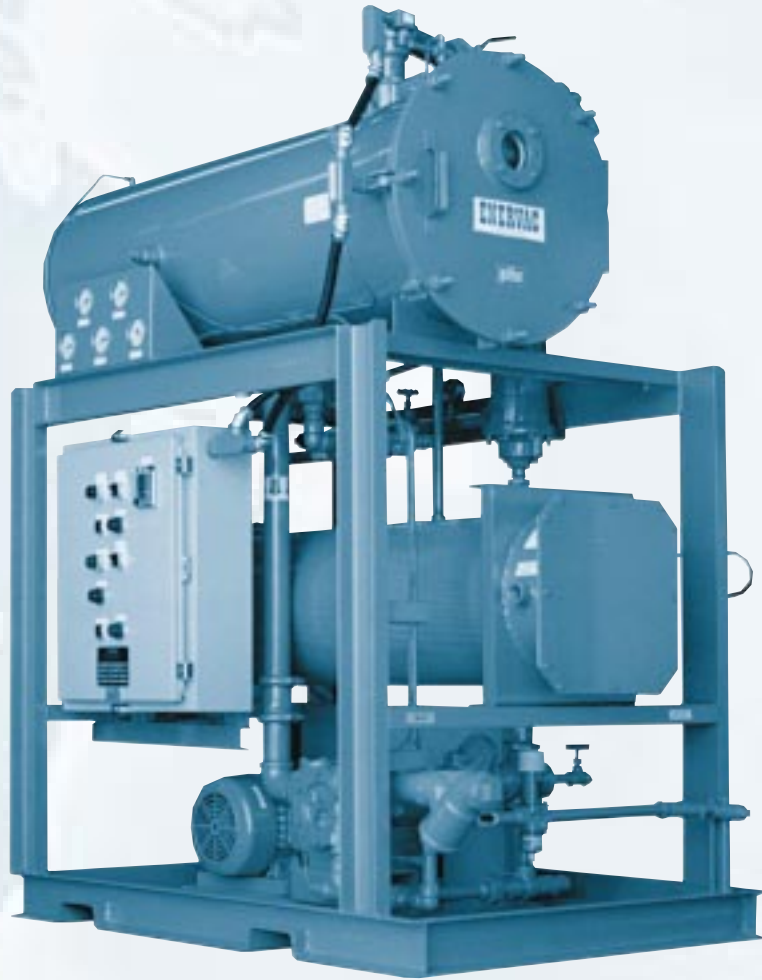


Vacuum Oil Dehydrators

E859A Series



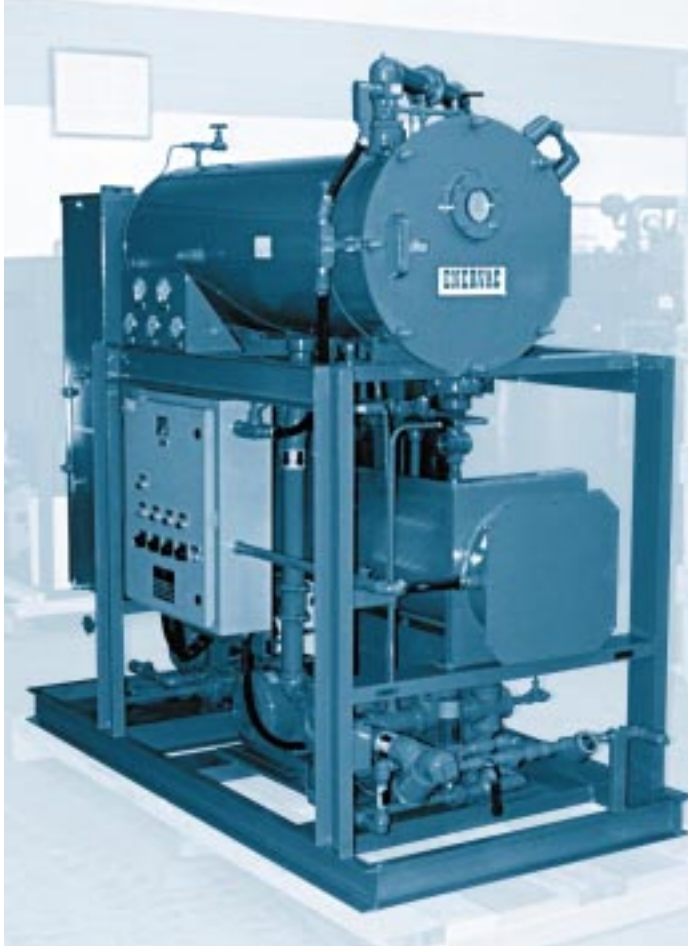
Dehydrates

Filters

Purifies

De-aerates

ENERVAC
CORPORATION



Description

The Vacuum Dehydrator is a completely packaged unit mounted on a common base, fully assembled and ready for connection to utilities. Operation is fully automatic. It is available with a Water Cooled Condenser that is strongly recommended for a fixed location where cooling water is available.

Application

One of the most frequently encountered contaminants in oil is water. Water is detrimental to the performance and life of the oil.

The Enervac Vacuum Dehydrator which uses a vacuum process to remove water, light hydrocarbons and solid contaminants, has successfully been performing services for the last 35 years in many applications involving:

- Lubricating Oils
- Hydraulic Oils
- Turbine Oils
- Compressor Seal Oils
- Synthetic Fluids
- Insulating Oils
- Quenching Oils
- Cutting And Cooling Mineral Oils

Dehydration

The Vacuum Dehydrator's principal function is the dehydration of oils. The operating principle is extremely simple. Oil, at suitable operating temperature is forced by atmospheric pressure into the vacuum chamber, where due to the high vacuum maintained therein, water (free, emulsified and dissolved), products of fuel dilution, dissolved air and gases, and other low range volatiles are boiled off, i.e.: vaporized out of the oil,

thereby purifying and conditioning it to a safe and operating standard. A cooling device of ample capacity efficiently condenses the steam and vaporized contaminants which are then ejected automatically to waste. Additives and detergents are retained and continue to serve their original purpose in the processed oil. No oil is lost in the processing.

The degree of dehydration is accomplished to virtually the zero point. The complete process is entirely automatic permitting the use of the Vacuum Dehydrator in a continuous operation or at timed intervals of operation as desired with a minimum of personal attendance. Varying water content within reasonable limits presents no problem as the unit automatically recirculates until all water is removed.

