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EVERPURE® CONSERV® HE-3

High Efficiency Reverse Osmosis
System for Foodservice Applications

Presentation Summary

- Introduction

- Target Audiences and Key Applications

- Building the Case for Water Quality

- Considerations for Choosing a Water System

- How the Everpure Conserv HE-3 System Can Help

- System Components

- Application Configuration

- The Value the Conserv HE-3 Delivers

- Competitive Advantages

Introducing the Everpure Conserv HE-3

RO, Reimagined

- Builds upon Pentair Everpure's 85-year history of innovation
- Pentair's first IoT-connected solution for foodservice
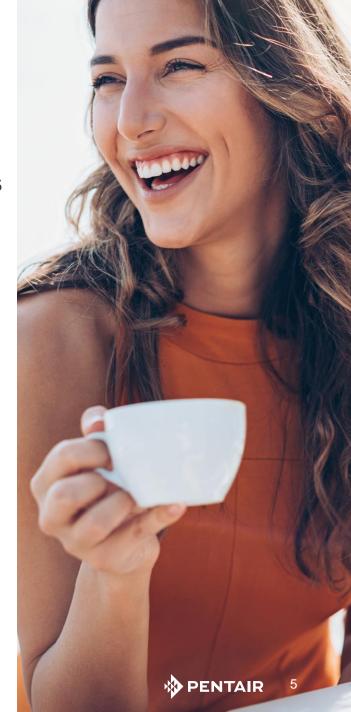- Expandable and configurable for multiple foodservice applications

What's It Made For?

- Specifically designed to provide the benefits of treated water while meeting the more demanding water needs of foodservice

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TARGET
AUDIENCES
AND KEY
APPLICATIONS

Target Audiences

- **Restaurant Chains**

- **Large Chain Retailers and Convenience Stores**
  - Stand-alone foodservice and in-store foodservice and beverage operations

- **Specialty Coffee Establishments**
  - From single-location shops to national or global chains

- **Institutional Foodservice**
  - Schools
  - Colleges and universities
  - Hospitals
  - Correctional facilities
  - Public and private cafeterias
  - Nursing homes
  - Day care and senior centers

Where Can This Be Used?

Common Applications Include:

- Batch and pour over coffee, and espresso

- Steam cooking equipment (e.g. combi ovens, steam kettles)

- Drinking water

- Iced tea

- Ice

Not only is the system versatile enough to be used across foodservice applications, eliminating the need for different pieces of equipment, it has the capacity to handle multiple applications simultaneously.

BUILDING
THE CASE
FOR WATER
QUALITY

Why Controlling Water Quality Is Important

Foodservice operations and their equipment face these key problems:

- Limescale

- Corrosion
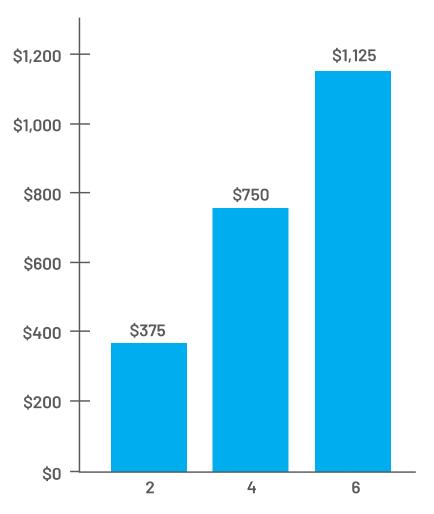
- Particulates

- Total dissolved solids (TDS)

Limescale

Effects

- Increases energy use by 40+%

- Reduces pressure

- Causes probes and floats to malfunction

- Lowers the temperature and limits flow

- Causes poor pre-infusion, leading to channeling through the puck

- Potential physical and chemical damage to equipment from scale removal process.

- Potential loss of manufacturer's warranty

Limescale damages equipment, results in higher energy costs and can cause reduced water pressure flow.

Annual Cost of Deliming (Coffee Brewing)

Based on $75/hr and 2.5 hrs of labor per deliming

Corrosion

Effects

- Erosion on metal surfaces and disintegration of parts
- Downtime due to equipment servicing

Corrosion leads to decreased efficiency and shorter equipment life.

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Particulates

Effects

- Equipment wear

- Scale formation

- Negatively impacts taste and odor

Particulates damage equipment and impact taste.

Total Dissolved Solids (TDS)

Effects of Uncontrolled TDS

- Equipment wear
- Negatively affects taste and odor of beverages
- Can lead to improper extraction of coffee or tea, which can result in coffee or tea that is too weak, too strong or has a bitter or sour flavor

Uncontrolled TDS can reduce the quality of beverages.

