



REsys Incorporated

4560 Ridge Drive NE

Salem, OR 97303

503-393-8000

503-390-5020

TITAN: Closed-Loop System w/Integrated Reverse Osmosis

Water Soluble Applications:

Closed loop water recycling is a proven and reliable process. All cleaner effluent is directed to the TITAN where the filtration process is initiated. The TITAN utilizes a combination of particulate, reverse osmosis and ion exchange filtration technology to efficiently provide deionized water. Once the water has been re-ionized it is passed through an in-line stainless steel heater to achieve the desired final rinse temperature. All the make-up water required to compensate for evaporative losses is pre-filtered via the reverse osmosis system, eliminating the need for an in-house tap water DI system.

Chemistry Cleaning Application:

The rinse water is recycled as it would be in a water soluble application. The integrated reverse osmosis system not only provides the make-up water, but provides the chemical isolation requirements. Providing high quality, heated water to the chemical isolation section improves the effectiveness and limits the negative impact of drag-out in the recirculating rinse. Incorporating a heat exchanger and 204 Transfer Station will increase the cost savings of the Titan. Additional options are available to assist in compliant effluent discharge for the chemical isolation waste stream (Effluent Treatment System, HMR Tanks).

Flexibility:

Closed-loop water recycling minimizes operating costs associated with in-line aqueous cleaning. Certain applications do not lend themselves to water recycling. For example, temporary water soluble masks or rinse aids are high in ionic content and will cause the carbon/ion exchange filtration to prematurely fail. Tap water reverse osmosis pre-treatment and heat recovery are an excellent alternative approaches to minimize operating costs. The Titan can automatically operate in an open or closed loop mode. Optionally, a water quality sensor can be integrated to monitor the in-line cleaner effluent bound for the Titan unit. If effluent water quality is below set point (excessively contaminated) it will not be recycled. The integrated reverse osmosis system will compensate for the loss of water from the loop. Since



the RO water quality is much better than the excessively contaminated effluent the burden on the ion exchange tanks will be dramatically reduced (significantly lower operating costs).

TITAN STANDARD FEATURES:

- Stainless steel multistage pumps
- Stainless steel RO membrane housings (high pressure)
- Stainless steel bag filter housing
- Back up tap water by-pass if RO system failure
- UL listed for safety
- Stainless steel DI water heater to achieve desired final rinse temp.
- Dual probe digital water quality meter w/low quality alarm
- Completely integrated system (RO, recycle, heating, storage, etc.)
- Hands free automatic operation (PLC controls)

TITAN SYSTEM UPGRADES:

- Increase heater size to 45 or 54 kW
- Integrated stainless steel heat exchanger
- Dual cleaner operation (3 HP delivery pump, increased RO system, automatic pressure adjustments)
- Auto open or closed loop mode of operation

Innovative Water Management Solutions