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*MORE THAN COMPLIANCE –
 WE IMPROVE THE BOTTOM LINE*

NewEcologySystems.com

OPTIONS

for Rinse and Recycle Equipment

Choose from among these options to create the container rinsing system just right for your plant. Whether you want only a simple Rinsers I or a high-performance Recycler II, there are some alternatives that will support you getting the job done. High pressure or low pressure rinse? Save water using rinse recirculation? Oil separation after the rinse?

Talk to us about your situation. Let us know what residues are in the drums and what you want to accomplish. We'll help you put together a system that will fulfill on its mission.

Option	Reuser I	Reuser II	Recycler I	Recycler II	Tote Cleaner
o Low Pressure System	✓	✓	✓	✓	✓
• Water Heater – Low Pressure	✓	✓	✓	✓	✓
• Rinse Additive Injection – Low Pressure	✓	✓	✓	✓	✓
o High Pressure System		✓	✓	✓	
• Water Heater – Low Pressure		✓	✓	✓	
• Rinse Additive Injection – High Pressure		✓	✓	✓	
o Rinse Reuse (Recirculation)	✓	✓	✓	✓	✓
o Sump Pump Level Switch	✓	✓	✓	✓	✓
o Sump High Level Alarm	✓	✓	✓	✓	✓
o Sump Oil Skimmer	✓	✓	✓	✓	✓
o Explosion Vents		✓	✓	✓	
o Enclosure Vapor Extraction Connection		✓	✓	✓	
o Nitrogen Blanket Header		✓	✓	✓	
o Electrical Area Classification		✓	✓	✓	✓

■ Rinse System Pressure

The interior surface of a drum is cleaned by a combination of things: flow rates, additives, heat, and impingement force. The hydraulic action at impingement is given by a combination of physical factors contributing to momentum. You want water to get up under the soils; lifting them from the surface; and having enough water to keep it off the surface, carry it off and down to, and out of, the drum. You want sufficient quantity of water to do the job and you want a minimum of water to have to treat.

○ **Low Pressure Systems**



Lower pressure systems are approximately 300 PSI. This is adequate for many drum residues, especially with heat and an additive.

○ **High Pressure Systems**



Higher pressure systems may be needed for sticky residues. Max pressure is 1,000 PSI. Again, heat and surfactant or other additive support removing a soil from a surface, but often a high pressure rinse without heat and without surfactant will be sufficient.

■ **Hot Water Systems**

- **High Pressure System** – Schedule 80 pipe coil heaters are used for high pressure systems. Temperatures can be up to 190F. The water is pressurized prior being heated. Reciprocating pumps are used.



- **Low Pressure System** – Hot water is generated in a low pressure (80psi or less) water heater tank, and the pump delivers preheated water at about 150F to the drum. Multi-stage centrifugals are the pump of choice here.



■ **Rinse Reuse**

Recirculation systems use lower pressure pumps (less than 100 PSI). Recirculation systems use “dirty” water in the sump to initiate the rinse process. The operator can choose number of initial rinse cycles to use used water to get the cleaning process started. Then the final rinse or two uses fresh water. A strainer removes large particulate from the water entering the recirculation pump. The recirculation pumps can tolerate some debris. Recirculated water is not re-heated.



■ **Rinse Additive Injection**

The right additive can help in removing a contaminant from a surface and holding it in suspension or in solution so it can be flushed from a drum. We inject additives in the first one or two rinse cycles beyond the initial reuse of sump water (if recirculation is chosen). We select a pump based on the pressure of the water system and the chemicals you specify. Controls are programmed to satisfy the duration and concentration you specify, to the degree possible.



■ **Sump Pump Switch**

If you intend to use a pump to move rinse water from the sump to an oily water separator, water treatment or tank, a level switch in the sump can send the signal to energize a pump switch or a pneumatic valve to operate a diaphragm pump.

■ **Sump High Level Alarm**

In the event a pump fails or the drain clogs, water level in the sump will rise and could overflow. Your equipment operator will be able to see water level rising in the sump each time the door is opened to extract or put in a drum, but he or she may not notice it. If you would like a high level alarm choose this option.

■ Sump Oil Skimmer

For installations in which the collected rinse water is pumped from the sump to a oily water separator or other device that would not like to receive the occasional oil slug, then you may want to consider a belt oil skimmer for the sump. This will also relieve your oil water separator of some oil. If you are using alkaline surfactant-based degreaser as a rinse additive, then this option may not be needed, as the oils rinsed from the drum will tend to stay in solution and not get lifted out.



■ Oil Separator



Are you removing oil and other petroleum products from your containers? The use of an oil/water separator will capture recyclable material and reduce burden on water treatment equipment. It is possible that water from an oil/water separator can be discharged to sewer. Check with your discharge authorities.

■ Explosion Vents

Explosion vents relieve the sudden pressure of an explosion inside an enclosure. Enclosure walls may deform and the unit may be adversely damaged in the event of an explosion, but the intent is that nothing becomes a high-speed projectile, and forces that could adversely impact personnel are reduced. Explosion vents attempt to relieve force upward, in a direction not likely to affect personnel.

■ Nitrogen Blanket Header

We will install nitrogen introduction fittings on the unit for the customer-installation of customer's nitrogen supply system. A header under the drum deck distributes the gas at a low velocity to discourage turbulence while creating a blanket over the sump rinsate – to the degree possible considering the environment.

■ Vapor Extraction Connection

Removing flammable volatiles and introducing more air into the enclosure could prevent combustible concentrations from occurring. This option includes a 4" slip fitting onto which the customer connects their air exhaust system.

■ Electrical Area Classifications

Explosion-proof electrical components and enclosures can be incorporated to affect an "explosion proof" electrical system. The Customer is responsible for ensuring appropriate completion of the system in the field at installation if required.