WRO 300 / 300 H PORTABLE RO USING GWD AND GXP AND CUSTOM PRESET FILES

This is an update to what was previously WATER,PR,10056-4/2007.

This document discusses version 3.2 software previously used in the WRO 300 / 300 H ROs. This software is no longer current and existing parts (Processor board, display board, etc.) are not compatible with newer SW. Please consult technical support for part replacement and software upgrades as direct replacement parts are no longer available.

The major changes to the software are related to the use of heat disinfection and are not relevant to the US market at this time as no heat disinfect ROs (WRO 300 H RO) have been sold into the US with this software version. Other changes relevant to the US market, and instructions for setting up the machine during the installation, are described below.

There are often questions about the operator settings (called presets) of the WRO 300 RO during installation, (i.e., what presets should be changed or adjusted?) To address these questions, a default US preset file has been designed to allow the technician, with the use of GXP, to setup the WRO 300 RO quickly and correctly.

Included below is a procedure that will allow the user, using the GXP software and the defaultUS.xp file, to read all the presets in the WRO 300 RO and identify those that are different from the values as prescribed for the U.S. market. Clinic specific settings can also be implemented and saved as a custom.xp file. These custom clinic-specific settings may then be used to setup any other WRO 300 RO as desired.

Please begin using this procedure during every installation. Remember that this procedure can also be used to simply read and verify the presets in machines already installed – a time saving feature.

Software for upgrading the WRO 300 RO to version 3.2 (GWD), and software for changing the preset values (GXP), can be obtained by contacting Technical Support. Also included are instructions for using these programs.

In addition to the software, you will need a service cable, W3T572608, to use GWD and GXP.

Note: Please read this entire Tech Note before proceeding with any procedures contained within.

To assist in your installations, this document contains a list of presets that can be configured specific to the clinic, as well as the presets that must be saved if the software is upgraded or reloaded. See the table at the end of this technical bulletin.

Note: Please keep this important information available, as this process will be used for implementing future WRO 300 software and preset changes.

Table of Contents

I.   New Features of Version 3.2 Software

The capability to use reminders has been added to the software.

Reminders can be used to advise the user about system maintenance. There are five reminders that can be used. Three of the reminders will be preconfigured with text: Replace Carbon Filter, Disinfection Required, and Acid Clean Membranes. Two more are available for customization using GXP. The reminders are disabled by default. The user can enable them and set the number of days remaining for each reminder, i.e., Replace Carbon Filter can be set for 30 days. To use a reminder, enter the Internal Service Menu and set the number of days remaining. Each reminder must be reset after it has timed out, i.e., the number of days remaining has expired.

A known communication problem had existed when connecting to the unit using GXP.

- This problem has been corrected in the 3.2 software release.
- Internal Error 103 now has several attributes to identify the cause of the alarm.
- See the WRO 300 Service Manual for details.

II.   The Gambro Service Tools*

Gambro Service Tools for WRO 300 RO consist of the GXP, GWD, and GXL programs.

- **GWD**   Used to upgrade the WRO 300 software to another version.
- **GXP**   Used to change the operational preset values within the current software.
- **GXL**   Used to log WRO 300 operations.

Note: There is also a GXL program for the CWP RO. It is a separate application unrelated to the WRO 300 RO.

* Gambro has provided the software for use by Evoqua Water Technologies. The programs all will install under the Gambro name. Evoqua, however, will provide all support for WRO RO units.

III.   Un-Install Older Versions of the Gambro Service Tools

Should there already be a WRO 300 RO version of GXP (or any other WRO 300 Gambro Service Tool) on the computer, it should be removed prior to the installation of a newer version of GXP/GWD/GXL. GXL for the CWP RO may remain.

   1. Open the Windows Control Panel.
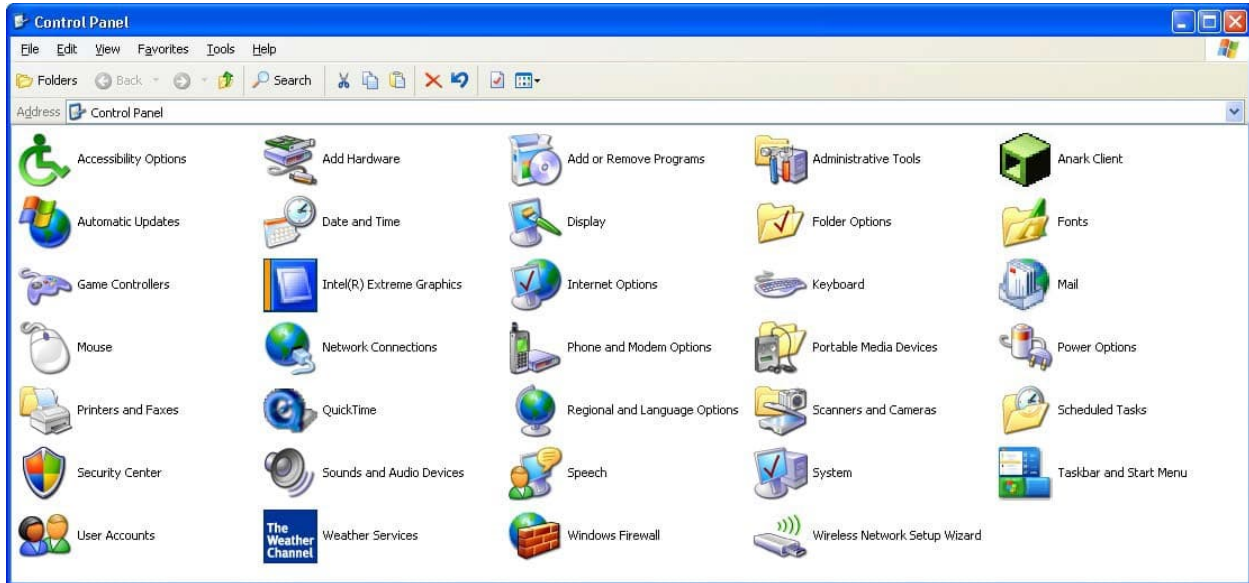
   2. Select the "Add Remove Programs" applet.
   3. Locate GXP and any other Gambro Service Tools.
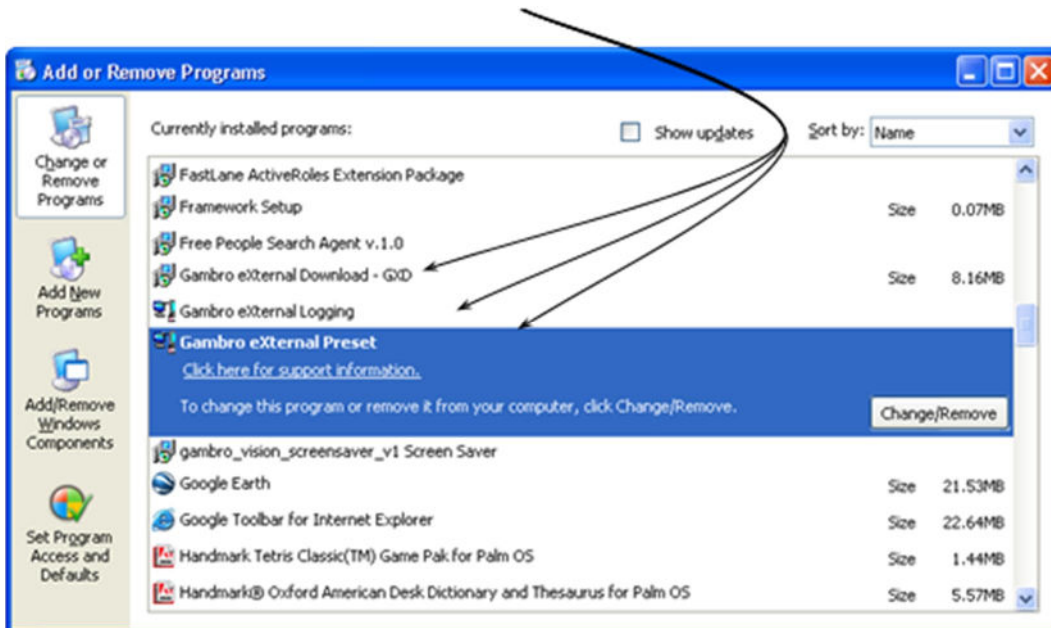

   4. Remove GXP, and any other WRO 300 Gambro Service Tools present. GXL for the CWP RO may remain.
   5. Close the Windows Control Panel.
   6. Open Windows Explorer.

