



## **Installation, operation, and maintenance instructions for the Puropal-Complete-2, Puropal-Complete-12, Puropal-Complete-25, & Puropal-Complete-50 H<sub>2</sub>O demineralizers**

### **Function**

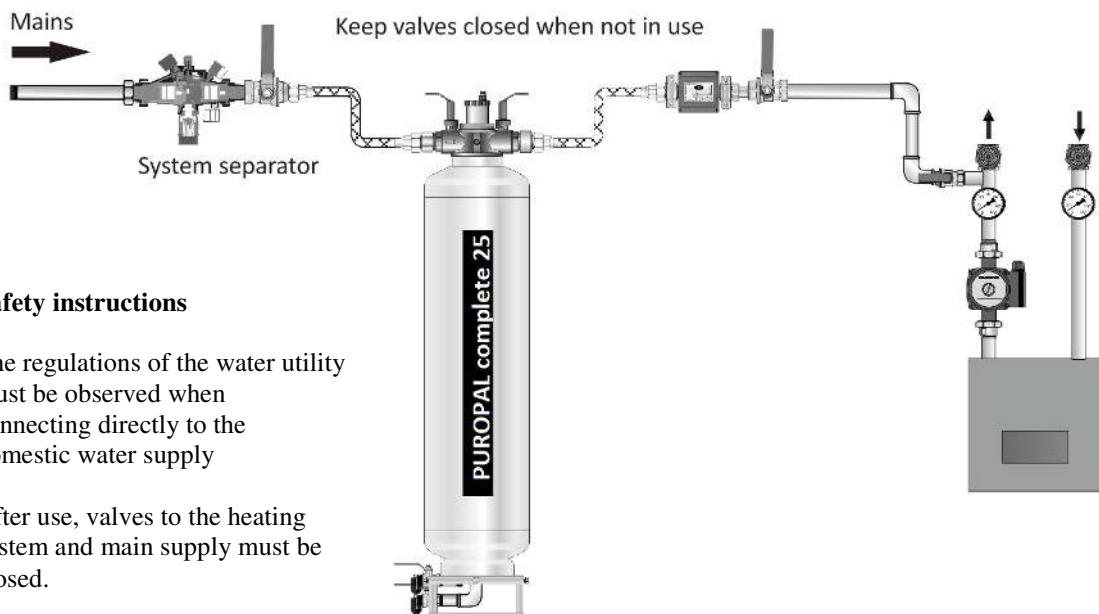
The Puropal-Complete filters lime and aggressive dissolved substances such as sulfates, nitrates and chlorides out of the make-up water. The device operates on the basis of a mixed bed ion exchange resin and provides completely demineralized water. This method does not release any chemical additives into the water and operates without an external power supply.

### **Permanent connection**

PUROPAL Complete is pressure-tested to 87 psi (600 kPa) and is therefore suitable for making a permanent connection between the domestic water supply and the hydronic heating or cooling system.

Depending on national or local regulations, a direct connection may be subject to technical conditions (back flow prevention device) which must be observed.

### **Simplified permanent connections**



### **Safety instructions**

The regulations of the water utility must be observed when connecting directly to the domestic water supply

After use, valves to the heating system and main supply must be closed.

## Use with a heating system fill hose

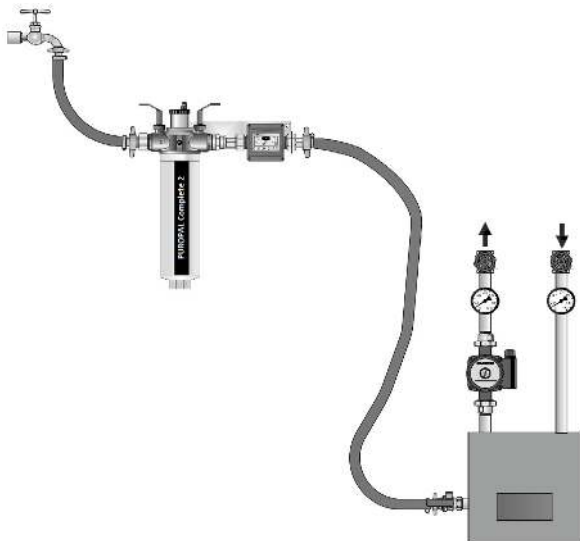
If the PUROPAL Complete is used to occasionally refill a closed loop system or to pre-mix demineralized water with glycol via a fill hose, the cartridge should be pre-flushed with fresh tap water in order to displace the initial flow water.

