Bowser® Technology Filter Dehydrator 929-300

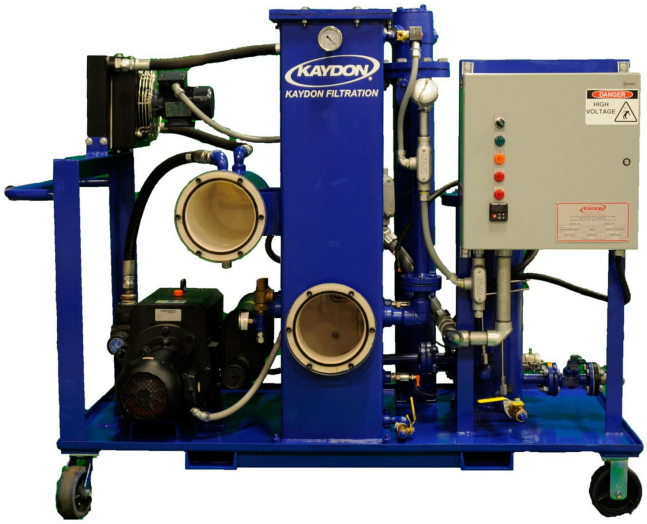
KEEPS OILS FREE OF WATER AND PARTICULATE CONTAMINATION TO ACHIEVE LONG-TERM, PREDICTABLE AND PROFITABLE PERFORMANCE

From our beginnings in the 1880's when Mr. Sylanus Freelove Bowser invented the self measuring water pump, Kaydon Filtration has been the leader in developing innovative equipment for the liquid separation industry. Responding to industry growth and the need for water separation in industrial oil handling equipment, Bowser invented the vacuum distillation system in the 1940's for removal of water from oil by transforming the entrained water from a liquid state to a vapor state.

The Bowser vacuum distillation process effectively removes harmful water, in the form of water vapor from a number of oils and fluids that cannot be addressed through coalescing, without negative effect on the oil. Kaydon Filtration proudly continues the Bowser legacy and history by incorporating Mr. Bowser's principles of oil purification in the Bowser Technology Filter Dehydrator 929-300.

The need for clean, dry oils and fluids is a necessity for long-term equipment reliability. Bowser Technology Filter Dehydrator 929-300 minimizes downtown and maximizes performance by removing water and particulate from industrial oils using water vapor and filtration methods.

The principle technology of the 929-300 removes water from oil in the form of water vapor rather than removing it in the liquid state. By removing water in the form of vapor the degree of emulsification is irrelevant. Even the most stubborn, stable oil/water emulsions can be separated.



Features

- Vacuum Distillation Process Tower Chamber
- Claw Vacuum Pump
- Water Collection Tank
- Full Status Control Panel
- Water Vaporization Control
- Filtration Filter Vessel
- Vacuum Chamber Port Hole View
- Oil Heater (15 kW)
- Sensors (low flow and oil level)
- Self-Adjusting Flow Rate Modulation
- Phase Monitor Reversing Switch

Our liquid separation and oil and fuel conditioning systems are used in a wide array of applications around the world.

Regardless of the industry, oil conditioning provides reliable, effective, long-term equipment protection.

KAYDON FILTRATION
Filtration Group®

Bowser Filter Dehydrator unit 929-300

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 principle technology of the Bowser Filter Dehydrator 929-300 vacuum distillation is different than other dehydration processes. The 929-300 takes water from the liquid state and transforms it into water vapor so it can easily be removed. By removing water in the form of vapor the degree of emulsification is irrelevant. Even the most stubborn, stable oil/water emulsions can be separated.

The Bowser Filter Dehydrator 929-300 allows for water removal from a number of oils that cannot be addressed through coalescing. The 929-300 Unit delivers less than 40 ppm water content with an ISO 16/14/12 cleanliness level.

