



ENVIRO 4 SUBMITTAL

ENVIRO 4
UNIT NUMBER: 99-EN-0004

WATER SEPERATOR FILTER
ELEMENTS PART NUMBER: 47-FMP100308

RETURN FILTER
ELEMENTS PART NUMBER: 47-LE03AZP (2 Micron)
47-LE10P (10 Micron)

Introduction

THE ENVIRO Monitoring and Fuel Conditioning Systems, by JCH Fuel Solutions were designed to keep a pristine state of middle distillate fuel in the main storage tank.

THE ENVIROS not only give you healthy fuel to run your equipment, but a clean storage tank at the same time.

THE ENVIRO 4 systems has been fully automated with SIEMENS PLC Technology and programmed with JCH logic for ease of use and maintenance.

We are monitoring the system for fuel contamination levels. The contamination level will reach a saturation point and alert the user of its maintenance needs on the easy to read 8 color graphic display. The alarms can also be interfaced with central plant monitoring for the customer's convenience. The maintenance can be scheduled and the system can be brought back on line. **THE ENVIRO 4** is a stand-alone closed-loop system with built-in diagnostics. This will meet the environmental issues for a safe operation.

THE ENVIRO Systems were designed for complete fuel remediation and control.

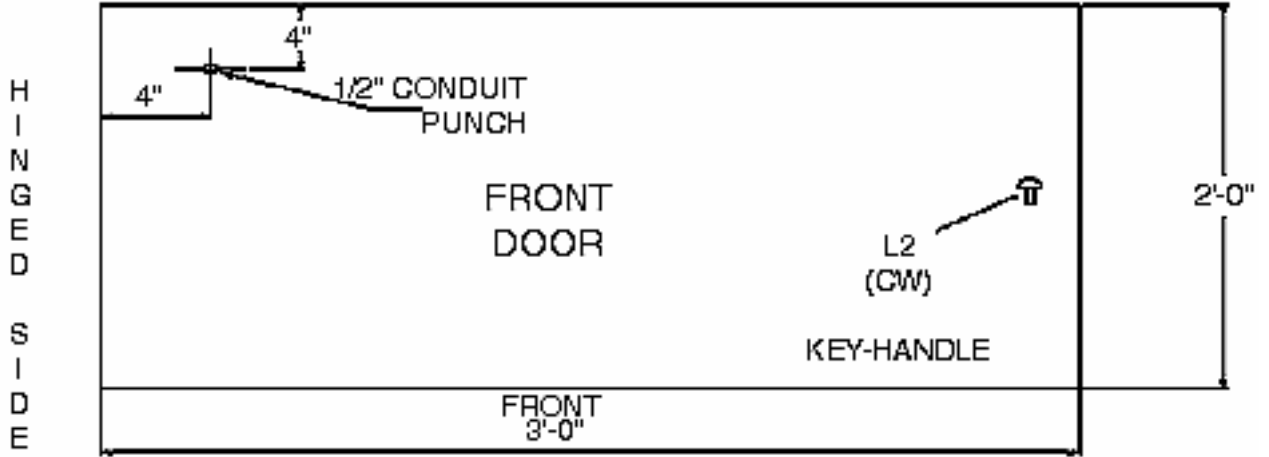
JCH Fuel Solutions is providing excellent fuel quality for today's equipment.

General Specifications

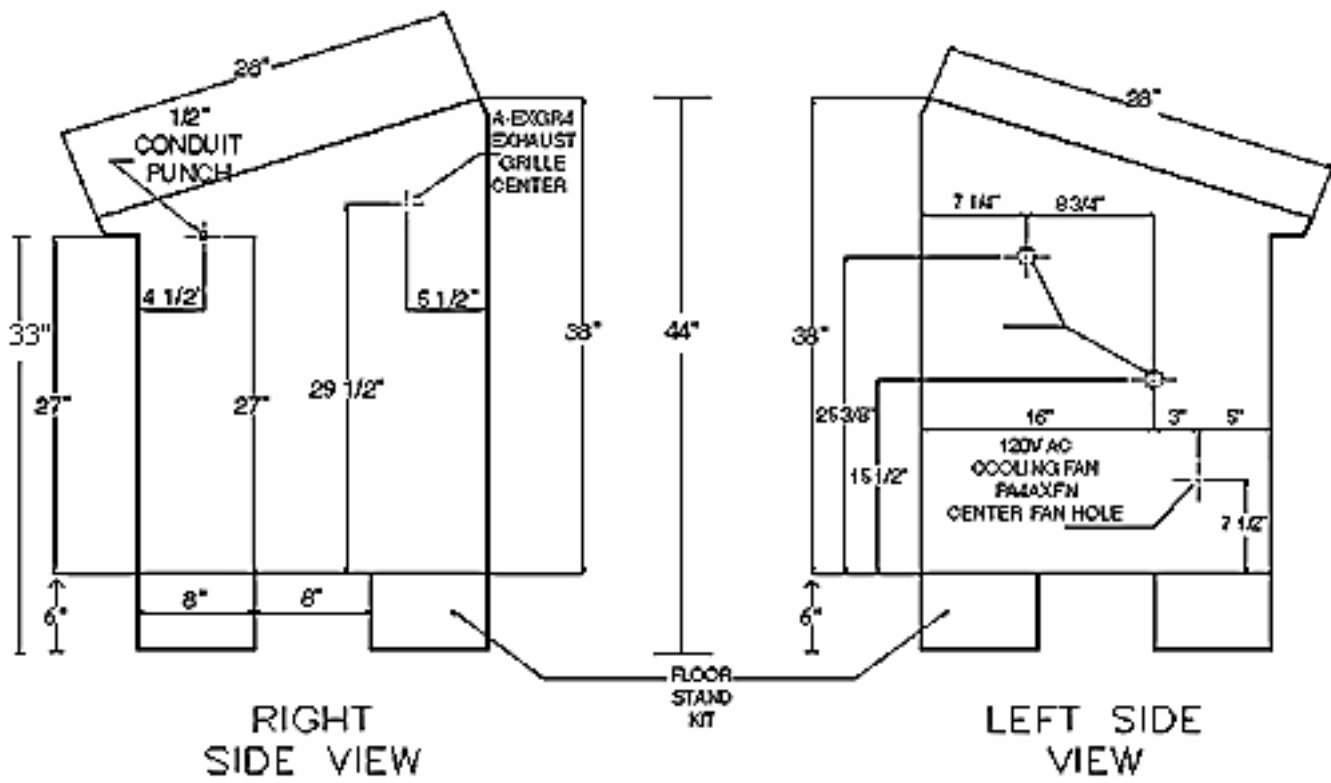
Enviro 4

Floor Mounting	36"W x 38"H x 26"D
	Includes 6" Risers on bottom
Flow Rate	8gpm - 480gph
Electrical.....	120 VAC/6.8A 50/60 Hz
	Single Phase
Motor.....	1/2 HP Single Phase
	120 VAC, 5.6A, 50/60Hz
Inlet	3/4" NPT Male
Outlet	3/4" NPT Male
Maximum Pressure	50 PSIG
System Weight (Empty)	380 lbs.
System Weight (Operational)	400 lbs.