After pre-flushing the cartridge, ensure the demineralization media is working by checking the integral combined meter to ensure complete demineralization. When the system is then filled, the fill hose must be first bled, in other words filled with water to prevent air entering the system via the fill valve.

### 1. Flush the cartridge

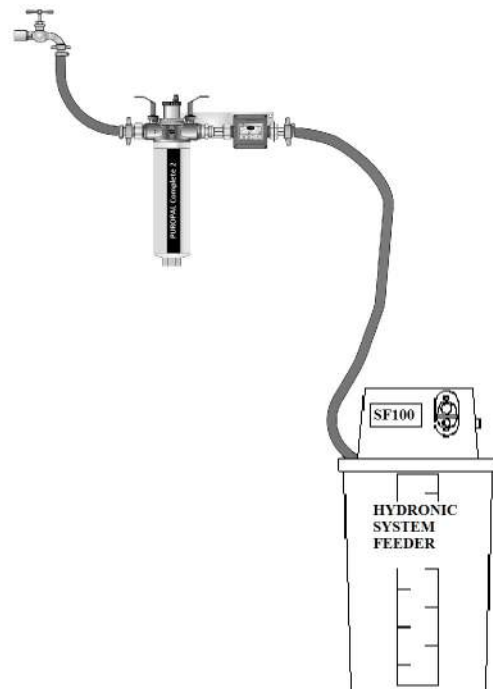


### 2a. Refilling the closed loop system

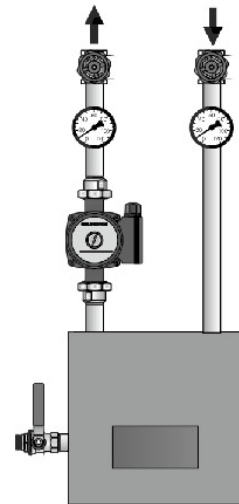


OR

### 2b. Refilling the hydronic system feeder



3. Close valves; remove hoses



### **Safety instructions**

PUROPAL Complete 2 should be pre-flushed with approx. 10 L water before each use in order to displace the initial flow water.

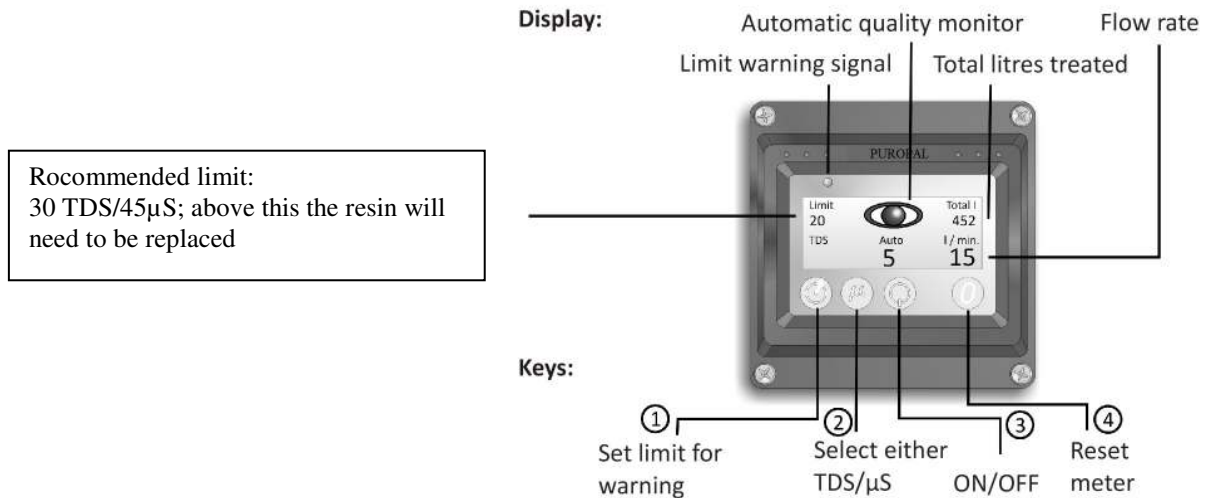
It is not permissible for a heating system fill hose to remain permanently connected. The refill appliance should never be left unattended whilst in use.