LUBE OIL PURIFICATION

Bowser Filter Dehydrator 929-300 removes damaging water from lubricating oil, such as turbine oil, paper machine oil, gear oil, and hydraulic oils.

Benefits

- Longer Equipment Life
- Dependable Equipment Operation
- Reduced Failures Related to Oil Contamination
- Fewer Forced Outages and Downtime
- Increased Oil Life and Reliability

Features

Claw Vacuum Pump: This high quality vacuum pump is maintenance friendly and produces a quick and steady vacuum of 24” – 26” Hg.

Vacuum Distillation Process Tower Chamber and Disperser Element: The distillation process tower uses a unique pleated disperser element to swiftly and efficiently remove water.

Water (Condensate) Collection Tank: The systems come standard with a large water (condensate) collection tank. After water is collected from the vacuum distillation process, it can be viewed from the water collection tank port hole.

Vacuum Chamber Port Hole Viewing: The port hole serves as an inspection tool for vacuum chamber oil level and clarity.

Heater: An on system oil heater quickly brings the oil to the optimum temperature for distillation.

Filtration Filter Vessel: Polishing-filter removes damaging particulate and debris before the oil exits the system.
The filter vessel is equipped with a differential pressure gauge and manual air release valve. The filter element filtration is rated at Beta (4.2) = 1000.

Electronic Point Sensors for Low Flow indication and High Vacuum Chamber Oil Level indication: The electronic point sensors eliminate the mechanical flaws of level switches and provides a more dependable method of automatically adjusting and modulating incoming flow to, and outgoing flow from, the vacuum chamber.

Flow Rate Modulation: The 929-300 system continuously and automatically balances incoming and outgoing oil flow.

Full Status Control Panel: The control panel provides operators easy access to the system operations:

- Illuminated On/Off Process Control Selector Switch
- Heat On Light
- Low Oil Flow and High Oil Level Lights
- High Temperature Switch and Controller
- Automatic Phase Monitor Reversing Switch

Gauges: A gauge installed on the vacuum chamber indicates vacuum level. A differential pressure gauge installed on the polishing filter vessel indicates when the filter element needs to be replaced.

Discharge Pump: The rotary 3-screw close-tolerance positive displacement discharge pump offers the best pumping capabilities with the least NPSH (suction) conditions while providing a steady, reliable, and consistent flow under this difficult pumping application.

Suction and Discharge Hoses: Standard equipment include 10 foot (3 meter) suction and discharge hoses.

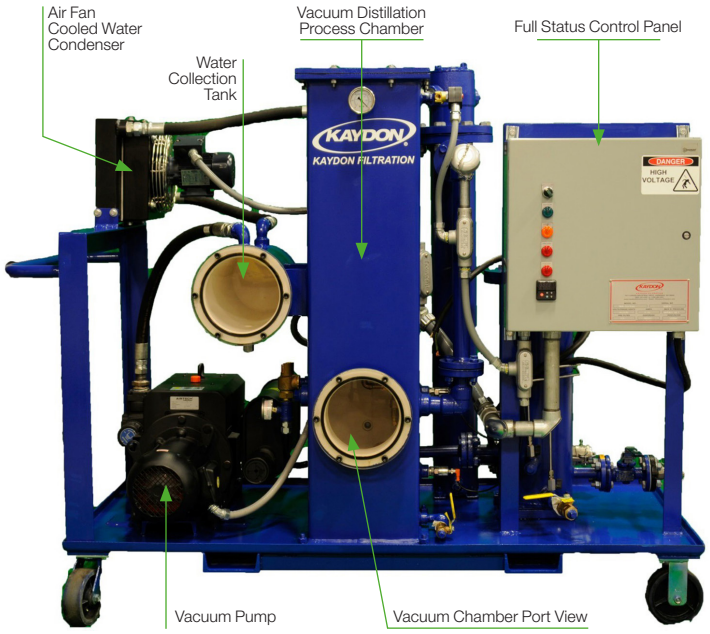
Isolation Valves: Isolation valves allow for convenient filter changes within the system.