7. Locate GXP and any other WRO 300 Gambro Service Tools in the Program Files folder.
8. Delete the Gambro Service Tools folder and all Gambro Service Tools files. GXL for the CWP RO may remain.
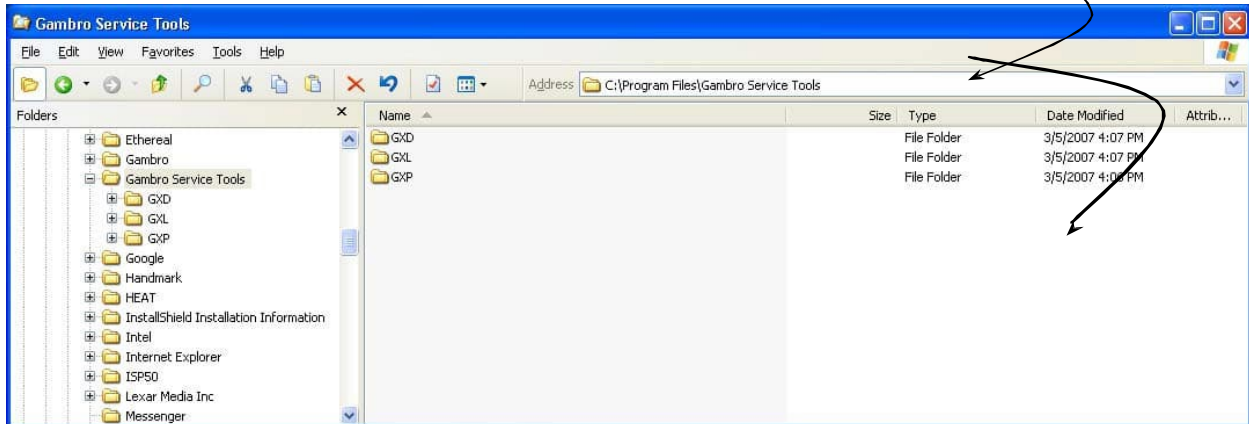
9. Locate GXP and any other Gambro Service Tools in the Start Menu/Programs folder.
10. Delete the Gambro Service Tools folder for WRO 300 RO, and all WRO 300 Gambro Service Tools shortcuts.
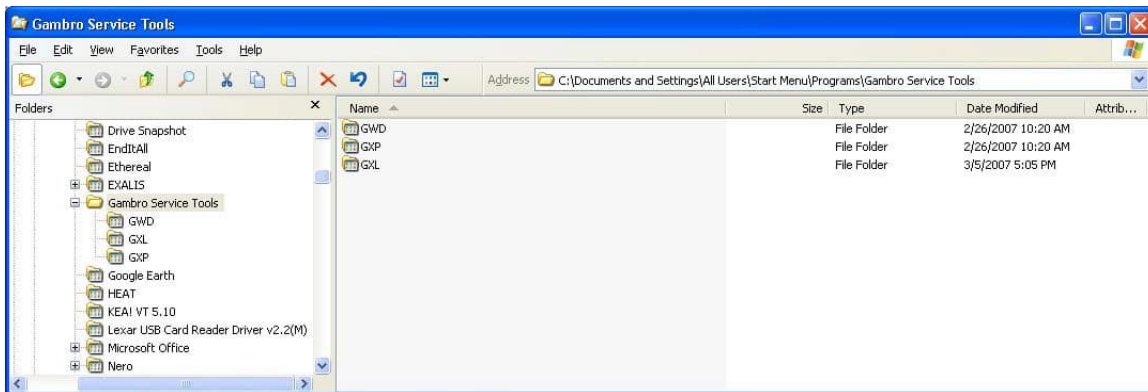
11. There may also be copies of the WRO 300 Gambro Service Tools shortcuts on the Windows Desktop as well as in other locations. Delete as needed.

IV.   Acquire the current version of the Gambro Service Tools

Contact Technical Support for software.

V.   Install the current Gambro Service Tools for WRO 300 RO

Contact Technical Support for installation help.

VI.   Upgrading To Version 3.2 using GWD

Upgrading to version 3.2 is not essential but may be desired if there are other machines in the clinic with the 3.2 version software.

WARNING
Unauthorized installation, modifications, alterations or repair of the WRO may result in malfunctioning or have other serious consequences for the safe operation of the equipment.
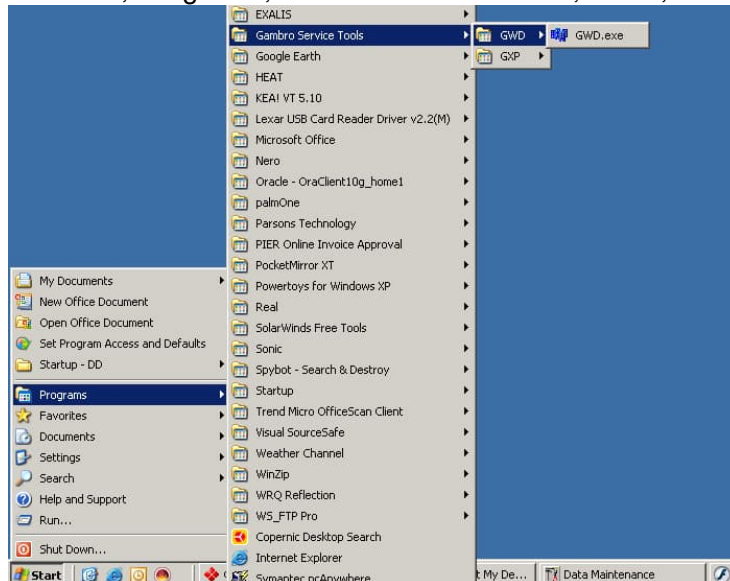
➢ **Setup**

Connect a service cable from the center port (P501) of the WRO 300 RO to the serial port of your computer.

Initiate "Boot" mode on the WRO 300 RO – simultaneously, press and hold the RUN button while you start up the WRO 300 RO. The LCD will turn black for a moment. After the black screen comes up release the RUN button. The display will show Boot 1.0. With "boot" mode initiated, the WRO 300 RO is now ready to receive the serial connection to the PC and download software.

➢ **Using GWD**

Go to the Start menu, Programs, Gambro Service Tools, GWD, and click on GWD.exe.

The GWD program will start up. Follow the instructions below for downloading data from the WRO 300 RO.

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Click on the Tools pull-down menu and select Connect.

The application will try to set up a connection to the WRO 300 RO. If the automatic connection is not possible, an error message (like the one shown at left - LOST CONNECTION) will appear. Try performing the manual connection procedure (see below). AUTO connection is the default and is normally attempted during startup of the GWD program.

> **Manual Connection**

If a problem maintaining a connection to the WRO RO occurs during the download, restart the WRO RO in Boot Mode. In GWD, select Tools and then select Reset. Select View, then Show COM port set up in use.
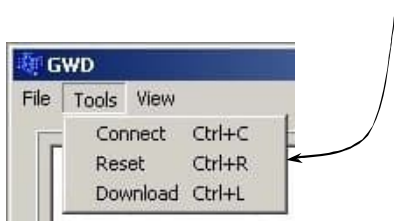
Uncheck the AUTO selection check box. Then click the Tools pull-down menu and select Connect.