Taste Test Comparison

Coffee brewed with hard water

Coffee brewed with treated water

Tea brewed with hard water

Tea brewed with treated water

Effects of TDS on Brewed Coffee and Tea

Beverage	TDS	Extraction	Result	Affect on Beverage
Coffee	Low	Overextraction	Too much of deep oils	Bitterness, weak crema, oil slick on surface
	High	Underextraction	Too little of the coffee solids	Weak flavor and color
Tea	Low	Overextraction	Too many tannins are released	Bitterness
	High	Underextraction	Low release of flavonoids	Weak flavor and color

Considerations
When Choosing a
WATER TREATMENT SYSTEM

Practical Experience with Water Treatment Systems

- Are you familiar with the differences between particulate filtration, reverse osmosis (RO), softening, etc.?

- Do you know your pretreated water quality or the system components required to achieve better quality post-treatment?

- Are you aware of changing water conditions at the site, and how that impacts final water quality of your products?

Capacity

- Do you need an RO system that can increase capacity as your business or operation grows?

- Do you want (or have the capital) to invest in separate RO systems for each point of use?

Physical Space

- What physical space is available for a system that meets the operation's current water quality and quantity needs?

  - Extra floor space is often devoted to front-of-house and seating.

  - Original floor plans may not have accounted for space for water treatment equipment.

  - Undercounter space often limits equipment height.

Real-Time Information on System's Performance

- Do you need access to live data on inbound water quality?

- Do you want to be able to monitor the status of :

  - Output water quality?

  - Particulate filters?

  - The RO module?

  - Your water softener?

- Do you need notification of system issues or water quality changes?

Understanding Maintenance Needs

- Does site staff know when to cartridge replacements or other system maintenance is needed?

  - It can be difficult to effectively plan routine maintenance.

  - System malfunctions may require multiple service calls to resolve.

  - Service personnel can spend valuable time collecting system and historical data on-site to understand product performance.

How the

EVERPURE CONSERV HE-3 SYSTEM

Can Help

Exclusive Remote Monitoring

Telemetry and sensors built into the system provide real-time monitoring and alerts, giving operators ongoing and historical insight into performance.

- View system information remotely from anywhere with an internet connection.

- Text and e-mail push alerts.

- Monitor water usage, TDS, filter and pump life indicators, membrane efficiency, and operation parameters.

  – Also monitor water softener low-salt warnings and power alerts (with optional Pentair Everpure CES-9100TS E-30C Water Softener)
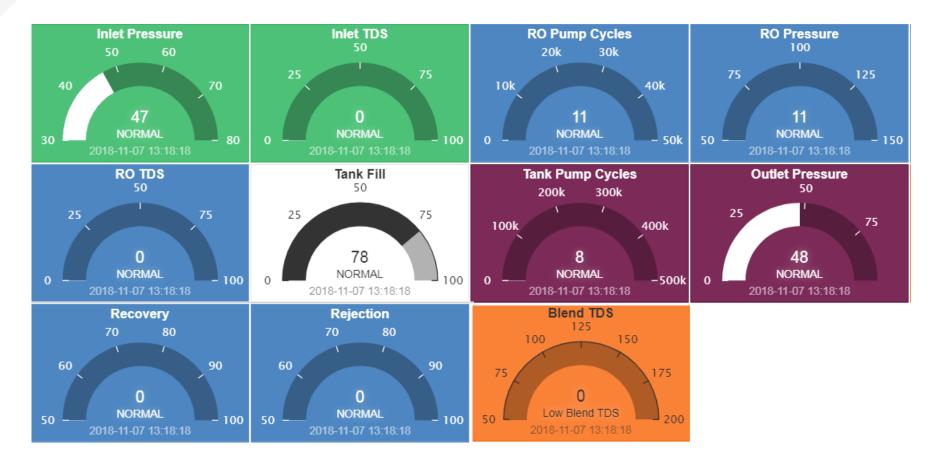
- Preset dashboards and data views.

Exclusive Remote Monitoring–Cont.

- Review data in different time frames for trend analysis.

- Increase preventative maintenance through system performance visibility.

- Monitor specific foodservice locations at the enterprise level.

Remote Monitoring−Dashboard Example

The remote monitoring dashboard is easy to read and understand.

Lower Operating Costs

- Significantly less water waste

- Better, proactive protection for foodservice equipment

- Lower service call costs: Identifies specific component problems and improves odds of "first call" fix

Custom Blending Capability

- The system is configurable to specific incoming water quality conditions regardless of where the installation or application is situated.

