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Using this Manual

This manual is for the MEDIVATORS® DSD EDGE® endoscope reprocessor. The manual describes the features of the reprocessor, how to setup and operate the reprocessor, and maintenance and troubleshooting procedures to keep the reprocessor in good operating order.

Throughout the manual are notes, service notes, cautions, and warnings. These provide additional important information. An example of each is illustrated below.

Indications for Use

MEDIVATORS DSD EDGE Endoscope Reprocessing System tests, washes, disinfects and rinses flexible endoscopes, such as fiberoptic and video endoscopes between patient uses. The DSD EDGE Endoscope Reprocessor System is indicated to provide high level disinfection, using RAPICIDE® PA High Level Disinfectant, of heat sensitive semi-critical endoscopes. Manual cleaning of endoscopes is required prior to placement in the DSD EDGE Endoscope Reprocessor system.

RAPICIDE PA contact conditions in the DSD EDGE Endoscope Reprocessor : 5 minutes - 30°C - 850 ppm peracetic acid.

Note: A note refers to relevant information not covered in the main body of the text.

Service: A service note refers to operations or repairs only a trained service technician may perform.

Caution! A caution describes actions and conditions that may cause damage to or destruction of the equipment.

Warning! A warning describes actions and conditions that may cause severe personal injury or death to the operator or patient.
Safety

This section outlines general safety guidelines for proper operation and service of the reprocessor. Failure to follow these guidelines may result in severe injury or death to the patient and/or operator. Read and understand all operating and service procedures before attempting to operate the reprocessor. If the equipment is not used as specified, the protection by the equipment may be impaired.

Intended Use

Only properly trained individuals may operate or service the reprocessor. Never use the reprocessor for any purpose other than the manufacturer’s specific intended purpose. It is the responsibility of the facility to maintain and ensure that adequate training is provided to operators. It is recommended that the facility conduct regular training of all personnel concerned with the operation and maintenance of this equipment, including emergency procedures for toxic, flammable or pathogenic material released into the environment. Attendance records of the training should be maintained and evidence of understanding demonstrated.

Operator Safety

Avoid biological contamination and chemical burns—always wear appropriate personal protective equipment when handling endoscopes or disinfectant solutions. Never open the reprocessor lid or remove the floating basin lid during operation.

Moving the DSD EDGE® Endoscope Reprocessor

Before moving the DSD EDGE Endoscope Reprocessor, ensure the electrical cord, drain line and water supply line are either disconnected or are appropriate lengths to accommodate the relocation of the machine. Failure to do so may result in damage to the machine. While moving the DSD EDGE Endoscope Reprocessor, ensure the machine remains in an upright position. Moving or resting the machine in any orientation other than an upright position may result in damage to the machine. For short distances, the DSD EDGE Endoscope Reprocessor may be slid upon its base. Take precautions to ensure the machine does not tip over which could result in damage to the machine or personal injury. For longer distances, the machine may be placed upon a dolly or pallet. When loading or unloading the machine onto or off of a dolly or pallet, utilize appropriate lifting equipment or manpower to avoid damage to the machine or personal injury.

Note: To avoid injury or death from an electrical insulation breakdown within the unit, the GFI (ground fault interrupter) circuit breaker should be checked for proper operation on an annual basis.

Note: If during the use of this equipment you see or smell smoke, immediately disconnect the unit from the power supply, discontinue use and call MEDIVATORS Technical Support at 1-800-444-4729.
Note: Prior to undertaking any service or maintenance operation, or when resetting the GFI ensure that the DSD EDGE® Endoscope Reprocessor is disconnected from the main power supply. If service or maintenance operations are to be conducted on the water system, ensure that the DSD EDGE Endoscope Reprocessor is isolated from the main water supply.

Caution! The reprocessor does not have an on/off switch. Be sure the reprocessor is positioned so that the power cord or main circuit breaker is accessible at all times.

Warning! The reprocessor must be protectively grounded.

Installation and Maintenance

Proper maintenance will ensure effective disinfection and prolong the life of the reprocessor.

- The reprocessor must be protectively grounded.
- The disinfectant immersion period (contact time) is fixed at five (5) minutes.
- All pressure regulators are factory-preset. Do not adjust the settings. Contact your Technical Support representative for assistance.
- Do not use alcohol or alcohol-based products to clean the reprocessor cabinet.
- The hookups are not autoclavable and must be reprocessed by low temperature disinfection only.
- Replacement parts must be ordered from the manufacturer to maintain the warranty.
- Regularly inspect reprocessor for basin damage, pipe and tubing damage, which may result in leaks.

Water Quality and Filtration

Potable water is the minimum standard. Incoming water must be pre-filtered to a minimum of 0.45-micron at 35-40 psi at a flow rate of 3.2 gpm/min and a temperature of 95°F (-4°F, +9°F) or 35°C (-2°C, +5°C).

- The high performance 0.2-micron water filter included with the reprocessor is a bacterial-retentive filter. The filter removes all microorganisms and particles greater than 0.2-micron.
- The routine maintenance schedule recommends replacing the 0.2-micron water filter every 6 months or sooner, depending on the pre-filtration system and the quality of the incoming water.
- Incoming water supplied (upstream of the external pre-filtration system) should be shut-off at the end of every work day. Ensure that this water supply is turned on prior to operating the reprocessor.
- The DSD EDGE Endoscope Reprocessor is optionally supplied with a 2-stage pre-filtration system, refer to document MI02-0045 for installation.
- The pre-filtration system should be monitored for excessive pressure drop indicating blocked filter membranes.
Chemicals

The DSD EDGE® Endoscope Reprocessor uses RAPICIDE® PA Part A and Part B peracetic acid disinfectant components to high level disinfect endoscopes. Refer to the American National Standard recommended practice titled, *Chemical Sterilants and High Level Disinfectants: A guide to Selection and Use* (AAMI TIR7:1999) and/or *Safe Handling and Biological Decontamination of Reusable Medical Devices in Health Care Facilities and in Nonclinical Settings* (AAMI/ANSI ST35:2003). The documents are available from the Association for the Advancement of Medical Instrumentation.

The DSD EDGE Endoscope Reprocessor also accommodates user specified detergents for endoscope washing and 70% Ethyl Alcohol and Isopropyl Alcohol for end-of-cycle endoscope drying.

For all chemicals used within the DSD EDGE Endoscope Reprocessor refer to the respective chemical labeling, directions-for-use (DFU) and/or material safety data sheet (MSDS) for chemistry constituents as well as for safety and handling guidelines. These documents should be displayed and stored near the DSD EDGE Endoscope Reprocessor for easy access in the event of a chemical spill or emergency resulting in contact with any chemical that is considered hazardous.

Detergent Solution

If the user decides to incorporate a pre-wash in the reprocessing cycle MEDIVATORS recommends the use of a detergent solution that has bacteriostatic properties to inhibit bacterial growth in the detergent reservoir and detergent line. The detergent should be low foaming and free-rinsing neutral in pH recirculation.

⚠️ Caution! Never use household detergent in the reprocessor.

Disinfectant Solution

USE ONLY RAPICIDE PA disinfectant.
Monitoring Disinfectant Potency

The disinfectant potency must be verified for each disinfection cycle. Use a peracetic acid test strip to verify that the retained disinfectant sample from the DSD EDGE® Endoscope Reprocessor sample port is above the minimum recommended concentration (MRC).

Endoscope Precleaning and Testing

All endoscopes must be manually precleaned prior to disinfection. Follow the endoscope manufacturer instructions and established professional guidelines to properly preclean the endoscope.

• Endoscopes with elevator wire channels require additional manual cleaning and disinfection steps.
• Leak test endoscopes prior to disinfection procedures.

Electromagnetic Compatibility

The DSD EDGE Endoscope Reprocessor meets all safety requirements of International standard IEC 60601-1-2 for medical electric equipment and is suitable for use in laboratory environments.

Caution! Portable and mobile communication devices can affect electrically-operated medical equipment.

Hookup Application Guide

A DSD EDGE Endoscope Hookup Application Guide has been provided with every unit purchased and an updated Hookup Application Guide can be acquired by contacting MEDIVATORS Customer Support at 1-800-444-4729 or from the internet by going to www.medivators.com.
Cleaning and Disinfection

Always follow established professional guidelines while cleaning and disinfecting endoscopes. The following organizations have published recommended guidelines.

Society of Gastroenterology Nurses and Associates
401 North Michigan Ave.
Chicago, IL 60611-4267
TEL: (800) 245-7462
FAX: (312) 321-5194
http://www.sgna.org/

Association for Professionals in Infection Control and Epidemiology, Inc.
1275 K Street, NW, Suite 1000
Washington, DC 20005-4006
TEL: (202) 789-1890
FAX: (202) 789-1899
http://www.APIinfo@apic.org

American Society for Gastrointestinal Endoscopy
13 Elm Street
P. O. Box 1565
Manchester, MA 09144-1314
TEL: (978) 526-8330
FAX: (978) 526-4018
http://www.asge.org/

American Society for Testing and Materials
100 Bar Harbor Drive
West Conshohocken, PA 19428-2959
TEL: (610) 832-9585
FAX: (610) 832-9555
http://www.astm.org/

Association of Operating Room Nurses
2170 So. Parker Rd., Suite 300
Denver, CO 80231-5711
TEL: (303) 755-6304
FAX: (303) 750-3462
http://www.aorn.org/

Canadian Society of Gastroenterology Nurses & Associates
P.O. Box 366
36 Adelaide Street East
Toronto, Ontario M5C 2J5
http://www.webray.com/csgna

British Society of Gastroenterology
3 St. Andrews Place
Regents Park, London NW1 4LB
01144-171-387-3534
BSG@mailbox.u2cc.ac.uk.
General

This chapter describes the operator controls, and how to set up and program the reprocessor.
Figure 2: DSD EDGE® Endoscope Reprocessor Dual Basin
Figure 3: Side and back of DSD EDGE® Endoscope Reprocessor
Control Panel

The control panel allows the operator to specify settings, view system messages, errors and warnings, and operate the reprocessor. This section describes each function of the control panel.

Figure 2: Control Panel
LED Indicators

The LED indicators alert the operator to system functions and errors. There are four types of indicators used on the reprocessor control panel.

- **Status Indicators**
  The status indicators blink if an error occurs, or if the STOP button is pressed. The upper indicator identifies station A. The lower indicator identifies station B.

- **Station Indicator**
  The station indicator identifies that the disinfection station is in use. The LED illuminates when the station is in use.

