

Vertical Separator Training System Plus



Model: 295-101-PAC

DAC Worldwide's Vertical Separator Training System Plus (295-101-PAC) is a realistic working demonstration separation system duplicates the process at a reduced scale using alternate production stream components: refined oil, air, and water. Three-phase separators, both vertical and horizontal, perform a fundamental purpose in oilfield production operations. Using very basic physical principles of gravity separation, the device efficiently separates mixed raw oil and gas production streams into their component parts: crude oil, gas, and water.

The system includes on-board supply pumps and a regenerative blower, delivering the emulated stream components to a static mixer, in order to create a emulated combined feed stream to the separator.

Vertical Separator Training System Plus Offers Real-World, Hands-On Industrial Learning

A custom-fabricated, large-diameter, clear acrylic, vertical separator vessel is provided with accurately-depicted internal features such as: an inlet diverter, overflow weir, mist eliminator, and strategically-located and reinforced outlet connections. Primary internal components are designed to be removable and modifiable using optional or user-supplied alternate components of varying geometries.

Metered supply valving and onboard variable area flowmeters allow for manual control and measurement of supply flow rates, simulating different supply variations and their effects on process efficiency.

The entire system is mounted on a mobile, formed-steel & powder coated support frame assembly, which can easily be moved from classroom to laboratory, and can pass through standard door openings.

All primary controls and active components are mounted on the front panel face. Both feedstock reservoirs and their related supply pumps are mounted on the rear of the device.

This unique, modifiable, demonstration system realistically demonstrates this fundamental oil & gas production process to both operations and maintenance personnel. Control and measurement features also allow for the mathematical study of a reduced-scale working system, under varying conditions.

FEATURES & SPECIFICATIONS

- Formed-steel, welded and powder-coated mounting frame; 48-in. x 37.5-in. x 78-in.)
- Four, leveling and locking casters
- Laminated, MDF front panel face and side panels providing moisture resistance and stable mounting surfaces
- On-board 19-in. x 34-in. instrument rack, allowing for electrical enclosure mounting, and provision for installation of optional advanced instrumentation and controls by the user
- Custom-manufactured, 12-in. diameter x 23-in. tall, 0.25-in. wall, clear acrylic separator, with removable flanged top head and reinforced, threaded inlet, and outlet connections
- Additional separator features including, level measurement scale, and multiple quick-connect pressure taps for monitoring pressures and differential pressures across the mist eliminator, using optional or user-provided measurement devices
- Custom-fabricated, modifiable internal separator details including; replaceable inlet deflector, oil over-flow simplex weir plate assembly, and replaceable, full-diameter, mist extractor assembly, including reticulated screen retainers, representative wire mesh media, and assembly retainers
- Front face-mounted 1-in. and 0.5-in., clear PVC supply and return piping system, including control/maintenance valving, and service drain
- Three, variable-area flowmeters (rotameters) at critical inlet locations
- Clear acrylic inlet static mixer
- Six, metered ball valves allowing for precise repeatable control of inlet and outlet streams and providing backpressure, if desire, during operation; valve tagging throughout
- Two, magnetic drive, seal-less centrifugal vertical process pumps, ½ HP, 0-2 GPM @ 0-10 PSI
- Front face-mounted operator control panel, including pump and blower on/off control, pilot lights, 24 VDC power connections, and provision for pump and blower control via banana jack-accessed contacts
- Rack-mounted primary power enclosure and control panel including system power breaker, system GFCI, and lighted system stop/start station
- Eight, “free line” (open conduit) connections between power enclosure, and front operator control panel
- Front panel-mounted, modular pressure gauge mounting bracket
- Two, 15-gallon, polyethylene water and oil reservoirs, with covers, and provision for mounting of vertical centrifugal pumps
- Five, quick-disconnect fittings throughout, allowing for measuring or monitoring of pressure and/or differential pressure at multiple points throughout the system, including the separation vessel

PRODUCT DIMENSIONS

- 48-in. L x 37.5-in. W x 7-in. H (1220 x 950 x 1975 mm)
- 450 lbs (205 kg)

INCLUDES Includes Three-Phase Vertical Separator Training System (295-101), Fully-Open Inlet Deflector (295-1012), Pressure and DP Gauge Pack (295-1013), and Refined Oil Charge (295-1014)

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