After use, always close the freshwater tap, the shut-off valve on the PUROPAL, and the boiler fill valve and remove the fill hose.

The ion exchange resin in the cartridge must not enter the heating system. As a precaution, a fine filter is fitted in the outlet which must not be removed.

## Operating the combined meter

The combined meter is battery-operated. It measures the flow rate in L/min, the total volume in litres and the concentration of dissolved minerals (electrical conductivity), either in microsiemens or TDS. In addition, a limit can be set for the maximum concentration of minerals tolerated in the demineralized water (Complete outlet). The limit and flow rate total can both be reset.



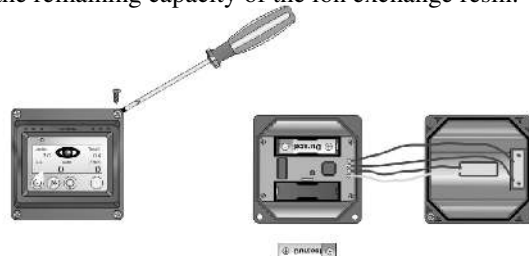
1. Every time this key is pressed, the limit is increased by 10 TDS or 15  $\mu$ S/cm. Pressing the key for 3 seconds resets the limit to zero. Programming the limit ensures that a warning is issued when the ion exchange resin is spent.
2. Select either TDS or micro siemens. The water hardness at the outlet of the refill appliance can be calculated using the following rule of thumb: **1 gpg equals approx. 33.6  $\mu$ S/cm; 1 gpg equals approx. 17 ppm (TDS)**
3. If the ON key is pressed once, the water quality is measured for 10 seconds and compared to the set limit. The measured value is shown. If it is above the limit, the LED glows red; if it is below, the LED glows green while the measurement is being taken. If required, the measurement can be repeated manually.

**Auto mode:** If the ON key is pressed for a second time, the combined meter begins automatic monitoring. The eye symbol appears to indicate that monitoring has been enabled. In auto mode, the meter only takes measurements when water is actually passing over it. If the water draw-off is interrupted, the meter continues to show the last captured value. While water is being drawn off, the combined meter measures the water quality every 40 litres. If the limit is exceeded in two successive measurements, the display continuously flashes red. This indicates that the ion exchange resin is spent and needs replacing. If the ON key is pressed for a third time, the meter exits auto mode.