- **Cycle Phase Indicators**
  The phase indicators identify which cycle phase the system is performing. The LED illuminates (or blinks) to indicate the present cycle phase.

- **Warning Indicators**
  The warning indicators alert the operator to system errors, or other conditions requiring immediate attention. The upper indicator identifies station A. The lower indicator identifies station B.
**LCD Screen**

The LCD screen displays system messages and prompts the operator during system setup.

- **User Prompt** displays messages and queries. “A:” represents station A, “B:” represents station B.
- **Station/Program** displays the current operating program.
- **Program status indicators** identify a station as “idle”, “stopped”, “resetting” or “running”.
  - Station stopped is indicated by alternating + and *.
  - Station running is indicated by alternating : and |.
  - Station resetting is indicated by alternating R and r.
  - Station idle has no indicator.

---

**Program status indicators**

- Station idle
- Station stopped
- Station running
- Station resetting

---

**Figure 4: LCD Screen**
**Numeric Keypad**

The numeric keypad allows the operator to enter numeric information.

- The * key can also be used as a “Cancel” or a “Backspace” button.
- The # key can also be used as an “Enter” button.

![Numeric Keypad](image.png)
## Function Keys

The function keys control the operation of the reprocessor.

- **ID Data**
  Press this button to enter the endoscope identification or serial number, operator ID number, patient ID number, and physician ID number into the log. Each ID entry can contain up to ten digits. This function is only active when the station is idle.

- **Program**
  Press this button to select a disinfection program. Enter the program number on the keypad. This function is only active when the station is idle.

- **Add Air**
  When the station is idle press this button, then the START button to air purge the endoscope. Otherwise, this function will append an add air cycle to the end of the currently running cycle. Pressing the button again will remove the add air cycle.

- **Set Up**
  Press this button to access system functions.

- **Enter**
  Press this button to accept settings, or to start some system functions.

- **Cancel**
  Press this button to reject settings, reset an alarm, or abort a disinfection cycle.
  - Reject an incorrect user entry by pressing the CANCEL button. The previous value is restored, or the previous screen is displayed.
  - Abort the currently running cycle by pressing the CANCEL button, then the ENTER button.
  - Reset an alarm by pressing the CANCEL button, then the ENTER button.

- **Station Select**
  Press this button to select Station A or Station B.

- **Start**
  Press this button to start a disinfection cycle or resume an interrupted cycle, or to start some system functions.

- **Stop**
  Press this button to pause a disinfection cycle, acknowledge a warning message, or stop a system function.

- **HLD Pass**
  Upon verification that the disinfectant sample met the MRC using a test strip, press this button to confirm.

- **HLD Fail**
  Press this button if the disinfectant sample failed to meet MRC upon test strip verification. This information is recorded with the reprocessor log.
Figure 6: Function Keys
Setting Up the Reprocessor

Warning! Avoid possible chemical burns. Always wear personal protective equipment (gloves, goggles) when handling disinfectant.

Warning! Avoid possible slip injuries. Clean up any spills immediately.

Note: Part A Uptake Tube is fitted with the BLUE cap. Part B Uptake Tube is fitted with the WHITE cap.

Note: Check Expiry Date of Part A and Part B before use.

Note: Ensure that Part A and B Caps are securely screwed onto containers.
▼ LOAD DISINFECTANT

The disinfectant is supplied in two separate 5 liter containers. Part A is the Peracetic Acid component, Part B is the buffer. Both containers fit into the disinfect drawer located on the left hand side of the reprocessor.

1. Open the doors of the reprocessor and slide the drawer fully out

2. Take the Part B container and place in the rear of the drawer.

3. Remove the bottle cap and foil seal.

4. Insert the Part B Uptake Tube (white cap) and fully secure to the container.

5. Take the Part A container and place in the front of the drawer.

6. Remove the bottle cap.

7. Insert the Part A Update Tube (blue cap) and fully secure to the container.

8. Close the disinfectant container drawer ensuring that the tubing is not restricted.
SET THE DATE

Use this function to set the system date. This setting changes both the control panel display and the internal system clock.

1. Press the SETUP button.

2. Enter 2 on the keypad, then press the ENTER button.

3. Change the day setting.
   • Enter the correct two-digit day (01-31).
   • Press the ENTER button.

4. Change the month setting.
   • Enter the correct two-digit month (01-12).
   • Press the ENTER button.
   • The month is displayed as three alpha characters (Jan., Feb., etc.) in Run mode.

5. Change the year setting.
   • Enter the correct two-digit year (00-99).
   • Press the ENTER button.

6. Change the day of the week setting.
   • Enter the correct day (1-7, Sunday is 1).
   • Press the ENTER button.
   • The day of the week is displayed as two alpha characters (Su, Mo, etc.) in Run mode.

Note: Press the SETUP button at any time to exit the function.
Figure 7: Set Date Screen
SET THE TIME

Use this function to set the system time. This setting changes the display and the internal system clock. Verify the clock setting daily to ensure accuracy.

1. Press the SETUP button.

2. Enter 3 on the keypad, then press the ENTER button.

3. Change the hour setting.
   • Enter the correct two-digit hour (00-23, midnight is 00).
   • Press the ENTER button.

4. Change the minute setting.
   • Enter the correct two-digit minute (00-59).
   • Press the ENTER button.

⚠️ Note: Press the SETUP button at any time to exit the function.
Figure 8: Set Time Screens
▼ DISPLAY SOFTWARE VERSION

Using the following procedure to view the current version of software installed in the reprocessor.

1. Press the SETUP button.

2. Enter 4 on the keypad, then press the ENTER button.

3. The current software and version is displayed.

4. Press the SETUP button to exit the display.

![Software Version Screen]

Figure 9: Software Version Screen
**DISPLAY LOG**

This function allows review of the status log on the display. The entire log can be displayed one entry at a time, starting with the most recent entry.

1. Press the SETUP button.
   - Enter 8 on the keypad, then press the ENTER button.

2. The most recent log entry is displayed.

3. Press the ENTER button to scroll through the entries.

4. Press the SETUP button to exit the display.

![Figure 10: Display Log Screen and sample entry]
**CLEAR LOG**

The log stores 1463 records per station. Once the log is full, additional records will overwrite the oldest entries. Print a copy of the log and clear the log at regular intervals.

1. Press the STATION SELECT button to choose station A or station B. The selected station must be idle to perform this function.

2. Press the SETUP button.
   - Enter 10 on the keypad, then press the ENTER button.

3. The message “Clear Log?” is displayed.
   - Press the SETUP button to retain the log.
   - Press the ENTER button to clear the log.

![Figure 11: Clear Log Screen](image_url)
CLEAR DISINFECTANT CYCLE COUNT

Use the following procedure to clear the disinfectant cycle counts after a disinfectant change.

1. Press the STATION SELECT button to choose station A or station B.

2. Press the SETUP button.
   - Enter 11 on the keypad, then press the ENTER button.

3. Press the ENTER button to clear the count.

4. Press the SETUP button to exit the display.

Figure 12: Clear Disinfectant Cycle Count Screen
Water Line Disinfection

This function disinfects the water lines in the reprocessor. The current water quality standard for Washers/Disinfectors in the United States and Canada recommends the use of potable (human consumption/drinking quality) water as the supply water for use in washers/disinfectors. If your facility can supply potable quality water to the DSD EDGE® automated endoscope reprocessor, you will meet these requirements, so daily disinfection of the water lines and water filter is not required, as long as the pre-filtration system is installed upstream of the reprocessor and is functioning properly. Other countries have a more stringent water quality requirement under the standard ISO 15883-4:2008 (Washers-disinfectors Part 4). If you are required to meet this standard, chemical disinfection of the water treatment (filtration) and delivery system must be performed on a weekly basis and whenever the 0.2 micron bacterial retentive filter is replaced. This standard requires that all rinse water delivered to the washer/disinfector contain no more than 10 cfu (colony forming units) per 100 ml. Microbiological quality of even potable water varies considerably. If you are unsure of the microbiological quality of your washer/disinfector supply water, you should have it tested according to either local or internal guidelines. This procedure must also be performed after each water filter change and after any service is performed on the water supply system.

Caution! Ensure the restrictor adapter provided with the installation kit is connected in the basin before performing this procedure.

1. Verify both stations are idle before performing this procedure. The default disinfection time is one and one-half (1 and 1/2) hour.

2. Press the SETUP button.
   • Enter 6 on the keypad, then press the ENTER button.

3. Press the START button.
   • The LCD displays a reminder message to “Attach Restrictor”. Press the START button again after verifying the restrictor is connected.
   • The disinfectant will remain in the lines for the pre-programmed water line disinfection time.
Upon completion of a water line disinfection cycle, the on-board .2 micron water filter housing located behind the front access doors should be purged of air.

4. Press the SETUP button.

5. Press 43 on the keypad, then press ENTER. This will open the incoming water supply solenoid valve providing a water supply to the on-board .2 micron filter housing.

Note: A counter on the LCD display will begin to count down from 250 to 0 in one second increments. After 250 seconds, the incoming water supply solenoid valve will automatically close if not manually closed sooner as explained within step 10.

6. Direct the purge line from the top of the on-board .2 micron water filter housing into a container that hold a minimum of 1 liter of liquid.

7. Slowly open the shut-off valve located on the purge line from the on-board .2 micron filter housing until the air is purged from the filter housing and a steady stream of water flows from the purge line.

8. After closing the shut-off valve, tap the purge line to promote the draining of the residual water within the purge line into the container.

9. Remove the container and empty.

10. Press the STOP button to close the incoming water supply solenoid valve and then press the STOP button again to exit the SETUP menu.
Programming the Reprocessor

INPUT PROGRAM

Custom programs allow the operator to change the cycle parameter settings, or to setup custom reprocessing protocols. A maximum of nine custom programs can be pre-set. Refer to the disinfection cycle chart in the appendix for range settings.

⚠️ Note: Depending on selections, some of the following screens will not be displayed.

⚠️ Note: To deactivate a cycle, enter “0” for the time setting, then press the ENTER button.

1. Press the SETUP button.
   • Enter 5 on the keypad, then press the ENTER button.

2. The “Program 1” screen is displayed. Enter the program digit (1-9) on the numeric keypad, then press the ENTER button.

3. The “Flush” screen is displayed. Enter the desired detergent flush time.
   • Enter two digits for the minutes, then press ENTER.
   • Enter two digits for the seconds, then press ENTER.