Uncheck AUTO
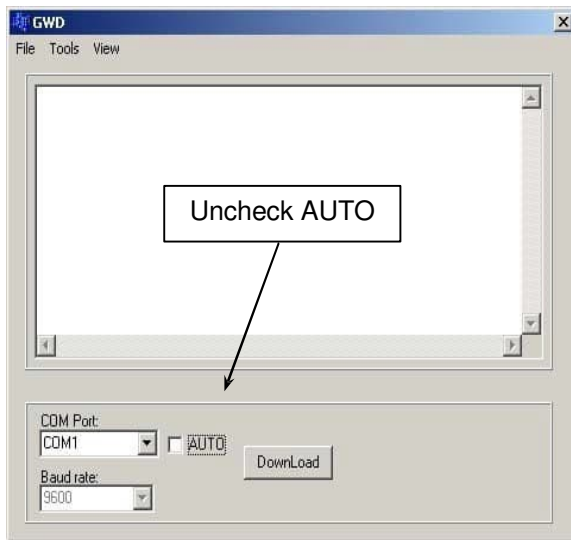
If the problem still exists, check all cable connections and the serial port (PC) setup; then try again.

➢ **Software Download**

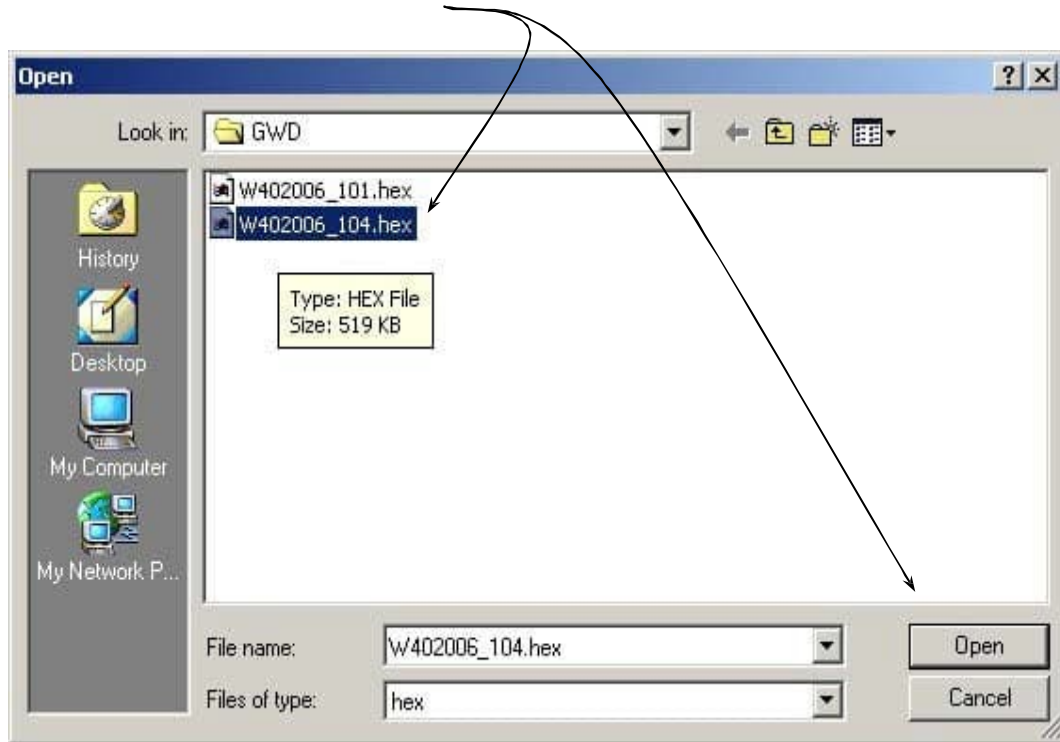To continue with the software download, press the Download button.

baud rate: 9600
Ready
Press the "Download" button and choose the file to download.
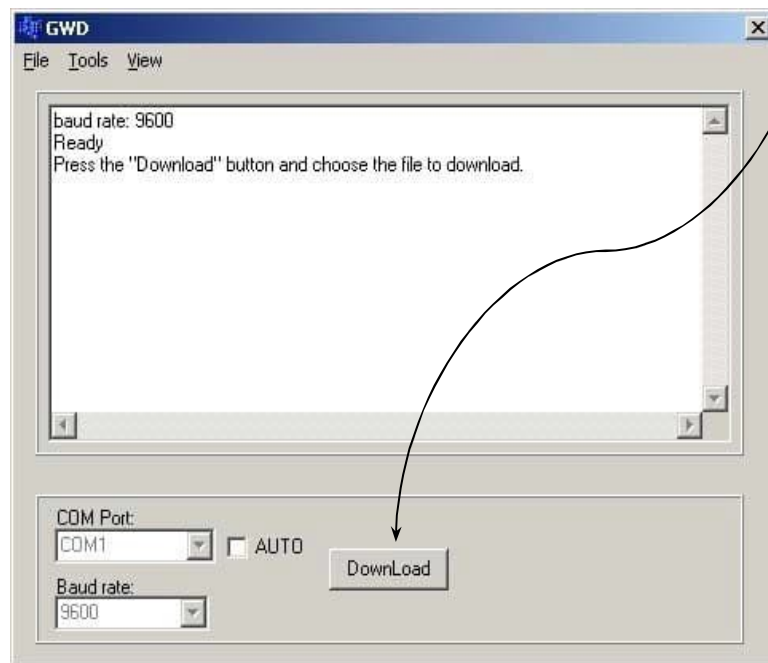
You will be given the following options:
- W402006_101.hex (2.1 software)
- W402006_104.hex (3.2 software)

Select W402006_104.hex, then press Open.

The application will proceed with downloading the software. It will display a timer, status graph, and the number of KB (kilo-bytes) downloaded.
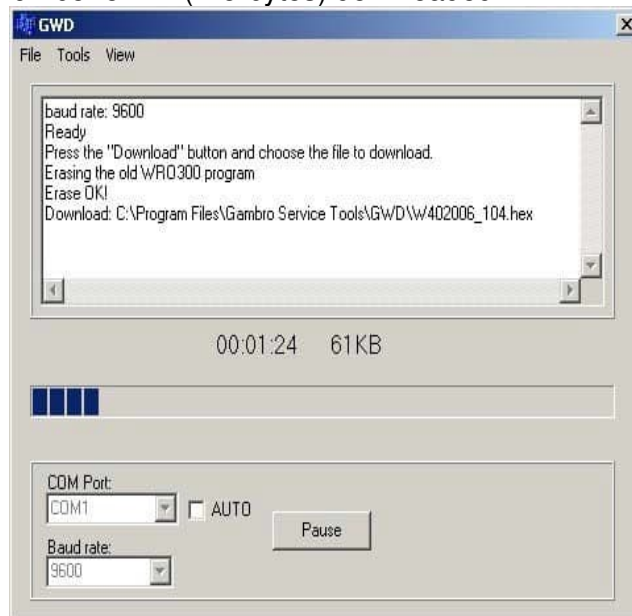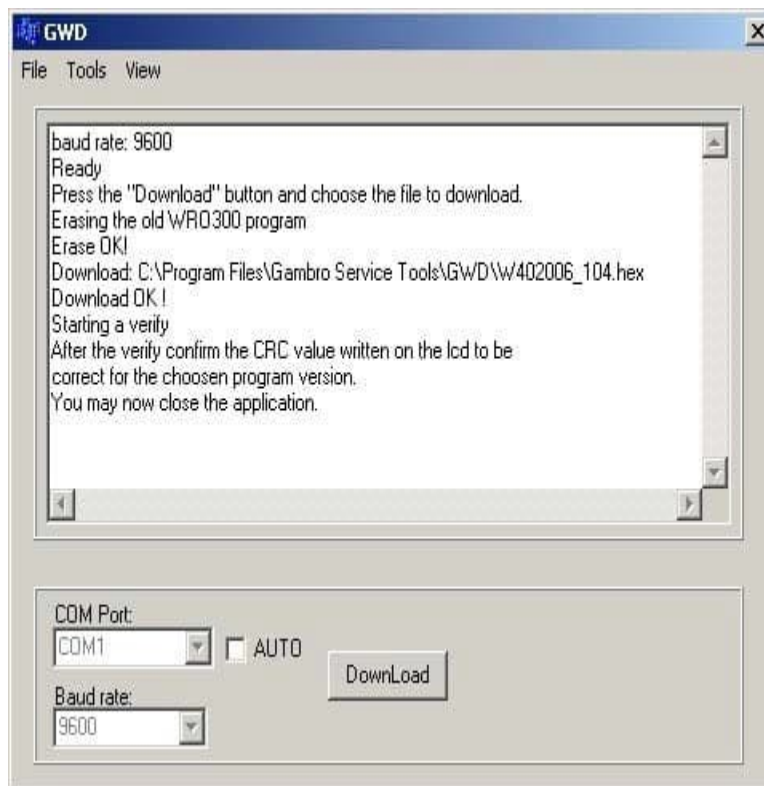
The downloading sequence may take up to 20 minutes.