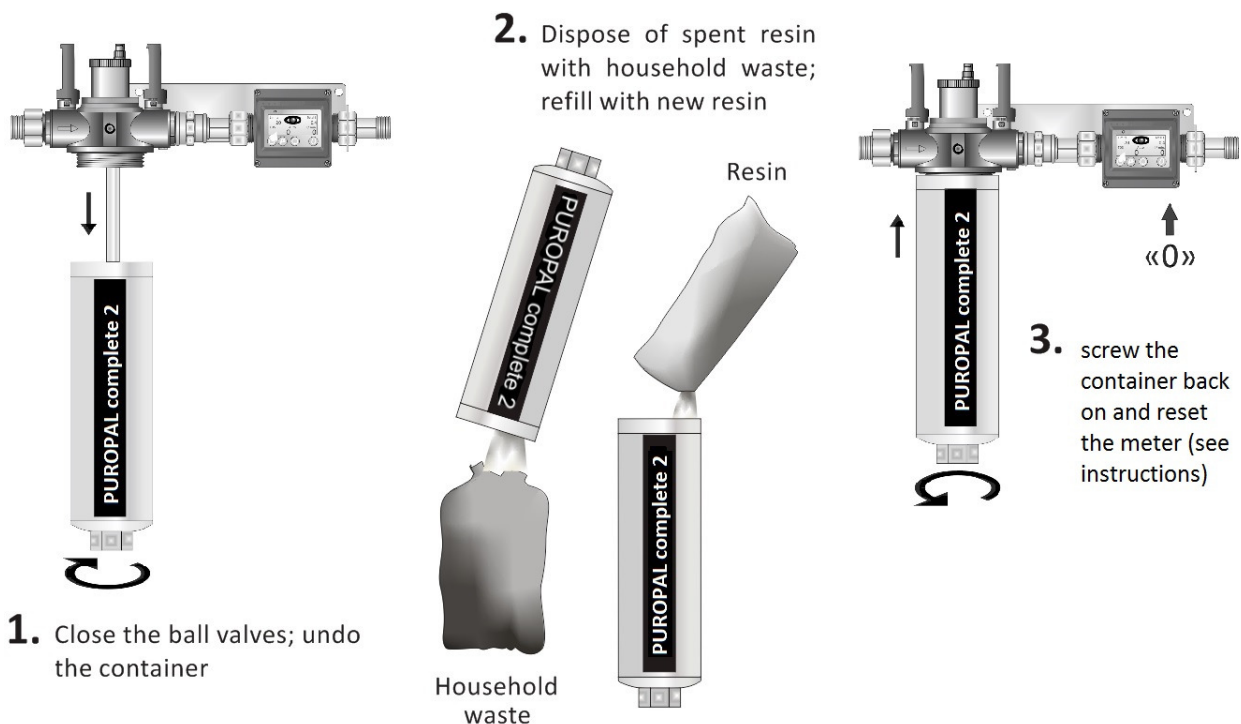
4. Pressing the reset key for 3 seconds resets the overall total on the meter. This is recommended every time the resin is replaced, as it gives a reference point for the remaining capacity of the ion exchange resin.

## Changing the batteries

Change the batteries when the battery warning symbol appears or the display is faint or blank. Undo the 4 screws on the front and carefully open the device. Change the batteries. 3 x AAA.