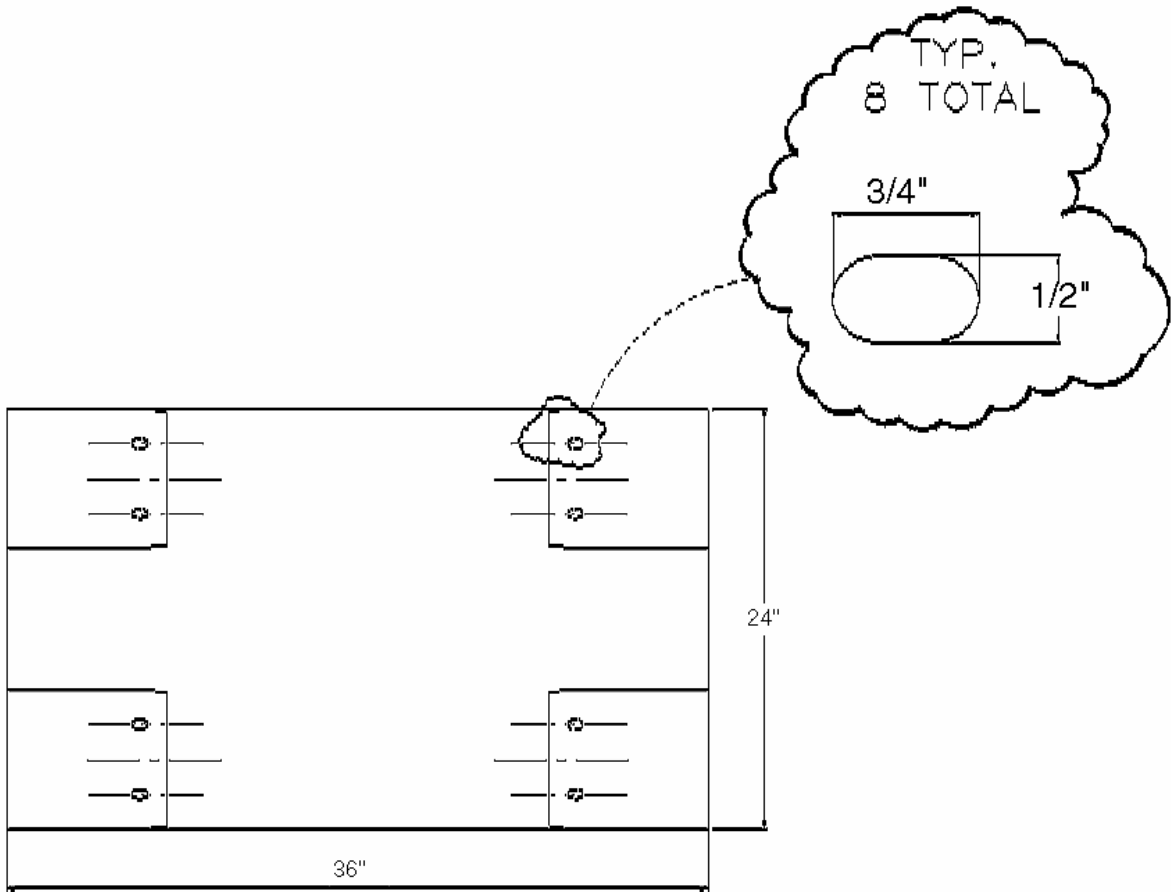
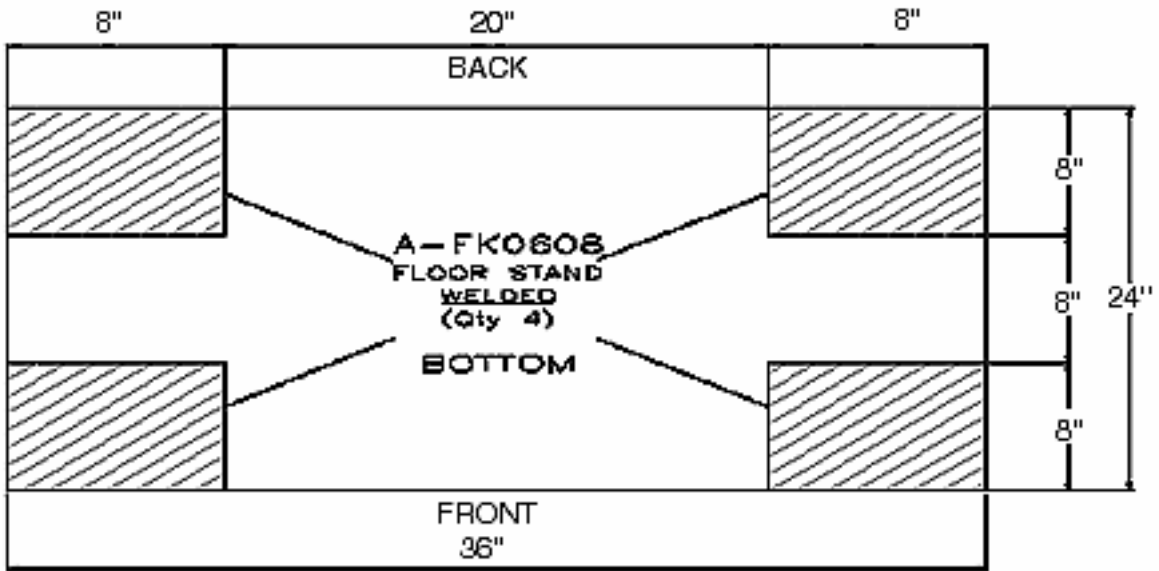
Enviro 4 Main Enclosure



