

	File in 2SAM Manual		
	SERVICE BULLETIN	Supersedes: Nothing	399
File with Forms: 155.17-M2			

Subject: Microcomputer Control Center (Paraflow Absorption) -
Eprom Version A.01F.12

On/about March 1999, Paraflow Absorption Units will be shipped with eprom version A.01F.12 (P/N 031-01669-002). This eprom has the following enhancements that revise Service Manual 155.17-M2 as follows:

PURGE OPERATION - "REPAIR" MODE

In addition to the existing AUTO and MANUAL purge modes, REPAIR mode is a new manual purge operation for those units equipped with the Automatic purge system. It allows the Purge Pump to be manually operated independent of the Purge Solenoid Valves and the Purge Solenoid Valves to be manually operated independent of the Purge Pump. In the servicing of the unit, there might be instances where it is desired to open the Purge Solenoid Valves even though the Purge pump is not running. It might also be desired to turn off the Pump with the Valves still open. **This operation must be performed only by a qualified Service Technician using extreme caution because the unit interior could be exposed to the atmosphere through the open valves!!!**

In this operation, both the Purge Tank Solenoid Valve (1SOL) and the Purge Pump Solenoid Valve (2SOL) are controlled simultaneously. If commanded to open, both open simultaneously; if commanded to close, both close simultaneously.

If I/O Expansion Board Program Jumper JP1 has been removed, enabling the Automatic Purge hardware, REPAIR mode can be selected using the usual Purge mode selection prompt as follows:

- 1.) Enter PROGRAM mode using Access Code 1 3 8 0.
"PROGRAM MODE, SELECT SETPOINT" is displayed.
- 2.) Press MODE key.
- 3.) Use ADVANCE DAY/SCROLL key to select SERVICE mode.
- 4.) Press ENTER key.
"PROGRAM MODE, SELECT SETPOINT" is displayed.
- 5.) Press MANUAL PUMP key.
"PURGE TYPE = X (0=MAN;1=AUTO;2=REPAIR)" is displayed.
- 6.) Using ENTRY keys, press 2 to select REPAIR mode.

7.) Press ENTER key.

“PROGRAM MODE, SELECT SETPOINT” is displayed.

8.) Press PROGRAM key to exit Program mode. A normal foreground message is displayed. REPAIR mode has now been selected.

After REPAIR mode is selected above, it can be used while still in SERVICE mode as follows: (When SERVICE mode is exited, the Purge mode will default to AUTO TANK Purge).

To operate Purge Pump independent of Purge Solenoid Valves:

1.) Press PUMP STATUS key.

“PURGE PUMP-OFF-REPAIR MODE” or “PURGE PUMP-ON-REPAIR MODE” is displayed, indicating the pump status.

2.) To start Pump:

If the pump is off, it can be turned on by pressing the MANUAL PUMP key.

To stop Pump:

If the Pump is on, it can be turned off by pressing the MANUAL PUMP key. However, the procedure to do this differs slightly depending upon whether the Purge Solenoid Valves are closed or open. If closed, the Pump turns off when the MANUAL PUMP key is pressed. If open, turning the Pump off could expose the unit interior to the atmosphere if proper precautions have not been previously taken. Therefore, pressing the MANUAL PUMP key does not immediately turn the Pump off. It must be pressed several times and a series of prompts must be answered before the Pump will be turned off as follows: The first press produces a caution message “CAUTION! LEAK POTENTIAL-PURGE VALVES OPEN”. The second press displays prompt message “CONTINUE WITH OPERATION? (0=NO;1=YES). If it is safe to proceed, press ENTRY key “1” (otherwise press “0” to abort procedure and return to step 1 above). If “1” was pressed to continue, prompt message “ARE YOU SURE? (0=NO;1=YES)” is displayed. If it is still safe to proceed, press “1” again (otherwise, press 0 to abort and return to step 1 above). If “1” was pressed, the pump will turn off.

To operate Purge Solenoid Valves independent of Purge Pump:

1.) Press PUMP STATUS key until “PURGE SOLENOID VALVES CLOSED” or “PURGE SOLENOID VALVES OPEN “ is displayed, indicating Solenoid status.

2.) To close Solenoid Valves:

If the Solenoid Valves are open, pressing the MANUAL PUMP key causes them to close.