4. The “Soak” screen is displayed. Enter the desired soak time.
   • Enter two digits for the minutes, then press ENTER.
   • Enter two digits for the seconds, then press ENTER.

5. The “Soak Rinse” screen is displayed. Enter the desired soak rinse time.
   • Enter two digits for the minutes, then press ENTER.
   • Enter two digits for the seconds, then press ENTER.
6. The “Detergent Inject” screen is displayed. Enter the desired detergent inject time. The volume of detergent is controlled by the number of seconds entered on the screen, up to a maximum of 59 seconds.

| 1 second | = 3 mL detergent solution | = 0.033 oz/gal. | = 0.26 mL/litre |

• Enter two digits for the seconds, then press ENTER.

7. The “Rinse 1” screen is displayed. Enter the desired primary rinse time.
   • Enter two digits for the minutes, then press ENTER.
   • Enter two digits for the seconds, then press ENTER.

8. The “Rinse 2” screen is displayed. Enter the desired secondary rinse time.
   • Enter two digits for the minutes, then press ENTER.

9. Enter two digits for the seconds, then press ENTER. 10. The “Rinse 3” screen is displayed. Enter the desired rinse time.
   • Enter two digits for the minutes, then press ENTER.
   • Enter two digits for the seconds, then press ENTER.
Figure 14: Custom Program Setup Screens
10. The “Alcohol” screen is displayed. Enter the alcohol purge time.
   • Enter two digits for the minutes, then press ENTER.
   • Enter two digits for the seconds, then press ENTER.

11. The “Alcohol Inject” screen is displayed. Enter the alcohol inject time. The volume of alcohol is controlled by the number of seconds entered on the screen, up to a maximum of 59 seconds.

   1 second injection = 3 cc alcohol

12. The “Air” screen is displayed. Enter the desired air cycle time.
   • Enter two digits for the minutes, then press ENTER.
   • Enter two digits for the seconds, then press ENTER.

13. The custom program setting is complete. Record the settings in the appendix for future reference (see the Custom Program Reference Chart).

   Note: Press the STOP button at any time to exit the Custom Disinfection Program setup function.
Figure 15: Custom Program Setup Screens
Figure 16: Custom Program Setup Screen
▼ DISPLAY TEMPERATURES

Use the following procedure to view the temperatures.

1. Press the SETUP button.
   • Enter 13 on the keypad, then press the ENTER button.

2. The temperatures are displayed in Celsius.

3. Press the SETUP button to exit the display.

![Figure 17: Display Temperature Screen](image-url)
DISPLAY TIME REMAINING

Use the following procedure to view the cycle time remaining for both stations.
1. Press the SETUP button.
   - Enter 17 on the keypad, then press the ENTER button.
   1. The typical cycle time remaining for each station is displayed, actual time may vary depending on the rate of incoming water.
   2. Press the SETUP button to exit the display.

![Figure 18: Time Remaining Screen](image-url)
DISPLAY STATE TIME

A cycle is comprised of a number of states. Use the following procedure to view the state time for both stations.

1. Press the SETUP button.
   - Enter 18 on the keypad, then press the ENTER button.
2. The current state number and time remaining for each station is displayed.
3. Press the SETUP button to exit the display.

Note: Refer to the Disinfection Cycle Chart in the Appendix for state times.

Figure 19: State Time Screen
PRINT ENTIRE LOG

This function prints a copy of the disinfection cycle log. Only the information saved since the last time the log was cleared is printed. Verify the printer is ON before printing.

1. Press the STATION SELECT button to choose station A or station B.
2. Press the SETUP button.
   • Enter 21 on the keypad, then press the ENTER button.
3. Press the START button to print the log.
4. Use Setup 10 to clear the log.

Note: The printing cannot be stopped once it is started
PRINT LAST RUN

This function allows printing of a paper copy of the last disinfection cycle run. Verify the printer is ON before printing.

1. Press the STATION SELECT button to choose station A or station B.
2. Press the SETUP button.
   • Enter 25 on the keypad, then press the ENTER button.
3. Press the START button to print the log.

Figure 21: Print Last Run Screen
**SET AUTOMATIC PRINTING ENABLE**

This function prints the log after every disinfection cycle. The default factory setting is “enabled”. Verify the printer is ON before printing.

1. Press the STATION SELECT button to choose station A or station B.

2. Press the SETUP button.
   - Enter 33 on the keypad, then press the ENTER button.

3. Enter 1 to enable automatic printing, then press the ENTER button. This will print one copy.
   - Enter 2 to print two copies, then press the ENTER button.
   - Enter 3 to print three copies, then press the ENTER button.

![Figure 22: Automatic Printing Enable Screen](image-url)
SET DELAYED START DATE/TIME

Use the following procedure to program the delayed startup time.

1. Press the STATION SELECT button to choose station A or station B.
2. Press the SETUP button.
   • Enter 28 on the keypad, then press the ENTER button.
3. Set the day setting.
   • Enter the correct two-digit day (01-31).
   • Press the ENTER button.
4. Set the month setting.
   • Enter the correct two-digit month (01-12). If the zero (0) is entered for the month, the programmed cycle will run every 24 hours.
   • Press the ENTER button.
5. Set the hour setting.
   • Enter the correct two-digit hour (00-23, midnight is 00).
   • Press the ENTER button.
6. Set the minute setting.
   • Enter the correct two-digit minute (00-59).
   • Press the ENTER button.
7. Enable the reprocessor (Setup 29) to perform the selected program at the time specified.
Figure 23: Set Delayed Startup Screen
SET DELAYED START ENABLE

Use the following procedure to enable the delayed startup option.

1. Press the STATION SELECT button to choose station A or station B.

2. Press the SETUP button.
   - Enter 29 on the keypad, then press the ENTER button.

3. Select the startup option.
   - Press 1 on the keypad, then press the ENTER button to enable the delayed startup.
   - Press 0 on the keypad, then press the ENTER button to disable the delayed startup.

Figure 25: Enable Delayed Startup Screen
Caution! Refer to the Service Manual for more information. Only properly trained personnel should attempt to perform the functions in the Diagnostics Menu.

Figure 26: Enter Diagnostics Screen
Chapter 3

OPERATION

Introduction

This chapter explains how to startup and shut down the reprocessor, how to program the preprocessor for a delayed start sequence, how to leak test endoscopes and how to prepare and disinfect an endoscope.
Cycle Operation

Startup Phase

During start-up phase, the software monitors certain sensors. If any of the monitored sensors are not satisfied during start-up, an error message is displayed and the process is halted. To cancel the start-up phase, press the STOP key. To resume, resolve the error according to the error message displayed, press the STOP key, and then press the Start key. Please refer to the maintenance and troubleshooting section for appropriate instructions to resolve error messages.

If the leak tester is enabled, a 40 second sheath test is activated during the start-up phase. During that test the endoscope is pressurized to 160mmhg for 20 seconds then the pressure is monitored for the remaining 20 seconds. If the pressure drops below 50mmhg, a “Sheath Fail” error message is displayed and the process is halted. To cancel the start-up phase, press the STOP key. To resume, resolve the issue according to the error message displayed, press the STOP key, and then press the START key.

The cycle then proceeds with a default Flush Phase or an optional Wash Phase.

Flush Phase

The flush phase introduces fresh water through scope channels for a minimum of 30 seconds as well as into the basin via the basin port. Detergent can be injected into the channels prior to the 30 second minimum fresh water flush via SETUP 5. The default detergent injection time is 3 seconds (~9 ml). Please refer to the table in the Programming the Reprocessor Section for the appropriate dilution and timing settings. The flush time can also be increased above 30 seconds via SETUP 5. Refer to the Programming the Reprocessor Section. Note: During this phase, the incoming water temperature is monitored to ensure that the water temperature is within the proper range for disinfection. If the water temperature is below the minimum required for disinfection, water will continue to flow into the basin until either the minimum incoming water temperature is met or the step times out. This flush phase concludes by purging the scope channels with air and emptying the basin of water.

Wash Phase

The wash phase consists of up to two Soak segments. The operator has the choice to run one wash segment, two wash segments or no wash segments. Setting the Soak time above zero using Setup 5, disables the second segment. Note: If one or two wash segments are chosen, then the flush phase is skipped.

During Soak, the detergent is injected into the basin through the scope channels according to the programmed detergent injection time. The default detergent injection time is 3 seconds (~9 ml). Please refer to the table in the Programming the Reprocessor section for the appropriate dilution and timing settings. After injection, water fills the basin and the endoscope is soaked in the basin for the programmed soak time. The basin is then drained while the endoscope channels are flushed with fresh water. A Rinse Soak period then follows which is identical to the soak period. However, no detergent is injected during this time.
**Disinfectant Phase**

During the disinfectant phase the disinfectant use-solution is first generated. Once the basin is filled and the temperature is stabilized inside the basin, the endoscope is soaked for the desired disinfectant soak time. During the soak period, the disinfectant is pumped through the channels. After soak, the disinfectant is dumped to drain.

**Rinse 1 Phase**

During the Rinse 1 phase, the basin is partially filled with fresh water as the scope channels are flushed with fresh water. After draining the basin, the basin is completely filled with fresh water as the scope channels are flushed with fresh water. The basin is then drained while the channels are purged with fresh water followed by an air purge.

**Rinse 2 Phase**

During the Rinse 2 phase (optional) the basin is completely filled with fresh water while the scope channels are flushed with fresh water. The basin is then drained while the channels are purged with fresh water followed by an air purge.

**Rinse 3 Phase**

Rinse 3 phase (optional) is identical to Rinse 2 phase.

**Alcohol Phase**

During the alcohol phase, alcohol is injected through endoscope channels then followed by an air purge for the Alcohol time programmed in Setup 5. The alcohol injection time is also programmed using Setup 5.
Air Phase
The Air phase is simply a programmed time during which air is purged through the endoscope channels.

Note: Please refer to the Disinfection Cycle Chart for user programmable time settings, default state times, and time limitations.

Note: Every drain transaction is followed by an air purge where air is flushed through the endoscope channels and internal fluid lines. The Air LED on the control panel blinks during air purge.

Note: During each phase of the cycle, an LED illuminates to indicate the present phase. The Flush LED indicates that one of the wash phase segments is running.

Pre-start Inspection
Use the following procedure to inspect the reprocessor before startup.

1. Check the external pre-filters if installed on the incoming water supply. Replace any filters if the dynamic pressure drop across any filter is greater than 10 psi. Inspect the pressure gauges for pressure reading when water is flowing through the filters.