- Water "blending" enables setting a certain mineral concentration for optimum equipment protection and specific water profiles.

- This feature is very useful for optimizing flavor, aroma and color and preventing over- and underextraction of coffee and tea.

Easily Expandable Capacity
Up to 880+ GPD

- Standard capacity: 440 gallons per day (gpd) plus blend

- Enough to serve multiple use points

- No need for cost, complexity and space issues typical of point-of-use treatment for every application

- Exclusive "plug and play" expandability to 880 gpd plus blend by adding a second RO membrane and post-filter

Less Water Waste

- New, highly efficient RO membrane
- Recovers up to 74% of inbound feedwater as usable permeate
- Some competing RO membranes recover only 10–25% of inbound feedwater; remaining 75–90% is waste to drain

Nonpressurized Storage Tank

- Increases RO production volume

- Reduces total tank volume by 1/3 to 1/4 of the storage capacity of a pressurized tank

- Enclosed bag liner eliminates need for expensive hydrophobic air filter for fill and draw, reducing annual maintenance costs for replacement filters

- Bag liner also makes tank cleaning fast and easy

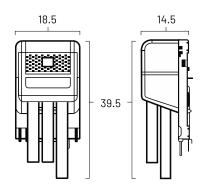- Tank cost included with system price; no need to buy a separate tank

SYSTEM COMPONENTS

Everpure Conserv HE-3 System Components

Carbon cartridge count
reduced from 5 to 3
2-year life on RO membrane;
robust, backlit controller

Over 40% smaller
footprint than the HE-2
+ 40-gallon tank

Nonpressurized
"bib" tank design

Real-time system data,
push alerts and remote
monitoring

Industry-proven,
heavy-duty centrifugal
pump

Reduced
installation time

Industry-proven
permeate vane pump

Expansion
capabilities from
440 to 880 GPD

Functions of Key Water Treatment Components

RO Module

- The heart of the treatment system
- Typically removes 90.7% of TDS from feedwater.

Pre-Filter: Particulate and Carbon

- Captures dirt and sediment from feedwater and protects the RO module from chlorine
- Reduces tastes, odors, dirt and sediment.

Optional Water Softener

- Reduces hardness and significantly improves the RO module's life and system recovery.

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NEW Pentair Everpure CES-9100TS E-30C Twin Sensor Water Softener (Optional)

For enhanced performance and extended RO membrane life

- Connects to and communicates information with the Everpure Conserv HE-3.

- Low-salt warning triggered when softener experiences poor or incomplete regeneration.

- Power/disconnected alert:
  - When the softener is disconnected from the Everpure Conserv HE-3.
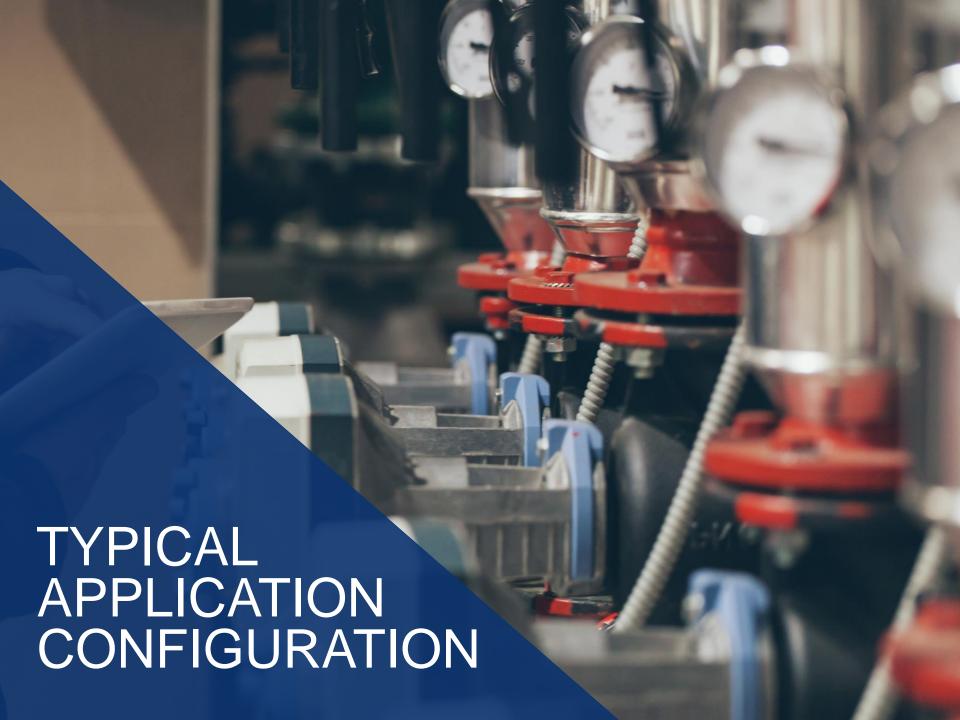 - When the softener is turned off or unplugged.