Enviro 4 Main Enclosure

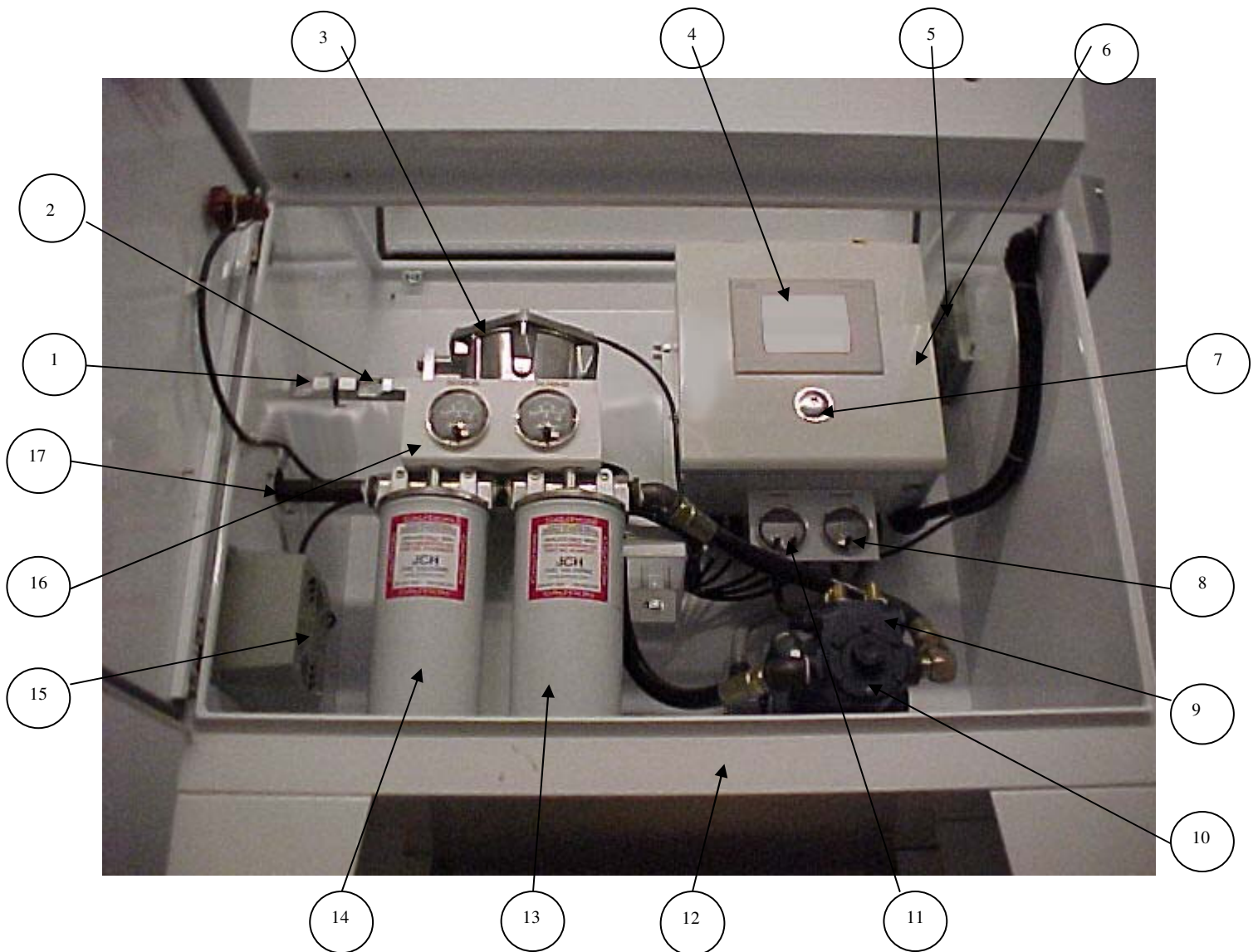


Enviro 4 Main Enclosure



LAYOUT FOR PRE-POURED PAD AND ANCHOR BOLTS

System Internal – Internal Identification



Enviro 4

- | | |
|-------------------------------|---|
| 1) Fuel Inlet | 11) Vacuum Switch Gauge |
| 2) Sight Glass | 12) Containment Area (2 3/4'') |
| 3) Separator Strainer 2 | 13) Filter # 2 (10 Micron) |
| 4) Graphic Interface | 14) Filter # 3 (2 Micron) |
| 5) Air Vent | 15) Fan |
| 6) Control Panel | 16) Pressure Differential Switch Gauges (2) |
| 7) Audible Horn | 17) Fuel Outlet |
| 8) High Pressure Switch Gauge | 18) Leak Sensor (Not Shown) |
| 9) Motor (1/2 H.P.) | 19) Drain (Not Shown) |
| 10) Pump Assembly (8 GPM) | |

Installation

1. **MOUNTING: THE ENVIRO** should be wall mounted on a hard, level surface. This unit can be mounted indoors or outdoors, but should not be mounted in non-ventilated locations. The unit should be located as close to the tank as possible.
2. **ELECTRICAL:** Install a disconnect lockout switch within five (5) feet of **THE ENVIRO**. All wiring should meet NEC or local requirements.

POWER REQUIREMENTS:

120 VAC 50/60 Hz
20 AMP Time Delay
or Thermal Breaker

3. **INLET:** A valve should be installed on the inlet to **THE ENVIRO**. Using the proper fuel approved piping, this line should originate from the lowest available point in the tank.
 - ¾" NPT female
 - Valve not included
 - All outlet plumbing should be ¾" or greater
4. **OUTLET:** A valve should be installed on the outlet of **THE ENVIRO**. Fuel approved piping should be plumbed to return fuel to the tank. This line should enter the tank as far away from **THE ENVIRO** suction line as possible.
 - ¾" NPT female
 - Valve not included
 - All outlet plumbing should be ¾" or greater
5. Piping should be rigid type. Dual containment piping should be used for any type of underground lines.

IMPORTANT INSTALLATION PRECAUTIONS

Inlet should be independent of the suction line to the engine. If not possible, a check valve must be installed on the outlet side of **THE ENVIRO**.

The outlet should also be independent of the return line from the engine. If return line from the engine and outlet of **THE ENVIRO** are common, a check valve should be installed on the return from engine. (Many engines are already equipped with a check valve - check with engine manufacturer).

If either of the lines from **THE ENVIRO** is common with the lines from the engine, **THE ENVIRO** should be disabled during generator operation. It is recommended that a relay contactor be installed in series with the incoming electrical in conjunction with the run relay of the generator to supply 120 VAC to the red & white #18 AWG wires that are labeled "customer supply power" located inside the workbox on the outside of the unit. The unit will then not clean during generator operation.

Fuel Cleaning Systems Warranty

LIMITED WARRANTY

JCH Fuel Solutions makes every effort to assure that our products meet high quality and durability standards and we expressly warrant the products described herein which are manufactured by JCH Fuel Solutions against defects in material and workmanship for a period of one (1) year from the date of purchase. This warranty is not intended to supplant normal inspection, care and service of the products covered hereby by the user, and shall not obligate JCH Fuel Solutions to provide free service during the warranty period to correct breakage, maladjustment or other difficulties arising out of abuse, misuse, or improper care and maintenance of such products. Our express warranty is subject to the following terms and conditions:

