

# **BAYPORT**

**TECHNICAL**



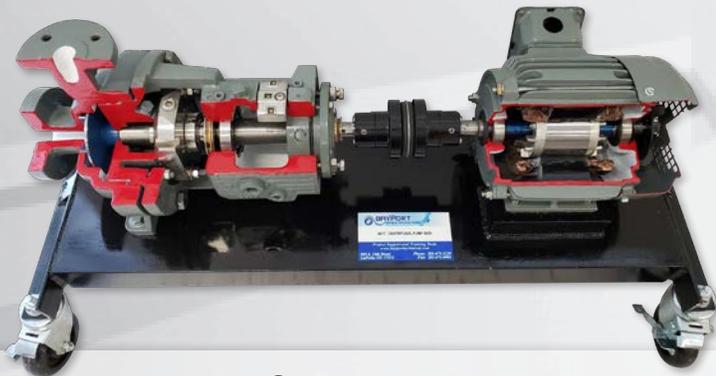
Located in the heart of the refining and chemical processing center of the world – along the U.S. Gulf Coast in La Porte, Texas – Bayport Technical has a fully-equipped research and manufacturing center that produces industry-relevant learning resources used worldwide.

We are committed to providing our clients innovative products, customized services, and advanced skills development resources. Our solutions include the following learning topics:

- Electro-Mechanical
- Instrumentation & Maintenance
- Fluids
- Heat Transfer
- Instrumentation & Process Control
- Oil & Gas
- Unit Operations

## Working Demonstrators

Offers learners realistic, first-hand visualization into the inner-workings of industrial components and systems.



## Cutaways

Allows students to see and identify a component's internal features. They may be taken apart and reassembled for further skill development.



## Models

Detailed, to-scale training aids that depict various industrial machines based on common equipment by industry leaders.

## Hands-On Learning Systems

Bayport makes a wide variety of hands-on learning resources to effectively prepare individuals for real world jobs. Resources include: Working Demonstrators, Trainers, Cutaways, and Models.



## Basic & Advanced Trainers

Hands-on systems designed to give students real-world experience working on full-sized, industrial components like they will encounter on-the-job.



## Custom Work

Can't find exactly what you need? Let us help! Bayport Technical offers customized services to produce unique, one-of-a-kind learning devices.





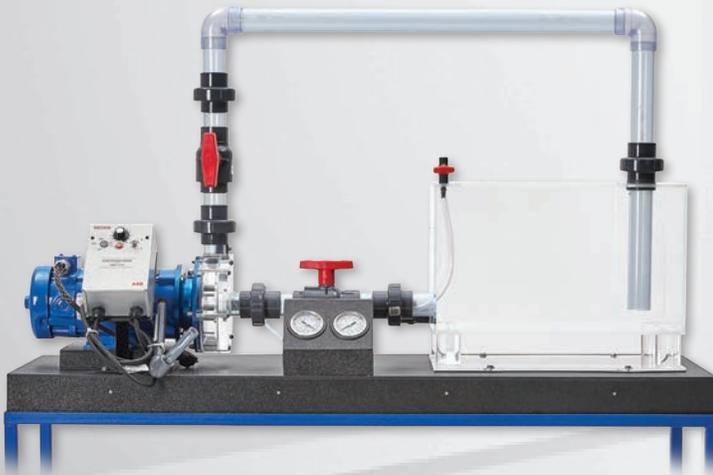
#### **Vacuum Working Demonstrator (102-VT)**

Vividly demonstrates the phase change effects of atmospheric pressure variations on fluids and gasses. The vacuum demonstrator features a domed vacuum chamber, vacuum pump, and a vacuum gauge.



#### **Cooling Tower Working Demonstrator (142-CT2)**

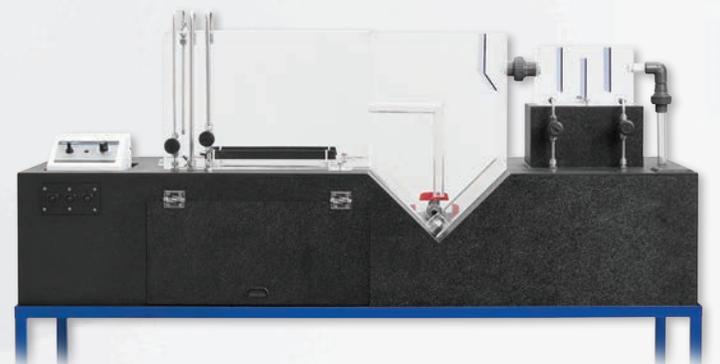
This tabletop working model allows a full view of the water flow through the tower and includes an induction fan, heater, circulation pump, mist maker, gauges and a tank. It produces a temperature gradient, just like a full-scale unit.



