

# VACUUM DEHYDRATION SYSTEMS FOR INDUSTRIAL OILS

Model 858, 929, and 989 vacuum dehydration-distillation method systems remove water and particulate from industrial oils. These systems are excellent oil purification solutions for high viscosity oils and poor water shedding oils. These vacuum dehydration-distillation method systems are continuous duty, off-line (kidney-loop) oil purification systems for industrial oil reservoirs used in paper mills, steel mills, mining, refineries, and power generation.



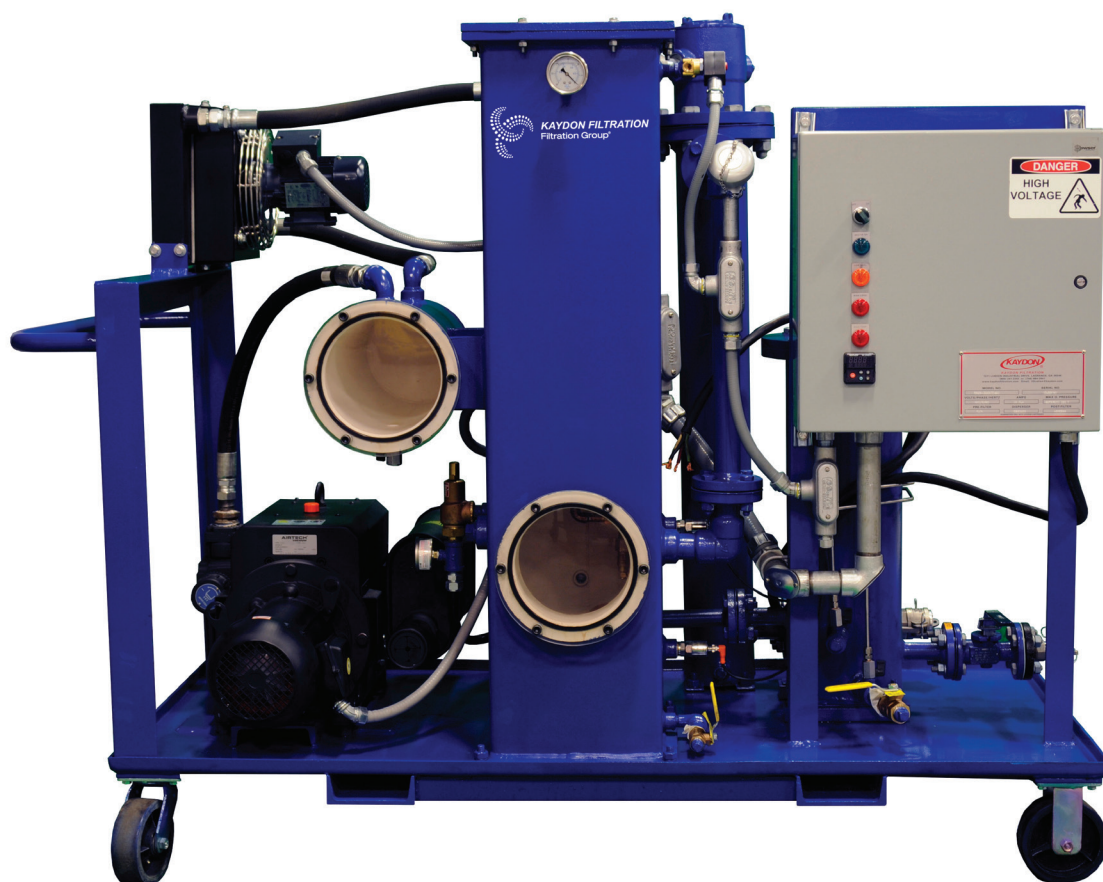
## 929-300 Vacuum Dehydration Oil Conditioning System

Water contamination can result in costly damage to equipment, as well as unplanned downtime that can take equipment offline, reducing efficiency, productivity and profitability. Small quantities of water suspended in oils can lead to loss of lubrication, corrosion, premature wear, and eventually breakdown. The Kaydon 929-300 vacuum dehydration oil conditioning system minimizes down time and maximizes performance by removing water and particulate from industrial oils using water vapor and filtration methods.

