### BIOPHARMACEUTICAL

# VAPOR COMPRESSION DISTILLATION

## **OVERVIEW:**

- Produces Purified Water (USP Purified), Highly Purified Water (HPW) and Water For Injection (WFI) in accordance with all recognized pharmacopoeias
- · Meets/exceeds the exacting standards of the pharmaceutical industry and cGMP requirements
- Available individually or as part of a total water treatment solution
- Superior energy efficiency
- All fabrication is by MECO in the U.S. (spare parts available)
- Efficient component layout allows for ease of maintenance and calibration
- Optional complete validation package with IQ/OQ protocol execution
- Supported by MECO 24-hour customer service
- Backed by warranty

## **PRODUCT HIGHLIGHTS:**

#### Standard Features

- Unit is completely piped, wired, and assembled on a single skid at the factory
  - Fully functional FAT
  - Reduces installation costs and startup time
- Vertical natural circulation evaporator
  - Accepts broadest range of feed water quality in the industry
  - Reduces scale effects
  - No circulation pumps or spray nozzles required •
  - Straight annealed tubes in evaporator
    - No residual stresses or surface finish problems commonly found with U-tubes
    - Individual tubes can be replaced as opposed to replacing an entire tube bundle · Premium valves and instruments
- Deaeration of feed water
  - Non-condensibles removed prior to distillation
  - Corrosion reduction
- Hot Stand-by
  - · Improved response to distillate demand
  - · Allows for steaming of distillate line during hot stand-by
- Elimination of bio-growth
- Sanitary construction and connections
- PLC based controls

- Variable output standard
- No oil and oil filter changes

## **Equipment Details**

- State-of-the-art, direct drive,
- GII Centurbo<sup>™</sup> Compressor
  - Inconel or 2205 Duplex Stainless Steel compressor impeller
- Directly mounted with no vapor duct work
- Double tubesheet heat exchangers
- Sloped piping and low point drains
- Minimum deadlegs
- 316/316L SS process contact components
- 25 Ra µin (0.64 Ra µm) standard process contact surfaces
- Pneumatic panel houses all pneumatic components
- Stainless steel air lines
- Stainless steel hardware
- Mirror finish stainless steel cladding

CAPACITY IN GPH [LPH] MODEL PES400MSSH 400 [1,514] PES750MSSH 750 [2,839] PES1200MSSH 1,200 [4,542] PES1600MSSH 1,750 [6,624] PES2400MSSH 2,400 [9,085] PES3000MSSH 3,000 [11,356] PES3600MSSH 3,600 [13,626] PES4500MSSH 4,500 [17,034] PES6000MSSH 6,000 [22,712] PES7200MSSH 7,200 [27,255]

Note: All VC Still models are available in both hot and cold distillate arrangements (PESXXXMSSHC).







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