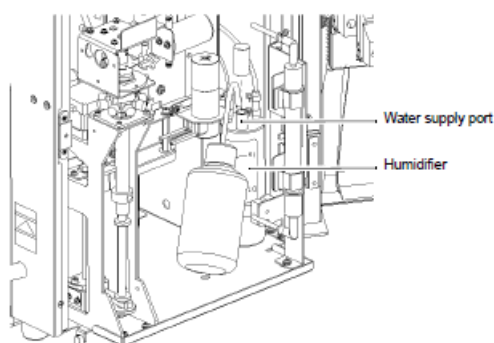


## TOC-L - Preparing your instrument for Startup

### 1. System Preparation

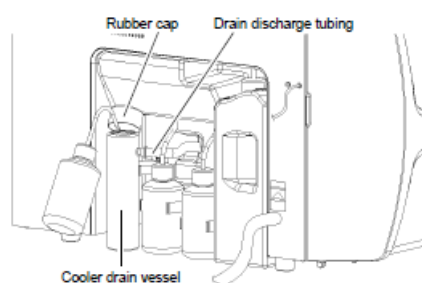
The following System Preparation steps are valid for all TOC-L instruments. The individual steps for the PC-controlled or Standalone instruments are explained in Chapter 2 and 3.

- 1.1. Clean the humidifier bottle and fill it up with pure water.



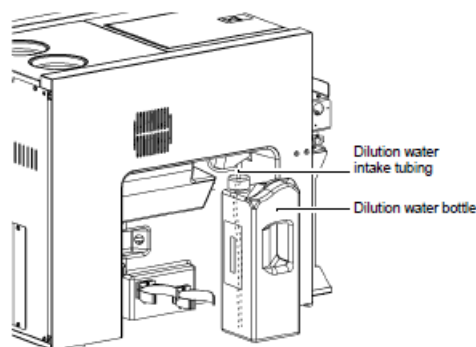
*Figure 1 Filling up the humidifier*

- 1.2. Clean the drain vessel and fill it up with pure water.



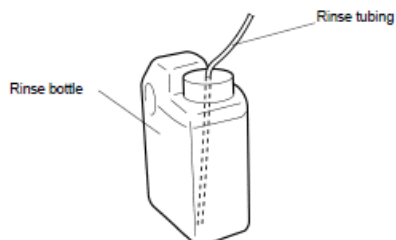
*Figure 2 Filling up the drain vessel*

- 1.3. Rinse the dilution water bottle with pure water and fill it up again.



*Figure 3 Preparing Dilution Water*

- 1.4. If the Instrument is equipped with an ASI-L please also replace the rinse water for the ASI as well

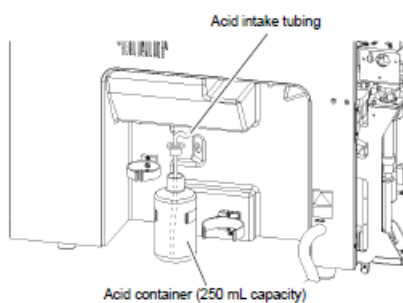


*Figure 4 Preparing Rinse Water ASI-L*

- 1.5. Check if the amount of acid is still enough.

N-type instrument: hydrochloride acid 1 mol/L

H-type instrument: hydrochloride acid 1 mol/L and phosphoric acid 25 weight %



*Figure 5 Acid Preparation*

- 1.6. Open the main carrier gas valve connected to the instrument.

## 2. PC-controlled system TOC-L CPH /CPN

### 2.1. Turning the Power On / Software Connection

Turn on the main power switch on the right side towards the top and turn on the power switch, which is on the left side towards the front to start up the instrument.