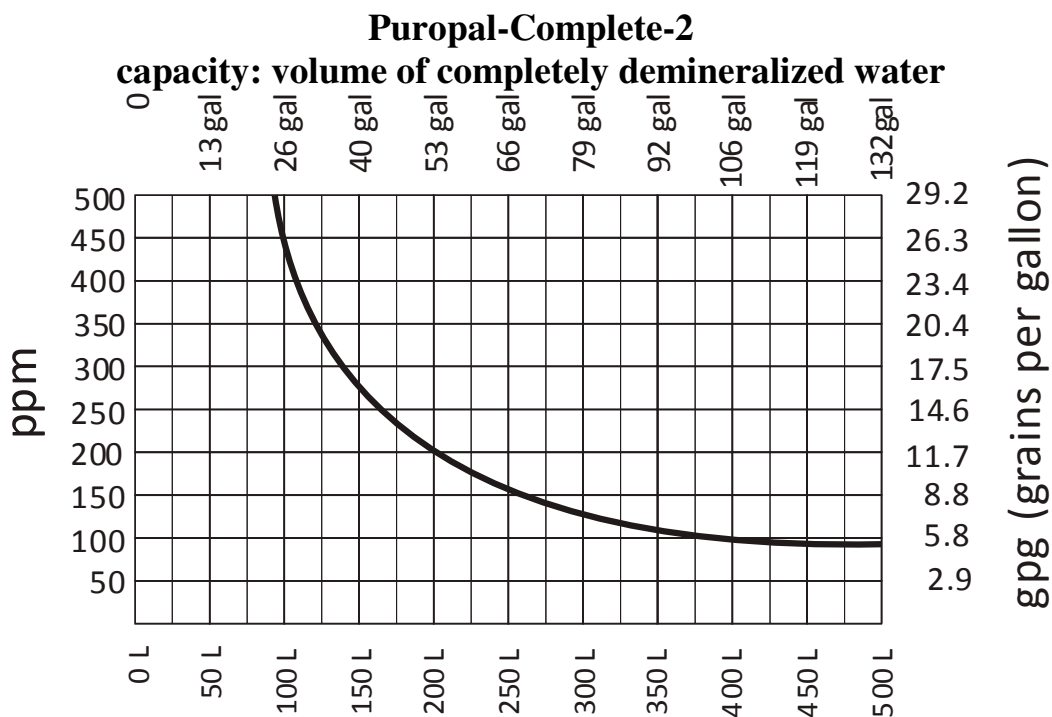


## Replacing the Resin in the Puropal Complete 2

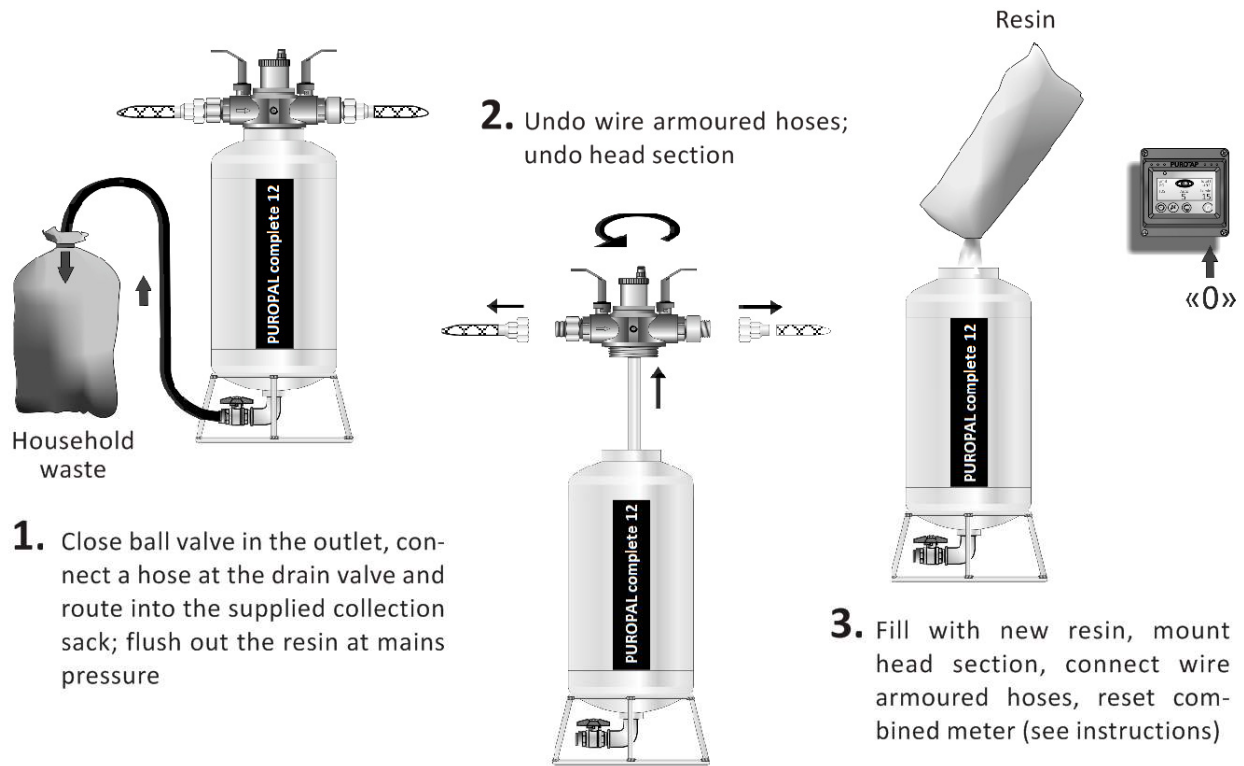


## Capacity of the ion exchanger

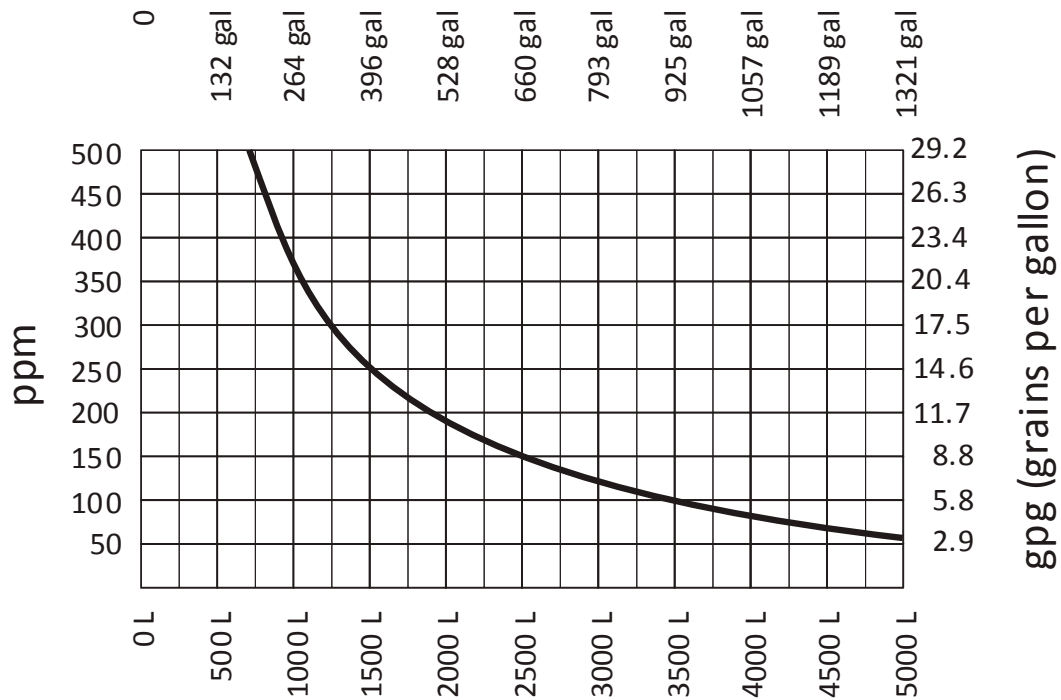
The capacity of the ion exchange resin depends on the water hardness. The capacity for each Puropal Complete series product can be read off the graphs below. Example: With a hardness