Unique Vacuum Chamber Elements

Special cylindrical elements, chemically inert, are employed to serve a number of purposes.

First, due to the element's relatively large active area, boiling of water and other volatile contaminants is greatly facilitated as the incoming oil floods them.

Second, their design is such that water in emulsion is coalesced and thereby the incoming oil is dehydrated mechanically.

Third, due to the element's large area, separation of dissolved air and gases is tremendously accelerated, and attendant foaming reduced to a minimum.

Fourth, the element acts as a micro filter for the oil to a degree where more than 99% of the original total solids contaminant is removed.

The filter element is constructed of predensified Fiberglass, and arranged for flow from inside to outside. This arrangement retains all of the contaminants within the element, and prevents any dirt, etc., from further entering the system.

Self-Policing System

Only oil of predetermined dryness passes to the purified oil outlet. The "educated valve" determines whether the oil is passed for usage or is recirculated through the unit for additional processing. This feature makes the system automatic for quality control of the effluent oil, thus reducing the personnel time normally involved with less efficient purifying methods.

Often Returns Its Cost In First Few Months

Ever-increasing use of high-quality additive and detergent lubricating oils, and costly synthetic oils, in addition to the many new types of turbine and dielectric oils, present related problems and higher standards for oil conditioning apparatus.

One answer is to reclaim used oil— Enervac's Dehydrator equipment offers a practical, proven, economical method. By means of a vacuum process, the Vacuum Dehydrator removes particulate matter, and breaks water/oil emulsions.

The Enervac Vacuum Dehydrator is the answer to high-reliability in oil reclamation.

