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## Engineered Water Systems

- Manufacturer and Distributor
- Solutions for Corrosive and High Purity Fluid Handling Applications
- In-House Engineering, CAD, and PLC Programming Services
- UL508a Control Panel Fabrications
- Thermoplastic and Metal Fabrications
- Turnkey Product Solutions
- Complete Field Services & Preventive Maintenance



# BurtProcess Equipment

## Company Overview

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Founded in 1970 Burt Process Equipment is a worldwide leader in the design, manufacturing, and distribution of high purity and corrosion resistant equipment, systems and services. BPE provides proven solutions for many industries including the life science, semiconductor, chemical processing, institutional, and academic markets.



## Products

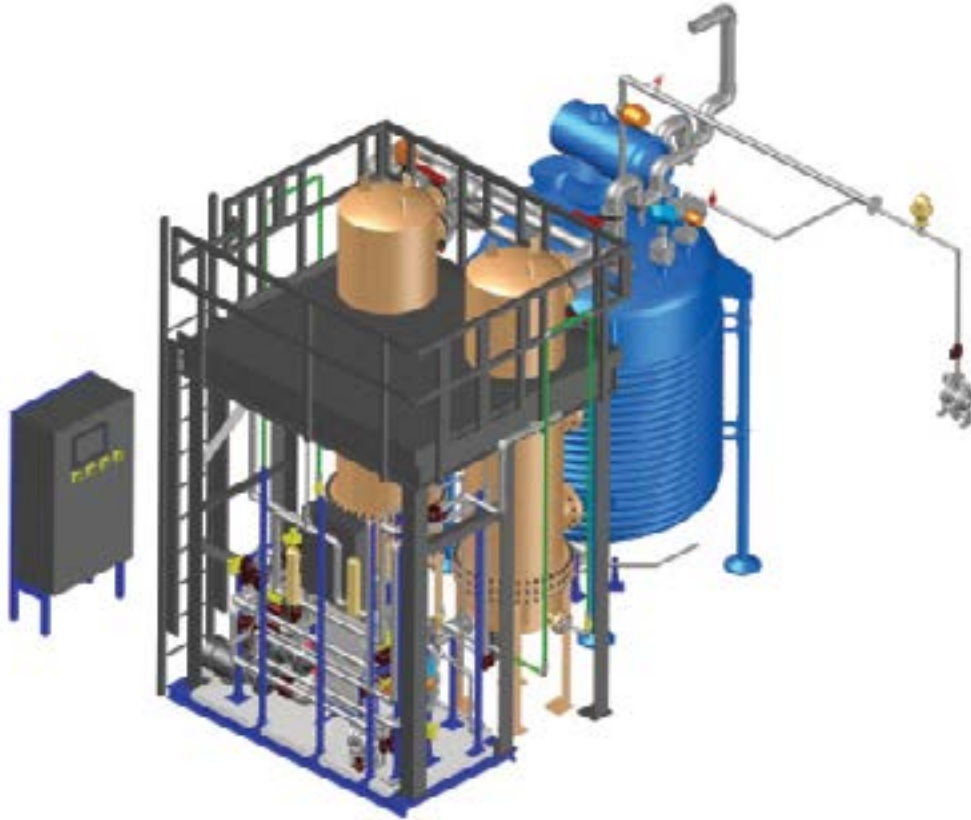
- pH Neutralization Systems
- Wastewater Treatment
- Filtration Equipment
- High Purity Water Generation Equipment
- Rainwater Reclamation Systems
- Custom Plastic and Stainless Steel Fabrications
- UL Listed Custom Control Panels
- Chemical Feed Systems
- Wet Process Benches
- Pump Lift Stations
- Tanks and Mixers
- Process Instrumentation and Controls

## Services

- System Engineering & Design
- Skid Mounted Equipment
- Turnkey Installations and Upgrades
- Controls Integration
- Start-up, Testing, Training
- Documentation
- Maintenance & Technical Support
- Instrumentation Calibration
- Pump Equipment Repair
- Transportation & Rigging