2. Check the detergent reservoir (if utilized) for proper detergent level. Add detergent, if necessary.

3. Check the alcohol reservoir (if utilized) for proper alcohol level. Add alcohol, if necessary.

CAUTION! For the alcohol and detergent bottles; remove, refill and replace each bottle (alcohol and detergent) separately to ensure the correct fluid is in reservoir.

Note: Allow 1 inch of space at the top of the detergent and alcohol reservoirs to accommodate the reservoir sensors.
4. Check the disinfectant Part A and Part B supply bottle expiration dates.

5. Check the time on the reprocessor display screen for accuracy. Reset the time, if necessary.

6. Verify the incoming dynamic water pressure by flowing water into the basin by pressing the SETUP button followed by entering 41 using the keypad and then pressing the ENTER button. The LCD display shall prompt “Water temp test?” Press the ENTER button to initiate water flow. As water flows into the basin, ensure that the dynamic water pressure at the inlet to the DSD EDGE® Endoscope Reprocessor is 35-40 psi (2.4-2.75 BAR).

7. While the water flows into the basin, verify that the incoming water temperature as indicated within the display is 35°C (-2°C, +5°C). Refer to Figure 1 for an explanation of the four temperature readings within the LCD display.

8. Once the incoming water supply dynamic water pressure and temperature is verified, press the STOP button. The LCD will prompt “Basin drained?” Once the basin is completely drained, press STOP to close the drain valve and press STOP again to exit setup mode.

![Figure 1: Display Temperature Screen](image)
Disinfecting Endoscopes

Use the following procedure to prepare an endoscope for disinfecting, to run the disinfection process, and to complete the disinfection process.

Preparing the endoscope

1. Preclean the endoscope to remove any organic debris. Follow the manufacturer’s instructions for precleaning, or refer to established professional guidelines. See “Endoscope Precleaning and Testing” in this chapter.

2. Remove all channel valves from the endoscope and connect the ports with appropriate hookup. Refer to the appropriate Medivators Hookup Guide for specific endoscope installation.

3. Position the endoscope in the reprocessor basin.
   - Position the control section of the endoscope in the right rear of the basin.
   - Position the light guide in the left front of the basin.

4. The distal end must not point upwards toward the floating lid.
   - The endoscope must be completely submerged when the basin is filled.
   - The endoscope must not contact the basin lid.

5. Attach the endoscope hookup connection to the basin connection. Verify there are no kinks in the hookup.

Warning! Periodically test the hookups to ensure there are no blockages and that the connections are secure. Verify condition of Hookups and replace if worn or damaged.

Caution! Use only MEDIVATORS supplied hookups with the DSD EDGE® Endoscope Reprocessor.

Caution! The hookups are not autoclavable and must be reprocessed by low temperature disinfection only.
Leak Testing

Use the following procedure to leak test an endoscope. Leak test adaptors are available for PENTAX®, OLYMPUS®, FUJIFILM® and KARL STROZ® endoscopes.

Note: This automated test is not a substitute for the endoscope manufacturer’s manual leak test. Follow the manufacturer’s instructions when performing a manual test.

1. Install the waterproof caps and leak tester adaptors on the endoscope following the endoscope manufacturer’s instructions.

2. Load the endoscope into the reprocessor.
   - Connect the leak tester hookup between the endoscope and the basin outlet.

3. Select the desired disinfection cycle. Press the START button on the reprocessor control panel.

4. The endoscope inflates for 20 seconds to 160mmHg (3psi). Endoscope pressure is monitored for another 20 seconds. If the pressure decreases below the 50mmHg (1psi) reading within this period, the warning LED on the reprocessor control panel blinks, the system activates an alarm and the message “Sheath Fail” is displayed. Press the STOP button to end the cycle. The cycle is aborted.
   - If no leak is detected, the disinfection cycle starts as normal. No indication is shown.

5. Pressure is maintained during the disinfection cycle to detect small leaks and prevent fluid ingression. If a small leak is detected, the reprocessor will continue the cycle then alert the operator of any detected leaks at the end of the cycle.
   - Press the STOP button to acknowledge the warning.

6. The endoscope automatically deflates at the end of the cycle.

7. The log printout indicates if the leak tester option is disabled, or indicates any leak test failure.

Caution! The leak test adaptor must be disconnected and removed from the basin when not in use to avoid potential fluid ingestion.
Running the Disinfection Process

1. Place the floating lid on the basin. Verify the endoscope or hookup does not protrude from the basin or contact the floating basin lid.

2. Close the reprocessor lid.

3. Press the STATION SELECT button to choose station A or station B.

4. Press the ID DATA button, then enter the ID Data (if required for printed log).
   - Enter up to ten digits for the endoscope serial number, then press the ENTER button.
   - Enter up to ten digits for the operator ID number, then press the ENTER button.
   - Enter up to ten digits for the patient ID number, then press the ENTER button.
   - Enter up to ten digits for the physician ID number, then press the ENTER button.

5. Select the desired disinfection program on the reprocessor control panel.
   - Select 0 for the default program.
   - Select 1-9 for a custom program.

6. Press the START button.
   - The disinfection program starts.
   - If the leak tester option is enabled, there is a 40 second delay at the beginning of the cycle.

7. During the detergent flush cycle, verify the endoscope connections and plugs are properly connected.
   - Verify fluid flows through the channels.
   - Verify fluid flows from the distal end of the endoscope.
   - Verify there are no leaks at the channel fittings and adaptors.

8. Indicators on the control panel display status information while the reprocessor processes the endoscope.

Note: To interrupt the process at any time, or to clear errors, refer to the Process Interruption procedure in Chapter 5 of this manual.

Caution! Do Not open lid(s) during disinfection process. Exposure to disinfectant vapor can cause sensitization.
Completing the Disinfection Process

When the disinfection process is complete, the LCD screen will prompt the operator to verify the disinfectant minimum recommended concentration. The operator must dip a test strip into the disinfectant sample port located within the front-left corner of the respective basin. If the test strip indicates that the disinfectant minimum recommended concentration was met for the cycle, the operator must then press the “HLD Pass” button on the control panel. If the test strip indicates that the disinfectant minimum recommended concentration was not met during that cycle, the operator shall then press the “HLD Fail” button on the control panel.

1. After ten seconds the process indicator light illuminates and the message “Completed” displays on the LCD screen.
   - If automatic log printing is enabled, the log is printed.
   - If the MRC was not met, re-run the cycle.

2. For optional lid locks: press the STOP button to unlatch the lid.

3. Open the reprocessor lid.

4. Remove the basin floating lid.

5. Verify the hookups are securely connected to the endoscope.
   - If the connections are loose, reconnect the hookups and repeat the cycle to ensure the endoscope is properly disinfected and rinsed.

6. Disconnect the hookup connectors from the endoscope.

7. Remove the endoscope from the basin.
Process Interruption

A process interruption may occur due to a system interruption, or initiated by the operator.

System Interruption

A system interruption may be caused by loss of water or air, loss of power, or by a lack of available Part A and Part B disinfectant components.

Note: During an operating cycle, reprocessors with optional lid locks cannot be opened except by means of a service code.

1. Correct the error, then press the START button.
   - The reprocessor continues the cycle from the point of interruption.
   - If the interruption is caused by a power outage, the reprocessor automatically restarts the cycle when power is restored. A “Power On” message will be indicated in the log.

Operator Initiated Interruption

1. Press the STATION SELECT button to choose station A or station B.
2. Terminate Cycle: Press the CANCEL button, then the ENTER button. The present cycle is aborted. The reprocessor fails to a safe mode and the endoscope must be reprocessed.
   - If the cycle is terminated, an “Aborted” message will be displayed. The endoscope should not be used unless a “Cycle Completed” message is displayed.

Service: If the error recurs, or cannot be corrected, refer to the Troubleshooting chapter.

3. Interrupt Cycle: Press the STATION SELECT button, then the STOP button.
   - To resume the cycle press the START button. The cycle proceeds as normal.
Shutdown

Use the following process to shutdown the reprocessor at the end of the day.

1. Turn the external air source to OFF (if applicable).
2. Close the incoming water line shutoff valve.
3. Sanitize the reprocessor upper basins and basin lids with an EPA-registered sanitizer, such as properly diluted ACTRIL® Cold Sterilant. Follow the sanitizer manufacturer’s recommendations for proper use.

![Warning! Avoid possible chemical burns. Always wear personal protective equipment (gloves, goggles) when handling sanitizer.]

4. Check the detergent reservoirs and alcohol reservoirs for proper level.
5. Refill the alcohol reservoir, if necessary.
6. Clean and refill the detergent reservoir, if used.
   - Clean the reservoir cap, bracket and detergent reservoir.
   - Flush the reservoir thoroughly with hot water.
   - Refill the reservoir with detergent.

![CAUTION! For the alcohol and detergent bottles; remove, refill and replace each bottle (alcohol and detergent) separately to ensure the correct fluid is in reservoir.]
MAINTENANCE AND TROUBLESHOOTING

General

This chapter contains basic maintenance procedures. Always refer to Safety section in the Introduction chapter before attempting to service the reprocessor.
COLLET COUPLING DISCONNECTION/CONNECTION

These instructions apply to all collet couplings used throughout the machine.

1. Depress locking ring toward fitting and pull tubing out of connector.
   • Release tool will aid in cases of fittings in close proximity to one another.

2. To reconnect tubing into collet end, insert and apply pressure to tube until tube slides past O-ring and “bottoms out.”

3. Pull on tubing to ensure that collet has engaged.

4. Check for leaking after pressure has been reapplied.

5. If tubing is replaced, ensure that the tube is square-cut and not crushed or distorted.
Figure. 1: Depress locking ring

Figure. 2: Insert tube

Figure. 3: Locking ring out
DISINFECTANT FILTER INSPECTION / CLEAN

The filter is located below the overflow valve and is part of the drain manifold assembly. (See photo) This should be checked and cleaned on a monthly basis.

1. Place a container under the filter to catch any excess liquid.
2. Remove the filter cover by unscrewing in a counter-clockwise direction.
3. Remove filter screen by pulling from the cap.
4. Wash filter screen under running water to remove any debris.
5. Replace filter screen in housing cap, ensuring that O-rings are in the correct locations.
6. Replace filter cover and hand tighten in clockwise direction.
Figure 4: Disinfectant Filter locations

Figure 5: Disinfectant filter housing

Figure 6: Disinfectant filter

Figure 7: Clean filter and reinstall
INTERNAL 0.2 MICRON WATER FILTER–REMOVAL

The disinfector must be in idle state to perform this procedure.