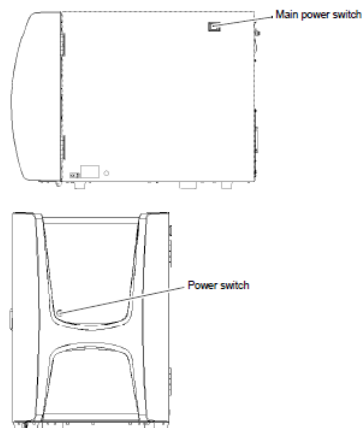


Figure 6 Main Power and Power Switch

Open the TOC Control Software from the Windows start menu and click the Sample Table Editor button.



Figure 7 TOC Control Software

Create a new sample table by clicking [New] in the Sample Table tab of the file viewer, or [New] in the tool bar

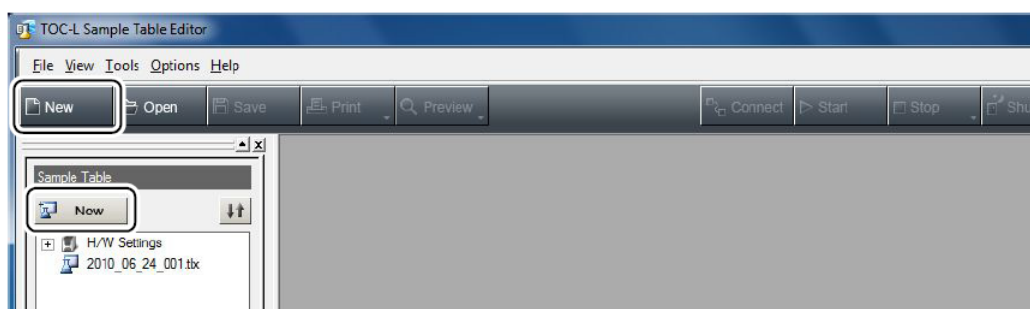


Figure 8 Creating a new Sample Table

Click the System drop down menu and select the system configuration to use and then click the Table Type drop down menu and select Normal.

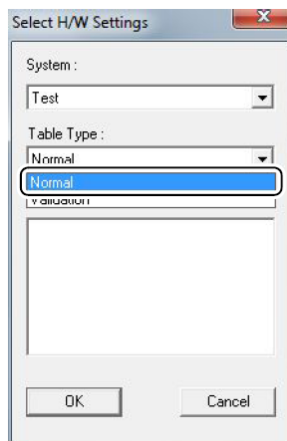


Figure 9 Selection of HW Setting

After opening the sample table click the [Connect] button to connect the software with the instrument. The ready state of the instrument is shown at the right end of the toolbar. Approximately 30-40 minutes are required for the temperature of the furnace to rise and the baseline to stabilize.

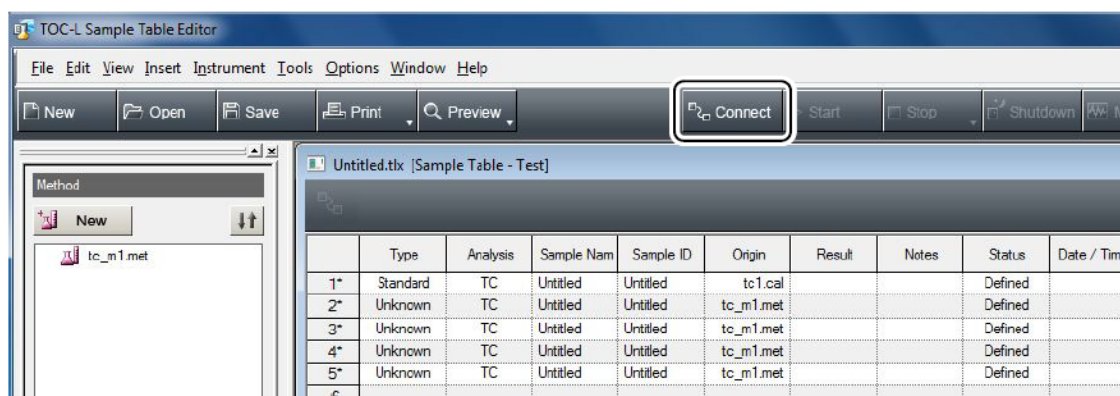


Figure 10 Connecting the software with the instrument

## 2.2. Maintenance Menu

Inside the Maintenance Menu different maintenance points and instrument operation check can be performed. Click first [Instrument] then [Maintenance] to have access to the different operations.

