		3	SF Target Rest Time			Zone 2 Dose %	100
	Zone 3 Dose ETM (m)			SF Elapsed Time (m)			Zone 3 Dose %	100
4	Zone 4 Dose Counter		4	Z1 FF Dose Cnt			Zone 4 Dose %	100
	Zone 4 Dose ETM (m)			Z2 FF Dose Cnt		3	2Z STD Enable Rest	288
5	Pump 1 Counter			Z3 FF Dose Cnt			2Z Peak Enable Rest	160
	Pump 1 ETM (m)			Z4 FF Dose Cnt		4	3Z STD Enable Rest	288
6	Pump 2 Counter		5	Next Zone to Dose			3Z Peak Enable Rest	160
	Pump 2 ETM (m)			Backflush Timer (t)		5	4Z STD Enable Rest	288
7	Peak Dose Counter		6	S.F.			4Z Peak Enable Rest	160
	Peak Enable ETM (m)			Peak		6	SF OFF Rest Time	190
8	High Lvl Counter [opt.]			Duplex			SF STD Enable Rest	90
	High Lvl ETM (m) [opt.]			0=Off / 1=On			SF Peak Enable Rest	45
9	Peak Zone ETM (m)					7	Peak Dose Allow (h)	72
	Peak SF ETM (m)						Auto FF Time Int. (h)	336
10	Zone 1 Field Flush Ctr.					8	Z1 FF Count Interval	25
	Zone 2 Field Flush Ctr.						Z2 FF Count Interval	25
	Zone 3 Field Flush Ctr.						Z3 FF Count Interval	25
	Zone 4 Field Flush Ctr.						Z4 FF Count Interval	25
						9	Back Wash Frequency (t)	3,000

Note: All SF Registers are Optional features

DEALER NOTES;

INSPECTION AND OPERATION PROCEDURE ONSITE DRIP DISPERSAL SYSTEM

NAME: _____

DATE: ___/___/___

Address: _____

Time: ___ : ___ AM PM

I. Monitoring Schedule Frequency

- A. Periodic Inspection _____
- B. Compile and review (submit) data _____

II. Periodic Inspection

- A. Field Conditions
1. Walk the field and record any visible wet spots from the drip system.
 2. O.K. ___ Repair ___ Comments and remedial action _____
- B. Controller
1. Lights and manual switch positions.
 - a. Open the control panel and open the lid to the hydraulic unit and pump tank. . Make sure all manual switches are in the automatic position. With Microprocessor on, verify power light and run light are on.
 - b. O.K. ___ Comments and remedial action _____
 2. Microprocessor input: See table in owners manual.
 - a. O.K. ___ Comments and remedial action _____
 3. Microprocessor output: Verify there is output only when in automatic operation. You may start automatic cycle with "Reset/Stop" button.
 - a. O.K. ___ Comments and remedial action _____
- C. Pump Tank Liquid Level Float Switches
1. Check liquid level in the pump tank to confirm switch operation.
 - a. If a float is down, its light should be off. Note; High level alarm float requires optional relay installed in control.
 2. O.K. ___ Comments and remedial action _____
- D. Pump and Valve Operation
1. Place pump "Hand-Off-Auto" switch in the "Hand" position to dead head pump against valves. Then open (optional) master valve. Flow meter should not turn indicating there are no leaks.
 2. O.K. ___ Comments and remedial action _____
 3. With the pump running, place each zone valve in the "Hand" (open) position one at a time to check operation. With one zone valve open, flow should register on the flow meter. When the zone valve closes (off position), the flow should stop.
 4. O.K. ___ Comments and remedial action _____
 5. With one zone valve open and flowing, close and reopen (optional) master valve to check operation.
 6. O.K. ___ Comments and remedial action _____
 7. With the pump in the "Hand" position open the filter backwash valve for filter one and two for ten seconds then close. There should be no flow registering in the flow meter and you should hear the valves open and close. The backwash return valve diaphragm will rise then lower during backflush.
 8. O.K. ___ Comments and remedial action _____
 9. Return all switches to the automatic position

- E. Hydraulic Unit
 - 1. Examine one filter and clean all filters as needed.
 - 2. Examine all hydraulic components for leaks, tubing crimps and other problems.
 - 3. O.K.____ Comments and remedial action _____

III. Annual Inspections (Includes Periodic Inspection)

- A. Extended Check - Zone Dose Rates
 - 1. Open the air release valve boxes and inspect. Make sure they close during the dose with no water leak after air is evacuated.
 - 2. O.K.____ Comments and remedial action _____
 - 3. Determine how many zones are in operation and the installed flow rates from the installation records.
 - 4. O.K.____ Comments and remedial action _____
 - 5. With the pump in the "Hand" position, select the first zone by placing the zone valve switch in the "Hand" position. After pressurization time, check flow rates by reading the flow meter for a timed minute. Repeat for all zones. If flow varies by more than 10% from original flow rates, reset flow rates.
 - 6. O.K.____ Comments and remedial action _____
 - 7. After the final zone is checked, place the "Zone Return" valve in the "Hand" position while the "Zone Valve" is still in the "Hand" position and verify that the flow rate increased to provide field flushing.
 - 8. O.K.____ Comments and remedial action _____
 - 9. Return appropriate switches to the automatic position.
 - 10. O.K.____ Comments and remedial action _____
 - 11. Press reset button for 5 seconds and check automatic zone dosing time.
 - 12. O.K.____ Comments and remedial action _____

- B. Tanks & Pumps
 - 1. Examine and clean effluent screens, filters, and floats as needed.
 - 2. O.K.____ Comments and remedial action _____

- C. Measure solids level in all tanks
 - 1. Septic tank Tank Depth _____ Sludge Depth _____
 - 2. Settling Tank Tank Depth _____ Sludge Depth _____
 - 3. Dose Tank Tank Depth _____ Sludge Depth _____
 - a. Sludge pumping required Yes ___ No ___

IV. Reporting

- A. Provide summary report to customer showing gallon flow to each field along with pertinent operating information and suggestions.
- B. Provide signed and dated inspection report to customer file and regulatory agency as needed.
- C. Have records available and be prepared to discuss operation and maintenance specifics with customer personnel.

V. Operator Signature _____ **Date:** _____

Perc Rite® Dealers are authorized to reproduce forms in this manual as needed for each site. Additional comments (use back of copy if necessary):

Order Information

AMERICAN MANUFACTURING COMPANY INC.

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1-800-345-3132 Fax: 1-703-754-0058

e-mail: sales@americanonsite.com web: www.americanonsite.com

**US MAIL: P.O. BOX 549
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DEALER NOTES;

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