1. Close the incoming water supply valve to the disinfector.

2. Drain excess water from the filter housing.
   • Place a container under the water filter inlet tube.
   • Disconnect the water filter inlet quick-connect from incoming water supply line.
   • Connect the accessory hose to the water filter inlet tube.
   • Open the filter bleeder valve and drain the water from the filter canister.

3. Remove the water filter cartridge.

⚠️ Warning! Always wear gloves when handling the filter.

• Loosen and remove the water filter housing.
• Rotate the filter counterclockwise to unlock.
• Remove the filter and discard in accordance with institution guidelines.
Figure 8: Internal water filter location

Figure 9: Disconnect the water inlet, attach the accessory hose

Figure 10: Loosen the housing
INTERNAL 0.2 MICRON WATER FILTER–REPLACE

1. Install the new water filter.

   • Insert the filter into the housing cap.
   • Turn the filter clockwise until the tabs locks into the cap.

2. Wipe the filter housing clean with a lint-free cloth.

3. Install the filter housing onto the housing cap.
   • Apply an NSF-approved silicone lubricant to the housing O-ring to aid assembly and sealing.
   • Tighten the housing into the cap by hand. Do not overtighten.

4. Reconnect the water inlet line.

5. Close the bleeder valve on the filter housing.

6. Slowly turn on the water supply and check for leaks.

7. Press the SETUP button.

8. Press 43 on the keypad, then press ENTER. This will open the incoming water supply solenoid valve providing a water supply to the on-board .2 micron filter housing. Note: A counter on the LCD display will begin to count down from 250 to 0 in one second increments. After 250 seconds, the incoming water supply solenoid valve will automatically close if not manually closed sooner as explained within step 10.

9. Direct the purge line from the top of the on-board .2 micron water filter housing into a container that hold a minimum of 1 liter of liquid.

10. Slowly open the shut-off valve located on the purge line from the on-board .2 micron filter housing until the air is purged from the filter housing and a steady stream of water flows from the purge line.

11. After closing the shut-off valve, tap the purge line to promote the draining of the residual water within the purge line into the container.

12. Remove the container and empty.

13. Press the STOP button to close the incoming water supply solenoid valve and then press the STOP button again to exit the SETUP menu.

14. Perform the Water Line Disinfect procedure as described in the Operator Controls chapter.
Figure 11: Install the new water filter

Figure 12: Reconnect the water filter

Figure 13: Filter installed
PRINTER PAPER–REPLACE

Use the following procedure to replace the printer paper. Only use Medivators supplied paper.

1. Raise the printer compartment cover on the reprocessor and remove the printer from the compartment.

2. Remove the used paper roll.
   - Press the paper feed switch to advance the paper beyond the cutting blade.
   - Cut any remaining paper on the roll from the printer.
   - Pull the remaining paper toward the paper cutter, through the printer mechanism.

   **Caution!** Avoid damaging the printer mechanism. Never pull paper from the back of the printer. Always pull forward, towards the cutting blade.

3. Install the new paper roll.
   - Unroll several inches of paper from the new roll and trim the leading edge even.
   - Feed the paper through the printer feed slot.
   - Press and hold the paper feed switch until the paper exits the top of the printer.
   - Release the switch after several inches are exposed.

4. Insert the spindle through the paper roll and position the roll in the slots.
   - Verify the roll turns freely. Paper jams could damage the printer mechanism.

5. Pull the exposed paper through the slot in the printer cover and lower the cover.

6. Replace the printer in the printer compartment. The printer is ready for normal use.
Figure 15: Printer compartment
Figure 16: Advance paper
Figure 17: Feed paper through slot
Figure 18: Install new roll
**PRINTER RIBBON—REPLACE**

Replace the ribbon before the printing becomes difficult to read. Use the following procedure to replace the printer ribbon.

1. Raise the printer compartment cover on the reprocessor and remove the printer from the compartment.
2. Unplug the printer power cable.
3. Remove the printer cover.
   - Press down on grooved corners until the cover rotates upward.
   - Lift the printer cover off the printer case.
4. Replace the cartridge.
   - Push down on the ribbon cartridge, marked PUSH.
   - Remove the cartridge and discard.
5. Install the new Medivators approved ribbon cartridge.
   - Align the cartridge in the slot and press down until firmly seated.
   - If there is paper in the printer, slide the paper between the cartridge and the ink ribbon before seating the cartridge in place.
   - Turn the small knob clockwise to adjust the ribbon tension.

**Caution!** Prevent ink stains. Do not allow the ribbon to contact the printer case. Wipe any ink from the case immediately to prevent stains.

6. Reinstall the printer cover.
7. Replace the printer in the printer compartment.
8. Turn on the printer. The printer is ready for normal use.
Figure 19: Remove the printer cover

Figure 20: Remove the cartridge

Figure 21: Feed paper (A) between the ribbon (B) and cartridge (C)

Figure 22: Adjust the tension
AIR FILTER–REPLACE

1. Locate the air filters.

2. Disconnect the quick-connect fittings.

3. Replace the old filter with a new filter.
   • Verify that the inlet of the filter faces the compressor.

4. Discard the old filters.

5. Record the date of change in the log.
Figure 23: Filter locations

Figure 24: Disconnect the filter

Figure 25: Verify inlet side
Troubleshooting Guide

Use this section to identify and correct operational problems. If none of the solutions correct the problem, or if the problem recurs, contact your customer support.

Note: During a leak test, there is a 40 second delay at the start of the cycle. The disinfection cycle will not start until the leak test is complete. This is normal operation and is not considered an “error”.

Reprocessor does not start.
No power to the reprocessor. ......................... Check the main power connection.
GFCI is tripped ........................................ Locate the GFCI on the inside back wall of the reprocessor. Press the reset button on the GFCI. If the GFCI cannot be reset, contact your customer support.
Main circuit breaker is tripped...................... Reset the circuit breaker. If the circuit breaker cannot be reset, contact your customer support.

Slow water fill into basin.
Insufficient water supply pressure, flow rate..... Contact your location building maintenance.
External water pre-filter plugged................... Replace the filter cartridge.
Internal water filter is plugged..................... If the pressure is low, replace the 0.2-micron bio-retentive water filter.
Incoming water regulator setting is incorrect ..... Check the regulator setting. The setting must be flowing pressure of 35 to 40psi. Do not adjust the regulator if the setting is correct — check for a plugged filter.

Water flows constantly from hookups.
Water valve not sealing correctly.................. Shut off the water supply and contact customer support.

Water does not drain from basin during flush or rinse.
Drain too high ........................................... Drain must be below the reprocessor outlet for proper flow.
External drain line kinked............................ Repair the drain line.
Drain line plugged ..................................... Clean the drain line or replace the line, if necessary.
Basin drain screen plugged ......................... Clean the basin screen drain.

No air after cycle.
Incorrect air program setting....................... Check the air setting in the Setup menu (Setup 5).
Excessive fluid remaining in endoscope channels Check for correct compressor operation.
**LCD screen unreadable.**
Contrast out of adjustment, screen failed......... Contact your customer support.

**Printing unreadable.**
Printer ribbon is infrequently used.............. Press the paper feed switch to advance the printer ribbon to a new section.
Printer ribbon worn................................... Replace the printer ribbon.

**Printer does not operate.**
No power to machine................................. Check the main power connection. Check the GFCI. Reset if tripped. Check the main circuit breaker. Reset if tripped.
Printer switch turned “OFF” ....................... Turn the printer switch to the “ON” position.
Power supply unplugged............................. Check the power supply connection is plugged into the outlet in the reprocessor.
Printer ribbon is jammed............................ Check the printer ribbon. Open the printer and re-align the jammed ribbon. Rotate the knob to adjust the ribbon tension.
Printer paper is jammed ............................. Check the printer paper. Open the printer and remove the paper jam. Press the paper feed switch to feed paper through the printer cover.
Printer connection is disconnected ............. Check the printer cable connection. Verify the connector is plugged in and seated tightly.
Printer damaged or defective ..................... Contact your customer support.
Non responsive machine........................... Disconnect unit from power. Wait 30 seconds and reconnect. If unit is still unresponsive, contact customer support.
Error Messages

Error messages are displayed on the LCD screen to alert the operator to operational malfunctions and/or operational warnings (see the Appendix for message definitions). If none of the solutions correct the problem, or if the problem recurs, contact your customer support.

“Bas Sen Err” is displayed.
Fluids on basin sensor........................................... Clean fluid droplets off sensor.
Basin fluid did not drain ........................................... Contact your customer support.
Drain line kinked .................................................... Check the line for kinks. Reposition, if necessary.

“Flow Sen Err” is displayed during initial start.
Flow sensor stuck in the “on” position ..................... Press the STOP button to clear the error.
Press the ADD AIR button to free the sensor.

“Lid Ajar” is displayed during initial start.
The reprocessor lid is open ..................................... Close the reprocessor lid. Verify there are no obstructions preventing the lid from completely closing. Press the START button to resume the cycle.

“Low Chamber” is displayed during disinfectant phase.
Disinfectant filter is plugged................................. Check the filter. Replace, if necessary.
Insufficient air pressure........................................... Check that the compressor is working correctly.
Check the external air regulator on non-compressor reprocessors.
Contact your location building maintenance.
Air pressure switch harness disconnected.............. Check the harness for proper connection. Also, check for damage, loose wires.
Debris in the filter connections.............................. Remove the filter and check the connections for debris. Clean the connections and replace the filter.

“Low Chamber” is displayed during disinfectant phase or rinse phase.
Insufficient air pressure........................................... Check that the compressor is working correctly. Check the external air regulator on non-compressor reprocessors. Contact your location building maintenance.
Insufficient water supply pressure, flow rate.......... Contact your location building maintenance.
External water pre-filter plugged.......................... Replace the filter cartridge.
Internal water filter is plugged............................... Replace the water filter.
Incoming water regulator setting is incorrect ......... Check the regulator setting. The setting must be 35 to 40psi. Do not adjust the regulator if the setting is correct—check for a plugged filter.
Air pressure switch harness disconnected.............. Check the harness for proper connection. Also, check for damage, loose wires.
"No Air Flow" is displayed.
Air compressor is not working......................... Contact your customer support.
Air filter is blocked ........................................ Replace the filter.
Hookup is disconnected or kinked .................... Verify the hookup is not kinked and reconnect.
Air filter is disconnected............................... Verify the air filter is connected.
Insufficient external air pressure.................... Contact your customer support.

