

Operations Manual

ADJ 1010H Smart Skimmer With The Remote Solar Station REM3000ES

Caution:

Read rules for safe operation and instructions carefully.

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3 YEAR WARRANTY

This product is warranted to the original purchaser to be free from defective materials and workmanship. Under this warranty the product will be repaired or replaced at our option, without charge for parts or labor.

This warranty does not apply to the ADJ 1010H Skimmer air logic valve, or diaphragm. Also, exempt from warranty is the air compressor dryer.

The period of this warranty covers 3 year on parts and labor from date of original purchase.

This warranty entitles the original purchaser to have the warranted parts and labor rendered at no cost for the period of the warranty described above.

RULES FOR SAFE OPERATION

1. Please review carefully and abide by the maximum limits placed on each type of equipment.
2. Don't store combustables inside REM3000ES control housing
3. Do not operate this equipment in a CLASS I explosive area.

The REM3000ES is designed to operate one Smart Skimmer without ANY external resources.

The Smart Skimmer can be stored inside the job box. The electronic controller provides intermittent recovery operation of the skimmer and turns off the skimmer when the product tank is full. The solar panels provides enough energy (200 watts) to power the electronic controller, and the on-board air compressor. A battery is included to provide up to 8 days of operation when there is no solar power being generated. The REM3000ES includes a maintenance free air dryer (membrane type), is designed to be easily picked up by fork lift, lockable, includes a high tank level assembly, and lots of storage space.

Programmable Controller

Intermittent pumping control with 24 start time

Heating time: 0-99 minutes

Pumping time: 0-99 minutes

30 days delay for one interval

Visual indicator displays tank full, running, and pumping

Displays pumping time in hours and minutes

Battery backed program memory

On-board Air Compressor

Pumping time limit: 2 hour per day

Membrane air dryer: Dries down to -32°

Maximum operating well depth: 100 feet

Solar Power System

One 80-watt solar panel mounted to top of Jobox

One 120-watt solar panel mounted to a ground mount

Solar computer manager provides battery protection

Two Optima batteries

General Specifications

Enclosure Size: 26" high X 24" deep X 60" wide

Weatherproof, lockable Jobox

Weight: 275 pounds

Product Recovery System Installation

The system in figure 1 relates to floating hydrocarbon recovery in wells four inches in diameter or larger. This system includes: an intrinsically safe Smart skimmer which removes LNAPL up to 100 feet deep, and a solar powered three function electronic controller.

STEP 1. Place the REM3000ES near the well and have the front of the box facing due SOUTH (Figure 2). Reposition the solar panel to its upright position by unbolting the two side hinge arms at each end of the solar panel and reattching these arms to the top of the box. Place the REM3000ES as close to the well as possible. Place the holding tank within 15 feet of control box. **CAUTION:** The controller inside the control box is NOT intrinsically safe. Do not operate the REM3000ES in a CLASS I area.

STEP 2. Install holding tank shutoff assembly into holding tank (a 2" standard pipe inlet will be required in the holding tank). The level of product in the holding tank can be set by raising or lowering the high level shutoff switch attached to the rod. Plug the high level shutoff switch cable connector into the left end of the REM3000ES (Figure 2).

STEP 3. Turn on the controller power switch. The Product Tank Full light should be off if the tank shutoff is working properly. A continuous RED light indicates you have a problem with the tank shutoff or it's wiring. Please read the Xitech trouble guide or call Xitech before making any changes to this equipment.

STEP 4. Cut a length of 3/8"OD tubing to cover the distance from the REM3000ES air outlet over to the well. Install one end of this tubing into the REM3000ES air outlet and run the rest of the tubing over to the well. Caution: Do not let any dirt get into this piece of tubing. Attach a filter union onto the end of this line at the well vault.