1. This warranty shall only extend to and is only for the benefit of original purchasers who use the products covered hereby for commercial or industrial purposes.
2. Any warranty claim received by JCH Fuel Solutions after one (1) year from the date of purchase will not be honored even if it is claimed that the defect occurred prior to the one (1) year from the date of purchase.
3. This warranty shall not apply to products (1) which have been tampered with, altered or repaired by anyone other than JCH Fuel Solutions without the express prior written consent of JCH Fuel Solution, (2) which have been installed improperly or subject to misuse, abuse, accident, negligence of others, improper operation or maintenance, neglect or modification, or (3) which have had the serial number altered, defaced or removed.
4. The liability of JCH Fuel Solutions under this warranty is limited to the repair or replacement of the defective product. JCH Fuel Solutions assumes **NO LIABILITY** for labor charges or other costs incurred by any purchaser incidental to the service, adjustment, repair, return, removal or replacement of products. **JCH FUEL SOLUTIONS ASSUMES NO LIABILITY FOR ANY GENERAL, SPECIAL, INCIDENTAL, CONSEQUENTIAL, CONTINGENT OR OTHER DAMAGES UNDER ANY WARRANTY, EXPRESS OR IMPLIED, AND ALL SUCH LIABILITY IS HEREBY EXPRESSLY EXCLUDED.**
5. **JCH FUEL SOLUTIONS MAKES NO WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, WITH RESPECT TO THE PRODUCTS COVERED BY THIS WARRANTY POLICY, EXCEPT AS EXPRESSLY PROVIDED FOR HEREIN. NO EMPLOYEE, AGENT, REPRESENTATIVE OR DISTRIBUTOR IS AUTHORIZED TO MAKE ANY WARRANTY ON BEHALF OF JCH FUEL SOLUTIONS, OTHER THAN THE EXPRESS WARRANTY PROVIDED FOR HEREIN.**
6. JCH Fuel Solutions reserves the right at any time to make changes in the design, material, function and specifications of its products. Any such changes shall not obligate JCH Fuel Solutions to make similar changes in such products that were previously manufactured.

WARRANTY CLAIM PROCEDURE

To make a claim under this warranty, please call our Customer Service Representative at **(888) 287-1627**. We will ask you to advise us of our Representative's name and address, the date of purchase, model number and a detailed explanation of the problem you are experiencing. The Customer Service Representative will arrange for a Field Engineer to inspect your system. If the inspection discloses a defect covered by our limited warranty, we will either repair or replace the defective parts or products at our election and at our cost. If upon inspection, our Engineer determines that there is no defect or that the damage to the system resulted from causes not within the scope of our limited warranty, then you must bear the cost of repair or replacement of the damaged parts. For service, please contact **JCH Fuel Solutions**.

JCH Fuel Solutions
4527 Losee Road
N. Las Vegas, NV 89031

Phone: (888) 287-1627 **Fax:** (702) 639-4101 **Direct:** (702) 639-4076

Internet: www.jchfuel.com **E-mail:** sales@jchfuel.com

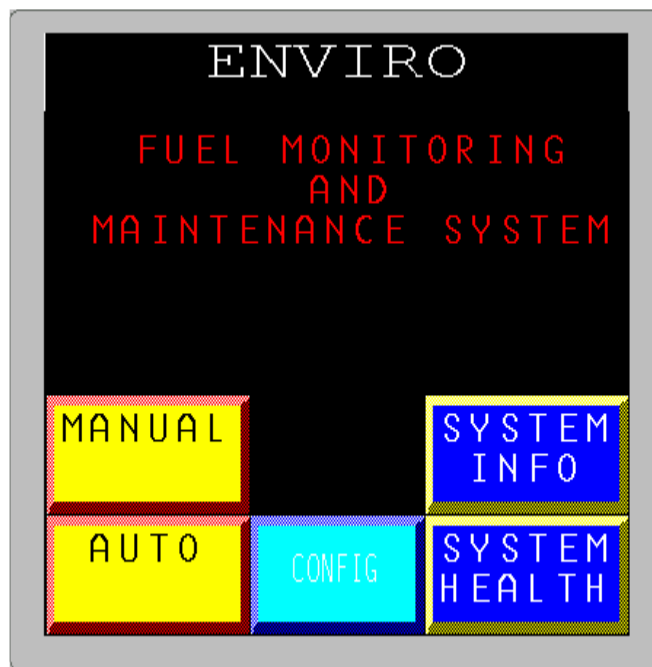
JCH Fuel Solutions

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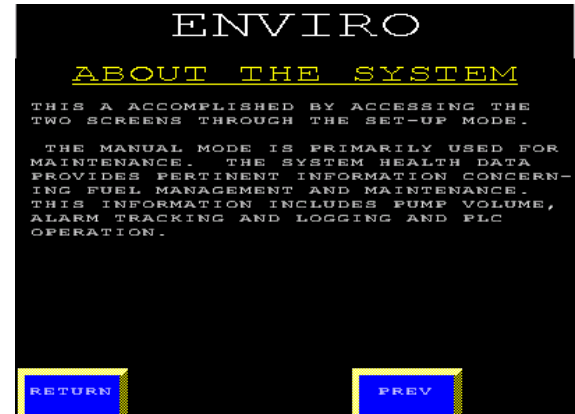
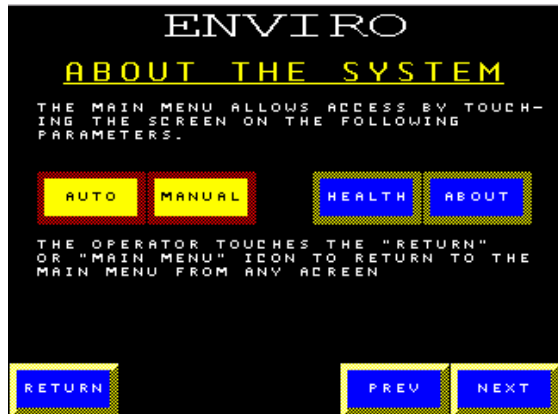
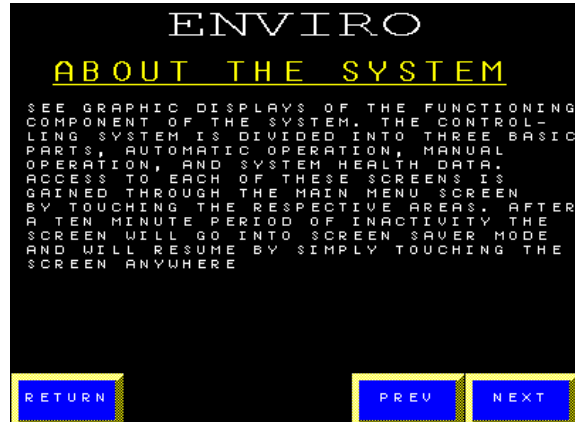
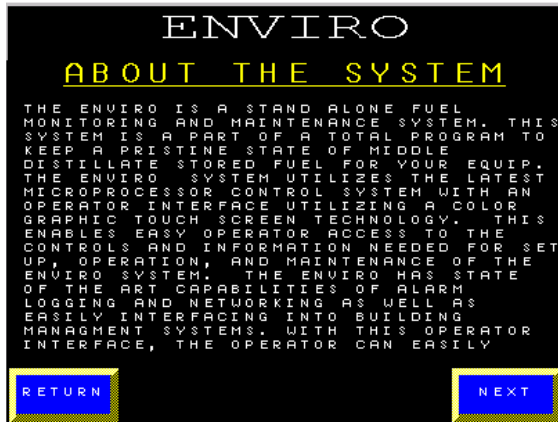
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Main Menu Screen