Reclaim costly oils with the ENERVAC Vacuum Oil Dehydrator

Model Nomenclature Chart

Standard Features

- Enervac's Exclusive Process
- Self-policing System
- Unattended Operation
- High Level Switch
- Oil Level Controller
- TEFC Motors
- Mechanical Sealed Oil Pump
- Low Watt Density Electric Heaters
- Illuminated Vacuum Chamber
- Observation Window
- Performance Tested
- Nema 4 Enclosure And Controls

Model nomenclature chart indicates standard and optional features available with each model. Complete flexibility is provided by selection of the type of operation, electrical input, NEMA class, etc.

| Code | Model |
|------|--|
| E | Water ejector c/w condenser |
| V | vacuum pump only (vane type) |
| V1 | liquid ring vacuum pump |
| E/V | vacuum pump (vane type) c/w condenser |
| E/V1 | liquid ring vacuum pump c/w condenser |
| E/V2 | E/V1 c/w closed loop sealing system |
| A/V2 | E/V1 c/w air-cooled closed loop sealing system |

E859A -

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Capacity USGPH

100
200
400
600
900
1200**

Code Electric Power

| | |
|----|----------|
| 22 | 220/3/60 |
| 38 | 380/3/50 |
| 46 | 460/3/60 |
| 57 | 575/3/60 |

Code Standard Options

| | |
|----|-----------------------------|
| 7 | Nema 7 Controls |
| C | Casters |
| F | Foam Control |
| N | Auto Inlet Valve |
| Z | Viton Gaskets |
| T1 | Discharge Filter Enervac |
| T2 | Discharge Filter |
| Y1 | Manual Drain Pot |
| Y2 | Automatic Drain Pot |
| W | Water Economizer |
| W1 | Water Economizer c/w Cooler |
| X | Special Engineering |

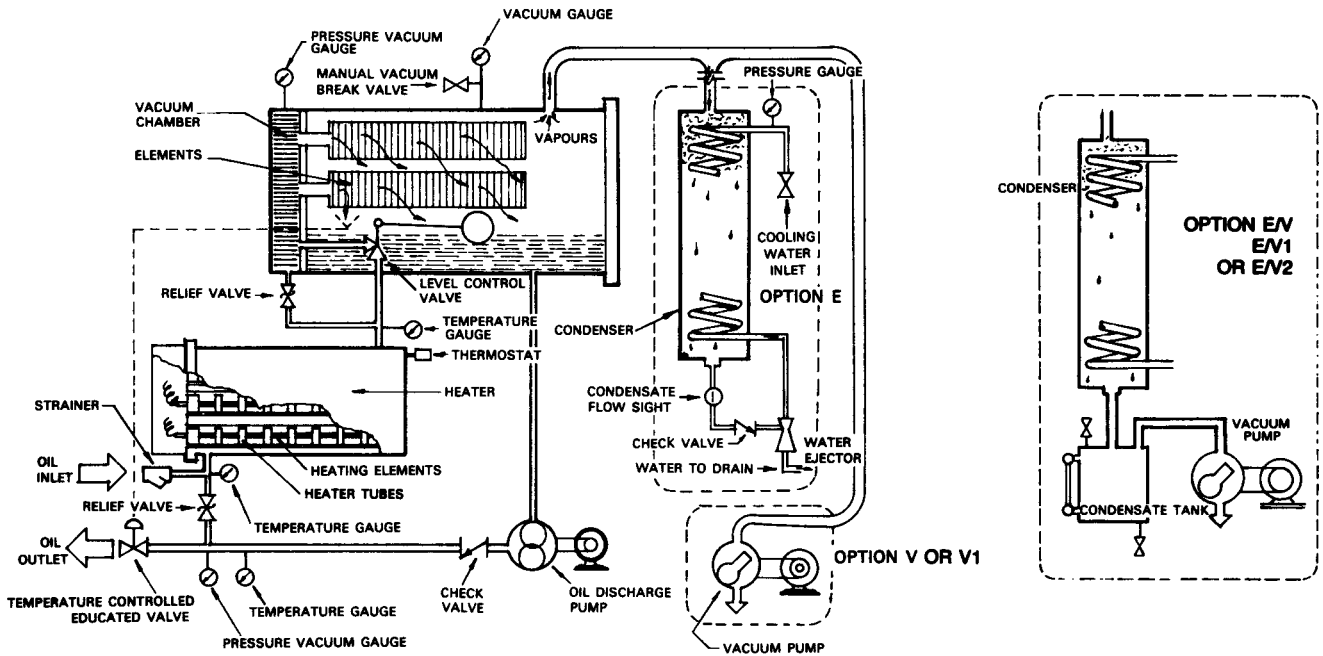
**** For larger capacities
contact factory.**