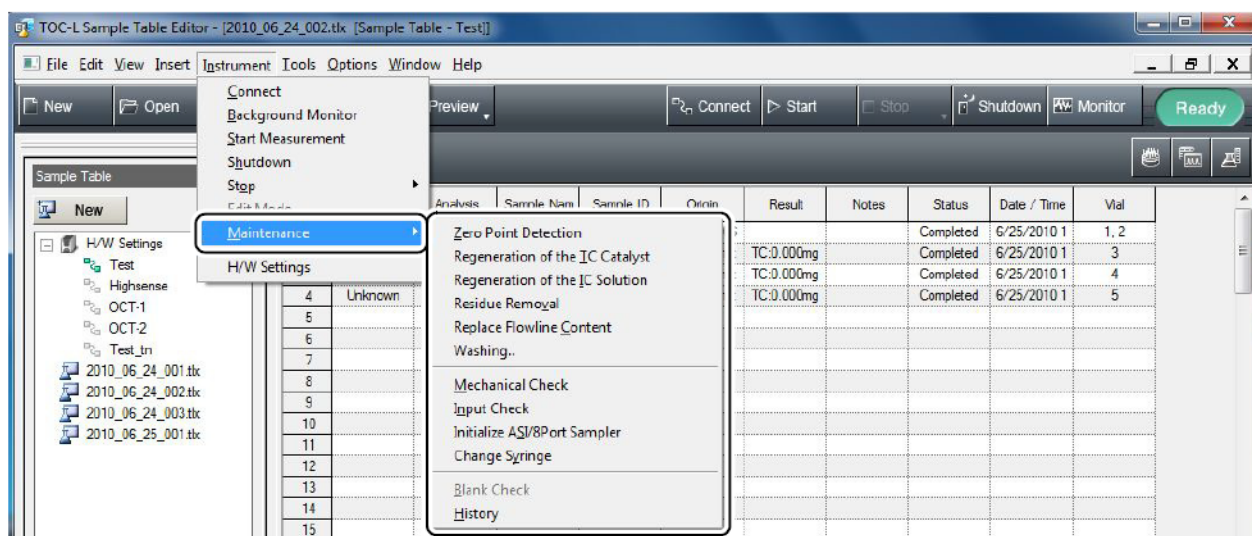


Figure 11 Maintenance Menu

### 2.2.1. Syringe Check / Zero Point Detection

Please check if the syringe of the TOC instrument is tightened sufficient. After this check please perform a syringe zero point detection. This ensures that the zero point of the syringe unit is set correctly. Click [Start] to begin the procedure. The progress bar continuously blinks while the operation is in progress. When the progress is completed, click [Close] to close the window.

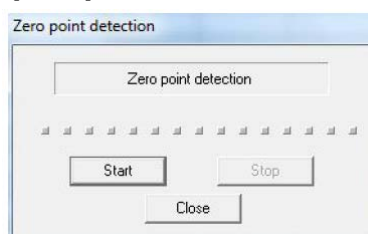


Figure 12 Syringe Zero point detection

### 2.2.2. Regeneration of TC-Catalyst

This function helps to restore the sensitivity and efficiency of the TC catalyst. Click [Start] to begin the procedure. The progress bar continuously blinks while the operation is in progress. When the progress is completed, click [Close] to close the window.