#### **Pump Working Demonstrator (102-PDTM2)**

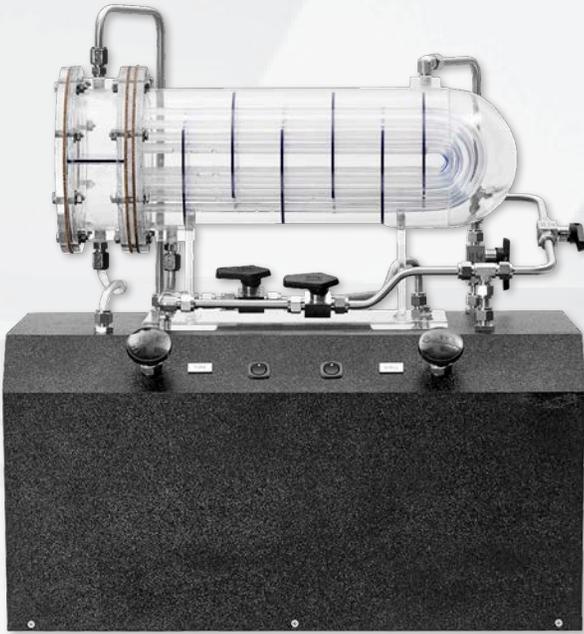
The Pump Working Demonstrator trains operators on the operation of centrifugal pump systems. It includes a see-through reservoir and volute, a DC motor, and vacuum/pressure gauges for real-world training.

*Also available as Custom Dual-Pump Working Demonstrator (102-PDTM2C)*



#### **Waste Water Working Demonstrator (102-WWT)**

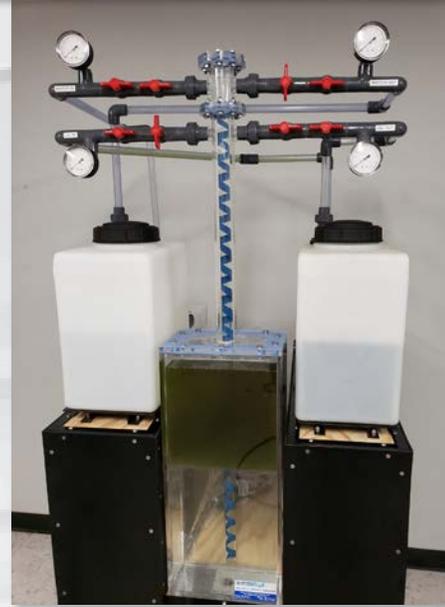
Provides a first-hand look at the workings and various methods of modern waste water treatment, including aeration and sediment separation.



**Tabletop Heat Exchanger Circulation Trainer (110-HECT1)**

The Tabletop Heat Exchanger Circulation Trainer (110-HECT1) is a hands-on circulation system aimed at improving student understanding of heat transfer and heat exchanger operation.

*Also available in U-Tube Heat Exchanger Circulation Trainer with Backwash (110-HECT2)*



**Acrylic Storage Well Demonstrator (142-ASWD)**

## Fluids & Heat Transfer

Bayport Technical's **Fluids & Heat Transfer** learning resources offer students realistic, first-hand visualization of the installation, operation, and maintenance of centrifugal pumps and heat transfer components.



**Distillation Trays Model (135-TRAY2)**



**Vertical Thermosyphon Reboiler Model (115-VTR)**



**Multi Port Plate Exchanger Model (115-MPPE)**



**Kettle Type Reboiler Floating Head Model (115-KRFH)**



**Multi Pass Floating Head Model (115-MPFH)**

### Other Available Models:

- Fixed Tube Sheet Multi-Pass Model (115-FSMP)
- Fixed Tube Sheet Single Pass Model (115-FSSP)
- U-Tube Type Model (115-UTB)

# Instrumentation & Process Control

**Instrumentation & Process Control** is a vital part of many major industries and involves monitoring and controlling processes involving fluids and gasses across most industry sectors.



## Custom Process Trainer with Remote Supervision (120-CPT)

The **Custom Process Trainer** is a hands-on training unit built to duplicate real-world operating equipment for process operators and maintenance technicians. The versatile trainer, which consists of multiple loops, is integrated into a compact, effective unit to properly and safely train personnel in the process industry.