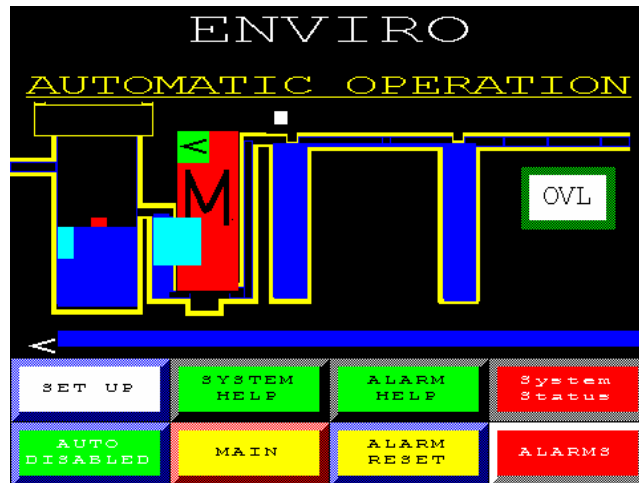


Operation Instructions For Siemens Touch Screen

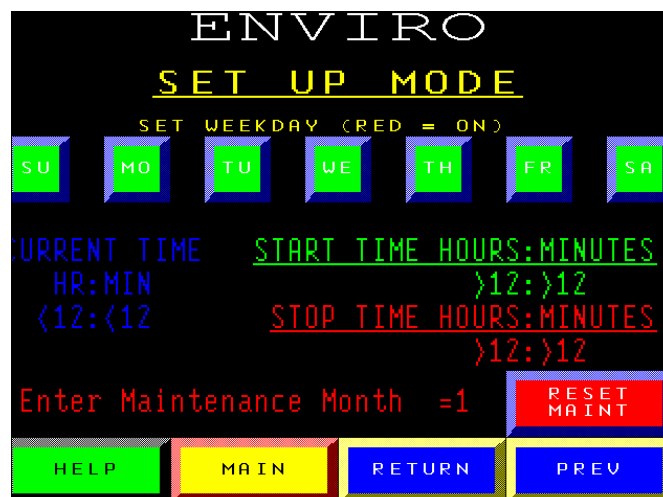
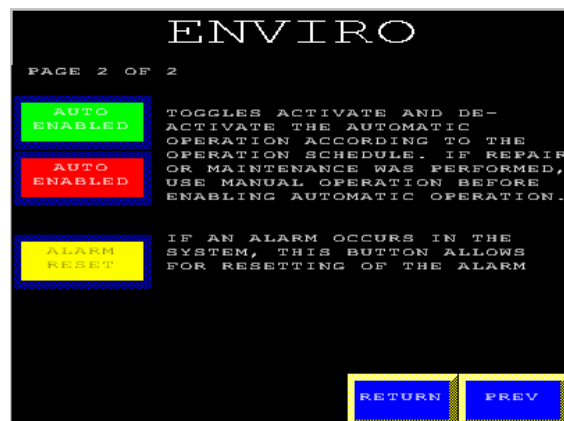
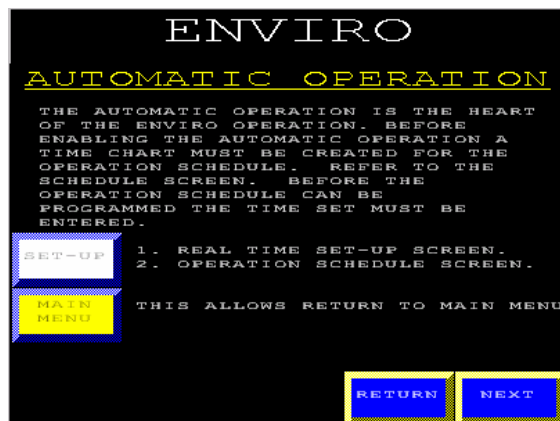
By touching **ABOUT THE SYSTEM** icon from the Main Menu you gain a brief description of the Enviro



By touching the **AUTOMATIC OPERATION** icon from the Main Menu you gain access to the following Automatic Operation Screen



By touching the **HELP** icon you will gain access to the following Help Screen on the Automatic Operation



By touching the **HELP** icon you will gain access to the following Help Screens to set-up the Enviro system

ENVIRO
PROGRAMMING

THE HELP SCREEN FOR THE ENVIRO SETUP IS DIVIDED INTO TWO CATEGORIES. THE FIRST FOR CREATING A TIME CHART AND SECOND IS THE PROGRAMMING OF THE TIMES.

CREATING A TIME CHART
THE ENVIRO WITH ITS MICROPROCESSOR BASED CONTROL CAN BE PROGRAMMED FOR DAILY OPERATION ON A SEVEN DAY PER WEEK BASIS.

AS A GUIDE LINE, FUEL CIRCULATION CAN VARY FROM ONCE A WEEK TO TWICE A WEEK. LARGER TANKS OFTEN REQUIRE LESS CIRCULATION THAN SMALLER TANKS AS THESE TANKS ARE SUBJECT TO A HIGHER LEVEL OF CONTAMINATION. HARSH ENVIRONMENTAL CONDITIONS OFTEN REQUIRE MORE CIRCULATION.

NEXT RETURN

ENVIRO
PROGRAMMING

FUEL VOLUME GALLONS	ENVIRO OPERATION HOURS PER WEEK
10,000	40
7,500	30
5,000	25
2,500	15
1,000	7

THESE HOURS CAN BE DIVIDED INTO THE WEEK FOR DAILY OPERATION

OTHER GUIDELINES FOR OPERATION

- 1.) THE ENVIRO SHOULD BE OPERATED REGULARLY TO ENSURE FUEL QUALITY.
- 2.) INCREASE USE OF THE ENVIRO DURING INITIAL LONG TERM FUEL STORAGE.
- 3.) INCREASE USE OF THE ENVIRO IF FREQUENT FILTER CHANGES OCCUR.

PREV NEXT RETURN

ENVIRO
PROGRAMMING

EXAMPLE:
FUEL QUANTITY 5,000 GALLONS
REQUIRED OPERATION FROM CHART
ENVIRO OPERATION 25 HOURS / WEEK

ON: 0 2 4 6 8 10 12 14 16 18

OFF: -----

SU MO TU WE TH FR SA

THE ENVIRO TURNS ON AT 8:00 AND TURNS OFF AT 13:00 WITH DAILY OPERATION MONDAY THRU FRIDAY. TOTAL 25 HOURS OF OPERATION PER WEEK.

