

THE MeP

Modular Extraction Platform

Chiller (included)

Model TAEvo M

Tons	.99
Btu/h	11,904
Low Temp	20 F
Main Power	230/1/60
Amps	20
Tank Volume (gal)	6.1
Length	26 in
Width	23 in
Height	32 in
Weight	150 lb

Hot Water Circulator x2 (included)

Thermo Fischer SC-100

Power (VAC)	110
Amps	13
Watts	1200
Width	6"
Depth	6"
Length	6"

Recovery Pump (included)

Haskel ext-420-2

Compressed air source capable of providing approximately 25 CFM of air at 90 psi.

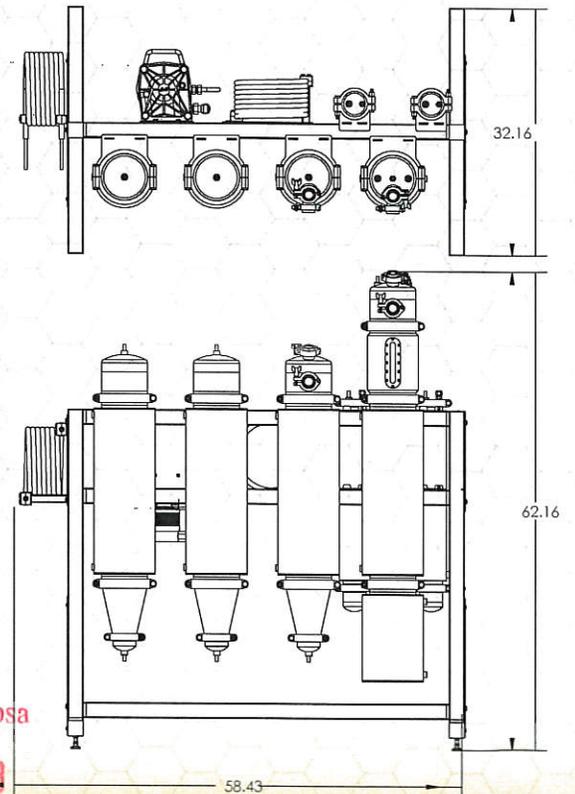
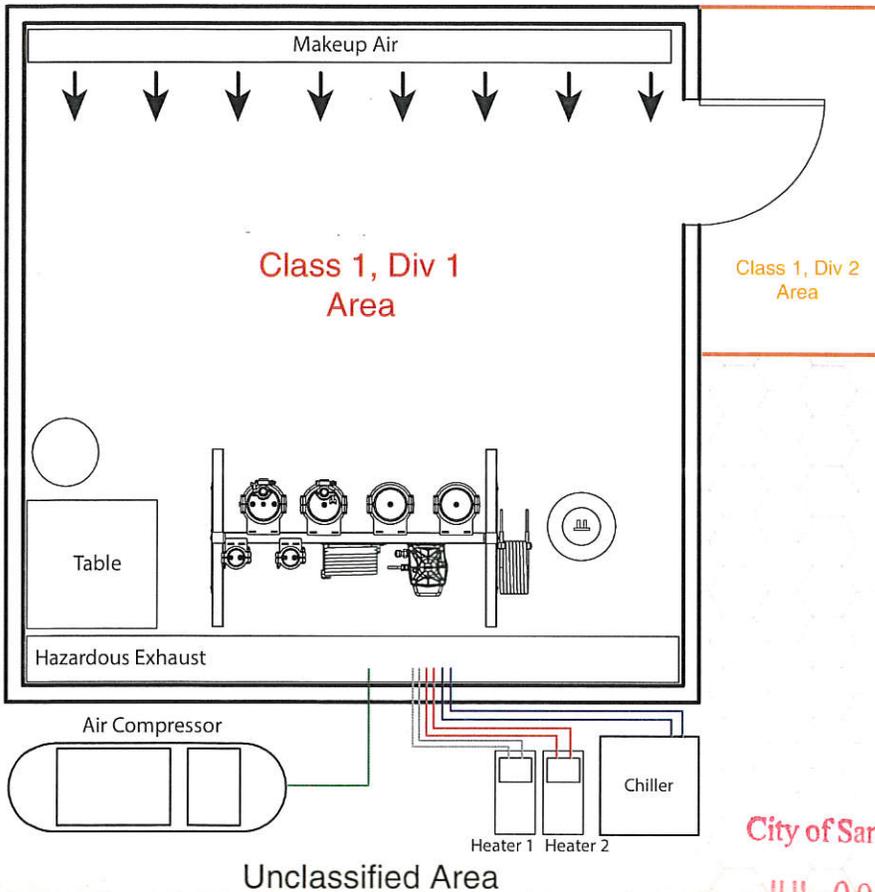
Industrial Screw Compressor (not included)