The CPT Process Trainer is capable of a minimum of more than 38 specific educational and troubleshooting functions, including piping, valves, flow/level, pressure, and more. The system includes four loops controlling:

- Level Control Loop
- Pressure Control Loop
- Flow Control Loop
- Temperature Control Loop

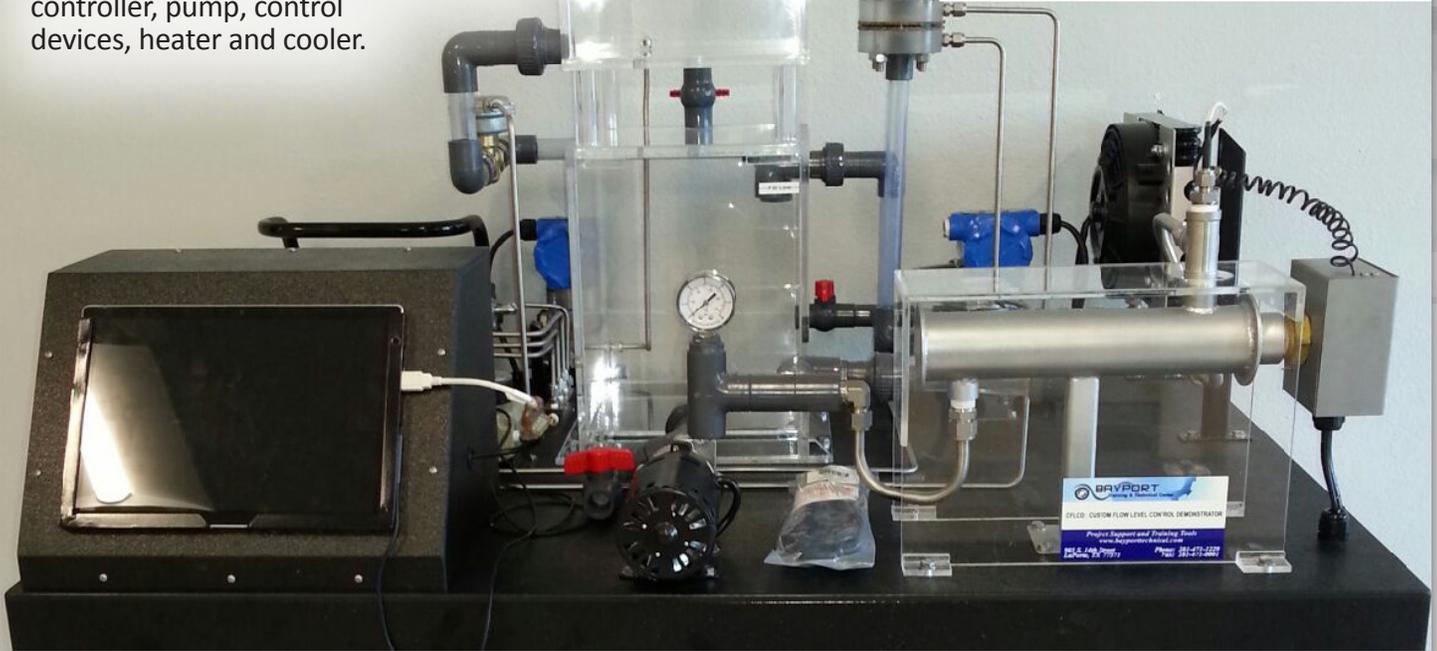
The **PLC with Wireless Touch Screen Interface** allows instructors the ability to program different functions from any area of the room. Fully integrated with all control loop functions, it is programmed to operate the system, as well as provide cascading abilities between various loops. It can also provide supervisory interlock functions.

### Key Features:

- **Pumps** – Features two ANSI process pumps mounted in parallel
- **Tanks & Piping** – Equipped with two stainless steel tanks and interconnecting piping to minimize corrosion
- **Level Control** – Outfitted with a level control loop, controlling the level in the top reservoir
- **Pressure Control** – Furnished with a pressure control loop
- **Flow Control** – Includes an orifice flow control loop, controlling the overhead tank
- **Temperature Control** – Provided system/loop consists of a side stream, which flows through a fixed wattage heater. For safety, the heating unit includes a high temperature shutdown and over-pressure relief valve.

### Custom Flow Level Control Trainer (120-CFLCD)

The Custom Flow Level Control Trainer (120-CFLCD) demonstrates various fluid flow properties, allowing hands-on learning in the control of common industrial processes. The unit includes multiple loops, programmable controller, pump, control devices, heater and cooler.