PREV NEXT RETURN

ENVIRO
PROGRAMMING

PROGRAMMING THE ENVIRO OPERATION FOR AUTOMATIC OPERATION IS DIVIDED INTO THREE PARTS.

WEEK DAY:
THIS IS ACCOMPLISHED BY TOUCHING THE RESPECTIVE DAY OF THE WEEK BLOCK. RED BLOCK INDICATES THE ENVIRO WILL OPERATE THAT DAY.

START TIME:
(USE 24HR MILITARY TIME)
THE START TIME IS ENTERED VIA KEYPAD, TOUCH DESIRED NUMBER TO CHANGE, THE KEYPAD WILL APPEAR, ENTER IN VALUE AND PRESS THE ENTER KEY.

PREV NEXT RETURN

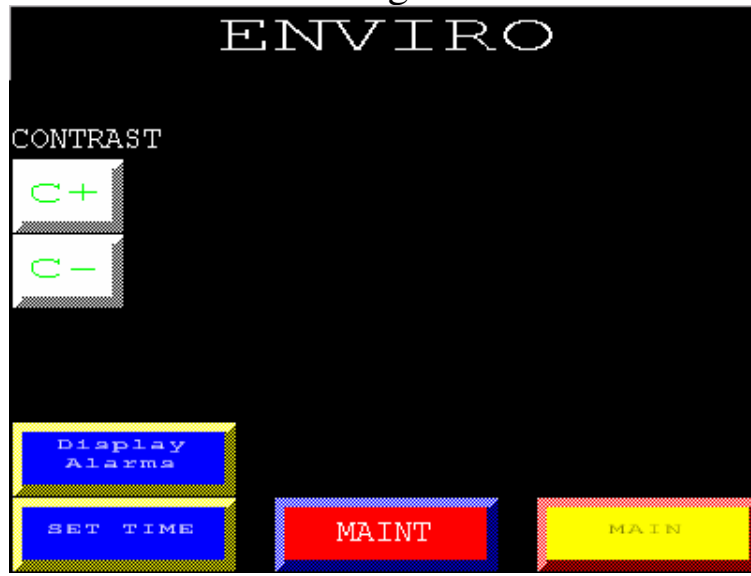
ENVIRO
PROGRAMMING

STOP TIME:
(USE 24HR MILITARY TIME)

THE STOP TIME IS ENTERED VIA KEYPAD, TOUCH DESIRED NUMBER TO CHANGE, THE KEYPAD WILL APPEAR, ENTER IN VALUE AND PRESS THE ENTER KEY.

PREV NEXT RETURN

By touching the **CONFIG** icon on the main menu, you will gain access to the following screen

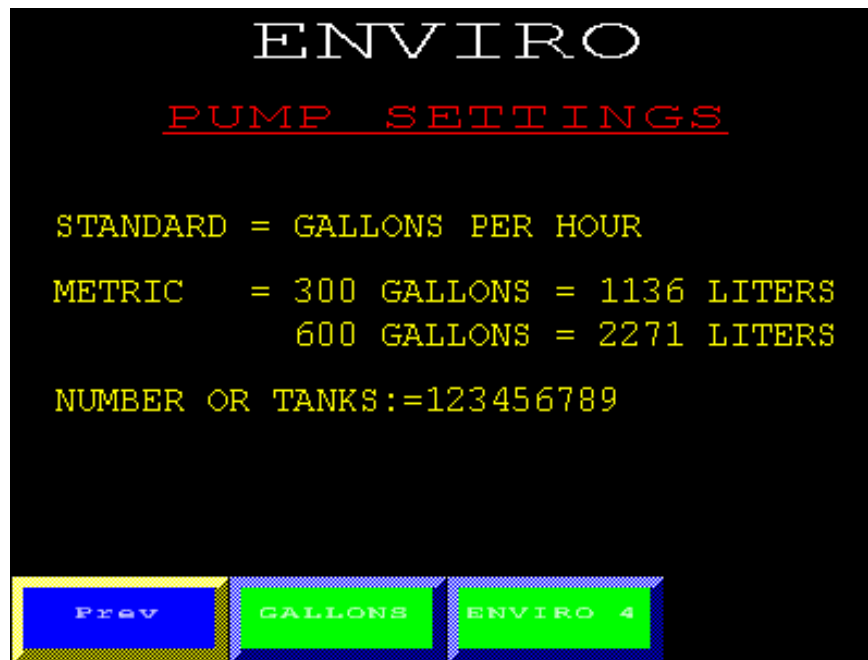


This screen allows you to either change the screen's contrast settings, or by touching the **MAINT** icon, you will gain access to the following screen



This screen keeps a running total of past alarms and allows you to either clear individual or all alarm records

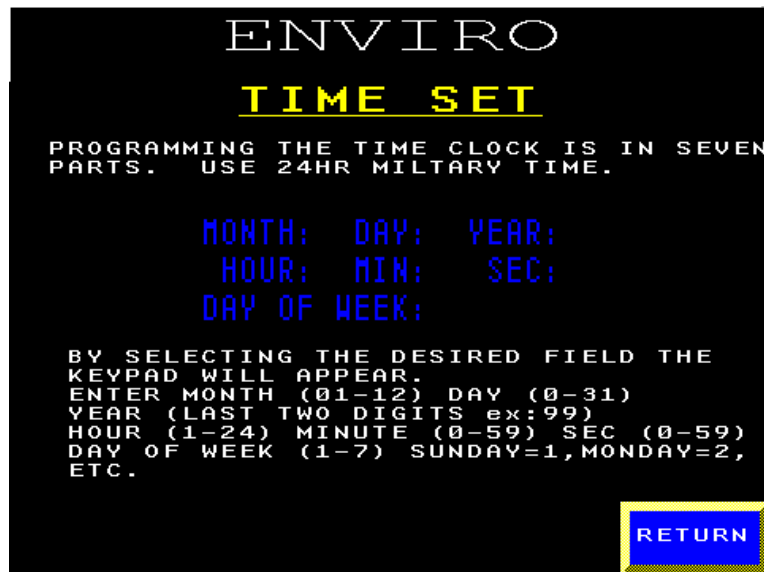
From the clear alarms screen, you may access the following screen by touching the **PUMP SETTINGS** icon.



Real Time Clock Screen



By touching the **HELP** icon you gain access to the following Help Screens



When the Enviro system is in **ALARM** it will alert you of the problems on the Color Graphic Display

By touching the **ALARM HELP** icon you will gain access to the following Help Screen



Clean Separator Strainer #1 Alarm Help Screen

ENVIRO

CLEAN SEPARATOR STRAINER #1

THIS ALARM INDICATES THAT SEPARATOR STRAINER #1 IS CLOGGED AND MUST BE CLEANED.

