Operating Manual

or Enteral Use Only
Not For Parenteral Use
Ross Products Division, Abbott Laboratories warrants the FLEXIFLOW™-II External Nutrition Pump against defects in material and workmanship for a one (1) year period from date of delivery. This warranty is valid only to the original purchaser and does not extend to any product, or part thereof, which has been subjected to accident, alteration, damage, misuse, repair by other than Ross authorized representatives, or has not been operated and maintained in the manner prescribed in the Operating Manual or which at the time of pump failure was being used with pump sets or containers other than Ross pump sets and containers. Examples of damage or misuse include but are not limited to: pumps that have been dropped, have had fluid spilled into or onto the casing, have been submerged or have had the back removed.

In no event shall Ross be liable for any incidental, indirect or consequential damages in conjunction with the purchase or use of the pump.

Ross reserves the right to repair or replace (at its option) any pump that fails to meet the foregoing warranty.

THE WARRANTIES HEREUNDER ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE.

The FLEXIFLOW™-II Pump can be used for adult and pediatric patients provided the patient’s rate falls within the pump operational specifications. These specifications are:
- The flow rate range is 1-3,000 ml/hr in 1 ml/hr increments.
- The flow rate accuracy is ±10% (see page 13 for details).
- The occlusion pressure limit is 25 psi nominal.

If these specifications are not appropriate for a given patient, the FLEXIFLOW™-II Pump should not be used.

CAUTION
Do not use this pump for feeding infants under 12 months of age. In addition, use in all pediatric patients 12 months of age or older must be carefully evaluated. All enteral pumps have the potential to bolus-feed, which is an important consideration in feeding volume-sensitive patients. The rate of feeding should be 25 ml/hr or greater, and a volume of product no more than four times the hourly feeding rate should be hung.

The decision to use this pump in a pediatric patient should be made in conjunction with a pediatrician.

Confirm proper placement and function of the enteral feeding tube before initiating feeding.

Before leaving a pump-fed patient unattended, verify the following:
1. Filter and filter cover are clean. Failure to thoroughly clean product build-up around filter may cause product oversupply.
2. Confirm filter cover moves freely up and down, and returns to a fully closed (down) position before starting pump.
3. Filter is firmly seated on pump.
4. Confirm that tubing guide is mounted tightly against pump.
5. Pump-set tubing is properly placed on the filter.
6. Feeding is being administered at the prescribed rate.

Failure to do so may result in an uncontrolled feeding rate, which may lead to vomiting and aspiration.

Pump set and container should be replaced as needed, or at least every 24 hours, to avoid product-contamination problems. For single use only.
DROP DETECTOR
- Clean with cotton swab and warm, soap-free, spirit. Dry thoroughly. Be sure no soap film or residue is left on lenses. DO NOT CLEAN WITH ALCOHOL.

- The pump should be stored away from excessive heat, cold, or humidity.
- Be sure ON/OFF switch is in the OFF position.

This FLEXI-FLO II Pump is highly reliable. As with any electromechanical device, however, minor problems may occur. In the event of a pump malfunction, please contact the Technical Division of the company.

BEFORE CALLING, DO A FEW SIMPLE CHECKS:
1. Check for proper electrical hook-up (is pump plugged in? Is electrical outlet functioning?
   Battery properly charged?)
2. Be certain that the DC power ON/OFF switch on rear panel of pump is ON
3. Be sure the FLEXI-FLO II Pump is properly positioned over the rotor, with both of the plastic connectors inside the tube-guide slots, and that the rotor cover is closed.
4. Be sure that the clamp on the pump set is open fully.
5. Be sure the drop detector is clean and the sight chamber is not overfilled or covered with a film of product.
6. Be sure the tubing, pump rotor, rotor cover and drop detector are clean and free of grease, oil and product.
7. Be sure the rotor and rotor cover are properly seated and that threaded screws on the tubing guide are securely tightened.