At the end of the download, GWD will trigger the WRO 300 RO to verify the flash memory CRC. When the CRC check is complete and correct, VERIFY OK will be displayed, along with a CRC code.
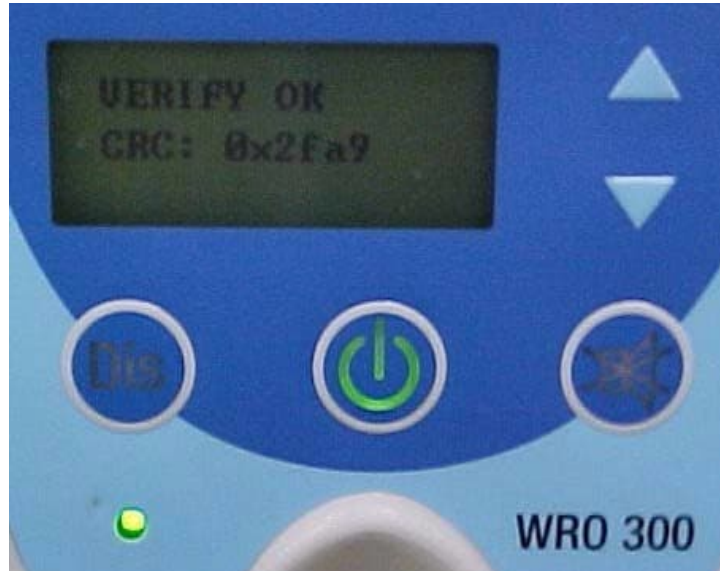
The GWD program can be closed and the WRO 300 RO turned off.

Note: After upgrading the WRO 300 RO software, you may need to cycle power twice. The first time it is powered on after the upgrade, the alarm 103 (-N INTERNAL ERROR) may occur. If so, reboot the machine.

Note: Cycle power before making any changes to the presets.

VII. **Configuring the WRO 300 RO Using GXP**

Note: GXP can only be used by qualified technicians, trained by Evoqua Water Technologies.

Note: When using GXP care must be taken to ensure that the proper Program Version is being used.

⚠️ **WARNING**
Unauthorized installation, modifications, alterations or repair of the WRO may result in malfunctioning or have other serious consequences for the safe operation of the equipment.

➢ **Setup**:

After installation of the WRO 300 RO, connect the GXP service cable between the center port (P501) of the WRO 300 RO and the serial port of your computer.


Start the GXP Program.

Note: You should have a shortcut icon for GXP on your computer's desktop. If not, you can create one by locating the C:\Program Files\Gambro Service Tools\GXP\GXP.exe program on your PC. Right-click the GXP.exe file and select Create Shortcut. Have it placed on the PC desktop.
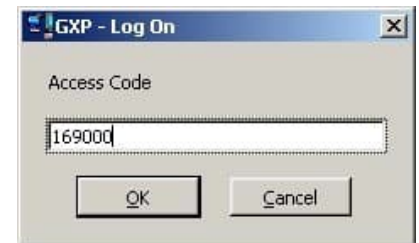
Turn on the WRO 300 RO and leave it in Standby mode.
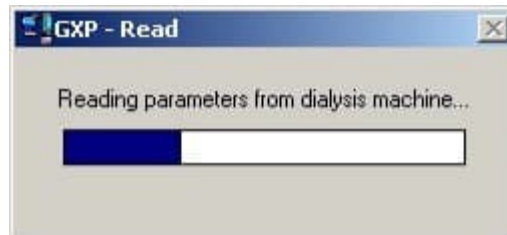
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A.   Configuring Machines during Installation

From GXP, select 3.2 for the program version and click Online. The GXP - Log On dialog box will appear.

Select 3.2 and click Online.
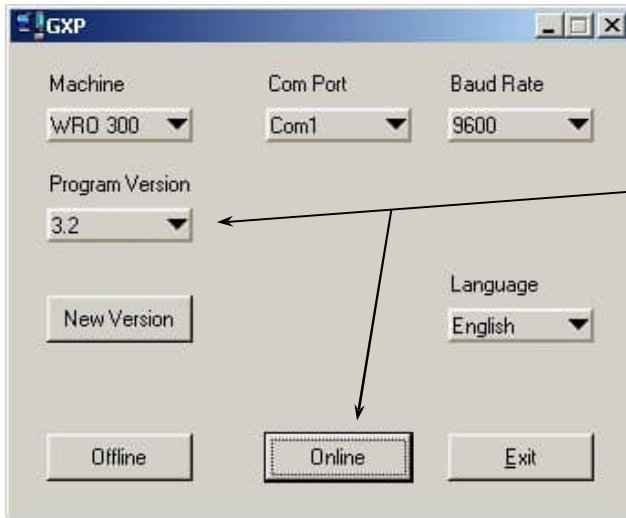
Enter the access code 169000 and click OK.

GXP will read the presets stored in the WRO 300 RO.

After connection is completed: select the File pull down menu.

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Select Open.

Select default32US.xp and then click Load.
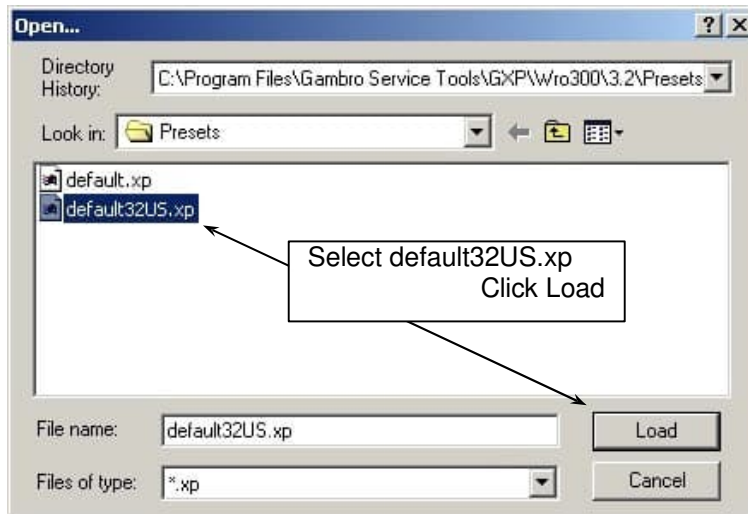
GXP will open the default32US.xp file. The values within the default32US file may differ from what is currently in the machine. The program will compare the presets in the defaultUS file to those stored in the WRO 300 RO and create a temporary list, shown in the Changed Parameters display window (see below). Any presets that appear in this window will be changed when you write them to the WRO 300 RO.