To open solenoid Valves:

If the Solenoid Valves are closed, they can be opened by pressing the MANUAL PUMP key. However, the procedure to do this differs slightly depending upon whether the Purge Pump is on or off. If on, the Valves open when the MANUAL PUMP key is pressed. If off, opening the Solenoid Valves could expose the unit

interior to the atmosphere if proper precautions have not been taken. Therefore, pressing the MANUAL PUMP key does not immediately cause the Valves to open. It must be pressed several times and a series of prompts must be answered before the Valves will open as follows: The first press produces a caution message "CAUTION! LEAK POTENTIAL-VACUUM PUMP OFF". The second press displays prompt message "CONTINUE WITH OPERATION? (0=NO;1=YES). If it is safe to proceed, press ENTRY key "1" (otherwise, press "0" to abort procedure and return to step1 above). If "1" was pressed to continue, prompt message "ARE YOU SURE? (0=NO;1=YES)" is displayed. If it is safe to proceed, press "1" again (otherwise, press "0" to abort and return to step 1, above). If "1" was pressed, the Valves will open.

EXCESS PURGE WARNING

Previously, the Excess Purge warning message and alarm occurred when there were > 6 purges within 7 consecutive days, after at least 150 hours of operating time had been accumulated. In this eprom version, the threshold is programmable over the range of 2 to 6 purges, with 4 being the Default. The threshold only has to be met or exceeded to initiate the message and alarm.

Program the Excess Purge threshold as follows:

- 1.) Enter PROGRAM MODE using Access Code 1 3 8 0.
"PROGRAM MODE, SELECT SETPOINT" is displayed.
- 2.) Press PURGE CYCLE COUNTER key.
- 3.) Use the ADVANCE DAY/SCROLL key to display the following message. Each time the key is pressed, the message alternates.
"EXCESS PRG WRNG = X PURGES PER 7 DAYS"
- 4.) Using ENTRY keys, enter the desired value between 2 and 6. If the CANCEL key is pressed, Default value 4 is displayed.
- 5.) Press ENTER key.
- 6.) Press PROGRAM key to exit.

DIRECT FIRED UNITS - LEAVING CHILLED WATER CONTROL

In previous eprom versions, the Burner Load Command would not Unload until the Leaving Chilled Water Temperature decreased to within 2.5 Degrees F of the Leaving Chilled Water Temp Setpoint. In some applications, this allowed the unit to shutdown on a Low Water Temp cycling shutdown because the Load Command would not begin to unload early enough as the load decreased.

A RATE control routine has been added to allow the unit to begin unloading before the Leaving chilled water temperature has decreased to within 2.5 Degrees F of the Setpoint.

Associated with this control are two new programmable Setpoints, **RATE COUNT** and **RATE SENSE**.

The amount of decrease in the Leaving Chilled Water temperature is evaluated over periods of time called the RATE COUNT periods. They are programmable over a range of 5 to 180 seconds. These periods run consecutively and continuously as long as the unit is running (ie, when the first one ends, the next one begins, etc). At the end of each period, the temperature error (difference between actual leaving chilled water and Leaving Chilled Water Setpoint) is compared to the temperature error of the previous period. The difference between these errors is the rate of decrease and is compared to the programmed RATE SENSE (0.2 to 2.5 Degrees F) value to determine the magnitude of Load Command reduction required. If the error is greater than the RATE SENSE, the Load command is reduced by a greater amount than if it is less than RATE SENSE. In this way, the value programmed for RATE SENSE determines the rate sensitivity of the control (ie, smaller values produce greater sensitivity).

To program the RATE SENSE and RATE COUNT, proceed as follows: (Default values should provide acceptable operation in most applications)

- 1.) Enter PROGRAM mode using Access Code 1 3 8 0.
“PROGRAM MODE, SELECT SETPOINT” is displayed.
- 2.) Press CHILLED WATER TEMPS key.
“RATE SENSE = X.X” is displayed.
- 3.) Using ENTRY keys, enter desired value between 0.2 and 2.5. If CANCEL key is pressed, Default value 2.5 is displayed.
- 4.) Press ENTER key.
- 5.) Press ADVANCE DAY/SCROLL key.
“RATE COUNT = XX“ is displayed.
- 6.) Using ENTRY keys, enter desired value between 5 and 180. Use leading zeroes where necessary (ie, 090). If CANCEL key is pressed, Default value 30 is displayed.
- 7.) Press ENTER key.
- 8.) Press PROGRAM key to exit. A normal foreground message is displayed.



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