Standard Power Requirements

7.5 HP (ShopTek)	26.5 acfm	230/3/40	1 Haskel at sea level only
10 HP (ShopTek)	35.5 acfm	230/3/30	1 Haskel at 5000 ft
15 HP (ShopTek)	63.5 acfm	230/3/60	2 Haskel
20 HP (ShopTek)	80.1 acfm	230/3/100	3 Haskel

*This chart reflects air compressors from Sullair. Every compressor manufacture is deferent, so consult with manufacture if using a different brand

Basic Extraction Room Setup



City of Santa Rosa

JUL 09 2018

Planning & Economic
Development Department

PN: US 9,399,180 B2

ExtractionTek™ Solutions LLC.
2751 W. Oxford Ave. Unit 4 • Englewood, CO 80110



CONTACT US TODAY

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1.5 HP DuraChill® Chiller, Turbine Pump; Air-Cooled



6800T

Key Specifications

Description	1.5 HP Chiller, Turbine Pump; Air-Cooled
Display	LED
Connectivity	Optional: RS232, RS485
Working Temperature Range °C	5° to 35°
Temperature Stability °C	±0.5°
Temperature Calibration Capability	1-point
Pump Type	Turbine

Key Features

Key Features

- High capacity cooling for lasers, electron microscopes, and other laboratory applications
- Small footprint conserves floor space
- Displays temperature and pressure or flow rate simultaneously
- User-adjustable temperature, pressure, and flow rate alarms
- Simple operation and maintenance
- Air- or water-cooled
- Positive displacement (PD) or turbine (T) pump; other pump options also available

Common Specifications

Working Temperature Range °F	41° to 95°
Working Temperature Range °C	5° to 35°
Reservoir Capacity (gallons)	3.5
Reservoir Capacity (liters)	13.25
Reservoir/Tank Material	Polyethylene
Reservoir Cover	Screw-on Cap
Cleanable Air Filter	Yes
Cleanable Fluid Filter	Yes
Temperature Stability °F	±0.9°
Temperature Stability °C	±0.5°
Display	LED
Display Resolution (Read)	0.1
Pump Type	Turbine
Process Connections	1/2" (F) NPT
Over-Temperature Protection / Failsafe Heater Control	Yes
Reservoir Liquid Level Indicator	Yes
Reservoir Drain	Yes
Maximum Ambient Temperature °F	95°
Maximum Ambient Temperature °C	35°
Overall Dimensions (L x W x H) (inches)	30.5 x 19 x 26 in
Overall Dimensions (L x W x H) (cm)	78 x 48 x 66 cm
Compressor Size (HP)	1.5
Refrigerant	R134a
Shipping Weight (pounds)	340.0

Shipping Weight (kilograms)	154.0
Catalog Page Number	104

60 Hz Only

Part Number	6860T56A270D
Maximum Pressure (psi)	100.0
Maximum Pressure (bar)	6.90
Maximum Pressure Flow Rate (gpm)	11.00
Maximum Pressure Flow Rate (l/min)	41.6
Cooling Capacity @ +10°C (W)	4420
Cooling Capacity @ +20°C (W)	5200
Cooling Capacity @ +30°C (W)	5980
Heater Wattage	1000
Electrical Requirements (VAC/Hz/Ph/A)	230/60/1/23.1
Regulatory Approvals	TUV

50 Hz Only

Part Number	6850T56A270E
Maximum Pressure (psi)	83.0
Maximum Pressure (bar)	5.72
Maximum Pressure Flow Rate (gpm)	9.00
Maximum Pressure Flow Rate (l/min)	34.0
Cooling Capacity @ +10°C (W)	3715
Cooling Capacity @ +20°C (W)	4371
Cooling Capacity @ +30°C (W)	5027
Heater Wattage	1000
Electrical Requirements (VAC/Hz/Ph/A)	240/50/1/25.6
Regulatory Approvals	CE

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DELTA SEPARATIONS

Centrifuge Utility Platform

CLOSED-LOOP ALCOHOL EXTRACTION SYSTEM

STANDARD FEATURES

- Closed-Loop System (As Defined By the State of California)
- UL listed Electronics C1D2 for Hazardous Locations
- 3rd Party Engineer Review
- 304 and 316L Sanitary Stainless Steel Construction
- Rated Low Temp Conditions (Recommended minimum -40C)
- Tempered and Reinforced Sight Glass
- Vacuum Jacket Insulation
- Spray Wash
- Bi-Directional Agitation
- Auto/Manual Controls
- Digital HMI Interface
- Fractional and/or Full Spectrum Extracts
- Variable Speed Control
- Easy Material Loading/Unloading
- Heavy-Duty Spin Drying
- 97% Removal of Tincture From Botanical material
- 6 Month Parts/Labor Warranty
- Technical Support
- Made in USA.