NOTE: IF THE BALL VALVE OUTSIDE THE CABINET IS CLOSED ON THE INLET SIDE OF THE SYSTEM IT WILL PRODUCE THE SAME ALARM. MAKE SURE VALVE IS OPEN THEN RESTART AND CHECK FOR SAFE OPERATION.

1. CAUTION COMBUSTIBLE: READ AND FOLLOW ALL SAFETY INSTRUCTIONS INSIDE DOOR.
2. SHUT OFF INLET AND OUTLET VALVE LOCATED OUTSIDE THE CABINET.
3. OPEN BOTTOM VALVE SEPARATOR STRAINER #1 AND DRAIN APPROXIMATELY ONE GALLON OF FLUID FORM THE HOUSING.

NEXT RETURN

ENVIRO

CLEAN SEPARATOR STRAINER #1

4. TO FACILITATE FLOW FROM THE SEPARATOR STRAINER #1 PUSH VACUUM RELIEF BUTTON AT THE TOP SIDE OF THE STRAINER #1.
5. WITH A 1/2" WRENCH. REMOVE THE SIX BOLTS HOLDING THE LID DOWN, THEN REMOVE THE LID.
6. CLEAN STRAINER AND REINSTALL THE STRAINER.
7. EXAMINE LID SEAL. IF DAMAGED RE-PLACE.
8. RE-INSTALL LID TIGHTEN BOLTS IN A CRISS CROSS PATTERN TO 10-20 flbs.
9. TURN THE INLET AND OUTLET VALVES ON OUTSIDE THE CABINET.
10. RESET ALARM.

PREV NEXT RETURN

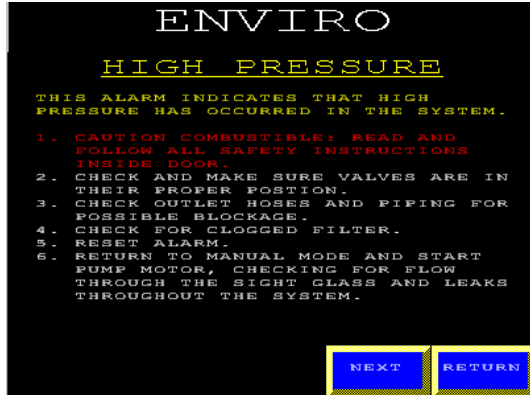
ENVIRO

HIGH VACUUM SWITCH - CLEAN FILTER #1

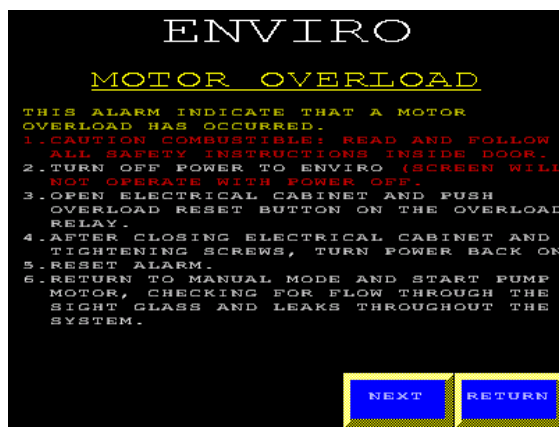
11. RETURN TO MANUAL MODE AND START THE PUMP MOTOR, CHECKING FLOW THROUGHOUT THE SYSTEM.
12. AFTER ENSURING UNIT IS READY FOR AUTOMATIC OPERATION, STOP PUMP MOTOR AND RETURN TO AUTOMATIC ENABLED.
13. DISPOSE OF WASTE IN ACCORDANCE TO LOCAL REGULATIONS.

PREV RETURN

High Pressure Alarm Help Screen



Motor Overload Alarm Help Screen



High Water - Separator Strainer Alarm Help Screen

ENVIRO

HIGH WATER SEPARATOR STRAINER #1

THIS ALARM INDICATES THAT THE SEPARATOR STRAINER #1 HAS ACCUMULATED WATER AND MUST BE DRAINED.

1. CAUTION COMBUSTIBLE; READ AND FOLLOW ALL SAFETY INSTRUCTIONS INSIDE DOOR.
2. SHUT OFF INLET AND OUTLET VALVES LOCATED OUTSIDE THE CABINET.
3. OPEN BOTTOM VALVE OF SEPARATOR STRAINER #1 UNTIL WATER IS PURGED FROM THE SYSTEM.
4. TO FACILITATE FLOW FROM THE SEPARATOR STRAINER #1 HOUSING, OPEN AIR VENT ON THE SEPARATOR STRAINER #1.

NEXT RETURN

ENVIRO

HIGH WATER SEPARATOR STRAINER #1

5. USE A CLEAR CONTAINER TO VIEW THE WATER AND FUEL DRAINAGE FROM THE HOUSING (FUEL WILL BE IN THE TOP LAYER).
6. OPEN INLET AND OUTLET VALVES LOCATED OUTSIDE THE CABINET.
7. RESET ALARM.
8. RETURN TO MANUAL MODE AND START PUMP MOTOR. CHECKING FOR FLOW THROUGH SIGHT GLASS AND LEAKS THROUGHOUT THE SYSTEM.
9. AFTER ENSURING UNIT IS READY FOR AUTOMATIC OPERATION. STOP PUMP AND RETURN TO AUTOMATIC ENABLED.

PREV NEXT RETURN

ENVIRO

HIGH WATER SEPARATOR STRAINER #1

10. DISPOSE OF WASTE IN ACCORDANCE WITH LOCAL REGULATIONS.

PREV RETURN

Pressure Differential - Change Filter #2 Alarm Help Screen

ENVIRO

PRESSURE DIFFERENTIAL CHANGE FILTER #2

THIS ALARM INDICATES THAT FILTER #2 RIGHT-HAND SPIN-ON INSIDE THE CABINET NEEDS TO BE REPLACED.

1. CAUTION COMBUSTIBLE: READ AND FOLLOW ALL SAFETY INSTRUCTIONS INSIDE DOOR.
2. SHUT OFF INLET AND OUTLET VALVE. LOCATED OUTSIDE THE CABINET.
3. PLACE A CONTAINER UNDER FILTER TO CATCH ANY SPILLS, AND KEEP CONTAINMENT AREA FREE OF FUEL.
4. LOOSEN AND REMOVE FILTER #2. THIS MAY REQUIRE A FILTER WRENCH.
5. REPLACE FILTER (10 MICRON ENTRAINED WATER/PARTICULATE REMOVAL).