"No Fluid Flow" is displayed during disinfect phase.
Disinfectant filter screen is clogged............... Clean the disinfectant filter screen.
Scope to basin connection disconnected............ Reconnect and restart the cycle.
Hookup is pinched or kinked.......................... Check for pinched or kinked hookup. Cancel the cycle, then reposition the hookup. Restart the cycle.
Scope channel is blocked................................ Remove scope and send for repair.

"No Fluid Flow" is displayed during flush or rinse phase.
Scope to basin connection disconnected............. Reconnect and restart the cycle.
Water pressure too low.................................... Pressure must be a minimum of 35-40psi (2.4 - 2.75bar).
Prefilter / internal filter clogged..................... Change the filter.
Air lock in the water filter............................. Open the bleeder valve on the filter to purge air.
Water filter is clogged................................. Check the water pressure at inlet and outlet regulators. Lower than normal pressure may indicate a clogged filter. Replace the filter.
Air pressure switch harness disconnected.......... Check the harness for proper connection. Also, check for damage, loose wires.

"Sheath Fail" is displayed.
Large leak detected at beginning of cycle.......... Leak in scope. Allow the scope to reprocess, then remove scope and send for repair. Leak between connectors. Check connection and reprocess scope.
Small leak detected during cycle .................... Leak in scope. Allow the scope to reprocess, then remove scope and send for repair. Leak between connectors. Press STOP to cancel the cycle and open the lid locks. Check connection and reprocess scope.
Leak test adapter not connected..................... Press STOP to cancel the cycle and open the lid locks. Connect correct leak test adapter and reprocess scope.

"Shth Sen Err" is displayed during initial start (for optional leak tester only).
Scope is pressurized during startup .................. Press STOP to cancel the cycle and open the lid locks. Disconnect the leak tester hookup to release the pressure. Reconnect the hookup.
APPENDIX
User Prompts

Alcohol  Prompts the user to enter the alcohol air purge time
Alcohol Inject  Prompts the user to enter the alcohol fluid inject time (3ml / second)
Attach Restrictor  Prompts the user to ensure that a restrictor (Scope Simulator) is attached in place of a hookup
Auto Line Dis.  Prompts the user to press the start button to start an auto waterline disinfect cycle
Basin drained?  Prompts the user to wait until the basin is drain before cancelling out of the water mixer calibration mode
Cancel?  Prompts the user to press the enter button to cancel a cycle
Clear Log?  Prompts the user to press the enter button to clear the print log of the selected station
Clr Run Cnt?  Prompts the user to press the enter button to clear the cycle counter of the selected station
Day of Week:  Prompts the user to enter the current day of the week (Sunday is 1)
Day:  Prompts the user to enter the current day of the month (1–31)
Detergent Inject  Prompts the user to enter the detergent fluid inject time (3ml / second)
Dis. Soak  Prompts the user to enter the disinfectant soak time
Display Log  Prompts the user that the display log mode has been entered
Dump Dis  Prompts the user to press the start button to start a disinfectant dump to drain
Flush  Prompts the user to enter the flush time
HLD Pass or Fail?  Prompt indicating that the cycle is stopped awaiting test strip verification from the user
HLD Test Pass?  Prompts the user to ensure that the disinfectant chemistry is above the minimum concentration (re-usable only)
Hour:  Prompts the user to enter the current hour of the day
Input Code:  Prompts the user to enter the diagnostic entry password
Load Dis  Prompts the user to press the start button to start a load disinfectant cycle
Log inhibit:  Prompts the user to enter 1 to inhibit data logging
Minute:  Prompts the user to enter the current minute of the hour
Month:  Prompts the user to enter the current month
Operator  Prompts the user to enter the operator ID
Patient  Prompts the user to enter the patient ID
Physician  Prompts the user to enter the physician ID
Print Dynamic  Prompts the user to enter 1 to enable dynamic printing
Print Log?  Prompts the user to press the enter button to print the entire log
Print Run?  Prompts the user to press the enter button to print the last run
Program:  Prompts the user to enter the desired program number
Reset Alarms?  Prompts the user to press the enter button to cancel an alarm
Scope  Prompts the user to enter the scope ID
Set Hours:  Prompts the user to enter the programmable hours
Set Minutes:  Prompts the user to enter the programmable minutes
Set Seconds:  Prompts the user to enter the programmable seconds
Soak 1  Prompts the user to enter the soak/wash times for the first soak/wash
Soak 2  Prompts the user to enter the soak/wash times for the Second soak/wash
Soak Rinse 1  Prompts the user to enter the soak rinse times for the first soak/wash
Soak Rinse 2  Prompts the user to enter the soak rinse times for the Second soak/wash
Start Enable:  Prompts the user to enter 1 to enable the delayed start feature
Water temp test?  Prompts the user to confirm if water should be sent thru the DSD,
displaying current temperature to calibrate mixer or take sample
Year:  Prompts the user to enter the current year
Error Messages

Aborted ..................................... Indicates a cycle was manually aborted and not complete
Air Disabled .............................. Indicates that the air flow sensor was disabled
A Dose Error ............................. Alarm indicating that the SSG Part A dosing reservoir has timed out and not all
........................................... chemistry was delivered
Bas Disabled .............................. Indicates that the basin level sensor was disabled
Bas Sen Err ............................... Indicates that the basin level sensor is reporting a full basin at the start of a
cycle (basin should be empty)
Basin Temp ............................... Indicates that the basin temperature has not reached the programmed
........................................... minimum
B Dose Error ............................. Alarm indicating the SSG Part B dosing reservoir has timed out and
........................................... not all chemistry was delivered
Clear Sys Alarm? ....................... Diagnostic 70: prompts the user to press the enter button to clear a system
........................................... alarm (such as a NVRAM error)
Flash High Error ....................... Indicates that the high code flash CRC test did not pass
Flash Low Error ....................... Indicates that the low code flash CRC test did not pass
Flo Disabled ............................. Indicates that the fluid flow sensor was disabled
Flow Sen Err ............................. Indicates that the flow sensor is reporting flow at the start of a cycle
........................................... (no flow should be occurring)
Flow 2 Sen Err .......................... (SSG only) alarm indicating that the chamber fluid flow sensor is reporting flow
........................................... at the start of the cycle (no flow should be occurring)
HLD Sampl Er ........................... Alarm indicating that a disinfectant sample port sensor is reading incorrectly
Lid ajar ................................... Indicates that the cover (lid) is open during a cycle
Lid Disabled ............................. Indicates that the cover (lid) opened sensor was disabled
Low Alcohol ............................. Indicates that the alcohol level is low
Low Chamber ........................... Indicates that the basin level did not reach the level sensor in time
Low Det. ................................. Indicates that the detergent level is low
No Air Flow ............................. Indicates that no air flow was detected
No Fluid Flo ............................. Indicates that no fluid flow was detected
No Fluid F12 ............................ (SSG only) alarm indicating that no fluid flow was detected by the 3.2 l/min
........................................... chamber fluid sensor
NVRAM Err ............................. Non-Volatile RAM error, can only be cleared in Diagnostics 70
Power on .................................................................. Indicates that the device lost power during a cycle
RAM Error ......................................................... RAM error, can only be cleared in Diagnostics 70
Res T High ......................................................... Indicates that the temperature of the reservoir has exceeded the maximum
Res T Low ......................................................... Indicates that the temperature of the reservoir is below the minimum for safe disinfection
Reset Alarms? ................................................. Prompts the user to press the enter button to cancel an alarm
Sheath Fail ....................................................... Indicates that the sheath test failed
Shth Sen Err .................................................... Indicates that the sheet tester measured pressure at the start of a cycle
SNVRAM Err .................................................... Short Non-Volatile RAM error, can only be cleared in Diagnostics 70
SSG A low ....................................................... Alarm indicating that the SSG has timed out before filling part A reservoir (Part A chemistry low)
SSG B low ....................................................... Alarm indicating that the SSG has timed out before filling part B reservoir (Part B chemistry low)
SSG A Sen Er ................................................... Alarm indicating that the SSG dosing reservoir A sensors are reading incorrectly (sensor hardware error)
SSG B Sen Er ................................................... Alarm indicating that the SSG dosing reservoir B sensors are reading incorrectly (sensor hardware error)
SSG Cmd Err ................................................... Alarm indicating that the SSG has received an unknown command from the DSD (software error?)
SSG Comm Err ................................................ Alarm indicating that the SSG detected a failure in the DSD Communications
SSG CRC Fail ................................................... Alarm indicating that the SSG failed its internal Software Checksum test (program not functioning correctly)
SSG Data Er ..................................................... Alarm indicating that the SSG Database was out of range. DSD and SSG data do not match.
SSG Dose Err ................................................... Alarm indicating that the SSG is not indicating completion prior to DSD step advancing (SSG lost database or program step error)
SSG Fill Err ...................................................... Alarm indicating that the DSD has advanced to the next step prior to SSG fill completion (program step error)
SSG HW Err ..................................................... Alarm indicating that the SSG has experienced a hardware error (includes capacitive sensor missing)
SSG Missing .................................................... Alarm indicating that the DSD detected a failure in the SSG Communication (DSD doesn’t see the SSG)
SSG Rsrvr Err .................................................. Alarm indicating that an SSG dosing reservoir sensor has remained high (not empty) after disinfect cycle
Sta Not Idle ......................... Indicates that the selected operation can not be performed because the station is not currently idle

Sth Disabled ....................... Indicates that the sheath (leak) tester was disabled

Task Unfin ......................... Alarm indicating that the SSG is reporting a Task Not Finished Error; fill or dose did not complete

Time Err ......................... Time base error, can only be cleared in Diagnostics 70

Log Messages

Add Air ............................ Indicates that an add air cycle was run.

Add Air On ...................... Indicates that an Add Air cycle will be added at the end of the current cycle.

Add Air Off ..................... Indicates that an Add Air cycle will not be added at the end of the current cycle.

Air ................................. Notes when the air portion of a cycle occurred.

Auto Dis ......................... Indicates that an auto water line disinfectant cycle was run.

Disinfect ........................ Notes when the disinfectant portion of a cycle occurred.

HLD Fail ........................ Log message indicating disinfectant efficacy has passed MRC test.

HLD Pass ........................ Log message indicating disinfectant efficacy has failed MRC test.

Low Alcohol ................... Indicates that the alcohol level is low.

Machine ID ..................... The serial number of the DSD-201.

No Air Flow .................... Indicates that no air flow was detected.

No Fluid Flo .................... Indicates that no fluid flow was detected.

