

Depot Series™

Vapour Recovery Solutions



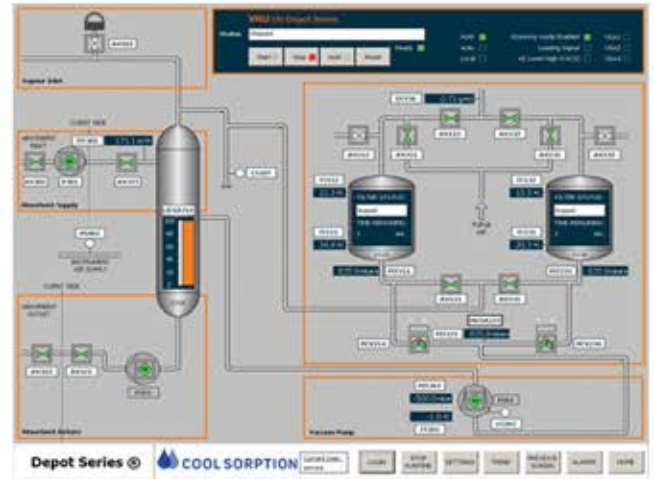
The Depot Series™ from Cool Sorption is a range of pre-designed VRUs, engineered for truck, barge and rail loading operations. These units are ideal for small to medium sized depots and terminals:

- High degree of standardization, resulting in short delivery time
- High reliability and easy to maintain, ensuring low operational costs
- Well proven design, easy to install and operate
- Superior lifetime for components and carbon
- High level of safety and functionality

Cool Sorption Depot Series™

Based on more than 35 years of experience with Vapour Recovery and over 320 vapour recovery units installed world-wide, the Depot Series VRUs are designed for optimal performance at an attractive price and with short delivery time.

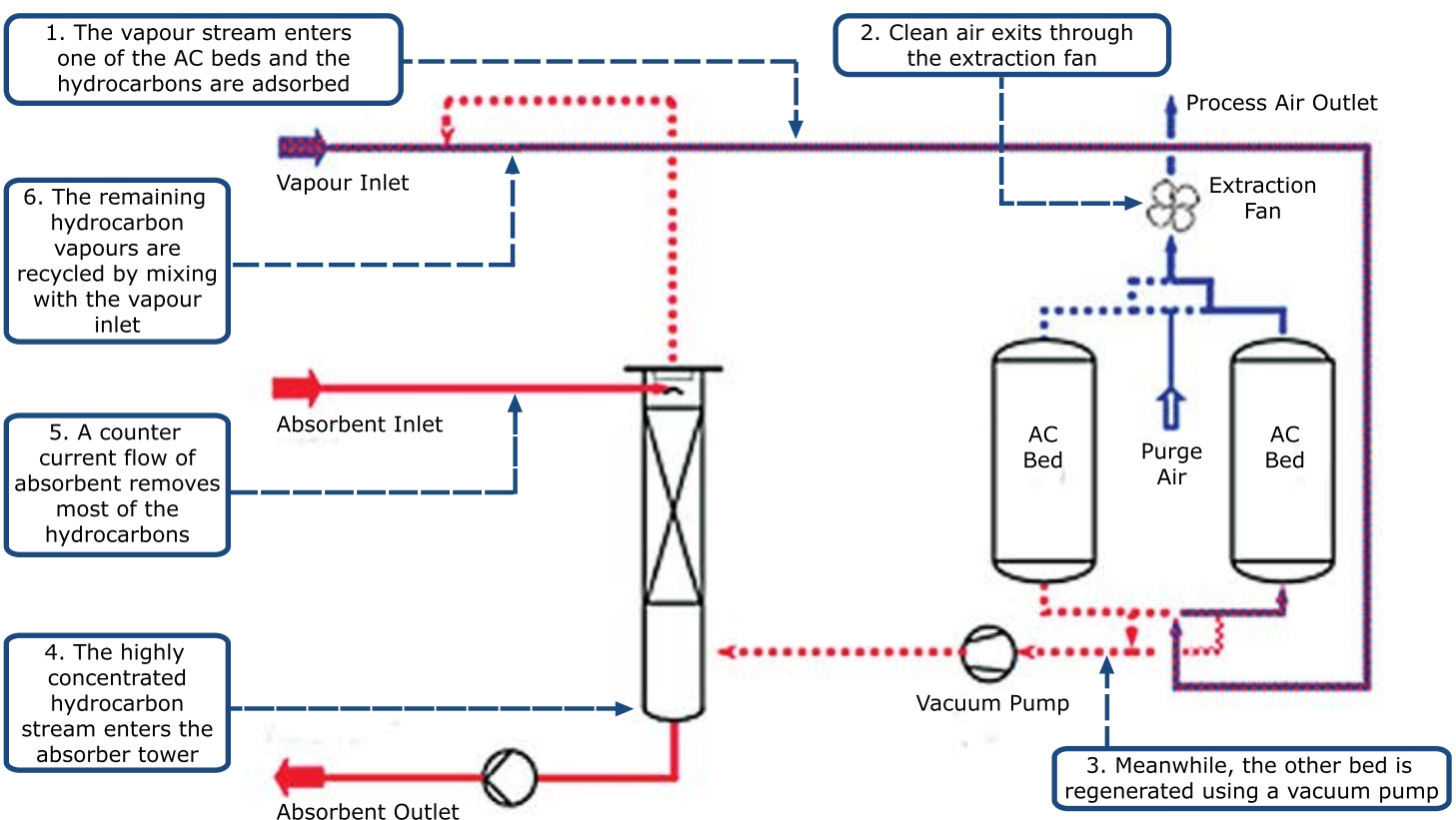
- Designed with extreme flexibility for variations in vapour flow and hydrocarbon concentration
- Complies with emissions from 35 g/Nm³ to 150 mg/Nm³
- Addition of a second stage ensures compliance with TA-Luft demand of 50 mg/Nm³
- Uses rotary vane vacuum pumps for high reliability and low power consumption and maintenance
- VRUs manufactured for all climate conditions, from desert to arctic
- All systems are constructed in accordance with internationally recognised standards and codes