Separation of water from oil by removing it in the form of water vapor, rather than removing it in the liquid state, is the principle used in the 929-300 vacuum dehydration system. In this way, water can be removed from oil without regard to the degree of emulsification. the 929 technology allows for water removal in a number of liquids and applications that cannot be addressed through coalescing. Even the most stubborn, stable oil/water emulsions can be separated.

The 929-300 is different than other dehydration processes as it takes water from the liquid state and transforms it into water vapor so it can easily be removed. In the distillation process, as water is vaporized from oil, oily water foam forms and is drawn into the vacuum pump. As the foam is transported through the condenser by the suction of the vacuum pump, the foam coats the inside of the condenser, reducing heat transfer. In addition, the oily foam releases through the system waste water discharge, requiring further wastewater treatment. Unlike other vacuum systems that do not provide effective foam control and must be constantly monitored, Kaydon Filtration prevents the intrusion of the oily water foam with the installation of a foam control device that retards oily water foam from growing. The 929-300 Unit delivers less than 40 ppm water content with an ISO 16/14/12 cleanliness level. The 929-300 is equipped with an easy-to-understand full status control panel, a vacuum gauge on the vacuum chamber, and a differential pressure gauge on the polishing element.

The 929-300 removes damaging water from lubricating oil, such as turbine oil, paper machine oil, gear oil, and hydraulic oils. oil, gear oil, and hydraulic oils. The standard 959 is air-cooled, with other options available, including an external water-cooled system.



## Applications

Lube Oil

Hydraulic Oil

## Features

Vacuum Distillation Process Tower Chamber and Disperser Element

Polishing filter

Vacuum chamber port hole

Electronic point sensors

15 KW Oil Heater

## Benefits

Uses a pleated disperser element to swiftly and efficiently remove water.

Removes damaging particulate and debris before the oil exits the system.

Provides visual indication into the interior of the vacuum vessel, oil clarity, and vacuum chamber oil level

Automatically adjusts and modulates incoming flow to, and outgoing flow from, the vacuum chamber

## Specifications and Details

Flow Rate (Maximum)	5 gpm / 19 lpm			
Reservoir Sizing	≤ 900 gallons (maximum viscosity = ISO 150)			
Environmental Parameters	NEMA 4 / IP54 Minimum Temperature: 32° F / 0° C Maximum Temperature: 130° F / 54° C			
Operating Voltage	460 VAC / 3 PH / 60 HZ / 35 AMPS			
Pump/Motor Assembly		Pump	Motor	Notes
	Vacuum Oil Discharge	Claw Positive Displacement (screw)	1.5 HP / 1.12 KW 1 HP / .75 KW	Water supply not required
Materials of Construction	Metals: Carbon Steel, Bronze, Stainless Steel Elastomers: Buna-N Paint: Epoxy			
Pressure Vessel	Carbon Steel			
Inlet/Outlet Connections	Type	Inlet	Outlet	
	NPT	1.5 inch / 38.1 mm	1 inch / 25.4 mm	
Dimensions	68" L x 32" W x 58" H / 1727.2 mm L x 812.8 mm W x 1473.2 mm H			
Weight (approximate)	1,200 lbs / 544 kg			
Maximum Operating Pressure	100 psig 7 BAR			
Fluid Compatibility	Mineral base lube oils (maximum viscosity = ISO 150 @ > 100° F)			
Performance	Particulate Water	ISO Cleanliness Code 16/14/12 <sup>1</sup> Removal to less than 40 ppm <sup>2</sup>		
Filter Stages	1st Stage 2nd Stage	water removal post filtration		

1. As measured with in-line automatic particle counter calibrated to ISO 15000. Particulate not greater than ISO 20/19/17.

1. As measured with in-line automatic particle monitor calibrated to ISO 11171 and influent no greater than ISO 22/19/17.

2. Total Water content (free, emulsified and dissolved) as measured by ASTM D6304-04 (Karl Fischer method).

All design specifications are subject to change without notice.