of 11.7 gpg (200 ppm), Puropal Complete 2 provides 53 gal (200 l) of completely demineralized water, Puropal Complete 12 provides 500 gal (1900 l), Puropal Complete 25 provides 850 gal (3250 l), and Puropal Complete 50 provides 1780 gal (6750 l). See separate graphs below for capacity of each model



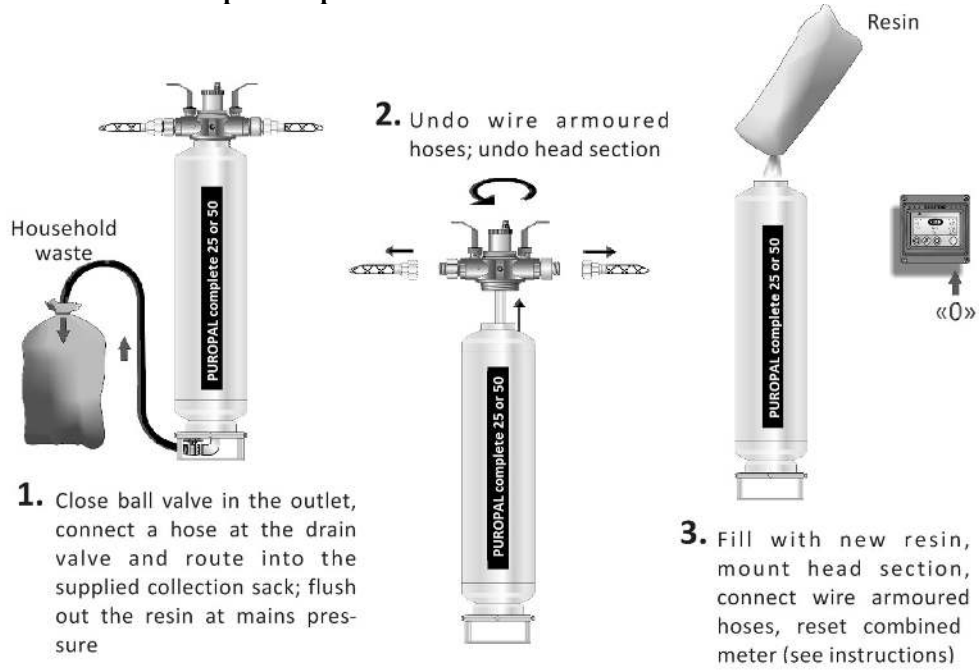
## Replacing the resin in the Puropal Complete 12