Power on ........................ Indicates that the device lost power during a cycle.

Resume .......................... Indicates when a cycle was resumed.

Rinse 1 .......................... Notes when the Rinse 1 portion of a cycle occurred.

Rinse 2 .......................... Notes when the Rinse 2 portion of a cycle occurred.

Rinse 3 .......................... Notes when the Rinse 3 portion of a cycle occurred.

S/N ................................. Indicates the machine serial number.

Sheath Fail ..................... Indicates that the sheet test failed.

Sheath Test ..................... Notes when the sheath test portion of a cycle occurred.

Shth Sen Err ................... Indicates that the sheet tester measured pressure at the start of a cycle.

Start ............................. Indicates when a cycle was started.

Sth Disabled .................. Indicates that the sheath (leak) tester was disabled.
Stop .................................. Indicates when a cycle was manually stopped.
Temp = .......................... Indicates the basin temperature at the beginning and end of the disinfect phase.
Water T High .................. Incoming water temperature exceeding maximum allowed.
Water T Low ................... Incoming water pump below the minimum around

**Glossary of Terms**

basin.............................. chamber into which the endoscope is placed for disinfection.
cleaning ......................... physical removal of organic debris from an endoscope.
control panel .................. operator interface used to program and operate the reprocessor.
custom program ............ disinfection program other than the default program.
cycle ......................... sequence of phases in the disinfection process: detergent flush, basin fill,
...................................... disinfection, rinse, alcohol purge, and air purge.
default program ............. disinfection cycle program supplied with the reprocessor.
disinfection procedure .... pre-programmed series of phases that collectively constitute a specified
...................................... disinfection protocol. function any operation other than a disinfection program,
...................................... example: disinfectant dump function.
high-level disinfection .... process defined by the CDC that destroys all vegetative bacteria, viruses, and
...................................... fungi, but not necessarily all bacterial endospores.
idle state........................ standby operating state during which no program cycles or other functions
...................................... are in progress.
MRC............................... Minimum Recommended Concentration.
phase............................ specific portion of a disinfection cycle.
reservoir ...................... container that holds disinfectant, alcohol, or detergent.
restrictor adapter .......... used to simulate a scope during certain operations. This part is supplied with
 ...................................... the reprocessor installation kit.
running state.................. operating state during which a program is in progress, or some other function is
 ...................................... occurring (i.e., any state other than idle or stop).
station ......................... part of the system used to disinfect a single endoscope. The station includes the
 ...................................... basin, fluid reservoir, valves, hoses, pump, and compressor.
status indicator .............. blinking symbol on the control panel display indicating the current operating state.
status log ....................... stored record of recent disinfection cycles containing usage history, error status,
 ...................................... and processed endoscope serial numbers.
stop state ....................... operating state during which a disinfection protocol is in progress, but the current
 ...................................... cycle is suspended.
SSG ............................... Sign Shot Generator
### Fuses

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF02-0004</td>
<td>Fuse 1.5 amp (main)</td>
<td>1</td>
</tr>
<tr>
<td>MF02-0014</td>
<td>Fuse 3.15 amp (F1: valves on valve drive board)</td>
<td>1</td>
</tr>
<tr>
<td>MF02-0017</td>
<td>Fuse 5 amp (F2: compressor and LCG pump on valve drive board)</td>
<td>1</td>
</tr>
<tr>
<td>MF02-0014</td>
<td>Fuse 3.15 amp (F3: LCG heater on valve drive board)</td>
<td>1</td>
</tr>
<tr>
<td>MF02-0012</td>
<td>Fuse 2.0 AMP (dosing Power Inlet)</td>
<td>2</td>
</tr>
</tbody>
</table>
## Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
</table>
| Chassis Dimensions (height x width x depth) | 48x36x21 inches (122x91x53 cm)  
Height with lid open | 64 inches (162.5 cm)                                     |
| Weight (approx.)                      | 400 lbs. (181 kg)                                        |
| Power Cord                            | Hospital grade – 6 feet                                   |
| Altitude                              | <15,000 feet (4,572m)                                    |
| Humidity                              | 20% to 80%, non-condensing                               |
| Temperature                           | 80°F ± 20°F (27°C ± 10°C)                                |
| Mains Supply Voltage Fluctuations     | Not to exceed ±10% of the nominal voltage                |
| Classification                        | I, Ordinary Protection                                   |
| Electrical Requirements               | 230 VAC 50 Hz, 1440 WATTS, Single Phase                  
120 VAC 60 Hz, 1440 WATTS, Single Phase | Accessory Outlet: 230 VAC or 120 VAC depending on unit configuration |
| Water Requirements                    | The water supply must be connected to and have the means of providing a water temperature of 95°F (-4°C, +35°C). Ensure water hardness is less than 12 gpg (200 ppm) for optimal performance. Water pressure 35-40 psi at 3.2 gpm/min |
| Water Consumption                     | Approx. 7.5 gallons (28 liters) per cycle                |
| Designed for Use                      | Indoor                                                   |
| Environmental Rating                  | Standard                                                 |
| Pollution Degree                      | 2                                                        |
| Mode of Operation                     | Continuous                                               |
| Degree of Mobility                    | Stationary                                               |
| Waste Drain                           | The reprocessors drain is 25 inches (60cm) above the floor. Because the reprocessor uses a gravity system there must be at least a 3 inch (25mm) drop from the reprocessor over 36 inches (30cm) for proper draining. |
| Capacities                            | Part A & B containers: 5 Liters  
Basin: 13 liters.  
Alcohol and detergent reservoirs: 800ml each |
| Disinfectant Compatibilities          | RAPICIDE® PA                                              |
| Safety                                | Conforms to UL STD 61010-1, ENSTD 61010-1,  
Certified to CSA STAD C22.2 No. 61010.1                  |
| EMC                                   | Tested to IEC 60601-1-2                                   |
## Disinfection Cycle Chart

### Legend

**Factory Set:** These settings can be changed by accessing the Diagnostics Menu.

**Hard Coded:** These settings cannot be changed.

**User Programmable:** These settings can be changed by the user without accessing the Diagnostics Menu.

### Phase and Option Description

<table>
<thead>
<tr>
<th>Phase</th>
<th>Option</th>
<th>Description</th>
<th>Default</th>
<th>Typical</th>
<th>Min. Limit</th>
<th>Max. Limit</th>
<th>Setting</th>
<th>State #</th>
<th>Function #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start-up</td>
<td>Leak</td>
<td>Inflated scope with air</td>
<td>20 sec</td>
<td>20 sec</td>
<td></td>
<td></td>
<td>Hard Coded</td>
<td>3</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Test for major air leak in the scope</td>
<td>20 sec</td>
<td>20 sec</td>
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<td></td>
<td>Hard Coded</td>
<td>4</td>
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<tr>
<td>Flush</td>
<td></td>
<td>Detergent injection</td>
<td>3 sec</td>
<td>3 sec</td>
<td>0 sec</td>
<td>59 sec</td>
<td>User programmable</td>
<td>16</td>
<td>Setup 5 Detergent Inject</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Endoscope channel flush with detergent and water</td>
<td>30 sec</td>
<td>30 sec</td>
<td>0 sec</td>
<td>99m:59s</td>
<td>User programmable</td>
<td>17</td>
<td>Setup 5 Flush</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Air purge through chamber line</td>
<td>5 sec</td>
<td>5 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Hard Coded</td>
<td>92</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clear air lines</td>
<td>5 sec</td>
<td>5 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Hard Coded</td>
<td>95</td>
<td></td>
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<tr>
<td>Wash Soak</td>
<td></td>
<td>Detergent injection</td>
<td>3 sec</td>
<td>3 sec</td>
<td>0 sec</td>
<td>59 sec</td>
<td>User programmable</td>
<td>7</td>
<td>Setup 5 Detergent Inject</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Endoscope channel flush with detergent and water</td>
<td>30 sec</td>
<td>30 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Factory Set</td>
<td>119</td>
<td>Diag 62</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Basin fill minimum (level sensor ignored)</td>
<td>90 sec</td>
<td>90 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Factory Set</td>
<td>119</td>
<td>Diag  62</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Basin fill balance (sensor monitored)</td>
<td>5 min</td>
<td>10 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Hard Coded</td>
<td>120</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Top off</td>
<td>30 sec</td>
<td>30 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Factory Set</td>
<td>121</td>
<td>Diag  67</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scope soaks in the basin, Basin fluid circulates through channels</td>
<td>60 sec</td>
<td>60 sec</td>
<td>0 sec</td>
<td>99m:59s</td>
<td>User programmable</td>
<td>122</td>
<td>Setup 5 Soak</td>
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<tr>
<td></td>
<td></td>
<td>Drains the basin while flushing the scope channels</td>
<td>90 sec</td>
<td>90 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Factory Set</td>
<td>96</td>
<td>Diag  61</td>
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<tr>
<td></td>
<td></td>
<td>Drains the rest of the fluid</td>
<td>30 sec</td>
<td>30 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Hard Coded</td>
<td>97</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Air purge through chamber line</td>
<td>5 sec</td>
<td>5 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Hard Coded</td>
<td>92</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Air purge through re-circulation lines</td>
<td>10 sec</td>
<td>10 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Hard Coded</td>
<td>93</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Endoscope channel air purge</td>
<td>30 sec</td>
<td>30 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Factory Set</td>
<td>94</td>
<td>Diag  63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clear air lines</td>
<td>5 sec</td>
<td>5 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Hard Coded</td>
<td>95</td>
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<tr>
<td>Phase</td>
<td>Option</td>
<td>Description</td>
<td>Default</td>
<td>Typical</td>
<td>Min. Limit</td>
<td>Max. Limit</td>
<td>Setting</td>
<td>State #</td>
<td>Function #</td>
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<td>Rinse Soak</td>
<td>Endoscope channel flush</td>
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<td>30 sec</td>
<td>Hard Coded</td>
<td>9</td>
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<tr>
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<td>Basin fill minimum (level sensor ignored)</td>
<td>90 sec</td>
<td>90 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Factory Set</td>
<td>111</td>
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<tr>
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<td>Basin fill balance (sensor monitored)</td>
<td>5 min</td>
<td>10 sec</td>
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<td>112</td>
<td></td>
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<tr>
<td></td>
<td>Top off</td>
<td>30 sec</td>
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<td>999 sec</td>
<td>Factory Set</td>
<td>113</td>
<td>Diag 67</td>
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<tr>
<td></td>
<td>Water flows through scope channels or recirculation is active</td>
<td>60 sec</td>
<td>60 sec</td>
<td>0 sec</td>
<td>99m:59s</td>
<td>User programmable</td>
<td>114</td>
<td>Setup 5 Soak Rinse</td>
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<td>Drains the basin while flushing the scope channels</td>
<td>60 sec</td>
<td>60 sec</td>
<td>0 sec</td>
<td>999 sec</td>
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<td>Diag 61</td>
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<tr>
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<td>Drains the rest of the fluid</td>
<td>90 sec</td>
<td>90 sec</td>
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<td></td>
<td>Air purge through chamber line</td>
<td>5 sec</td>
<td>5 sec</td>
<td>Hard Coded</td>
<td>92</td>
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<td>Air purge through re-circulation lines</td>
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<td>Endoscope channel air purge</td>
<td>30 sec</td>
<td>30 sec</td>
<td>0 sec</td>
<td>999 sec</td>
<td>Factory Set</td>
<td>94</td>
<td>Diag 63</td>
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</tr>
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<td></td>
<td>Clean air lines</td>
<td>5 sec</td>
<td>5 sec</td>
<td>Hard Coded</td>
<td>29</td>
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<td>Finish Filling Chemical Reservoirs</td>
<td>150 sec</td>
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<td>Fill Basin with Water for 30 sec</td>
<td>30 sec</td>
<td>30 sec</td>
<td>Hard Coded</td>
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<td>Fill and Dose Chemistry</td>
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<td>Circulate through Chamber Valve</td>
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<td>30 sec</td>
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<td>Circulate through Endoscope Channels</td>
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<td>60 sec</td>
<td>Hard Coded</td>
<td>36</td>
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<td>Fill to Basin Sensor</td>
<td>300 sec</td>
<td>30 sec</td>
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<td>37</td>
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<td>Top off</td>
<td>30 sec</td>
<td>30 sec</td>
<td>Factory Set</td>
<td>38</td>
<td>Diag 57</td>
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<td>Mix</td>
<td>30 sec</td>
<td>30 sec</td>
<td>Hard Coded</td>
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<td>0 sec</td>
<td>999 sec</td>
<td>Factory Set</td>
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<td>Replenish with fresh water</td>
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<td>30 min</td>
<td>30 min</td>
<td>99m:59s</td>
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<td>90 sec</td>
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<td>999 sec</td>
<td>Factory Set</td>
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<td>30 sec</td>
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<td>5 sec</td>
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<td>Function #</td>
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<td>Basin fill balance (sensor monitored)</td>
<td>5 min 10 sec* Hard Coded</td>
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<td>Top off</td>
<td>30 sec 30 sec 0 sec 999 sec Factory Set 102</td>
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<td>Replenish with fresh water</td>
<td>0 sec 0 sec 0 sec 99m:59s User Set 103</td>
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<td>97</td>
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<td>Air purge through chamber line</td>
<td>5 sec 5 sec Hard Coded</td>
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<td>Endoscope channel air purge</td>
<td>30 sec 30 sec 0 sec 999 sec Factory Set 94</td>
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<td>5 sec 5 sec Hard Coded</td>
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<td>Rinse 3</td>
<td>Endoscope channel flush with water</td>
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<td>101</td>
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<td>Top off</td>
<td>30 sec 30 sec 0 sec 999 sec Factory Set 102</td>
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<td>0 sec 0 sec 0 sec 99m:59s User Set 103</td>
<td>Setup 5 Rinse 2</td>
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<td>Air purge through chamber line</td>
<td>5 sec 5 sec Hard Coded</td>
<td>92</td>
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<tr>
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<td>Endoscope channel air purge</td>
<td>30 sec 30 sec 0 sec 999 sec Factory Set 94</td>
<td>Diag. 63</td>
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<td>Alcohol</td>
<td>Alcohol dispensing into manifold</td>
<td>10 sec 10 sec 0 sec 59 sec User Set 55</td>
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</tr>
</tbody>
</table>

