



# BRS3 BACTERIAL REDUCTION SYSTEM

**Not Just A System, It's The Solution**  
The Ultimate In Brine Treatment & Conditioning

**Central System  
for Multiple  
Injector  
Applications  
(Refrigerated)**

## Technologically Advanced Fluid Treatment Methods for the Meat, Poultry and Other Related Processing Industries

**Filtration • Deposit Control Technology • UV Disinfection & Purification  
COMBINED FOR MAXIMUM EFFECTIVENESS**

### ***"THE COMPETITIVE EDGE"***

*The following features make the BRS/3 particularly effective in treating brine:*

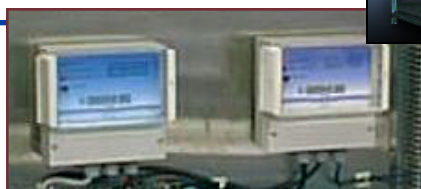
*The BRS/3 bacterial reduction system combines several technologies to achieve a very high bacterial kill rate, at least 3 logs for common contaminants.*

**FILTERING:** The BRS/3 provides four-stage filtering. This helps clarify the brine. The cleaner the brine, the more effective the treatment systems will be.

**DEPOSIT CONTROL:** Decalcifies water, making it "wetter". Less chance of mineral build-up in system and on UV lamps.

#### **DUAL QUATTRA 50 UV STATIONS:**

The double Quattra 4 lamps stations will achieve a 3 log reduction on a single pass. The lamps have pneumatic wipers to keep them clean. The system is designed for a double pass on all brine. A proprietary reaction chamber design allows for maximum exposure of the brine to the UV light during the treatment process, yielding better bacterial kill.



#### **MULTI PASS SYSTEM:**

This system will provide at least two passes through the double Quattra stations. The system will achieve a three log reduction on a single pass. Only treated brine is delivered to the injection systems.

#### **REFRIGERATED RESERVOIR TANKS:**

Accumulation tanks before and after treatment system allow you to create batches of untreated and treated brine in separate vessels. This allows all brine to be treated twice as a batch..

**CENTRAL SYSTEM:** This system is designed to treat up to 3000 gallons of brine per hour. This can feed up to 4 injection lines for fresh marination.



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**Filtration, Patented TWT® Deposit Control, Ultraviolet  
Disinfection & Purification / Bacterial Reduction System**



- **The systems process is guaranteed to achieve a minimum three (3) log reduction for common bacterial contaminants. The recirculating ability of the systems will guarantee an enhanced kill rate.**
  - **Multiple technologies, including Filtration, TWT Patented Deposit Control Technology, Ultraviolet Disinfection & Purification, are combined for maximum effectiveness.**
  - **High capacity system: able to treat up to 3000 gallons of brine per hour**
  - **All brine, both incoming and recirculated, is passed through the system assuring only “treated” brine is injected into the meat/poultry.**
  - **The bacterial reduction system is ruggedly constructed for exceptional performance. The rugged self-contained design of this system ensures that the system will enjoy a long and reliable life cycle when properly cared for.**
  - **Easy to follow care, maintenance & operational manual. Other basic informational labels are affixed to the system (system requires minimal maintenance).**
  - **The B-R-S system guarantees a reduced bacterial load in the brine solution; this ensures a cleaner, safer product for processing & consumption**
  - **Self Contained Unit**
  - **Enhance Food Safety Efforts by Controlling Pathogens and Spoilage Organisms Which May Enter Brine**
  - **Enhance Shelf Life**
  - **High Quality Final Output**
  - **No Chemicals Used**
  - **Environmentally Friendly**
  - **Insures That Safe Products are Delivered to Consumers**
  - **Cost Effective and Pays for Itself**
- \$2.7 Billion, the cost of  
E.Coli 0157:H7**

**Recalls:**  
Meat & Poultry Journal  
Feb 2003

**Rising Insurance Costs:**  
Meat & Poultry Journal  
March 2003

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## Not Just A System, It's The Solution



**Wyckomar**  
UV PURIFICATION SYSTEMS



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# BRS/3 Factory Assembled & Enclosed Unit Able To Treat Up To 3000 Gallons Per Hour

This fluid management system is a self-contained unit for the treatment & conditioning of water/brine

## Process Overview: Basic Systems Operation / System Detail

This system utilizes Filtration, TWT Deposit Control Technology, and Ultraviolet Disinfection & Purification for the treatment, conditioning and reduction of bacteria in water/brine. The system is designed to integrate with existing treatment processes and equipment configurations.

### Stage 1 Treatment:

Integrated treatment tank: Ammonia or Glycol-Jacketed 100 gallon capacity. ASME certified.

The fluid will first flow through the stage one treatment tank and then through the TWT reaction chamber, enhancing the operation of all downstream treatment processes. The solution will then pass through a 4-stage filtration process to remove the oxidized materials. Cleanable, reusable 250/100 micron stainless steel mesh filters are used to help keep operation costs to a minimum, and providing a simple, efficient and rapid cleanout process. If fluid conditions require the trapping of even smaller micronic particles, filter bags for ST/ST tanks are available in various micronic sizes, providing flexibility & adaptability to meet the needs of all fluid conditions & applications. Stage 1 will accomplish primary filtration of the fluid stream and result in a more clear fluid to be processed in stage 2.