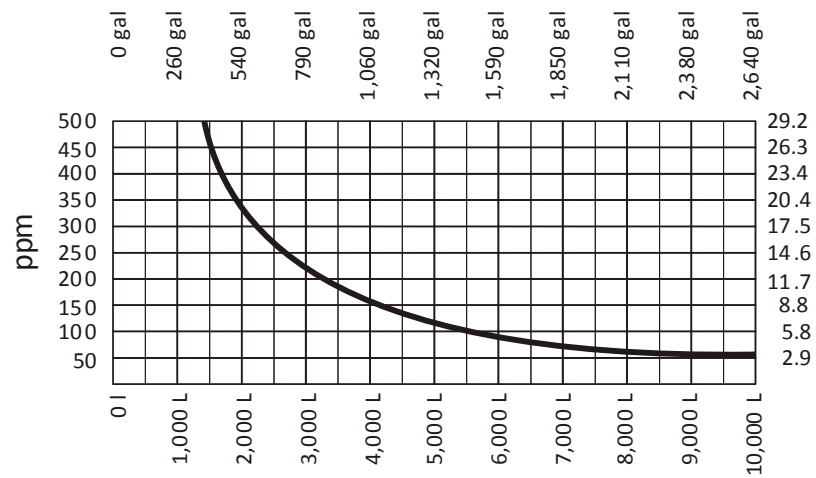
### Puropal-Complete-12 Capacity: volume of completely demineralized water



## Replacing the resin in the PuroPal Complete 25/50

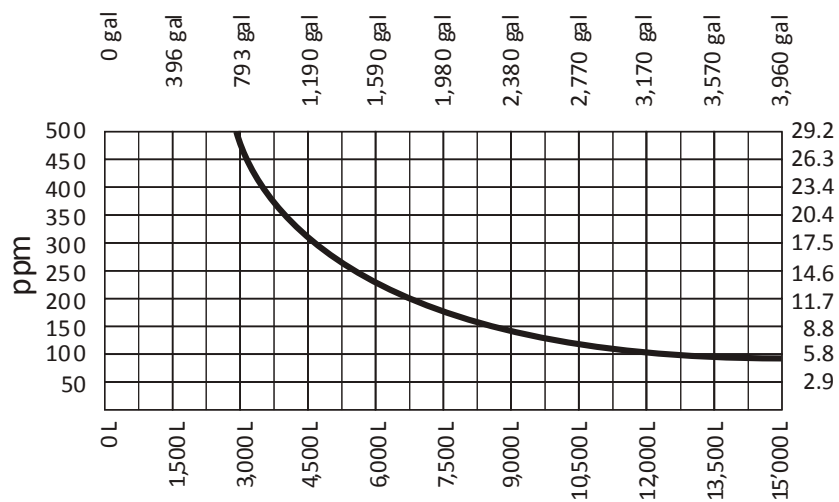


### PuroPal-Complete-25 Capacity: volume of completely demineralized water



gpg (grains per gallon)

### PuroPal-Complete-50 Capacity: volume of completely demineralized water



gpg (grains per gallon)