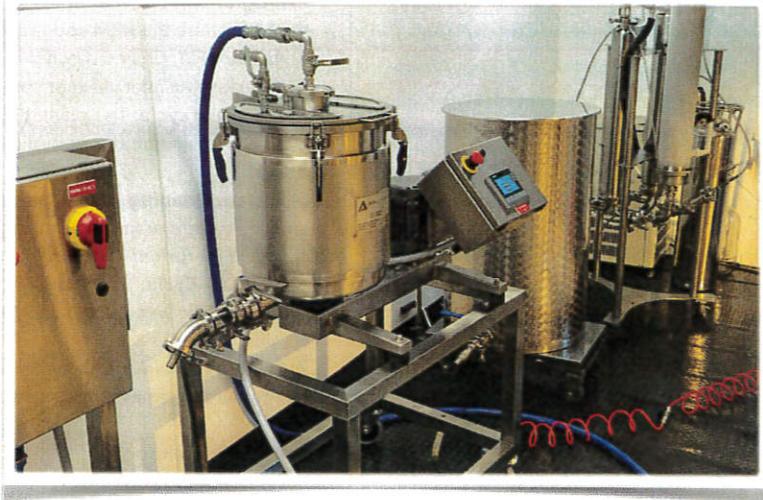
Production Capacity:

CUP 15:

- 10 - 14 lbs of Plant Material Per Batch (depending on mill size)
- Avg. Run Time: 10 - 15 Min (Depending on SOP)
- Alcohol Requirement: 13-15 Gallons per run (Wash Slurry Can Be Used Twice if Desired)



MADE IN THE USA



The CUP 15 SERIES ALCOHOL EXTRACTION SYSTEM provides the ability to extract and target botanical compounds from a diverse plant species. This unique extraction technology can isolate specific botanical compounds through programmable sequences, effectively targeting the desired separation. The system combines closed-loop, cold alcohol extraction with mechanical centrifugation which ensures high-purity extractions.

The Centrifuge Utility Platform provides accurate control over important extraction variables:

- | | |
|----------------------------|-------------------------------|
| • Alcohol Residence Time | • Automatic Cycle Programming |
| • Basket RPM | • Manual Cycle Programming |
| • Spray Wash Stripping | • Min/Max Parameters |
| • Cycle Agitation Strength | • Ethernet Connection |
| • Plant Material Drying | • System Troubleshooting |
| • Temperatures | • Cycle Tracking |
| • Data Logging | • Administrative Functions |

Process Overview: Operator fills filter bag with milled plant material and places it in the system where it is spun at varying speeds while injecting alcohol at controlled rates. The system can also be flooded, and bi-directionally agitated for full target compound removal. After the wash, the plant material undergoes a medium duty spin dry, leaving the the spent plant material 97% free of tincture with up to 98% target compound removal. The alcohol wash is then used for another 2-3 runs of material or diverted to a mixing tank for further processing.

PATENT PENDING

STANDARD FEATURES

Vessel :

- (1) Alcohol Feed Port: 1.5" Sanitary Tri-clamp Fittings
- (1) 1.5" Tri-clamp; Remote Discharge Vent and Pressure Relief Port
- (1) 4" Tri-clamp to 1/2 NPT Spray/Wash Paddle Port
- All Wetted Parts are 304 and 316L Stainless Steel Construction
- 2" Tri-Clamp Angled Drain
- Liquid/Vapor Tight (No Pressure) Vessel with EPDM Lid Seal
- Vacuum Jacket Insulation
- LowTemperature Compatibility -60C

Controls:

- UL Listed C1D2 - UL Standard No. UL 698A, Industrial HAZLOC Control Panel (File #: E490626)
- Siemens Touch HMI Control Panel (On System)
- 20ft Tethered Electronic Drive Panel (Installed Outside of HazLoc)
- Emergency Stop
- Variable Frequency Drive: 0-1200 RPM,
- Ethernet Connection

Electrical:

All system electronics are UL listed and certified for use in Hazardous Location Class 1 Division 2

- CUP 15- 230v- 30 amp- Single Phase
- UL Certified Class 1 Div 2 2HP Motor
- UL-NEMA L6- R30 Plug
- UL- L6 - 30 (30A-250V)

Footprint:

• CUP 15 : w/o Auxiliary Components (37" L x 25" W x 56" H)

• Master Panel Not Shown: (24" L x 32" W x 54" H)

• *Recommended Total Footprint of Extraction Area: CUP 15, Control Panel, Kegs, Filter, Pump*

(15 ft Width h x 5 ft Depth)