ADJ 1010H Smart Skimmer And REM 3000ES Remote Solar Station

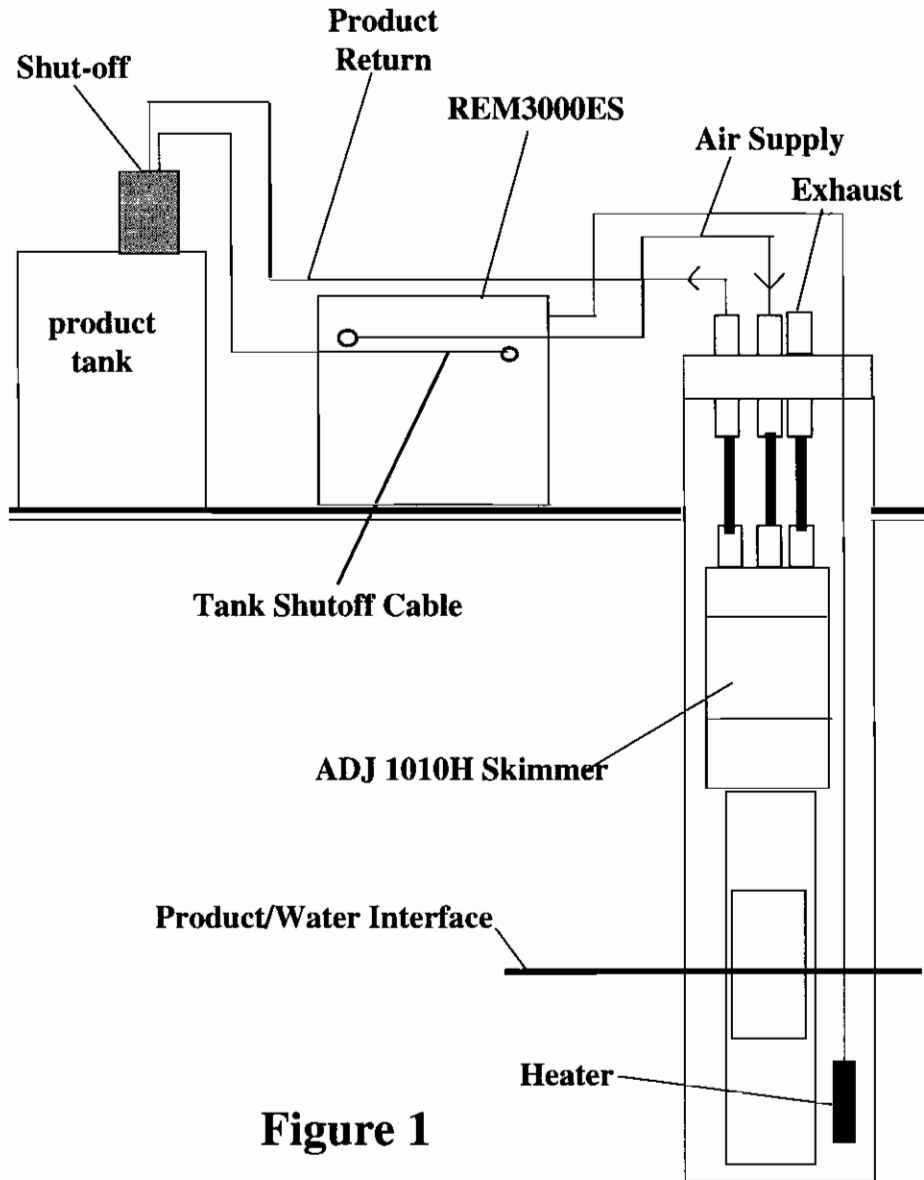


Figure 1

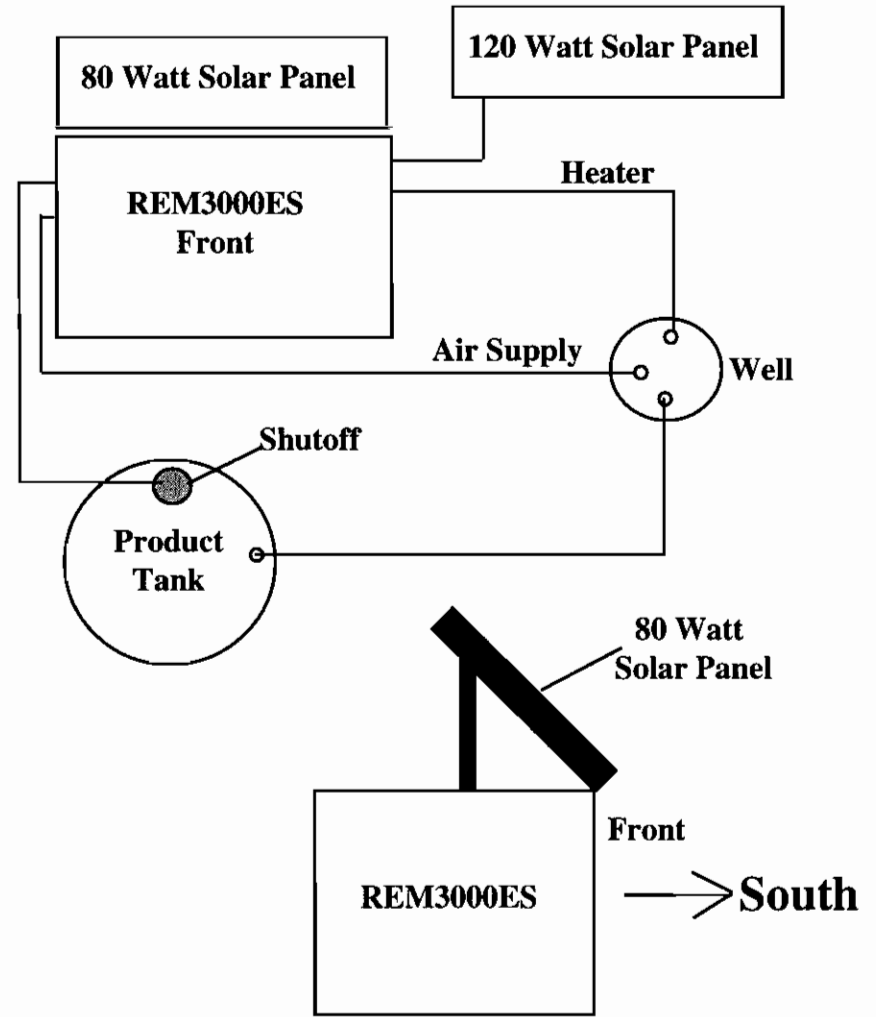


Figure 2

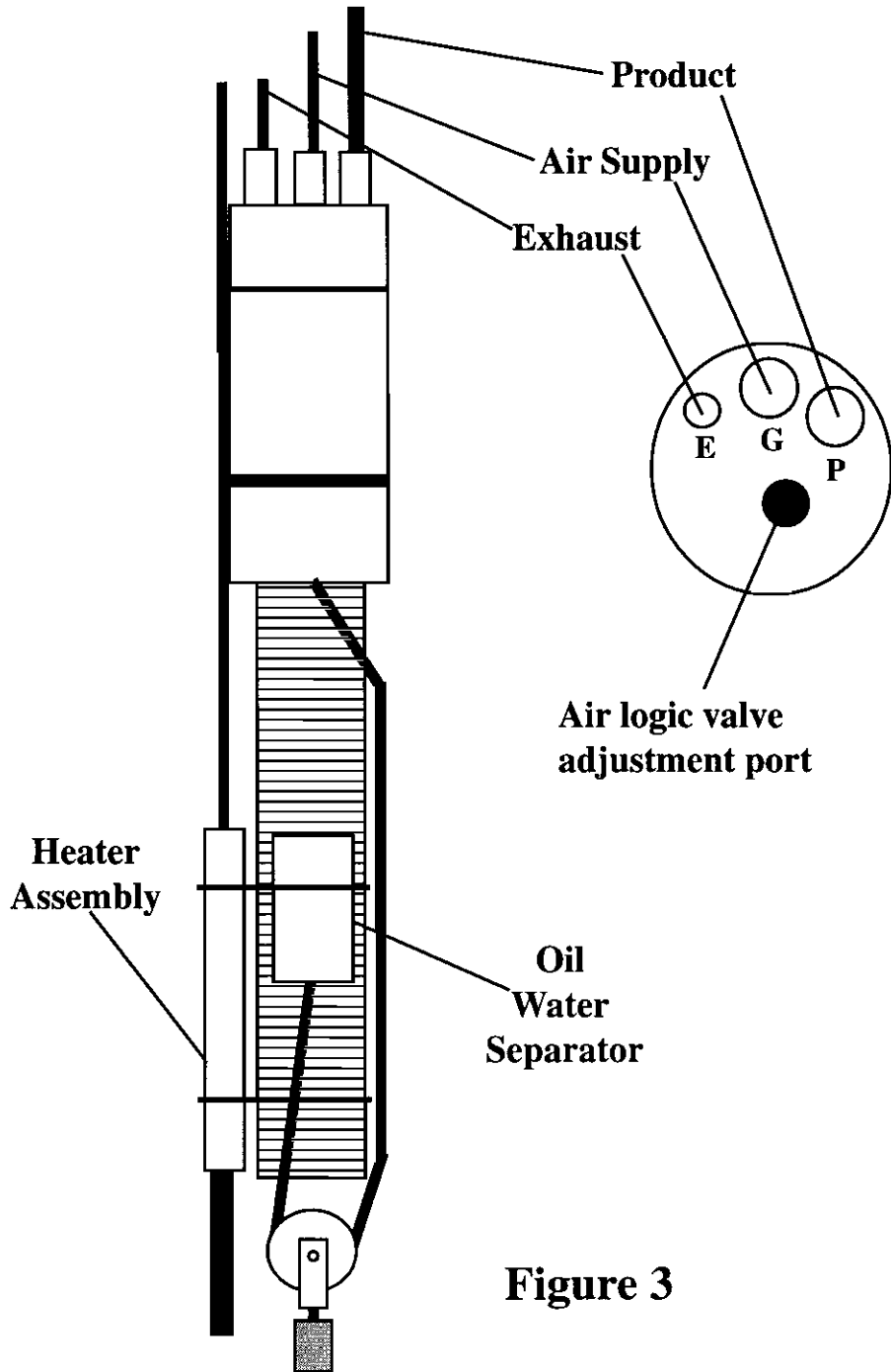


Figure 3

3000ES Programmable Timer

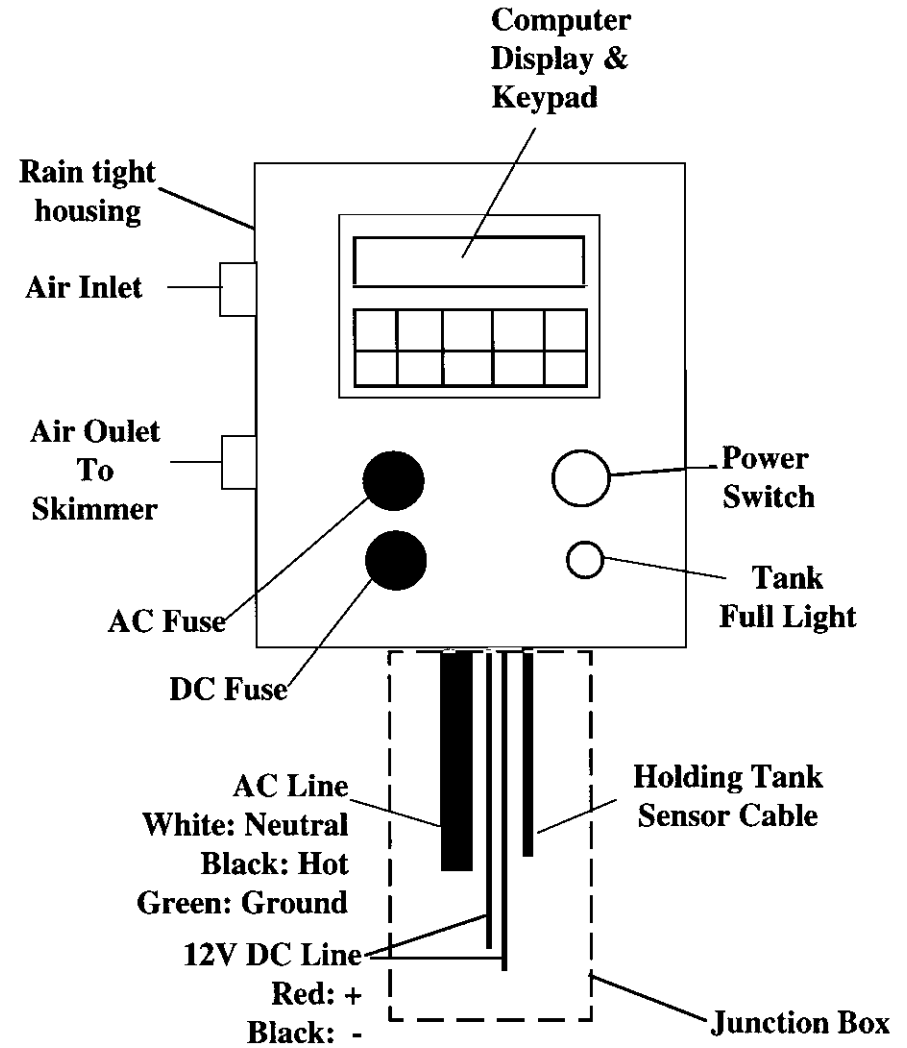


Figure 4

STEP 5. Cut a length of 1/2"OD tubing to cover the distance from the holding tank over to the well. Install one end of this tubing into the inlet of the holding tank shutoff assembly and run the rest of the tubing over to the well.