An advanced and user-friendly interface allows the operator to get a clear overview of the VRU

Vapour Recovery Process Description

Our Depot Series™ uses the Carbon Vacuum Adsorption (CVA) technology with Activated Carbon (AC) beds to recover hydrocarbons. The diagram below shows a simplified flow diagram of the cyclic process:



Unique Features of the Depot Series™

Pre-Engineered Solution

Most documentation (detailed electrical documentation, PIDs, general arrangement & foundation drawings, etc.) is available shortly after the order is placed. The high level of standardisation allows fast and reliable delivery time. Well proven design results in high quality VRU with long lifetime (generally 25+ years), high availability (>98%) and low maintenance and lifecycle cost.

Zero Pressure Loss

An extraction fan at the AC vessel outlet compensates for all pressure losses in the VRU system, avoiding overpressure in the system and often reducing the necessary vapour inlet pipe size. In most cases the extraction fan excludes the need for a certified Zone 0 vapour transport blower in the vapour header.

Superior Carbon Lifetime

Extremely high duty activated carbon with excellent adsorption and regenerative properties is used in all Cool Sorption VRUs. The use of pelletized, mineral-based carbon, with much higher physical stability than granular carbon, minimises dust tendency, resulting in longer lifetime of the carbon and vacuum pumps, as well as long term compliance with emission demands.

Advanced Activated Carbon Vessel Design

An unique "hold down" arrangement prevents movement of the carbon bed during pressure changes. Formation of dust from friction as well as uneven distribution of the activated carbon is thereby prevented, resulting in long-lasting processing capacity of the unit.

Safety History

No recorded incidents in over 20 years. All pressure vessels and piping are designed to withstand high pressure, ensuring optimal safety even in the highly improbable case of a runaway temperature increase in the activated carbon beds.

Rotary Vane Dry Vacuum Pump

Highly efficient and reliable rotary vane dry vacuum pump(s) with between 25-30% lower power consumption than traditional liquid ring pumps. No glycol waste disposal concerns. Simplified piping system and simplified maintenance compared to liquid ring pumps. Simple and flexible cooling system compared to the screw pump and easier and faster maintenance.

Standard Energy Saving Mode and VOC Measurement

Highly advanced energy saving mode utilising loading signal and VOC measurement at vent outlet to control the system and to strongly reduce energy consumption during low operational activities. The VOC measurement system can also be used for emission logging.

Easy Access to and Maintenance of Components

All valves are located at ground level, eliminating the need for ladders and platforms to the top of the carbon beds. This reduces both installation time and price and improves the access and safety for operators and maintenance engineers.

Remote Access (Optional)

Connection via secure modem to Cool Sorption service department for easy diagnostics.

Technical Specifications*

MODEL	DS-080		DS-150		DS-300		DS-450		DS-550		DS-700		DS-850	
Max number of bays	1		2		4		6		8		10		12	
Arms connected Simultaneously	4		8		16		24		32		40		48	
Absorbent flow, m ³ /h	6		10		20		35		35		53		53	
Vapour inlet header	6"		6"		6"		8"		8"		10"		12"	
Power installed, kW	26		36		52		84		86		114		114	
Power consumption, kW	23		32		47		76		77		103		103	
Emission Limit, g/Nm³	10	0,15	10	0,15	10	0,15	10	0,15	10	0,15	10	0,15	10	0,15
15 minute capacity, m ³	40	35	90	52	180	115	235	197	315	205	400	315	510	315
1 hour capacity, m ³	120	100	260	154	510	335	690	576	900	595	1160	910	1440	920
4 hour capacity, m ³	348	290	710	450	1420	964	2000	1667	2480	1715	3300	2630	4000	2645
Continuous capacity, m ³ /h	76	64	152	99	304	202	436	364	530	375	721	575	841	575

* Capacities in table correspond to VRUs with inlet vapour concentration of 40 vol% and emission limits of 10 g/Nm³ and 150 mg/Nm³, excluding methane. All units can comply with TA-Luft 50mg/Nm³ using a second stage vapour polishing. Number of bays/arms are indicative. Data may vary depending on local conditions and requirements. Always consult our sales team to determine the appropriate VRU for your operations as parameters such as product load, HC concentration, type of absorbent and others will dictate the sizing of the unit.

Service and Maintenance

Cool Sorption has a Service and Maintenance Department comprised of highly experienced service engineers. We are available to support both Cool Sorption and third party VRU customers. Our service concept includes:

Breakdown Services

- 24/7 hotline service
- Call-out with guaranteed response time

Preventive Maintenance Services

- Periodic preventive maintenance
- Remote online supervision
- Emission measurement & reporting

Life Cycle Services

- Upgrade and revamp
- Carbon test & exchange
- Consultancy