# Engineering and Design Capabilities



## Engineering and Design Capabilities

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Burt Process Equipment takes a hands-on approach with our clients in developing proven industrial systems. Our highly qualified staff includes mechanical, chemical, and electrical engineers as well as project managers, programmers and CAD designers to offer complete engineering and development services. We offer turnkey assistance from the first call, where our application and design engineers work with you to develop specifications and solutions specifically designed for your needs. Customized equipment is our specialty and our engineers work with our clients every step of the way, providing:

- Preliminary Site Reviews
- Process Design
- Specification Writing
- CAD Drawings Including 3-D System Design
- Project Management
- Complete Mechanical Design
- Electrical Designs to Meet UL and NFPA Standards
- Software Development in Both PLC and PC Platforms
- Complete FAT and SAT Testing

# pH Neutralization Systems

## PHX pH Plus

Burt Process Equipment's pH Plus Family of advanced pH adjustment modules and systems represent the industries' best and most complete line of pH monitoring and controlling equipment. The pH Plus Series is the result of forty-three years of experience and engineering development in the field of industrial wastewater treatment.

### System Features

- PLC/HMI Control for Setpoints and Status
- Customer Specified PLC/HMI Capabilities
- Optional UL508A Listed Controls

### System Features

- PHX Single Reagent Systems
- Flow Monitoring Equipment
- Batch Collection Tanks
- Pump Transfer Stations
- Liquid Level Controllers
- Secondary Containment



## ACS Assured Compliance

The Assured Compliance System (ACS) treats continuous flow streams employing hybrid batch technology developed by Burt Process Equipment, the leader in pH neutralization systems for over forty-three years.

Unlike typical continuous flow systems, the ACS provides assurance of a properly treated waste stream through the use of freeboard and flow diversion should an out of range pH condition occur.

### System Features

- Flow Rate of Up to 300 GPM and a pH of 1-14
- Assured Compliance Control Technology
- Passive Equalization Chamber
- Multi-Chamber Treatment Tank
- Heavy-Duty Gear Mixer
- Recirculation Loop Reagent Injection
- Recirculation Loop Flow Fault Detection
- Easily Maintained Wet-Tap with Self-Cleaning pH Probe
- High Efficiency Proportional Metering Pumps
- Large Out of Spec Retention Volume



### Available Options

- Single or Dual Stage Treatment
- Additional Diversion Storage Tanks
- Pump Transfer Lift Stations
- Instantaneous & Total Flow Monitors
- Effluent Temperature Monitor
- Redundant pH Probes
- Passive Tank pH Adjustment
- Full Range of Analytical Monitors
- PLC Control Packages
- Effluent Sampling Systems
- HMI/SCADA Interface
- Touch Screen Monitors and Controls
- Bulk Reagent Transfer Systems



# RODI High Purity Water

## RODI High Purity Water

The Pure Plus family of ultra-pure water systems represents the industry's most complete line of generation and distribution equipment as skid-mounted modules. The Pure Plus line is a result of forty-three years of evolution and Burt Process Equipment's expertise in the application of state of the art equipment and materials for high purity and chemical applications. Water generation grades include USP, Electronic, ASTM/NCCLS/CAP Lab, and more.

We have successfully installed RODI water systems in the following markets:

- Pharmaceutical Manufacturers
- Life Science Research Facilities
- Bio-medical and Clinical Laboratories
- Semiconductor Fabrication Plants
- Printed Circuit Board Manufacturers
- Food and Beverage Processing
- Metal Finishing Industry
- Hospitals and Institutions
- Educational Facilities
- Power Generation Plants

- Fusion Welded and Sanitary Polypropylene and PVDF Piping
- High Pressure Stainless Steel Reverse Osmosis Pressure Vessels with Performance Membranes
- Pharmaceutical and Electronics Grade Filter Elements
- Pretreatment Water Softening and Carbon Treatment
- PLC Based Controls with Optional Web Interface
- Proprietary Ultrapure Storage Vessel
- Continuous Storage Tank Level Measurement
- Precision Controlled Nitrogen Tank Blanketing for 18.3 Mohm Applications
- Ultraviolet Bacteria and TOC Reduction
- Low Resistivity Alarm/Diverter Valve
- Ethernet and Modem Options for Remote Access