Water Vaporization Control: A water vaporization control retards oily water foam from being created during the distillation process as water is vaporized from oil.

Skid Mounting with Portability: All components of the Bowser Filter Dehydrator 929-300 are conveniently mounted on a single skid with four casters.

Specifications

System flow	5 gpm
Configuration	Portable with four 6 in. casters
Sizing	For use with oil reservoirs up to 900 gallons (maximum oil viscosity = ISO 150)
System Operating Pressure	100 psig (6.9 BAR) (maximum)
Environmental Parameters	NEMA 4 (moisture proof and dust proof) Minimum Ambient Operating Temperature: 32F (0 C) Maximum Ambient Operating Temperature: 130F (54C)
Operating Voltage	460 VAC / 3 PH / 60 Hz / 35 amps
Materials of Construction	Metals: Carbon Steel, Bronze, Stainless Steel Elastomers: Buna-N / Paint: Epoxy
Filtration Pressure Vessel	Carbon Steel (ASME Code Designed, Built and Stamped)
Inlet/Outlet Connections	Type NPT, Inlet = 1.5 inch /Outlet = 1 inch
Hoses	Suction Hose: 1.5" female cam lock with 1.5" NPT male thread Discharge Hose: 1" male cam lock with 1" NPT male thread
Discharge Pump/Motor Assembly	Pump Type: Gear - Positive Displacement (3-Screw) / 1 HP
Claw Vacuum Pump/Motor Assembly (Rotary Vane Option also available)	Pump Type: Claw Motor: 1.5 HP NOTE: Water supply not required.
Air Fan Cooled Heat Exchanger Water Condenser with Inlet Oil Demister	Aluminum bar and plate construction with louvered fins and specially designed fan blades provides excellent heat transfer in a small compact design. Any potential oil mist that may be pulled into heat exchanger is coalesced out by the oil demister.
Automatic Phase Monitor Reversing Switch	System automatically adjusts to proper motor rotations.
Low Flow and High Level Indicators	Electronic Point Sensors
Fluid Compatibility	Mineral Base Oils (maximum viscosity = ISO 150)
Filter Stages	1st Stage: 30 mesh pump protection strainer 2nd Stage: water removal 3rd Stage: particulate removal
Oil Heater	15 KW with Temperature Controller
Water (Condensate) Collection Tank	Collects water that has been removed from oil.
Performance	Particulate: – ISO Cleanliness Code 16/14/12[1] Water: removal to less than 40 ppm[2]
Weight and Dimensions	1,200 lbs. (68”L x 32”W x 58”H)
Instructions and Operations Manual	One manual supplied with each system



SYSTEM SELECTIONS

DESCRIPTION	PART NUMBER
5 GPM/460 VAC/3 PH/60 Hz (NEMA 4 Control Panel) - portable	929-300STD460
5 GPM/380 VAC/3 PH/50 Hz (NEMA 4 Control Panel) - portable	929-300STD380
5 GPM/460 VAC/3 PH/60 Hz (NEMA 4X Control Panel) - portable	929-300-4X
5 GPM/460 VAC/3 PH/60 Hz (NEMA 4 Control Panel) Explosion Proof Rating: Class I, Division II, Group B, C, and D - portable	929-300XP460

CONSUMABLES

MODEL/DESCRIPTION	Qty.	PART NUMBER
Disperser Element	1	C220300
Filtration Element[3]	1	KM6018-3
Vacuum Vessel Lid Seal[4]	1	A029012
Filtration Vessel Lid Seal[4]	1	A628009
Heat Exchange Inlet Oil Demister	1	929-OIL DEMISTER

Footnotes
(1) As measured with inline 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)
(3) Removes 99.9% of all particles 11.3 micron and larger per ISO 16889
(4) Required for element changes

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Filtration Group®

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