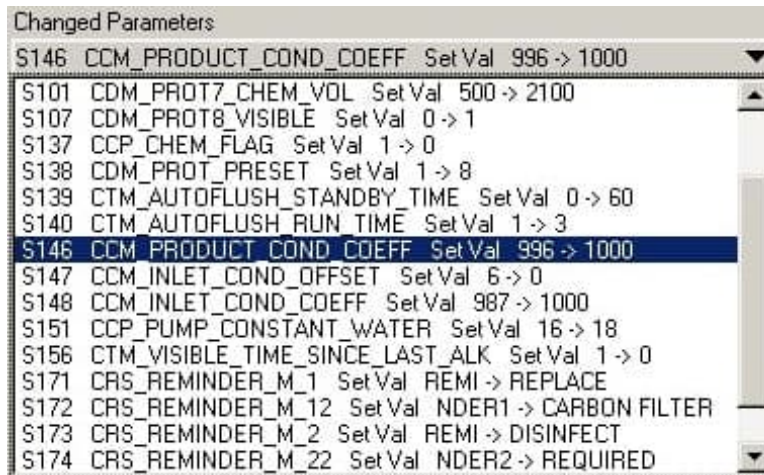Open the Changed Parameters selection window (press the down arrow).
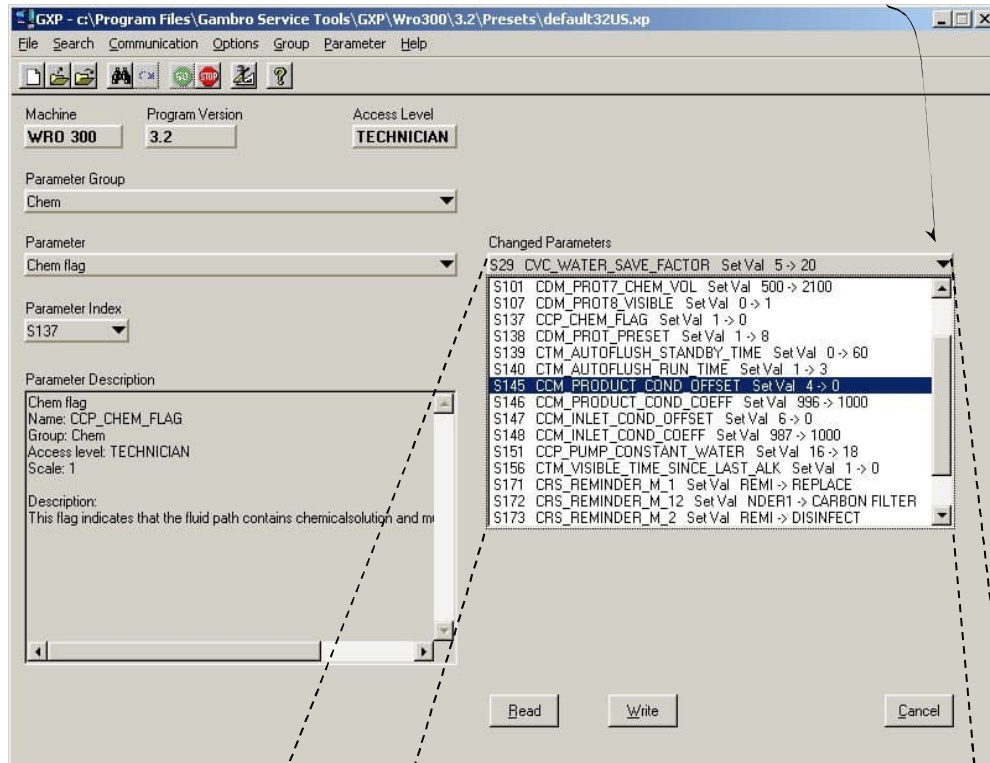

Scroll through the list.
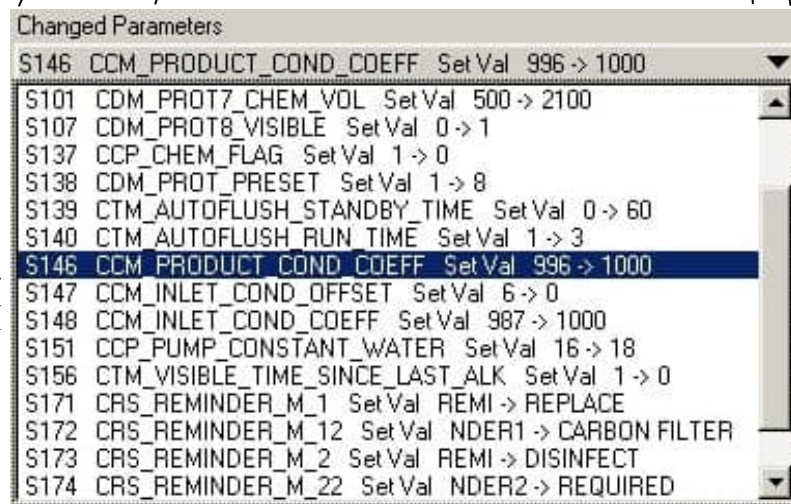
If there are any conductivity presets (S145, S146, S147, S148) and/or the CCP_PUMP_CONSTANT_WATER preset (S151) listed; they must be removed from the list before writing the presets to the machine. See the removal instructions below.

To remove a preset, start by double clicking the desired preset item in the Changed Parameters window.

The preset selected will now appear in the Parameter Group. The Set Value selector will show the value from the defaultUS file. The Changed Parameters selector will show the current machine value (left of arrow) and the new proposed value (right of arrow; from the defaultUS file) with the arrow in between the two values. To remove the preset from the Changed Parameters list you must make the proposed value (right) the same as the current value (left).

In the Set Value entry box, enter the current value (left of the arrow) as it appears in Changed Parameters selector, and press the ENTER button on your keyboard.
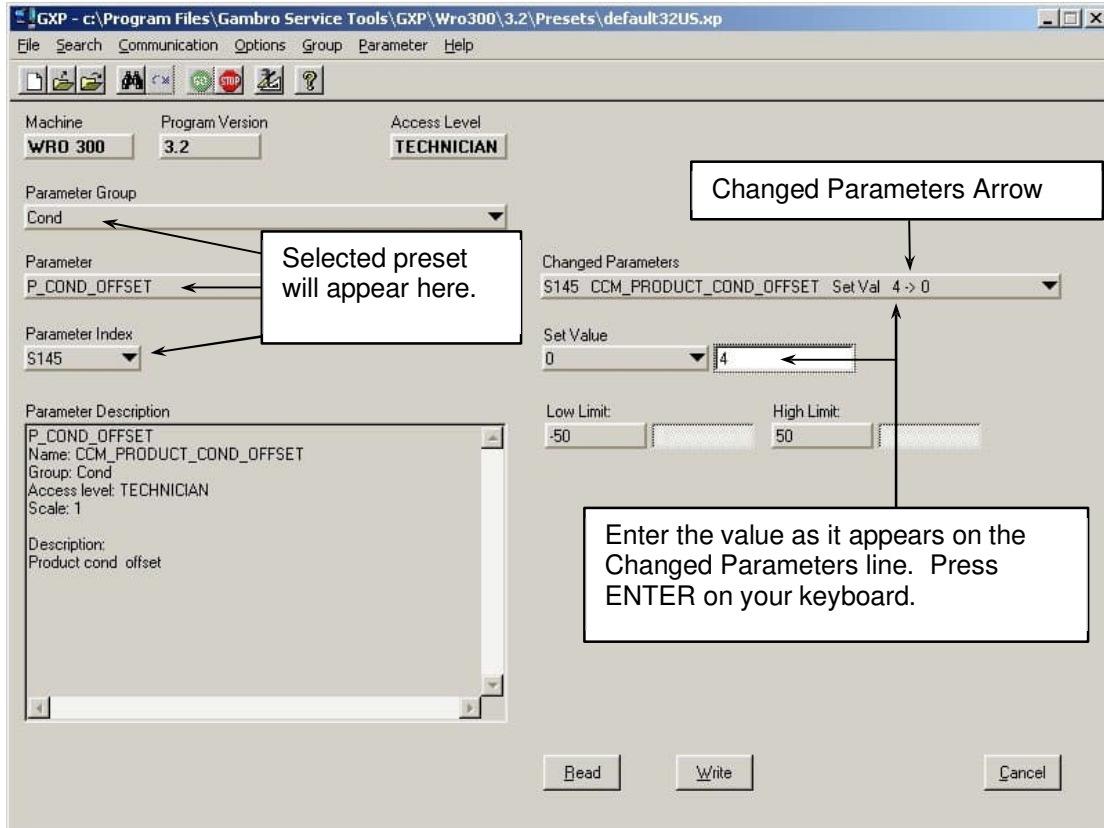
This changes the preset back to the stored value and removes it from the Changed Parameters list. The value just entered should appear in the Set Value box and the preset should disappear from the Changed Parameter list. Do this for presets S145, S146, S147, S148 and S151 only, if they are listed.