Specifications (Standard Unit) Model E859A

| | 100 | 200 | 400 | 600 | 900 | 1200 |
|---|---------|---------|---------|---------|---------|---------|
| Rated Capacity USGPH | 100 | 200 | 400 | 600 | 900 | 1200 |
| Height*, inches | 78 | 78 | 78 | 78 | 78 | 95 |
| Length*, inches | 38 | 38 | 54 | 54 | 54 | 132 |
| Width*, inches | 32 | 32 | 39 | 39 | 39 | 72 |
| Weight, lbs | 1700 | 1800 | 2000 | 2200 | 2250 | 5000 |
| Total Power, kW | 9 | 14 | 25 | 36 | 42 | 69 |
| Heater Capacity, kW | 6 | 11 | 22 | 33 | 38.5 | 66 |
| Water Temp., °F (max.) | 70 | 70 | 70 | 70 | 70 | 70 |
| Water Press., psig (min.) | 30 | 30 | 30 | 30 | 30 | 40 |
| Water Consumption, USGPM (at 70°F & 30 psig) | 3 | 5 | 11 | 18 | 18 | 30 |
| Oil Inlet Size | 1" NPT | 1" NPT | 1½" NPT | 2" NPT | 2" NPT | 2" NPT |
| Oil Outlet Size | ½" NPT | ½" NPT | ¾" NPT | ¾" NPT | ¾" NPT | 1½" NPT |
| Water Inlet Size | ½" NPT | ¾" NPT | ¾" NPT | ¾" NPT | 1" NPT | 1" NPT |
| Water Outlet Size | ½" NPT | ¾" NPT | ¾" NPT | 1" NPT | 1" NPT | 1" NPT |
| Oil Discharge Pressure | 30 psig | 30 psig | 30 psig | 30 psig | 30 psig | 30 psig |

*Dimensions are approximate only; for exact dimensions contact Enervac.

Unique vacuum system removes dirt particles, breaks water/oil emulsions



Sizes and Types

Model E859A Vacuum Dehydrators are manufactured in seven different standard types.

Type E Models are equipped with a water ejector, condenser and a heater of a capacity for normal requirements. This is regarded as "Standard equipment" and has proved to provide excellent performance for most applications.

Type V Model is equipped with a mechanical vane type Vacuum Pump and normal capacity heaters. Recommended when water for an ejector and condenser is not available.

Type V1 Model is identical to Type V except the vane type Vacuum Pump is replaced with a Liquid Ring Vacuum Pump.

Type E/V Models are equipped with a vane type vacuum pump and water condenser. This model has a condensate collector pot with manual or automatic drain.

Type E/V1 Model equipped with water condenser & Liquid Ring Vacuum Pump. (Optional Extra) Condensate Collector Pot with manual or automatic drain.

Type E/V2 Model is identical to Type E/V1 except it is equipped with a closed loop Sealing System.

Type A/V2 Model is identical to type E/V1 except it is equipped with an air-cooled closed loop sealing system.

Simplified Flow Description

Moved by atmospheric pressure, oil to be processed enters the unit passing through a line strainer and then through an electric heater (or steam heat exchanger in the line if requested). Inflow rate is automatically regulated by a float control valve to match the operating output of the unit.

Oil enters the vacuum chamber through the accelerator elements where solids are removed and retained. Water and volatile contaminants are boiled off in vapor form. Dissolved air and gases are also removed. Purified oil falls to the bottom of the collector chamber to be removed by the discharge pump. Oil level is controlled by a float control valve. Vapors and gases are drawn off at the top and condensed in the cooler, and are continually discharged from the unit automatically. Vacuum is maintained by means of a venturi jet assembly utilizing water, or by a vacuum pump, as required by the application.

| Size | Type E, E/V, E/V1 & E/V2 | Type V & V1 |
|------|--------------------------|-------------|
| 100 | 1.5 | .50 |
| 200 | 3.0 | 1.00 |
| 400 | 6.0 | 1.70 |
| 600 | 8.0 | 2.25 |
| 900 | 11.00 | 3.00 |
| 1200 | 16.00 | 4.50 |

Water removal gallons per hour (approx.)

Representative:



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