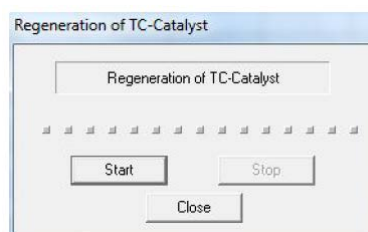
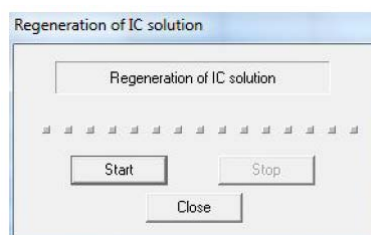


Figure 13 Regeneration of the TC-Catalyst

### 2.2.3. Regeneration of the IC solution.

*Only applicable for the TOC-L CPH instrument.*

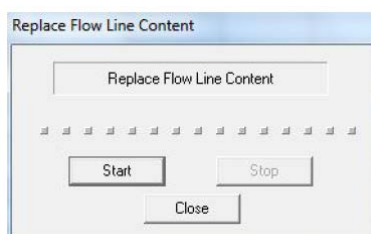
This function regenerates the content of the IC reaction vessel, by flushing it with the IC reagent solution multiple times. Click [Start] to begin the procedure. The progress bar continuously blinks while the operation is in progress. When the progress is completed, click [Close] to close the window.



*Figure 14 Regeneration of the IC solution*

### 2.2.4. Flowline Content Replacement

With the [Replace Flowline Content] function bubbles from the dilution water tubing and hydrochloride acid tubing, connected to the 8-port valve can be removed. Click [Start] to begin the procedure. The progress bar continuously blinks while the operation is in progress. When the progress is completed, click [Close] to close the window.



*Figure 15 Replace Flowline Content*

### 2.2.5. Blank Measurement / Control Sample / Calibration

After all the above-mentioned points are performed, please perform 3 measurements of blank water with the instrument. This help to flush the instrument and to get it into working mode. Afterwards it is recommended to run a control sample. Depending on the result, decide to renew the calibration or use of existing calibration curve(s) you want to perform with the instrument.

### 3. Standalone Instruments TOC-L CSH / CSN

#### 3.1. Turning the Power On

Turn on the main power switch on the left side of the instrument towards the top of the TOC-L. The power switch on the left of the front door of the TOC-L lights up orange.

Turn the power switch on the left of the front door of the TOC-L. The power switch lights up green and the instrument starts up. The display lights up at the same time.

If the indicator in the Middle of the front door is orange the instrument is not yet in ready mode.

Approximately 30-40 minutes are required for the temperature of the furnace to rise and the baseline to stabilize. When the instrument is in ready mode the indicator will switch from orange to green.