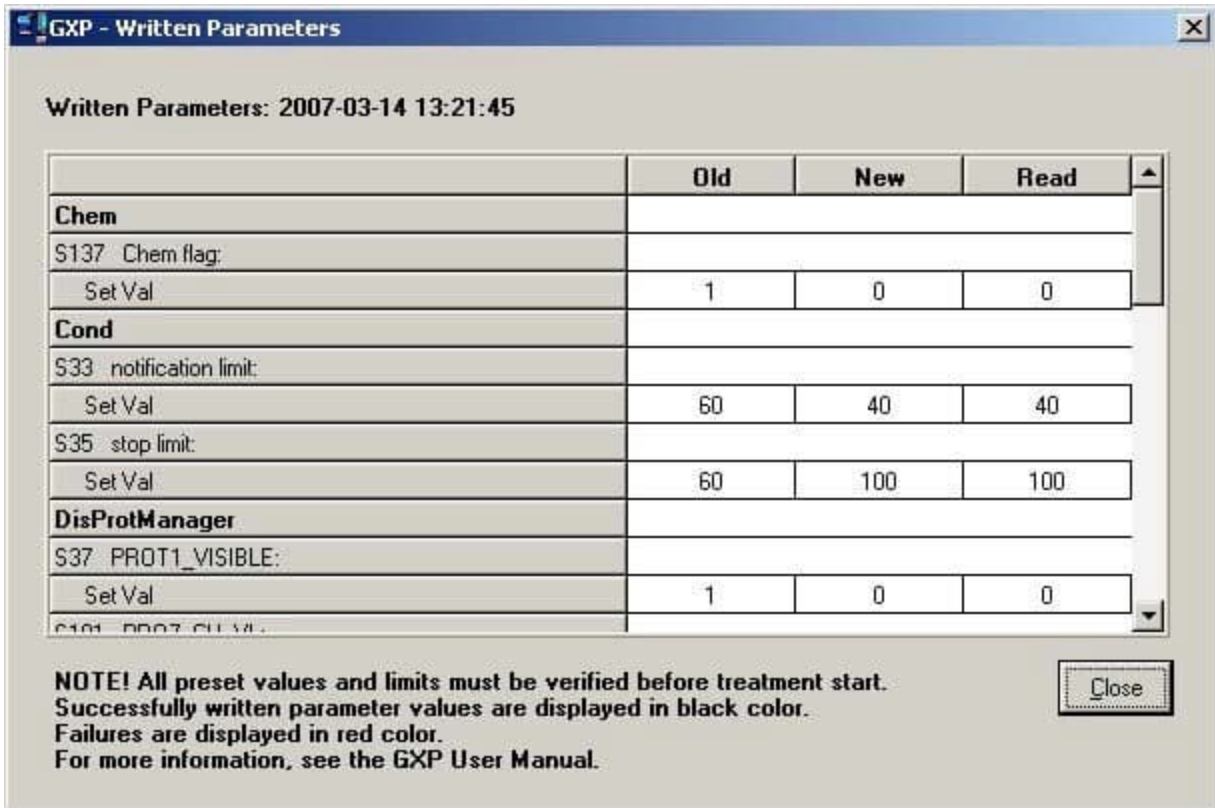Do not change any other settings at this time.

After removing all desired presets from the Changed Parameters window, select WRITE.
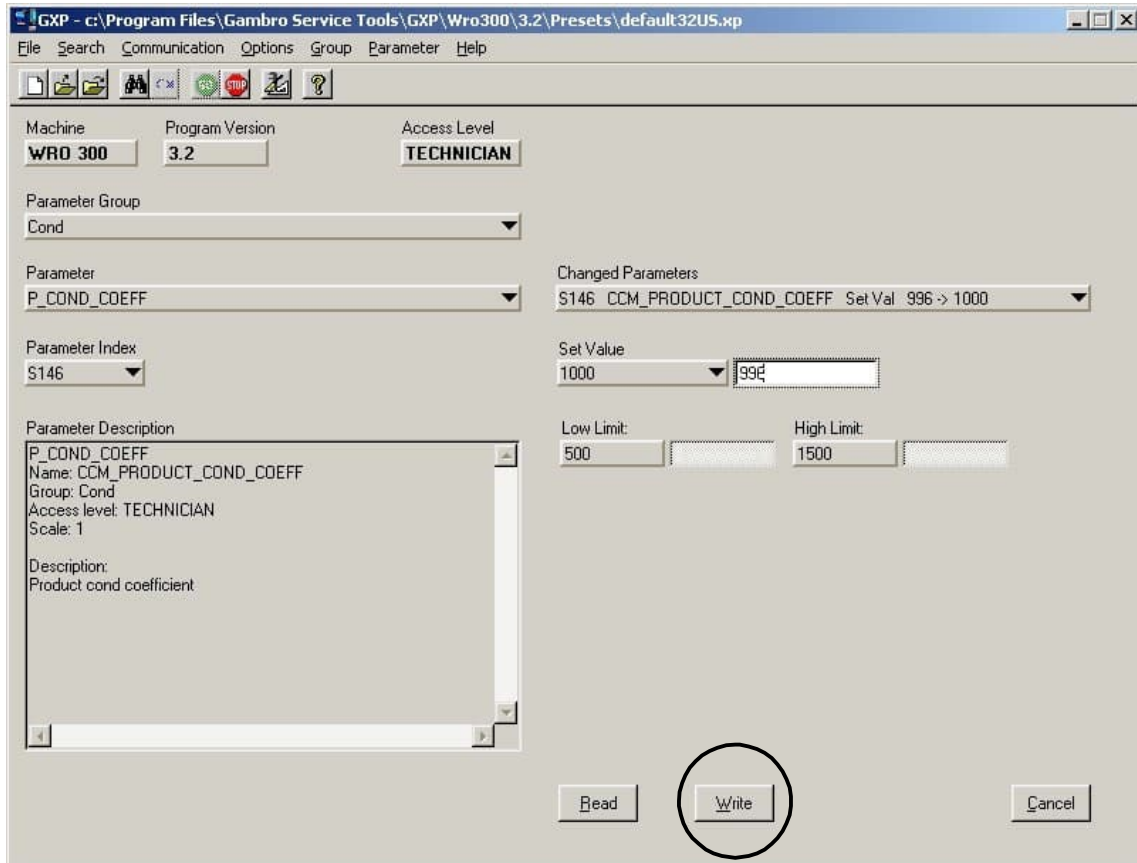
GXP will write, read and then display the changed settings.
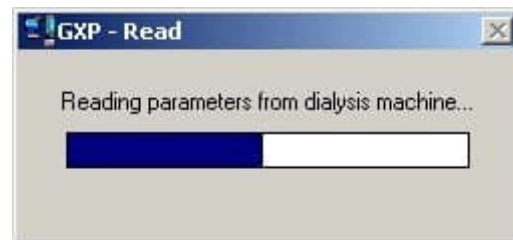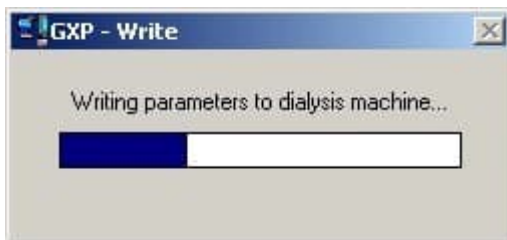
The system is now configured properly for U.S. use.