[NEXT](#) [RETURN](#)

ENVIRO

PRESSURE DIFFERENTIAL CHANGE FILTER #2

6. LUBRICATE THE NEW GASKET WITH OIL AND INSTALL GASKET. SCREW NEW FILTER 1/2 TURN AFTER GASKET MAKES CONTACT.
7. OPEN INLET AND OUTLET VALVE ON OUTSIDE OF CABINET.
8. RESET ALARM.
9. RETURN TO MANUAL MODE AND START PUMP MOTOR, CHECKING FOR FLOW THROUGH SIGHT GLASS AND LEAKS THROUGHOUT THE SYSTEM.
10. AFTER ENSURING UNIT IS READY FOR AUTOMATIC OPERATION, STOP PUMP MOTOR AND RETURN TO AUTOMATIC ENABLED.
11. DISPOSE OF WASTE IN ACCORDANCE WITH LOCAL REGULATIONS.

[PREV](#) [RETURN](#)

Pressure Differential - Change Filter #3 Alarm Help Screen

ENVIRO

PRESSURE DIFFERENTIAL CHANGE FILTER #3

THIS ALARM INDICATES THAT FILTER #3 LEFT-HAND SPIN-ON INSIDE THE CABINET NEEDS TO BE REPLACED.

1. CAUTION COMBUSTIBLE: READ AND FOLLOW ALL SAFETY INSTRUCTIONS INSIDE DOOR.
2. SHUT OFF INLET AND OUTLET VALVE. LOCATED OUTSIDE THE CABINET.
3. PLACE A CONTAINER UNDER FILTER TO CATCH ANY SPILLS, AND KEEP CONTAINMENT AREA FREE OF FUEL.
4. LOOSEN AND REMOVE FILTER #3. THIS MAY REQUIRE A FILTER WRENCH.
5. REPLACE FILTER (10 MICRON ENTRAINED WATER/PARTICULATE REMOVAL).

[NEXT](#) [RETURN](#)

ENVIRO

PRESSURE DIFFERENTIAL CHANGE FILTER #3

6. LUBRICATE THE NEW GASKET WITH OIL AND INSTALL GASKET. SCREW NEW FILTER 1/2 TURN AFTER GASKET MAKES CONTACT.
7. OPEN INLET AND OUTLET VALVE ON OUTSIDE OF CABINET.
8. RESET ALARM.
9. RETURN TO MANUAL MODE AND START PUMP MOTOR, CHECKING FOR FLOW THROUGH SIGHT GLASS AND LEAKS THROUGHOUT THE SYSTEM.
10. AFTER ENSURING UNIT IS READY FOR AUTOMATIC OPERATION, STOP PUMP MOTOR AND RETURN TO AUTOMATIC ENABLED.
11. DISPOSE OF WASTE IN ACCORDANCE WITH LOCAL REGULATIONS.

[PREV](#) [RETURN](#)

Liquid In Cabinet Alarm Help Screen

ENVIRO

LIQUID IN CABINET

THIS ALARM INDICATES THAT LIQUID HAS ACCUMULATED IN THE CONTAINMENT AREA OF THE ENVIRO.

1. CAUTION COMBUSTIBLE: READ AND FOLLOW ALL SAFETY INSTRUCTIONS INSIDE DOOR.
2. CHECK FOR LEAKS IN THE ENVIRO AND REPAIR.
3. MOP UP LIQUID FROM CONTAINMENT AREA.
4. RESET ALARM.
5. PROCEED INTO MANUAL MODE AND START PUMP MOTOR. CHECKING FOR FLOW THROUGH SIGHT GLASS AND LEAKS THROUGHOUT THE SYSTEM.

[NEXT](#) [RETURN](#)

ENVIRO

LIQUID IN CABINET

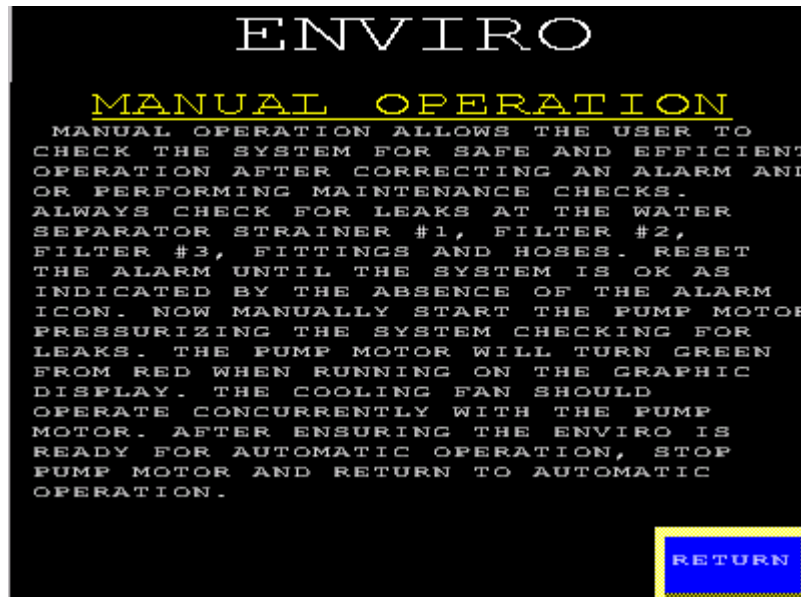
6. AFTER ENSURING UNIT IS READY FOR OPERATION, STOP PUMP MOTOR AND RETURN TO AUTOMATIC ENABLED.
7. DISPOSE OF WASTE IN ACCORDANCE WITH LOCAL REGULATIONS.

[PREV](#) [RETURN](#)

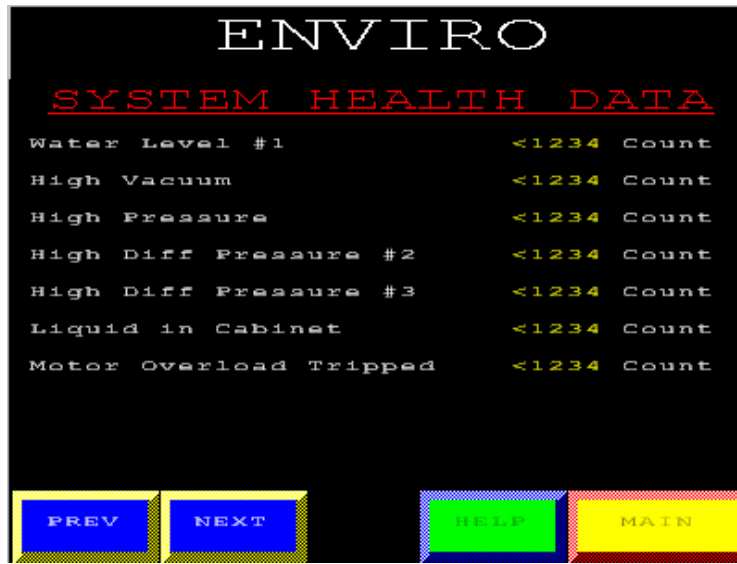
By touching the **MANUAL OPERATION** icon from the Main Menu you will gain access to the following Manual Operation Screen



By touching the **HELP** icon you will gain access to the following Help Screen



Alarm Error Screen



I.O. Check Screen