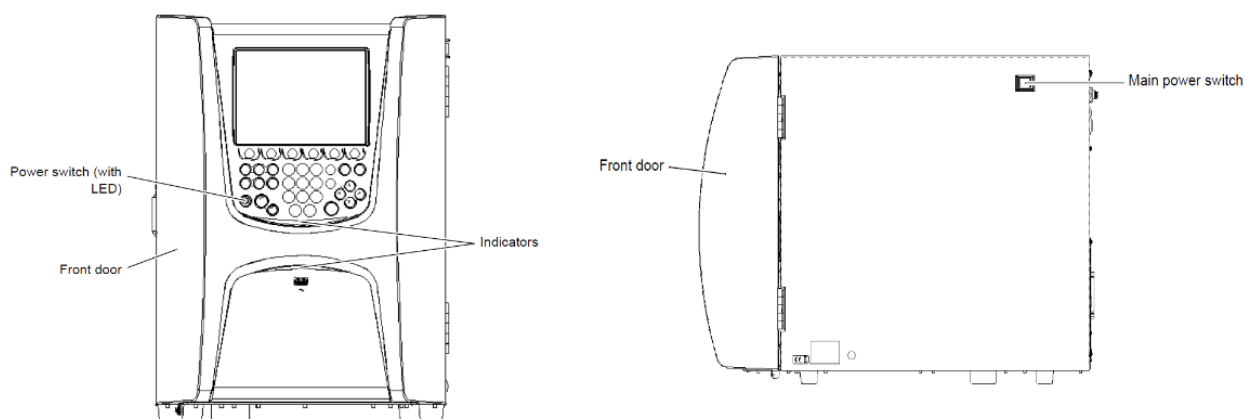


Figure 16 Standalone Instrument

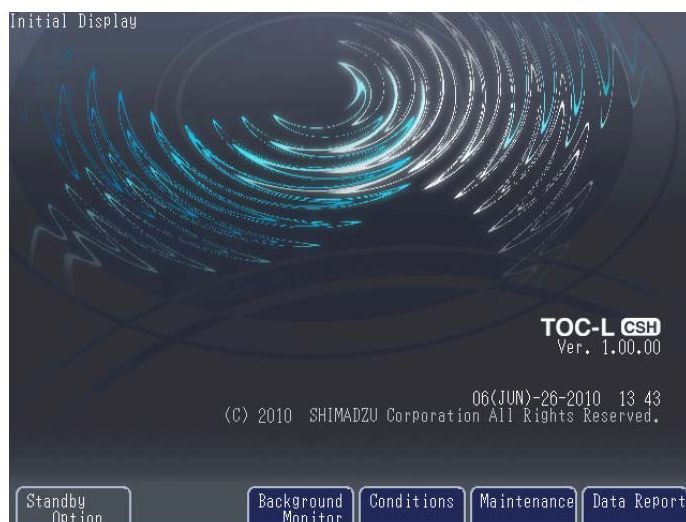


Figure 17 Initial Display

### 3.2. Maintenance Menu

Press the F5 [Maintenance] key in the “Initial Display” to get access to the maintenance menu.

#### 3.2.1. TC Catalyst Regeneration

Move the cursor to the Regenerate TC Catalyst item, and press the [NEXT] key. The message “TC Catalyst regeneration in progress. Please wait.” will be displayed on screen, as regeneration is executed.

The message box closes when the regeneration process is complete.

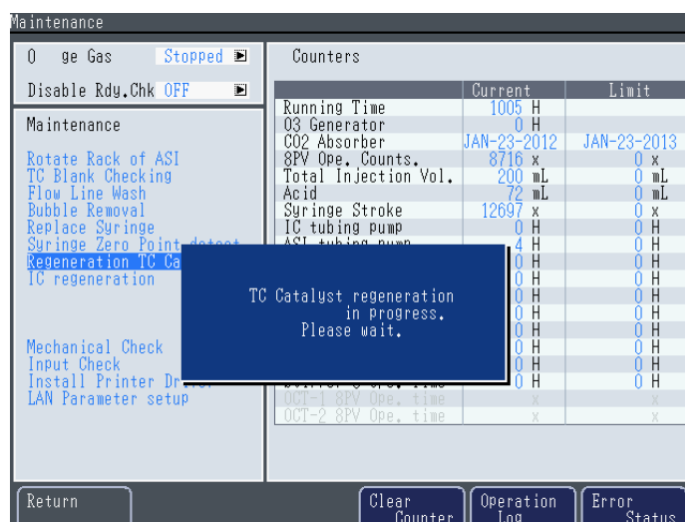


Figure 18 TC Catalyst Regeneration

#### 3.2.2. Bubble Removal

Move the cursor to the Bubble Removal item, and press the [NEXT] key. The message “Bubble Removal in progress. Please wait.” will be displayed on the screen, as the procedure is executed. The message box closes when the regeneration process is complete.

#### 3.2.3. Syringe Zero Point Detection

Move the cursor to the Syringe Zero Point Detection item, and press the [NEXT] key. The message “Syringe Zero Point Detection in progress, Please wait.” will be displayed on the screen, as the procedure is executed. The message box closes when the regeneration process is complete.

### 3.3. Blank Measurement / Control Sample / Calibration

After all the above-mentioned points are performed, please perform 3 measurements of blank water with the instrument. This help to flush the instrument and to get it into working mode. Afterwards it is recommended to run a control sample. Depending on the result, decide to renew the calibration or use of existing calibration Curve(s) you want to perform with the instrument.

**For further question please refer to the TOC-L User Manual, Chapter 3 preparation for measurement, or contact your local Shimadzu representative.**