Close the window and the program. You will be asked to save settings to a file. Choose NO. Turn the WRO 300 RO off. Complete the installation of the WRO 300 RO per procedures.

B.   Using GXP for Existing WRO 300 RO Installed Units

The procedure described above can be used to verify machines already installed.

Note: Be sure to select the proper program version (2.1 or 3.2) when starting GXP and the proper custom default file (default21US.xp or default32US.xp) when changing parameters.

Custom default files can be created to clinic specific settings.

- See the Clinic Specific Presets chart at the end of this document.
- Changes made to the settings should be recorded on the chart and filed for future reference.

The procedure for customizing the WRO 300 RO is in the next section.

VIII. Customizing the WRO 300 RO

Important: Conductivity Alarm Limits should be adjusted according to water quality conditions at the time of installation. It is recommended that the Alarm Warning be set to about twice the value of the product water, and the Alarm Stop should be set to twice the value of the Warning.

Note: For detailed information about the Alarm Limits see the WRO 300 RO Operator's manual.

Consult with the local salesperson or clinic administrator to determine proper settings for the WRO 300 RO or contact Technical Support for assistance.

⚠️ **WARNING**
Unauthorized installation, modifications, alterations or repair of the WRO may result in malfunctioning or have other serious consequences for the safe operation of the equipment.

Note: GXP can only be used by qualified technicians, trained by Evoqua Water Technologies.

Note: When using GXP care must be taken to make sure the proper Program Version is being used.

A. Items that can be adjusted to Clinic Specific Settings

Water Saving Valve: can be adjusted to conserve water. The higher the water saving is set the more reject water is directed back into the inlet tank.

Note: This will affect the fouling of the membranes and may increase the need for cleaning.

Percent Rejection Low Alarm: is set to 90% as default but can be adjusted lower to accommodate local conditions. Verify the Water Quality by performing an AAMI water analysis before making a change.

Conductivity Peak Test: may need to be adjusted to meet local conditions. Moderately low feed water conductivity, around 120uS or less, may not violate the test limit at start up. Therefore, the system may need to be adjusted lower to respond correctly. The default is 30uS. Observe the conductivity at start up and adjust the limit accordingly.

Reminders: can be used to trigger various user messages. This is done by setting the "days remaining" using the internal service menus. See description in the Operator's Manual for further information.

Disinfect Protocols: that are visible to the user can be pre-selected by using the Internal Service menu or through GXP.

Autoflush: is activated as default. The time of flushing and the time between flushing sequences can be adjusted for local conditions.

Note: To use Autoflush the system must be left in Standby and connected to a water source. Default settings will initiate a flush for 3 minutes every hour.

To change a preset:

Open the Parameter Group Window and select the desired group.

Select Parameter Group and the desired group from within the list.
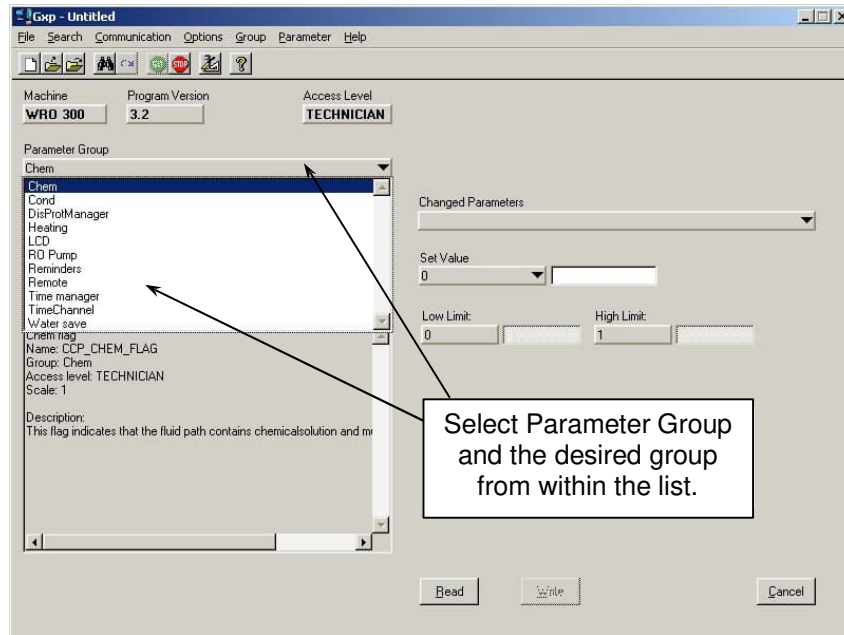
Click on the Parameter box and select the desired preset. The parameter can also be selected by choosing the Parameter Index box and select the preset number.
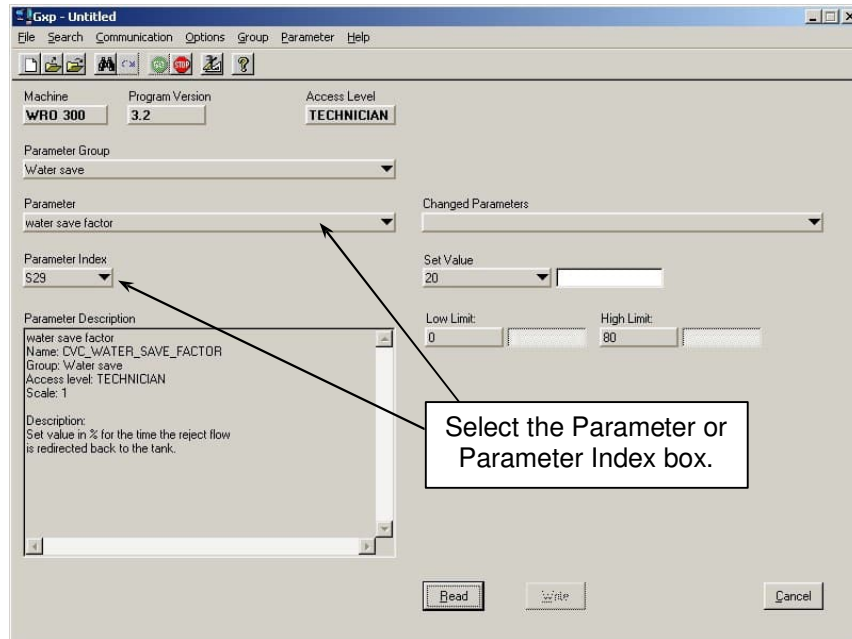
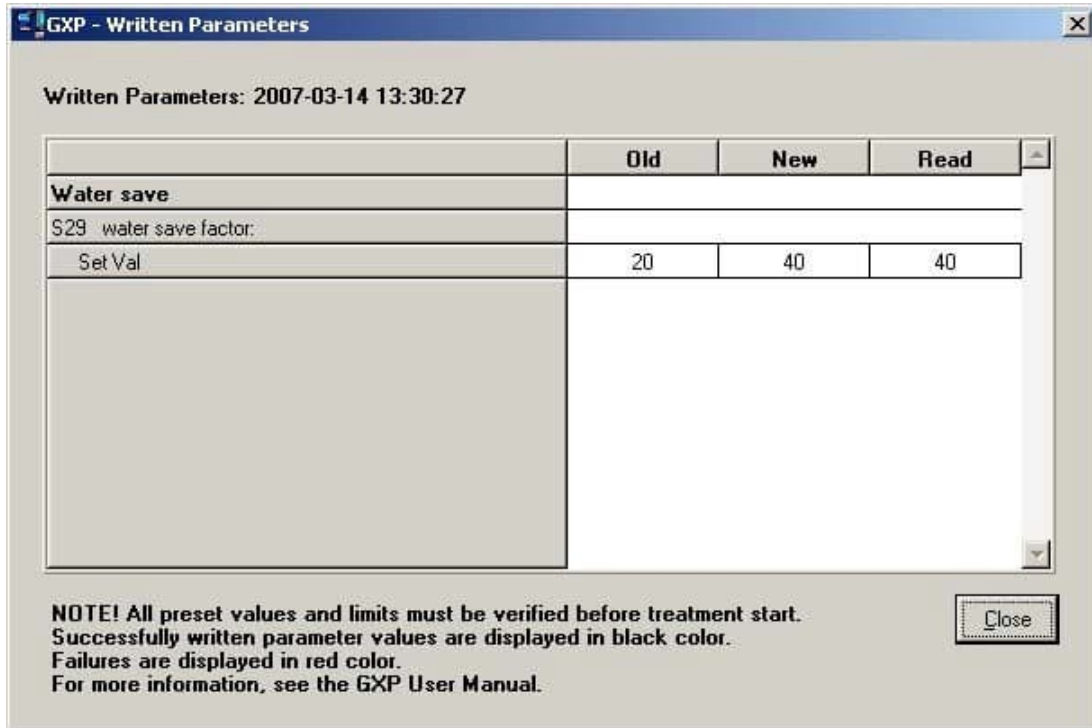Enter the approved value into the Set Value entry box and press Enter on the computer keyboard.
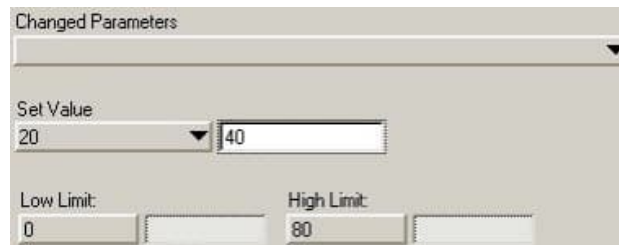
The value will change to the Set Value and appear in the Changed Parameter window.