1 - The time in the Typical column where an * symbol is indicated, is subject to how fast the basin fills. An alarm will occur when default time is reached.

2 - Selecting zero time during Setup 5 will cancel all accompanying states in the phase.

3 - The “FLUSH” message is displayed in the Phase column indicates that the state is only active when the SOAK time is set to zero.

4 - States with a leak test option are active if the unit is provided with the Leak Tester and the sheath sensor is enabled in the diagnostics mode.
# Custom Program Reference Chart

Complete the chart as a reference for custom program settings.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Program 0 (default)</th>
<th>Program 1</th>
<th>Program 2</th>
<th>Program 3</th>
<th>Program 4</th>
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<tbody>
<tr>
<td>Flush</td>
<td>00:30</td>
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<tr>
<td>Soak</td>
<td>00:00</td>
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<tr>
<td>Soak Rinse</td>
<td>00:00</td>
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<tr>
<td>Detergent Inject</td>
<td>00:00</td>
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<tr>
<td>Rinse 1</td>
<td>00:30</td>
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<td>Rinse 2</td>
<td>00:00</td>
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<td>Rinse 3</td>
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<td>Alcohol Inject</td>
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<td>Air Dry</td>
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<th>Program 6</th>
<th>Program 7</th>
<th>Program 8</th>
<th>Program 9</th>
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<td>Rinse 1</td>
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<td>Alcohol</td>
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<td>Alcohol Inject</td>
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<td>Air Dry</td>
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## Setups

### DSD EDGE® Endoscope Reprocessor Setup Functions (Ver. 5.C7, 6/30/09)

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<td>2</td>
<td>Set Date</td>
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<tr>
<td>3</td>
<td>Set Time</td>
</tr>
<tr>
<td>4</td>
<td>Display Software Version (micro, flash and SSG)</td>
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<tr>
<td>5</td>
<td>Input Program</td>
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<td>6</td>
<td>Waterline Disinfect</td>
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<tr>
<td>8</td>
<td>Display Log Information</td>
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<tr>
<td>9</td>
<td>Disable Logging</td>
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<td>10</td>
<td>Clear Log</td>
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<td>13</td>
<td>Display Temperatures</td>
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<td>17</td>
<td>Display Time Remaining</td>
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<td>18</td>
<td>Display State Time (number &amp; time)</td>
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<td>21</td>
<td>Print Entire Log</td>
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<td>Cancel Print Run</td>
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<td>Print Last Run</td>
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<td>Disable Weekend Delayed Starts</td>
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<td>Set Delayed Start Time</td>
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<td>29</td>
<td>Set Delayed Start Enable</td>
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<td>33</td>
<td>Set Automatic Printing Enable</td>
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<td>41</td>
<td>Incoming Water Temperature Check</td>
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<tr>
<td>42</td>
<td>Display State Time and Time Remaining</td>
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<td>43</td>
<td>Turn on Water Inlet Valve (at end of auto-disinfect)</td>
</tr>
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<td>88</td>
<td>Enter Diagnostics</td>
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WARRANTIES

Limited Warranty

Subject to the terms below, Medivators Inc. (the “Company”) warrants that its products (the “Products”) will conform to the Company’s written specifications (where applicable) and will be free from defects in material and workmanship under normal use and service for the following periods (the “Warranty Period”):

Endoscope reprocessors and associated equipment, and Irrigation Pumps: fifteen (15) months from date of shipment from the Company or one (1) year from the date of installation, whichever occurs first.

Consumables, accessories, and Product service parts, including, but not limited to, endoscope hook-ups, filters, printers, printer supplies, test strips, accessory bags, and service parts for products: ninety (90) days from the date of installation or one hundred and twenty (120) days from the date of shipment, whichever occurs first.

Disposable Products: warranted for single use. The warranty period will not in any case exceed the expiration date on the Product label.

The warranty does not cover, and the Company will have no warranty obligation whatsoever with respect to, any damage to a Product caused by or associated with: (i) external causes, including without limitation, accident, vandalism, acts-of-God, power failure or electric power surges, (ii) abuse, misuse or neglect of the Product by the customer or use of unauthorized third party filters or other consumables and accessories, (iii) usage not in accordance with product instructions, (iv) the customer’s failure to perform required preventive maintenance, or (iv) servicing or repair not authorized by the Company.

Limitation of Remedy

The warranty obligation of the Company hereunder is limited to the repair or replacement (at its option) of the defective Products or any parts it deems defective. This will be customer’s exclusive remedy for a covered defect.

In order to recover under the warranty, the customer must notify the Company in the state (if in the U.S.A.) or the country of installation, of the defect (describing the problem in reasonable detail) prior to the expiration of the warranty period and within thirty (30) days of discovery of the defect. Upon receiving the Company’s official “Return Material Authorization” (RMA), the customer must promptly return the defective part or Product to the Company (or the service center indicated on the RMA), freight and insurance prepaid. The Company will not be responsible for any damage during shipment.
Warranty Disclaimer

THE WARRANTY ABOVE IS THE COMPANY’S ENTIRE WARRANTY OBLIGATION TO THE PURCHASER OF PRODUCTS. IT IS IN LIEU OF ALL OTHER WARRANTIES OF THE COMPANY, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND THE COMPANY DOES NOT REPRESENT OR WARRANT THAT ANY PRODUCT WILL MEET CUSTOMER’S REQUIREMENTS. THE COMPANY’S RESPONSIBILITY FOR DEFECTS IN A PRODUCT IS LIMITED SOLELY TO REPAIR AND REPLACEMENT AS SET FORTH IN THIS WARRANTY STATEMENT.

TO THE EXTENT PERMITTED BY LAW, THE COMPANY SHALL NOT, UNDER ANY CIRCUMSTANCES, BE LIABLE TO CUSTOMER FOR CONSEQUENTIAL, INCIDENTAL, INDIRECT OR SPECIAL DAMAGES OR LOSSES, INCLUDING WITHOUT LIMITATION, DAMAGES ARISING OUT OF OR IN CONNECTION WITH ANY MALFUNCTIONS, DELAYS, LOSS OF PROFIT, INTERRUPTION OF SERVICE, OR LOSS OF BUSINESS OR ANTICIPATORY PROFITS, EVEN IF THE COMPANY HAS BEEN APPRISED OF THE LIKELIHOOD OF SUCH DAMAGES OCCURRING.

This Warranty gives the customer of Products specific legal rights, and customers may also have other rights which vary from jurisdiction to jurisdiction.

In no event shall the Company’s liability exceed the original purchase price of the covered Product.

No representative or agent of the Company has any authority to bind the Company to any other representation or warranty with respect to the Products, and the customer accepts the Products subject to all of the terms above.