20 – 70
Gallons Per Hour

VACUUM EVAPORATORS

ENERGY CONSCIOUS
SINCE 1993

Industrial Wastewater Minimization
Reduce Hauling & Disposal Costs
Process Stream Concentration

ENCON EVAPORATORS

www.evaporator.com

The ENCON Vacuum Evaporator Utilizes Heat Pump Technology

Low Energy Consumption Wastewater Evaporation & Distillation

The **ENCON Vacuum Evaporator** is an energy efficient, cost-effective, and environmentally friendly alternative to traditional wastewater treatment or disposal methods. The ENCON Vacuum Evaporator converts contaminated wastewater to clean condensate.

It minimizes the amount of waste that needs to be hauled off-site, and its heat pump technology uses less energy than traditional methods.

The integration of a heat pump circuit provides the necessary heating and cooling to evaporate and then extract clean condensate from the wastewater solution.

The heat pump cycle uses electricity to move heat from one place to another instead of generating heat directly. Therefore, it is **five times** more energy efficient than conventional electric resistance evaporators.

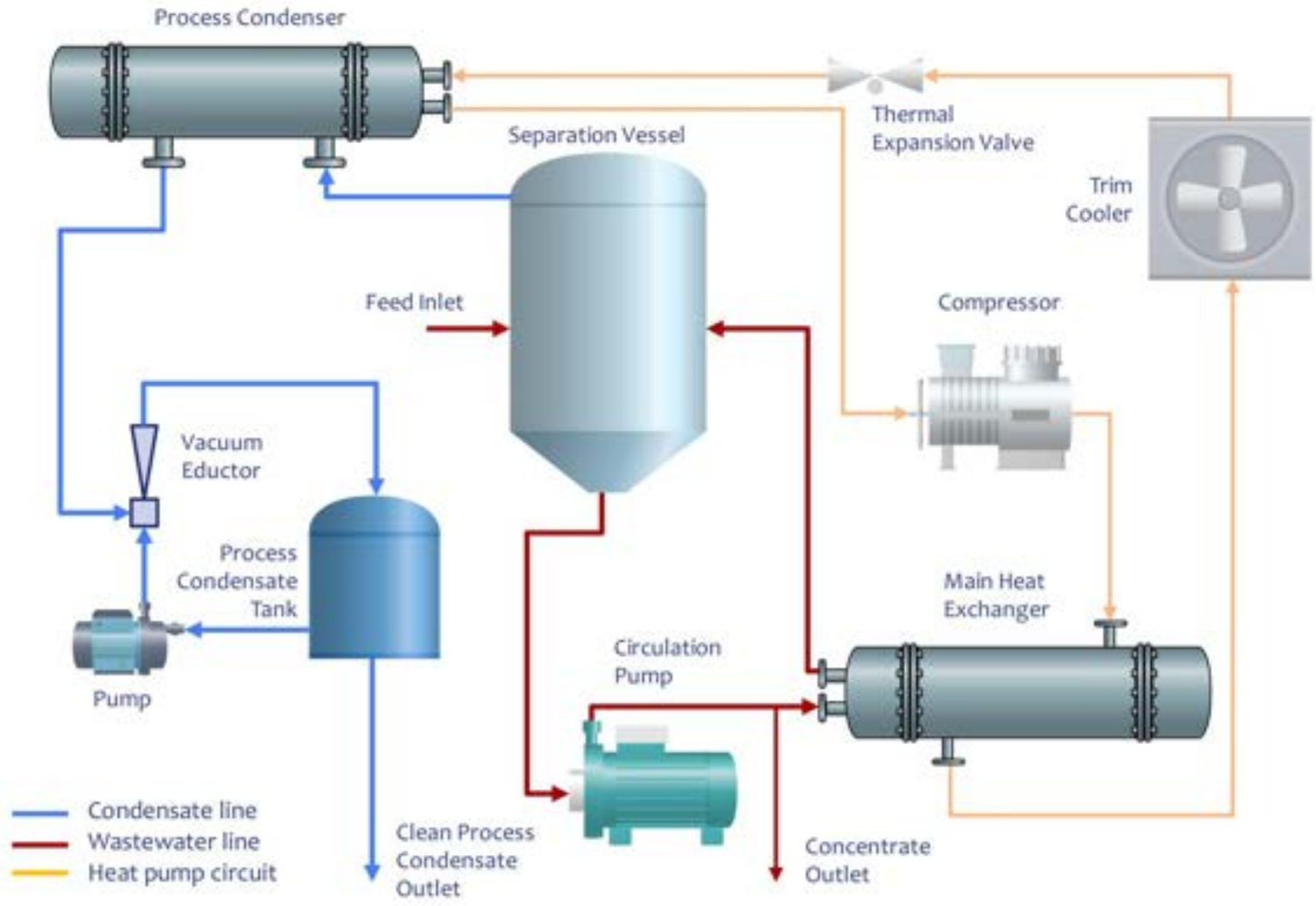
The system is designed to operate autonomously and without supervision to reduce manpower needs and costs. All models are designed for continuous operation, 24 hours a day, 7 days a week, and require only an electrical supply and compressed air.