### Stage 2 Treatment:

The system will process the stage 1 treated fluid through the TWT 2nd reaction chamber, (within the deposit control system), then through the two (2) Quattra 50 UV systems to provide disinfection and purification to the fluid stream.

### Stage 3 Treatment:

The treated and conditioned fluid will then be recirculated (a minimum of two times) through the system further to achieve and guarantee enhanced kill rates. Then the disinfected solution will go through a third reaction chamber (within the deposit control system), and then transfer to the 2nd holding tank (100 gallon Ammonia-Jacketed Distribution Tank), which returns the treated brine to the injectors. Providing end-to-end treatment and conditioning.

### Filtration:

Filters are designed to trap various kinds of debris, dirt, and other similar particles that will otherwise enter your equipment and/or plumbing system, restrict fluid flow and create a breeding ground for bacteria. The first step in achieving clean, clear fluid is to install a filtration system that effectively removes particulate matter and similar debris. Filtration is the first line of defense and an important step in the treatment of water/brine solution. Filters used in staged filter housings are configured as illustrated. If fluid conditions require smaller micronic particle trapping for enhanced results, mesh filters for the housings are available in various micronic sizes (providing flexibility & adaptability to meet the needs of all fluid conditions & applications).

### TWT Patented Deposit Control Technology:

The basic component in the TWT systems is the deposit controller. **The system is comprised of a microprocessor, and solenoid coil wrap reaction chamber.** The microprocessor is a patented controller that functions like a computer to relay a continuous electrical power supply to the solenoid coil reaction chamber. The reaction chamber is plumbed into the fluid line just before each piece of vital processing equipment, and provides a factory-wrapped wire coil forming a solenoid. The solenoid conveys the triangular wave signal at the appropriate

power level (as allowed by the model chosen) to the fluid passing through the chamber. This signal constantly changes the polarity, frequency, and amplitude of the current entering the fluid. This triangular wave treatment produces several benefits. **It increases the capability of the fluid to hydrate scale ions and other colloidal particles.** In effect, the surface charge of the hydrogen molecules is enhanced and the fluid is made "wetter". This "hydrated" fluid can dissolve unwanted particles, suspend them in solution, and allow them to be easily filtered out or flushed from the system. Accordingly, the mineral and biological particles that cause scale, deposits, and corrosion are dissolved and washed away.

This means that the breeding environments for bacteria, such as biofilm and corrosion, are eliminated. The agitation created in the reaction chamber also disrupts the conditions essential for the normal reproduction of bacteria and they die. **If left untreated, scale build-up inside the reaction chamber and on the quartz sleeve containing the UV lamps may rapidly diminish the UV disinfection effectiveness by reducing the amount of UV light which is absorbed into the fluid stream.** The TWT Deposit Control System will further condition the treated fluid stream so as to prevent this scale-build-up inside the UV reaction chamber, helping to maintain maximum UV life cycle and penetration into the fluid stream.

### Ultra Violet Disinfection

**The UV disinfection technology is used in the system to provide safe fluids, free of disease-causing pathogens.** As fluids pass through the UV chambers, UV light will attack and render harmless any bacterial, viral or spore contamination present in the treated fluid. High intensity UV light destroys these contaminants. The output fluid is thus disinfected and offers exceptionally high quality fluid for processing. The Quattra 50UV has an integrated pneumatic wiper system to maintain lamp efficiency, and a proprietary UV reaction chamber designed to increase the dwell time inside the chambers. The system is engineered and designed to provide a very high UV dose via extended dwell time at multiple flow rates.

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### Product TWT-BRS/3

**Utilities:** L: 144" W: 76" H: 85"

**Weight:** Appox. 0000 lbs.

**ELEC:** 3 Phase 460 Vac. 30 Amps • 1 Phase 120 Volts 20 Amps

**Air:** 1/4" 100 PSI 10 CFM

**Warranty:** 1 year parts and labor for defective parts or workmanship on mechanical components – 90 days for electrical components

**Delivery:** 12-14 weeks (after clarification of all technical details)

**Price \$** \_\_\_\_\_ – Does not include piping to and from injectors nor integration of injectors to piping including pumps, floats, valves etc. Includes installation supervision and training

**FOB:** South Plainfield, NJ USA or Company Warehouse

**Payment Terms:** 50% with purchase order, 40% on delivery, 10% thirty (30) days after delivery

*Note: We recommend that an initial supply of replacement products e.g., replacement filters, UV lamps etc. be stored at owners facility at all times, that will insure uninterrupted service and treatment.*

*Installation: Must have enough room on all sides for filter and UV replacement & maintenance*

*Pumps, piping, fittings, valves, and other material needed to and from system owners responsibility*