STEP 6. Position the skimmer and well cap on the ground near the well. Cut a length of 3/8"OD air supply tubing to cover the distance from the top of the well down to the product/water interface plus 5 feet. Install 3/8"OD air supply tubing through the well cap tube fitting labeled "G" (Figure 3). Slide enough tubing through the well cap to position the center of skimmer's slotted area at the product/water interface and attach the end of the tubing to the top of the skimmer tube fitting labeled "G". Try not to kink the tubing. NOTE, If the product thickness is greater than 2 feet then position the the center of skimmer's slotted area at least 1 feet below top of product.

STEP 7. Cut a length of 1/2"OD tubing same as the air supply line. Install 1/2"OD product tubing through the well cap tube fitting labeled "P" (Figure 3). Slide enough tubing through the well cap and attach the end of the tubing to the top of the skimmer tube fitting labeled "P". Try not to kink the tubing.

STEP 8. Cut another length of 3/8"OD tubing for the air exhaust line equal to the air supply line. Install 3/8"OD air exhaust tubing through the well cap tube fitting labeled "E"(Figure 3) onto the skimmer tube fitting labeled "E".

STEP 9. Install 3/8"OD heater line through the well cap tube fitting labeled "H". Pull enough heater line through the cap to reach the right end of the jobbox. Attach the black and white wires coming out of the heater line onto the black connector per Figure 5. Attach the heater line and connector to the right end of the jobbox. Attach the other end of the heater line to the side of the skimmer slotted area using 2 long tie wraps(Figure 3). Make sure the heater cartridge is located below the bottom of the slotted well screen (Figure 3).