# RainEx Rainwater Reclamation



## RainEx Rainwater Reclamation

Burt Process Equipment's RainEx product line is a key component in achieving Green building status through LEED certification. The result of over forty-three years of fluid handling and engineered systems experience the RainEx line of reclamation systems provides prepackaged solutions for rainwater recycling. Combining skid mounted tanks, pumps, filtration, sanitization, and electrical controls, the RainEx series gives customers a complete treatment package for use in recycled applications for irrigation, flushing fixtures, and cooling tower make-up.

## System Features

- Prepackaged and Factory Tested Design for Reduced Installation Costs
- High Quality Piping and Valves to Meet Local Plumbing Codes
- Stainless Steel or PVC Filtration Systems
- Sanitization via Ultraviolet or Chemical Injection for Flushing Fixture Use
- Touch Screen and PLC Automatic Controls for Ease of Use
- Pigmented Storage Tanks to Minimize Bacterial Growth
- Optional Dye Injection for Flushing Fixtures
- Optional In-line pH Adjustment
- On Site Start-Up and Training by a Factory Trained Field Service Technician

RainEx systems are meeting the **GREEN** needs of:

- Schools and Universities
- Office Buildings
- Hotels
- Data Centers
- Government Facilities
- Industrial Plants



Engineered and supported by  
ARCSA accredited professionals.



# Control Panels and Lift Stations



## Control Panels

In 2002, Burt Process Equipment, Inc. received our UL 508A certification from Underwriters Laboratories. The UL 508A Standard is used to evaluate Enclosed Industrial Control Panels and certifies that the components and construction comply with the applicable NEC, ANSI/NFPA 70 guidelines. The certification ensures that a panel marked with the UL label is built with UL listed or UL recognized components and that the construction is compliant with the type requirement for the enclosure.

## System Features

- NEMA Enclosures
- High Quality Components
- Audible/Visual Alarms
- Main Panel Power Switch and Indicating Light
- IEC or NEMA Motor Starters
- Ethernet and Modem Options for Remote Access
- PLC Based Control with Optional Web Interface
- Equipment Running Lights and Operators

## Pump Lift Stations

The Classic Series of pump lift stations is designed for applications where gravity drainage is not an option. Standard motors are TEFC, 115/230VAC, 50/60 Hz, single phase. Three phase and hazardous duty motors are also available. Standard models are available with flows to 100 gpm and pressures up to 80 ft TDH.

A customized unit can easily be built to meet your individual needs. Tanks are offered in various materials including PP, HDPE, PVC, CPVC, PVDF, FRP and stainless steel. Available pump styles are vertical, horizontal, centrifugal, gear, magnetic drive, grinder and self-priming in electric or air operated configurations.

Each unit includes a tank with a bolt-down cover with welded FNPT inlet and outlet fittings. Pre-mounted pump(s) include CPVC suction and discharge piping and a true union ball check valve.

Pump operation is automatically controlled via a Burt Process Equipment LSF float level control for automatic pump down operation. The NEMA 4X level control housing is factory wired to the pump using non-metallic flexible conduit and connectors.



# Field Service & Technical Support



## Field Services

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- Instrumentation & Component Calibration
- PLC and PC Controls Programming
- Installation and Start-Up
- Customized User Training
- Equipment/System Troubleshooting
- Instrumentation Upgrades
- Programming Updates
- Preventive Maintenance Services
- On-Site Equipment Performance Evaluations

Working closely with customers, our highly trained engineers will review your requirements and offer a treatment technology specifically tailored to meet your needs. From start to finish Burt Process Equipment can provide feasibility studies, system design, fabrication, installation, start-up, training, and service.