### Instrumentation Process Trainer (120-IPT)

The Instrumentation Process Trainer (120-IPT) duplicates real-world operating equipment for process operators and instrument technicians.

### Additional Instrumentation & Process Control Trainers:

Basic Process Trainer (120-BPT) provides introductory hands-on training for future process operators and maintenance technicians



**Distillation Tower Working Demonstrator w/ Reboiler (132-DTT5)**

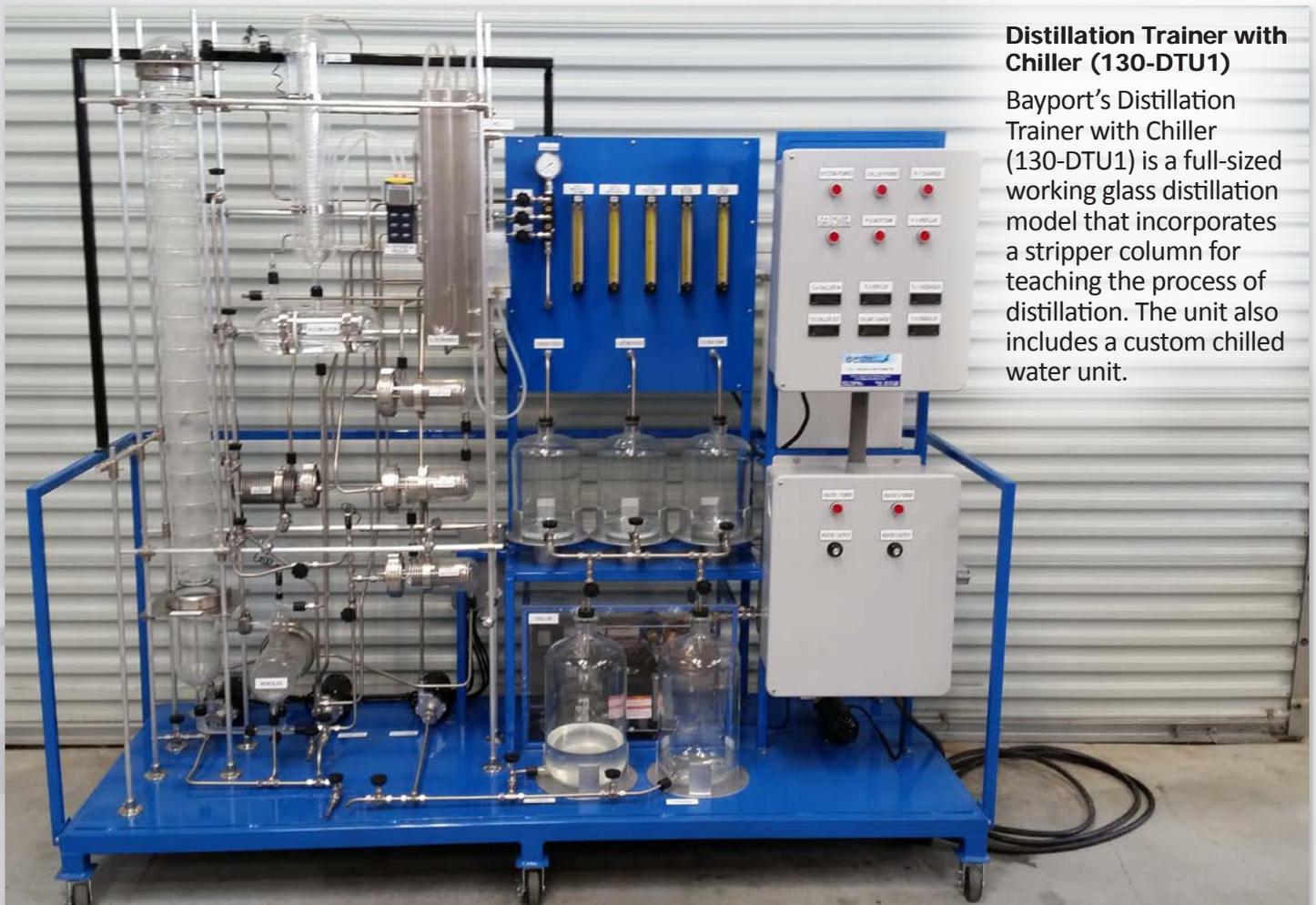
Demonstrates operation of a distillation column using water and air.