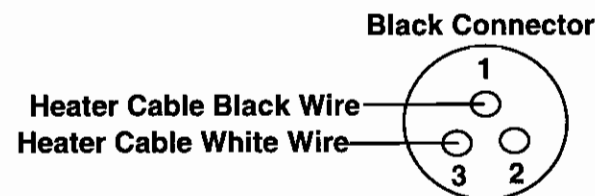


Figure 5

STEP 10. Attach a safety rope from inside the well cap to the top of the skimmer pump head. Be sure to leave 3 feet of slack in the rope. The tubing will carry the weight of the skimmer.

STEP 11. Attach the 1/2" product line coming from the well cap into the inlet of the 3-way ball valve. Attach the 1/2" product line coming from the holding tank into the outlet port of the 3-way ball valve.

STEP 12. Attach the 3/8 reducing union onto the 3/8" air supply line coming out of the well cap and attach the other end of the union to the 3/8" air supply line coming from the controller.

STEP 13. Attach the exhaust check valve onto the end of the 3/8" air exhaust line coming out of the well cap.

Operation of the Product Recovery System

STEP 1. Setting up the program. Start by going to the "PROGRAM OR RUN" window. Push the "DEL" key once. Select "PROGRAM" and push the "MENU" key once to move to the next window.

STEP 2. Input the current clock time. This time is your real time clock time. Next, push the "MENU" button move to the next window.

STEP 3. You should be looking at "#01 START AT: 00:00 window. This is the first interval for operating the skimmer. There are up to 24 intervals that you can input a program. Input your "Start Time" for all desired intervals before moving to the next window. Next, push the "MENU" button move to the next window.

STEP 4. You should be looking at "#01 HEATING TIME: 00:00
PUMPING TIME: 00:00

Input your times for heating and pumping before moving to the next window. Next, push the "MENU" button move to the next window.

If you found that it after 30 minutes of preheating you found it took 10 minutes to pump the well dry of product then set the "pumping time" to 5 minutes (Xitech's 1/2 Rule).

You now have to guess how many times a day to empty the well. A good guess would be once a day for slow recovering product and 2-4times a day for fast recovering product.

STEP 5. Choose how often you would like the interval(s) to run. NOTE: If the recovery rate of a well takes longer than a day (i.e. every 2 days). Then you would choose "EVERY OTHER DAY". Push the "MENU" button move to the next window.

STEP 6. You are now back at the "PROGRAM OR RUN" window. Select the "RUN" choice and push the "MENU" button. You should be looking at "AUTO PUMPOFF" or "AUTO #1 PUMPON" depending on your start time. Push the "TIME RESET" button to zero out the time. The program is now running and you should see your "TOTAL TIME" begin to increase.

YOU ARE NOW READY TO OPERATE THE SYSTEM! TURN ON THE POWER TO THE CONTROLLER.

PLEASE CALL XITECH FROM THE FIELD IF YOU HAVE ANY TROUBLE WITH YOUR INSTALLATION.

FINAL NOTE: Keep in mind that you are trying to empty the formation of free product over a long period of time. To do this you must always try to keep some free product thickness in your recovery well at all times while removing free product daily. You are also trying to operate on limited solar power.

Computer Windows

When you turn on the power to the computer timer for the first time you should be looking at the 'PROGRAM OR RUN' window. Press the "MENU" KEY to begin going through the different windows.

PROGRAM MODE:

1. Mode Selection Window

PROGRAM OR RUN

Choose "PROGRAM"

Press the MENU key to continue

2. Set Current Clock Time Window

SET TIME: 00:00

USE 24 HOUR TIME

Press the MENU key to continue

3. Set Start Time and Run Time Window

START AT: 00:00 USE 24 HOUR TIME

Change Interval # to add another start time.

Press the MENU key to continue

4. PREHEAT TIME: 00:00 Hours: Minutes

PUMPING TIME: 00:00 Hours: Minutes

Press the MENU key to continue

5. Choose Interval Frequency Window

RUN PROGRAM

EVERYDAY CHOOSE UP TO 30 DAYS DELAY

Press the MENU key to continue

6. Choose "RUN"

Press the MENU key to continue