## Installation

Our factory trained installation teams offer turnkey installation services for all of our equipment. Having installers familiar with the equipment keeps projects on schedule and within budget. We utilize state of the art welding and fabrication equipment allowing us to also field fabricate and install systems in areas where limited access had previously prohibited equipment upgrades and expansion.

## Start-Up

Field start-up is included with each of our systems and provides a thorough check of all mechanical and electrical connections including any field re-assembly of modularized systems. This service ensures a smooth turnover to the owner and a speedy commissioning process. Our team also facilitates integration with other equipment along with BMS (Building Management System) and network tie-ins.

## Training

Successful equipment operation stems from experience and training. With all new equipment engineers, operators, and maintenance technicians will be trained to understand and address the theory of operation, maintenance, and troubleshooting aspects of equipment. Training is conducted on-site and can be digitally recorded for use as a refresher course or for new employees.





# Manufacturer's Index

**+GF+ SIGNET**  
GEORGE FISCHER +GF+ Piping Systems



**HAYWARD**  
Hayward Industrial Products, Inc.



**MAGNATEX**  
Pumps, Inc.

**PRICE PUMP**

**PLAST-O-MATIC**



**Colder Products Company**  
Quality Engineering & Filtration for Plastic Tubing



## Pumps

Alfa Laval  
 AMT  
 Ansimag  
 ARO  
 Berkeley  
 Blue White  
 Ebara  
 Eastern  
 Eclipse  
 ECO  
 Finish Thompson  
 Fluid-O-Tech  
 Flux  
 GRI  
 Grundfos  
 Ismatec  
 Isochem  
 Liberty Process  
 Lutz  
 LMI  
 March  
 Magnatex  
 Masterflex  
 Micropump  
 Myers  
 Netzsch  
 Oberdorfer  
 Omni  
 Pacer  
 Ponndorf  
 Price  
 Pulsafeeder  
 Pulsatron  
 Sotera Systems  
 Sundyne  
 Webster  
 Wilden  
 Yamada

## Motors/VFD

Baldor  
 Weg  
 AC Tech  
 Emotron

## Tanks

Burt Process Equipment  
 Chem-Tainer  
 Nalgene  
 Norwesco  
 Peabody Engineering  
 Saint Gobain

## Instrumentation

Blue White  
 Dwyer  
 Flowline  
 Signet

## Tubing, Hose & Fittings

Colder  
 Finger Lakes  
 Masterflex  
 Ponndorf  
 Rubber Fab  
 Saint Gobain  
 Tygon  
 TBL

## Pipe, Valves & Fittings

Alfa Laval  
 Asahi  
 Georg Fischer  
 Griffco  
 Hayward  
 Plast-O-Matic  
 Sanitech  
 Simtech

## Specialty Products

ChemPlus  
 Chemical Feed Systems  
 EMI Mixers  
 Lightnin Mixers  
 Fusion Mixers  
 PolymerPlus  
 Polymer Feed Systems  
 Process Technology Heaters  
 Blacoh Pulsation Dampeners

Custom Systems by Burt Process Equipment



**FLOWLINE**

**MICROPUMP**  
A UNIT OF IDEX CORPORATION

**Isochem**

**MARCH**  
**PUMPS**



**NETZSCH**

**Fluid-o-Tech**  
PUMP TECHNOLOGY AT ITS BEST

**PEABODY**  
ENGINEERING

**CHEM-TAINER**  
INDUSTRIES, INC.

**PULSAFEEDER**  
A UNIT OF IDEX CORPORATION

**MASTERFLEX**

**Lutz**  
The Fluid Managers

**FTI**  
FINISH THOMPSON INC.

# System Examples

## Semiconductor Manufacturer

**Application:** Waste Solvent Collection and Transfer

**Details:**

The system accepts waste solvent from a manufacturing process and pumps it automatically based upon level to a waste treatment system.

The system is a completely automated system and provides a double contained collection system inside a sealed enclosure.

**The Unit Features:**

- Air operated transfer pumps and valves suitable for hazardous environment
- Intrinsically safe instrumentation for system control
- Integral vent and flame arrester suitable for solvent vapors

**Collection:**

55 gallon dual 316 stainless steel drums

**Instrumentation:**

Intrinsically safe guided wave radar and point level switches for pump control, alarms, and leak detection in secondary containment.