<table>
<thead>
<tr>
<th>SWITCH</th>
<th>FUNCTION</th>
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<tbody>
<tr>
<td>RUN/STOP</td>
<td>TURNS PUMP ON OR OFF BUT DOES NOT CAUSE PUMP TO LOSE DOSE OR VOL. FED DATA. CHANGES ALL VISUAL AND AUDIO ALARMS.</td>
</tr>
<tr>
<td>UP ARROW</td>
<td>INCREASES BLOW RATE IN ML/HR OR DOSE IN ML. OPERATES ONLY IN STOP MODE.</td>
</tr>
<tr>
<td>DOWN ARROW</td>
<td>DECREASES BLOW RATE IN ML/HR OR DOSE IN ML. OPERATES ONLY IN STOP MODE.</td>
</tr>
<tr>
<td>VOL FED (flow rate)</td>
<td>IN STOP MODE, PRESS VOL FED, THEN UP ARROW OR DOWN ARROW TO SELECT FLOW RATE. IN RUN MODE, PRESS VOL FED TO DISPLAY FLOW RATE. PUMP WILL NOT OPERATE WITHOUT A SETTING FOR VOL FED.</td>
</tr>
<tr>
<td>DOSE (volume in ml to be fed)</td>
<td>IN STOP MODE, PRESS DOSE, THEN UP ARROW OR DOWN ARROW TO SELECT VOLUME TO BE FEED. IN RUN MODE, PRESS DOSE TO RECHECK WHAT WAS SELECTED AS VOLUME TO BE FEED. (DISPLAY HOLDS FOR 5 SECONDS.) PUMP WILL NOT OPERATE WITHOUT A DOSE SELECTED (DOSE SET AT ZERO).</td>
</tr>
<tr>
<td>VOL FED (volume in ml that has been fed at any time up to when DOSE is reached)</td>
<td>IN RUN MODE, PRESS VOL FED TO RECHECK THE AMOUNT THAT HAS BEEN FEED UP TO THAT POINT. (DISPLAY HOLDS FOR 5 SECONDS.) PRESS DOWN ARROW TO RESET VOLUME TO ZERO IF ADDITIONAL PRODUCT MAY BE FEED UP TO VOLUME THAT IS SET AS DOSE.</td>
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LED DISPLAY AND AUDIO ALARM: FUNCTION:
| NO FLOW | PUMP STOPS BECAUSE FLOW HAS STOPPED FOR SOME REASON. CHECK FOR EMPTY CONTAINER OR FLOW OBSTRUCTION (CLEAN DUMP, DRAIN FLUID INTO DRAINING TUBE). |
| COVER OPEN | PUMP STOPS IF COVER IS OPENED. |
| LOW BATT | BATTERY VOLTAGE IS LOW. PUMP WILL RUN APPROXIMATELY 30 MINUTES. |
| DOSE COMP | PLANNED TOTAL DOSE HAS BEEN REACHED. PUMP AUTOMATICALLY STOPS. TO FEED ADDITIONAL PRODUCT, PRESS DOSE, THEN PRESS UP ARROW TO DISPLAY DESIRED ADDITIONAL VOLUME TO BE FEED. PRESS RUN TO RESTART THE PUMP. TO CLEAR DOSE INDICATION FEATURE AND FEED ADDITIONAL VOLUME, PRESS DOSE, THEN PRESS DOWN ARROW TO DISPLAY ZERO. PRESS RUN TO RESTART THE PUMP. |
**PROBLEM**
Neither UP ARROW nor DOWN ARROW responds when switch keys are pressed to increase or decrease Dose, DOSE or VOL FED.

**CORRECTIVE ACTION**
The UP ARROWS and DOWN ARROWS operate only when the pump is in STOP mode.

Flow rate is incorrect.

<table>
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<tr>
<th>Flow Rate Setting (ml/hr)</th>
<th>Approximate Residence per Minute</th>
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<tbody>
<tr>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td>100</td>
<td>3</td>
</tr>
<tr>
<td>180</td>
<td>5</td>
</tr>
<tr>
<td>250</td>
<td>7</td>
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1. To test flow rate, use the following procedure. Be sure to use a graduated cylinder for volume measurement--not an arterial container.

   Using Enfermed's Complete Balanced Nutrition®, Omnifast® Liquid Nutrition or Jevity® Lacteal Liquid Nutrition with other fluids in the container and set up pump per instructions.

   Use a PUMP FLO® Pump Set only.

2. Confirm that the testing guide and rotor are mounted tightly against the pump and the rotor is firmly seated on the shaft.

3. Be sure rotor and screw arm are free from product spillage and all four rollers turn freely.

4. Check that rotor moves freely up and down and returns to a fully closed (down) position before starting the pump.

5. Check rotor speed with a watch. Place two pieces of tape—one on rotor, one on rotor cover—to help count revolutions, per instructions. Check rotor speed against the chart. If necessary, refer to ROTOR ASSEMBLY, page 11.

6. Start the pump and run for 15 minutes. Then run product into graduated cylinder for 1 hour and compare to base rate on pump. If flow rate is incorrect, try a new pump set and repeat procedure. Refer to SPECIFICATIONS, page 10, for accuracy rate.

10. Confirm proper placement and function of external feeding tube. Connect adapter to patient's external feeding tube (nasogastric, gastrostomy, etc).

11. Open clamp fully.


13. Select flow rate (ml/hr), using UP or DOWN ARROW.

14. If desired, set dose by pressing DOSE switch and then UP or DOWN ARROW. Set dose to zero, using DOWN ARROW to override the DOSE function.

15. Press RUN/STOP switch to start feeding.

16. When feeding is complete, switch pump off.

**NOTE:** Pump stops and sounds an alarm automatically when the container is empty. If the DOSE function is in use, the pump will stop, sound the alarm and display the DOSE COMP message when the selected dose is reached.