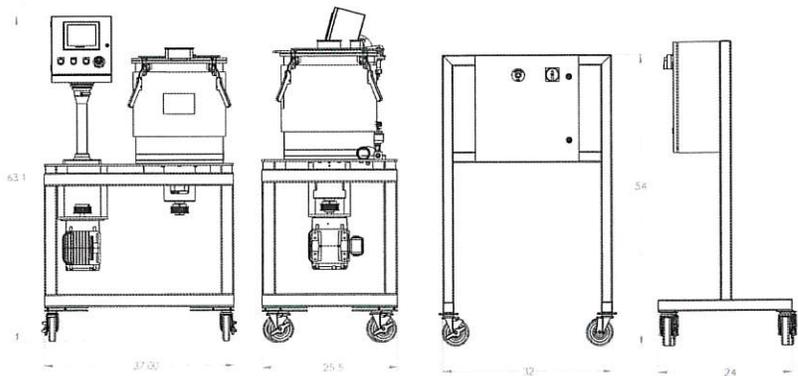
CUP 15 Extraction Cycle

The CUP 15 offers 3 Program cycles: *Spray Wash, Agitation Wash, and Spin Dry* cycles. Each "program cycle" has (2) programmable Auto recipes and (1) programmable Manual recipe.

- 1) **System loading:** A preloaded filter bag is placed into the basket and system is sealed.
- 2) **Program Menu:** The "Spray Wash" or "Agitation Wash" program is selected on the HMI where the RPM and cycle times are set to the operator's specifications.
- 3) **Alcohol Fill:** Chilled alcohol is pneumatically pumped from source tank into the CUP system via inlet valve or spray nozzle.
- 4) **The Wash cycle:** The plant material undergoes either a spray wash or an Agitated wash with a set number of bi-directional agitations aimed at extracting 98% of plant desirables.
- 5) **System Draining:** When the wash cycle is complete, the outlet valve is opened and the system drained. The alcohol wash is pumped to a properly rated storage reservoir for further processing.
- 6) **Spin Dry Cycle:** The "Spin Dry" menu is selected on the HMI and the drying cycle is started. The wet plant solids are spun dry of the remaining alcohol mixture within.
- 7) **System Unloading:** Upon completion of the "Dry cycle The system is unloaded by retrieving the filter bag from the basket.

CUP 15 Advantages

- Safe operating conditions
- Closed loop system design
- UL Certified Electronics for use in Class 1 Div 2 Hazardous Environment
- 97% Alcohol removal from spent plant material
- Full user control over process variables
- Significantly reduce processing time
- Designed for single operator batch processing
- 10- 15 min per run (Depending on Cycle Times)
- Auto/Manual controls
- Digital interface
- Full spectrum yields
- 98 % Cannabinoid removal from plant material
- Maximizes workload efficiency
- User controlled residence time
- Easy loading/unloading
- Minimizes material waste stream containment





Rotary Evaporators

A rotary evaporator is a device used in chemical laboratories for the efficient, gentle removal of solvents from samples by evaporation. Rotary evaporation is most often used to separate solvents with low boiling points, such as n-hexane or ethyl acetate, from compounds which are solid at room temperature and pressure. However, careful application also allows removal of a solvent from a sample containing a liquid compound, if there is minimal co-evaporation (azeotropic behavior), and a sufficient difference in boiling points at the chosen temperature and reduced pressure.



SE130
13 Gallon Rotary Evaporator

Features

- Solvent-resistant PTFE and Viton gaskets ensuring long time operation.
- Specialized motor with compact intermeshed worm and worm gear provide precise, vibration-free operation.
- Modular design (individual rotary and water bath modules) for easy future upgrade.
- Easy multi-level manual evaporating flask lifting with lock.
- Operate visually and easily with digital speed and temperature display.
- PID temperature controller for accurate temperature control.
- One year warranty and life time US-based parts and service support.

Model	SE05	SE13	SE26	SE53	SE130
Power	110V or 220V 50/60Hz single phase		220V 50/60Hz single phase		
Rotation Motor Power	25 watts	40 watts	300 watts		400 watts
Evaporating Flask	0.5, 1, or 2 Liter	5 Liter	10 Liters	20 Liters	50 Liter
Receiving Flask	1 Liter	3 Liter	5 Liter	10 Liter	20 Liter
Rotation Speed	10-180 RPM	10-140 RPM	10-130 RPM		10-110 RPM
Condenser	Vertical with dual-spiral glass tubing		Main & auxiliary triple-circulating cold traps, vertical		
Evaporating Speed	20 ml/minute	0.5-1.0 gal/hour	1.7 gallon/hour	1.32-2.9 gal/hour	2.4-4 gal/hour
Number of Heaters	One		Two	Three	
Maximum Lifting Distance	10 inches	6 inches	4 inches	7.5 inches	9 inches



SE05
0.5 Gallon Rotary Evaporator