*Also Available with Reboiler & Chimney Trays (132-DTT6)*



**Fluid Catalytic Cracking Working Demonstrator (132-FCCU)**

Features a reactor, generator, standpipes, risers, and an air blower, which forms the catalyst circulation system.



**Distillation Trainer with Chiller (130-DTU1)**

Bayport's Distillation Trainer with Chiller (130-DTU1) is a full-sized working glass distillation model that incorporates a stripper column for teaching the process of distillation. The unit also includes a custom chilled water unit.



## Unit Operations

Bayport Technical's Unit Operations Trainers provides learners with the skills to operate many types of chemical processes, including separation, distillation, evaporation, and more.

### Portable Distillation Trainer with Chiller (130-DTU2)

A working distillation unit that fits in a compact space. Gives fractionation and distillation operators a visual concept of what goes on inside the metal towers used in petroleum refineries.



### Flash Drum Separator Trainer (140-FDS)

Designed to allow visual observation and physical control of the flash drum process during separation.



### Gas Lift Process Trainer (140-GLPT)

Illustrates the injection of gas into the production piping of wells with inadequate formation pressure to flow independently.

# Electro-Mechanical Maintenance

Electro-Mechanical Maintenance trainers are designed to provide students with hands-on skills in the maintenance and operation of mechanical power transmission systems and electric-mechanical devices commonly found in industrial processes.



## Maintenance Trainer (150-MT)

This system was designed to provide hands-on lock-out/tag-out training for a real-world application found in many facilities.

## Standard Multiple Mechanical Trainer (150-SMMT)

This mechanical trainer allows maintenance and operations personnel to perform a full range of hands-on mechanical power transmission maintenance skills using one comprehensive training unit. The trainer integrates: bearings, gears, shafts, belts, and chain drives.



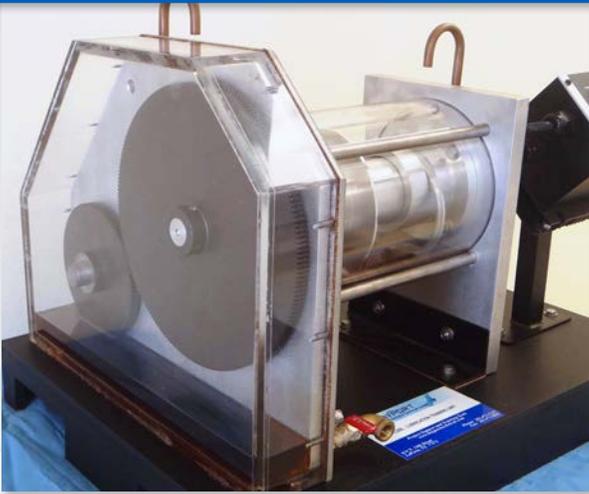
## Lock-Out/Tag-Out, Single Block & Bleed (150-LOTO1B)

The 150-LOTO1B LOTO trainer is designed to provide hands-on training for a wide variety of common process safety activities, both mechanical and electrical.



## Lock-Out/Tag-Out Single+Double Block & Bleed (150-LOTO2B)

The 150-LOTO2B provides lockout/tagout training for electrical & fluid systems using a double block & bleed configuration.



**Lubrication Working Demonstrator (152-LUBE)**

Models three of the most common bearing lubrication methods. The unit is equipped with a variable-speed motor and centrifugal pump. The lubrication system provides visual observation of all bearings, slingers, shafts, and bushings.



**Flange and Gasket Trainer (150-FGT)**

This trainer incorporates air and water pressure with a variety of industry-standard blind flanges, gaskets, flanged ports, and valves to simulate field maintenance conditions.



**Centrifugal Pump Skid Cutaway (108-CPS)**

## Cutaways

Bayport Technical's Cutaways allow students to see and identify the internal components. They may be taken apart and reassembled for further learning.



**Pressure Relief Valve Cutaway (108-PRV)**



**Twin Seal Plug Valve Cutaway (108-TSPV)**



**Foxboro 43 AP Controller Cutaway (128-FAPC)**

### Other Available Cutaways:

- Air Operated Ball Valve Cutaway (108-AOBV)
- In-Line Check Valve Cutaway (108-ILCV)
- Steam Reciprocating Pump Cutaway (108-SRP)
- Inverted Bucket Steam Trap Cutaway (118-IBST)
- Thermostatic Float Steam Trap Cutaway (118-TFST)
- Magnetic Flow Meter Cutaway (128-MFM)
- Lubricated Gear Reducer Cutaway (150-LGR)



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