Advantages of Evaporation

- ✓ Can handle different waste streams simultaneously
- ✓ Can handle very challenging and complex waste streams
- ✓ Dramatically reduces disposal volume & cost
- ✓ Eliminates sewer discharge accountability
- ✓ Achieve ZLD
- ✓ Safe to operate 24/7
- ✓ Low operating costs
- ✓ Requires less operator intervention than most wastewater treatment technologies
- ✓ Very effective for process stream concentration

Evaporator Model	Evaporation Rate (Gallon/Hr)
VHP-20	20 GPH
VHP-40	40 GPH
VHP-70	70 GPH

Process Description



1 FEED WASTEWATER

Wastewater is collected in a holding tank upstream of the evaporator, and fed to the system via the separation vessel.

2 EVAPORATION

The wastewater is circulated by the circulation pump through the main heat exchanger, where it is heated by hot refrigerant. The heated wastewater is then returned to the separation vessel. Upon arrival, flash evaporation occurs.

3 CONDENSATION

The water vapor in the vessel exits to the condenser, where It's condensed by cold refrigerant. Distilled condensate exits the process via the condensate tank.

KEY DESIGN PRINCIPLES

1. Evaporation takes place at low temperature and reduced pressure conditions. The pressure in the separation vessel ranges from 0.7 psia to 1 psia. At this pressure, the boiling point of water is 90-102 °F.
2. Energy consumption: 0.57 kWh/gallon of distillate.
3. Refrigerant: The ENCON Vacuum Evap uses R513a which has a low Global Warming Potential (GWP) of 573 which is less than half that of competitors systems, is Freon-free, and has an ozone depletion potential of zero.
4. Continuous flow system: this means that the solution in the separation vessel is maintained at a constant, maximum desired concentration. Concentrate is continuously discharged and replaced by fresh inlet solution.

Why Choose ENCON?

ENCON has been in business for over 30 years designing, fabricating, selling and servicing our line of evaporators and related technologies.

FULL RANGE OF UPGRADES, ACCESSORIES AND SERVICES TO UNLOCK YOUR EVAPORATOR'S FULL POTENTIAL

ENCON offers a full range of upgrades, accessories and services to minimize labor and maximize return on investment.

- **Recover your wastewater as clean condensate with our condenser package!**
- **Work with our consultative Sales Engineers to spec a turn-key system.**
- **Automate with auto-dump or auto-oil-decant.**
- **Utilize our air permitting / permit-exemption services.**

OVER 1,600 INSTALLATIONS WORLDWIDE

ENCON Evaporators was founded on the principle of design innovation. In 1993 ENCON introduced the world's first thermal evaporator with mist eliminator technology incorporated as part of the standard design. Today that tradition of innovation continues. We are constantly seeking client feedback which drives continuous product improvement. Our mission is to ensure that the ENCON products are not only the premier evaporator on the market today, but that it will be even better tomorrow.

We encourage you to speak to our valued clients about ENCON systems and our industry leading service & support. Contact a Sales Engineer at 603-624-5110 for references or view case studies at **www.evaporator.com/case-studies**.

TRUSTED BY THE WORLD'S MOST RESPECTED COMPANIES

3M, ABB, Alfa Laval, GE, CERN, United Technologies, Caterpillar, Kohler, Ford, Pepsi, TE Connectivity, WM Waste Management, Parker

MOST HEAT SOURCE OPTIONS IN THE INDUSTRY

Choose the most cost-effective option for your needs

- NATURAL GAS
- PROPANE
- STEAM
- ELECTRIC
- LANDFILL GAS
- #2 FUEL OIL
- THERMAL OIL
- WASTE OIL
- WASTE HEAT
- DIESEL

Industry Leading Service & Support

PROACTIVE STARTUP ASSISTANCE

After your order, a Service Engineer will be assigned to your account. They'll work with you to make sure everything is ready for installation. They will walk you through start up (on-site startup and training is also available).

FREE TECHNICAL SUPPORT FOR THE LIFE OF YOUR EVAPORATOR

Getting help and/or advice shouldn't require a contract!. ENCON has offered free and unlimited remote support for three decades. On-site service is also available. ENCON maintains a complete record of service work and interactions regarding the evaporator.

Free Application Feasibility Report

The centerpiece of our consultative approach is our complimentary bench scale analysis of your waste or process stream. This free analysis determines:

- How appropriate the stream is for evaporation
- Estimated reduction percentage
- Recommended materials of construction
- Recommended operating procedures.

To find out more, ask your ENCON Sales Engineer, give us a call at 603-624-5110 or email sales@evaporator.com.

PREMIUM SERVICE OFFERINGS

In addition to our industry leading standard support, ENCON offers a variety of premium offerings such as scheduled visits by ENCON Service Engineers. They will review and tune your evaporator, assess the unit's condition, assess the wastewater process, make suggestions for improving results, and conduct training.

FREE STANDARD LAB ANALYSIS OF YOUR WASTE STREAM FOR THE LIFE OF YOUR EVAPORATOR

Want to consider a new waste or process stream for evaporation? Not sure if your waste stream has changed? ENCON will analyze a sample of your stream, compare it to previous tests and make recommendations on any necessary process changes.