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Optional Pentair Endurance TKO Pretreatment Microfilter
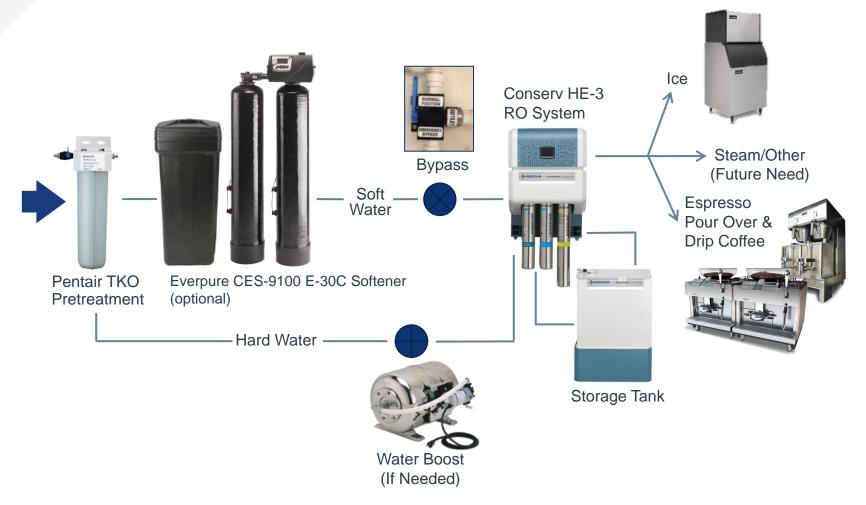
Extra protection against particulates

- Extends the life of primary particulate filter

- Delivers 0.65-micron nominal filtration of dirt and rust particles

- 12 times the surface area compared to a typical 20-inch slim, spunbond-type prefilter

- Good addition in high-sediment areas

- Protects hot water heater and other appliances from fine particles

TYPICAL
APPLICATION
CONFIGURATION

Typical Multiple Point of Use Application Configuration

Ice

Conserv HE-3 RO System

Bypass

Steam/Other (Future Need)

Espresso Pour Over & Drip Coffee

Soft Water

Pentair TKO Pretreatment

Everpure CES-9100 E-30C Softener (optional)

Hard Water

Storage Tank

Water Boost (If Needed)

THE VALUE
CONSERV HE-3
DELIVERS

The Value the System Delivers

The Everpure Conserv HE-3 lowers the cost of ownership for foodservice companies in a variety of ways, helping to improve the bottom line.

- One central system to deliver water for multiple foodservice applications.
  - No need for point-of-use filtration for every application

- Remote monitoring provides visibility to system performance, allowing for proactive vs. reactive system maintenance.

- The capacity of the system can easily be increased.

The Value the System Delivers- Cont.

- The high-efficiency RO membrane provides 74% efficiency, meaning less water to waste.

- The system is configurable to specific incoming water quality conditions regardless of where the installation or application is situated.

- Water "blending" allows users to set a certain mineral concentration for optimum equipment protection and specific water profiles.

- The atmospheric tank and new pump extend the lifespan of the system.

COMPETITIVE
ADVANTAGES

Key Competitive Advantages

- Remote monitoring capability is currently only available with Everpure Conserv HE-3.

- Storage tank included in price of system.

- Expandable production capacity.

- Bacteriostatic pretreatment inhibits bacterial growth in filters, which is something not seen in other systems.

- Robust third-party certification, including NSF Standards 58, 53 and 42 and UL.

Learn More

- Since 1933, Pentair Everpure has been one of the most recognized global brands among foodservice operators and facilities managers.

- Among the most trusted brands by those who serve the foodservice industry, from consultants and dealers to service providers and original water-using equipment manufacturers.

- Pentair Everpure's expansive portfolio of technologies and products is designed to be right-sized to deliver the exact water quality specifications needed by an operator's ingredient and process water requirements.

For more information about the Everpure Conserv HE-3 Reverse Osmosis System, contact your Pentair Representative.

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