

BVV 20GPH FALLING FILM EVAPORATOR



Metered Solvent Injection



Crude Discharge Pump



Distribution Plate



Solvent Discharge and Vacuum Pump

The BVV™ 20GPH Falling Film Evaporator is designed to evaporate ethanol that has been diluted in crude oil during a filtration or extraction process. By reducing the vapor pressure inside the system and metering the injection valve, the user can set the heat exchangers to the appropriate temperatures to efficiently evaporate solvent from their crude oil.



Technical Data Sheet

BVV 20GPH FALLING FILM EVAPORATOR

KEY FEATURES:

- Compact rack design for use in fume hoods (39"x30"x75.5")
- Vernier scale metering valve for controlled injection
- Accurate heater and chiller temperature control
- Deep vacuum for effective solvent removal
- Discharge pumps to eliminate constant reservoir draining and down time
- Chemical resistant vacuum pump
- Adaptable discharge outlets to customer preference
- Insulation to limit thermal losses and reduce condensation (Not Pictured)
- Sanitary tri-clamp and compression fittings
- Pre-heat injection coil
- Injection distribution plate
- Tube in shell heat exchanger for efficient evaporation and condensation
- Packable vapor path for reduction of contaminants and cleaner separation
- Water reservoir for priming the heating system and expansion during operation

POWER REQUIREMENTS

Equipment	Purpose	Power Requirement	Amp Draw	Notes
Hubbell Process Water Heater	Heater for Heat Exchanger Column (Evaporation)	240V 3-Phase	87	36kW Heating Capacity
Taco ECM High-Efficiency Circulator	Water Circulator for Heater	115V 1-Phase	2.5	Max flow rate 52GPM
10hp Polyscience Chiller 230v	Chiller for Heat Exchanger Column (Condensation)	230V 1-Phase	37.4	38.7kW Cooling Capacity
2GPM Ethanol Recovery Pump for Vacuum	Pump for Ethanol Recovery Discharge	230V 1-Phase	2.4	2GPM Max Flow Rate, Vacuum Check Valve
Beaker and Wrench Explosion Proof Oil Pump	Pump for Oil Recovery Discharge	230V 1-Phase	1.1	90L/hr. Max Flow Rate, Vacuum Check Valve
Welch BTpro100 Diaphragm Pump	Vacuum Pump for System	115 1-Phase	3.4	3.5 CFM, 6 Torr Ultimate Vacuum
			Total Amp Draw	133.8

EFFICIENCY

Throughput	11 GPH	18 GPH	20 GPH	22 GPH	24 GPH
Efficiency	98%	97%	94%	90%	85%

** Efficiency calculated at 10:1 ratio (Ethanol : Crude Oil) with heater temperature of 160°F. Crude is fully dewaxed when going into the falling film evaporator. Solution starts at room temperature. Speeds may differ based on dilution ratio, crude quality, and running parameters. **

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