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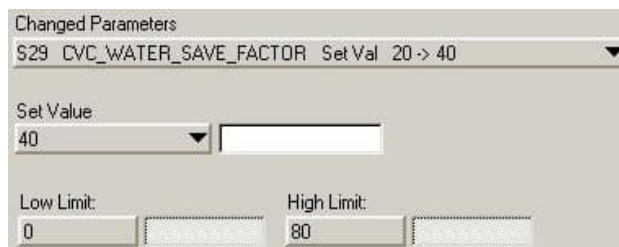
After all changes have been made select Write at the bottom of the window.
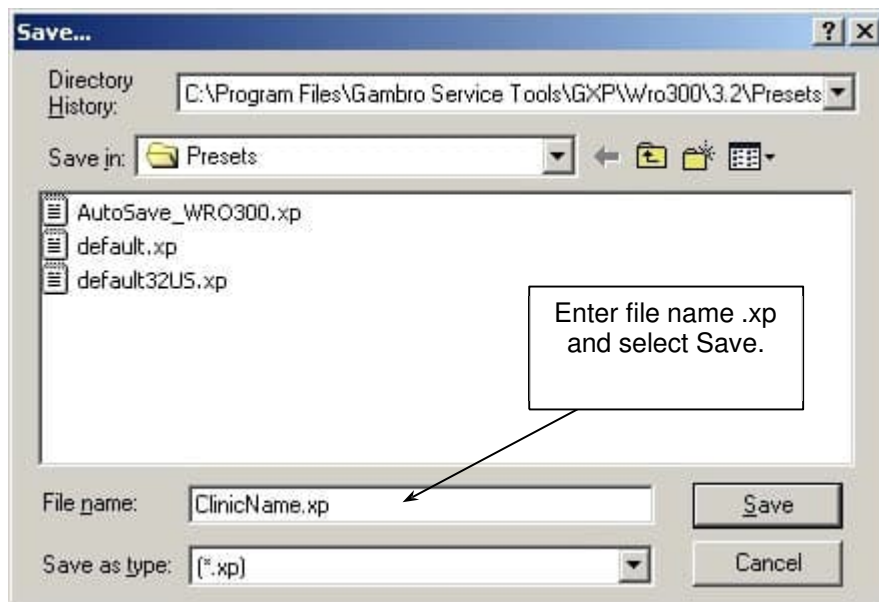

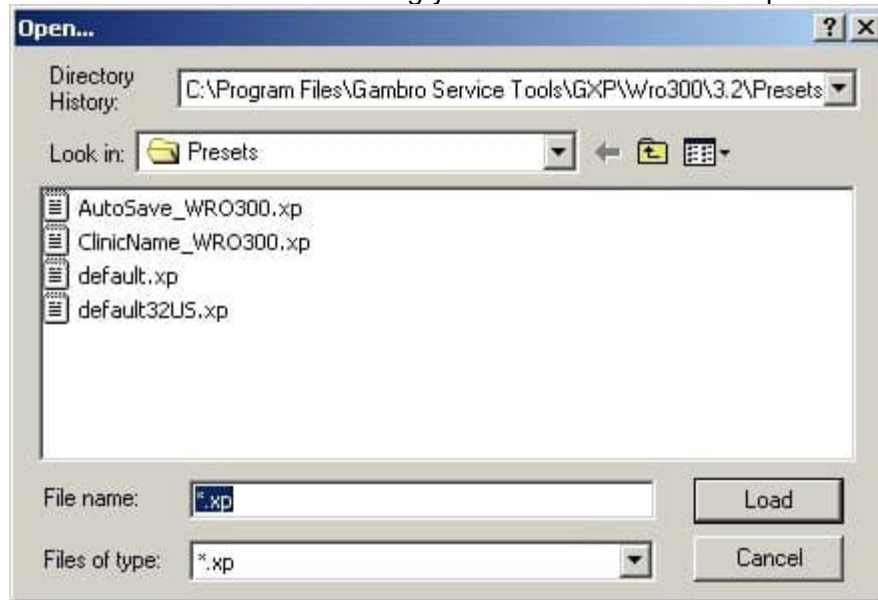GXP will Write, Read and then display the changes.

Close the window.

To save the clinic specific settings choose Save As and enter a file name with an .xp extension.

Press Save. The file will be saved using your file name with the ".xp" extension.

The file can be used to configure other machines using the same procedure described in Section VII.

Note: Be sure to select the proper program version (2.1 or 3.2) when starting GXP and the proper custom default file (default21US.xp, default32US.xp, or the clinic specific ClinicName.xp) when changing parameters.

B. Configuration Settings for WRO 300 RO

There are more than 150 presets (operating parameters) used in the WRO 300 RO. Most of these parameters are specific to the function of the WRO 300 RO and should not be changed unless stated in a Technical Update.

The presets listed below can be configured per clinic.

Consult with your local Clinical Supervisor if you are unsure what these settings should be.