**Use:**

Collection and transfer of solvent waste where gravity drainage cannot be utilized



## Pharmaceutical

**Application:** pH Adjustment System for Cooling Plant Blowdown

**Details:**

The system accepts wastewater from a pharmaceutical plant on a 24/7 basis. The waste is basic in nature due to the cooling chemistry added. The system treats flow rates varying from 100 gpm to 400 gpm and is fully redundant to allow for uninterrupted service.

**The Unit Features:**

- Fully redundant treatment trains including controls for uninterrupted service
- Double wall tanks for system safety and containment
- Redundant effluent shutdown and batch control in the event of an out of specification waste condition
- Control system historian tied into the building network for complete remote system control as well as remote data recording

**Treatment Tanks:**

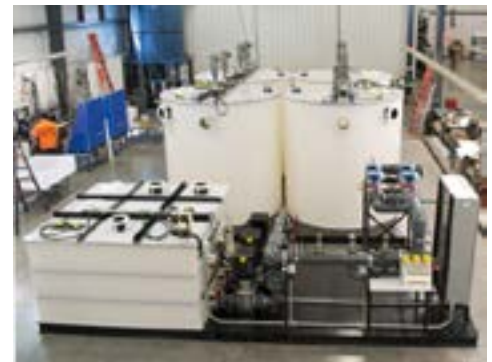
[4] 2500 gallon double contained fully redundant treatment tanks

**Instrumentation:**

Redundant pH, temperature and level sensors in each treatment tank with instrumentation fault alarms. Effluent includes redundant flow sensors and redundant waste samplers for municipal discharge verification.

**Use:**

Pharmaceutical Wastewater Treatment



## Semiconductor Research Lab

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**Application:** ASTM E-1 High Purity Water Generation and Delivery System

**Details:**

The High Purity water treatment system is designed to provide deionized (DI) water at a rate of up to 15 gpm to a DI water storage tank utilizing dual redundant pre-treatment trains. The DI storage supplies purified water to three points of use: 15 gpm make-up DI supply to clean rooms, 90 gpm make-up DI supply to testing areas, and 25 gpm DI loop supply to laboratories.

**The Unit Features:**

- Redundant pre-treatment train
- Dual pass Reverse Osmosis
- Pre-treatment EDI
- Pre-treatment 254 nm UV treatment
- Service exchange DI resin bottles
- 185 nm UV treatment
- 0.2 micron absolute final filtration
- Reverse Osmosis Reclamation System

**Collection Tank:**

1500 gallon welded heavy-duty polypropylene storage vessel with nitrogen blanketing

**Instrumentation:**

Complete control package interface to PLC including storage tank pressure level transmitter, % rejection monitor on RO modules, conductivity loop monitoring, UV bulb status, loop feed TOC monitoring, loop flow feed monitoring and variable speed control for distribution pumps.

**Use:**

ASTM E-1 for Electronics Research Laboratories



## Data Center

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**Application:** Reclaimed Water System for Data Center Cooling Plant Make-Up

**Details:**

The systems are designed to reclaim water from multiple sources to offset the large cooling demand of the data center. These include rainwater, ground water and non-potable city water source. Each system is designed to treat its unique water source.

**The Unit Features:**

- Water Filtration to 40 micron utilizing reclaim water back-washable filters
- Pneumatically controlled self-cleaning ultraviolet (UV) lights for water disinfection
- Fully redundant reclaim transfer and distribution pumps
- PLC controlled for integration and communication into the Data Center Control System
- Secondary design features for potable water make-up by the system as needed

**Critical System Components:**

- Redundant 316 SS transfer pumps
- 316 SS UV with pneumatically controlled wiper and intensity monitors
- Low flow back-washable filters that can stay in operation while back flushing is occurring

**Use:**

Data Center Cooling Water Make-Up





## Corporate Headquarters

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