

VACUUM DISTILLATION UNITS SRU-320 TO SRU-3000

FOR RECYCLING OF 1100 TO 20000L SOLVENT DAILY



Customizable
CH250W159D16



Highest
quality
d9911c7



Pan-european 24h
on-site service
0U-21f6 26LA1C6



Safe through
primary EX-protection
b11W9L7 EX-b10f6C10U



SRU-320
2K0-350

SRU-650
2K0-820

SRU-2000
2K0-3000



Integratable into
existing systems
6X121U8 2L2f6U1



Fully automatic for
monitoring free
24h operation
54U 0b91910U



Production-
optimization through
quality increase
d9911c7 1UCL6926

VACUUM DISTILLATION UNITS SRU-320 TO SRU-3000

THE IDEAL UNITS FOR MEDIUM TO HIGH SOLVENT QUANTITIES

The models SRU-320 to SRU-3000 are recommended for daily quantities of 1100 - 20000 l. Through the innovative vacuum technology your solvents can be recycled very cost efficiently.

The filling of the units SRU-320 to SRU-300 takes place fully automatic and is controlled by filling level regulation. At the end of the process the distillation residues are treated up to the desired residual solvent rate. Therefore, almost unattended 24-hour operation is possible.

Instruments in the front panel inform about process pressure, solvent gas temperature and heating temperature of the unit. The discharging of the residues is done via the scraper system and the discharge slide damper. A manhole aperture with persistent O-ring seal on the top of the unit ensures operator convenience. Additionally the inspection glass of the manhole aperture allows visual observation of the process in every distillation phase.

The unit is equipped with switching cabinet and PLC control unit. The control unit ensures the desired process flow and monitors the compliance of all safety relevant parameters.

The vacuum unit reduces the boiling point of the solvent, avoiding thermal decomposition of the solvent. At the same time the energy consumption is decreased, solvent yield, performance and distillate quality as well as operation safety are greatly increased. Additionally the process under vacuum (and therefore the absence of oxygen) offers a improved explosion protection and a more favorable ex-zone classification.



DISTILLATION UNIT

▶ Double-walled, conical, vertical container	✓
▶ Stirring-/ scraper system in -design with adjustable, nonarcing scraper system	✓
▶ Cleaning-/ maintenance aperture in manhole version	✓
▶ Safety closure with O-ring seal	✓
▶ Manual drain valve (DN 200) with final position switch	✓
▶ Pneumatic drain valve (DN 200) with electro pneumatic -pilot valve and final position switch	○
▶ Pneumatic drain ball for automatic discharge of liquid residues	○
▶ Container interior electropolished	○

VACUUM UNIT

▶ Vacuum pump in -design	✓
▶ Liquid ring vacuum pump, up to 35mbar, low maintenance	✓
▶ High-performance chemistry diaphragm pump, up to 10mbar	○
▶ Dry running high performance pump, up to 1mbar, low maintenance	○

HEATING

▶ Heating in -design	✓
▶ 1 to 3 stage, PID-controlled heat carrier heating	✓
▶ Redundant temperature and heating monitoring	✓
▶ Heat carrier: thermal oil	✓
▶ 4 and multistage, PID-controlled heat carrier heating	○
▶ Heat carrier: hot water	○
▶ Heat carrier: steam	○

FRAME VARIANTS

▶ Anodized, conductive aluminium profile frame	only SRU-320
▶ Conductive, painted steel frame	✓
▶ Powder coated, conductive steel frame	○
▶ Galvanized, conductive steel frame	○
▶ Conductive stainless steel frame	○

✓=Standard, ○=Optional

Conical, vertical distillation vessel

- ▶ Easy discharging and cleaning using gravitation and scraper system

Stirring and scraper system

- ▶ Prevention of incrustation at the inner surface of the vessel
- ▶ Optimized heat transfer inside the vessel
- ▶ Individually customized scraper provide optimal vessel cleaning without sparking

Prepared for water cooling

- ▶ Emission minimized condensation of the solvent gases even at high ambient temperatures




Switching cabinet with electrical control system

- ▶ Continuous process flow
- ▶ Monitoring/ compliance of the safety parameters
- ▶ Designed for 24h operation (minimized unit supervision)

SAFETY/ SYSTEM INTEGRATION

▶ Explosion protection class EX II 3 G c IIA T3 (with inerting and suction)	✓
▶ Inerting unit	✓
▶ Suction hood at slide damper	✓
▶ Explosion protection class EX II 2 G c IIA T3 (without inerting/ suction)	○
▶ External, single or double-walled container for fresh/ contaminated or mixed goods	○
▶ Feed station for mix-container	○
▶ Mobile and tiltable residue container	○
▶ Safety collecting drip pan according to WHG	○
▶ Integration in existing plants/ systems	○

CONTROL SYSTEM

▶ Fully automatic, PLC operated system	✓
▶ Designed for monitoring free 24h operation	✓
▶ Delay timer for night-/ weekend operation	✓
▶ Including 15m cable loom (from unit to switching cabinet)	✓
▶ <u>At unit</u>	
▶ On-/ off switch	✓
▶  -operation indicator lamp	✓
▶  -error indicator lamp	✓
▶ Emergency stop palm button	✓
▶ <u>At switching cabinet</u>	
▶ Graphics display and operating terminal at cabinet door, monochromatic, 16 gradations, touchscreen	✓
▶ Operation indicator lamp	✓
▶ Error indicator lamp	✓
▶ Emergency stop palm button	✓
▶ PID-controller & display	✓
▶ 50m cable loom	○
▶ <u>At unit</u>	
▶ Graphics and operating terminal in  -design	○
▶ <u>At switching cabinet</u>	
▶ Graphics and operating terminal with color display, touchscreen	○

✓=Standard, O=Optional



Safe through primary explosion protection

2916 ~~μικροίς~~ ~~βιωμαία~~ ~~εχθροίον~~ ~~biofection~~

Primary explosion protection is written in capitals at DesbaTec. All vacuum distillation units come off-the-shelf with inerting unit. This offers besides the self-evident secondary measures the highest possible safety.



SERVICE

▶ 24 months warranty	✓
▶ Pan-european 24h on-site service	✓
▶ Express shipment of spare parts	○
▶ Up to 60 months warranty	○
▶ Remote maintenance through automation device or modem	○
▶ Support at the creating of the explosion protection document	○

✓=Standard, ○=Optional

Highest economic efficiency

- Amortisation normally < 1 year
- Low operational costs
- High recovery rate (up to 98%)

Automatic and continuous operation

- No cooling phase of the unit
- No manual filling

Process optimization

- Production optimization through constant distillate quality
- Minimization of disposal costs
- Minimization of fresh goods purchase and storage costs
- Minimization of disposition and handling expenditures

Systems engineering according to european regulations

- Highest operational safety



Customizable

There are many use cases for vacuum distillation. For that reason, every unit is individually tailored and designed to the specific requirements in order to producing optimum results for you and your company.



Integratable into existing systems

DesbaTec vacuum distillation units can be directly integrated into existing systems/plants. This saves handling effort and allows a continuous supply of your processes with recovered solvent.



Highest quality

Highest quality of the components is natural for us, as well as efficient production processes and precise, electronic measuring and control technology. All wetted parts are made of stainless steel, including the double-walled jacket and the welded heat-exchanger.



Production optimization through recycling

Continuous supply with solvents of constant high quality improves process results (e.g. washing results, degreasing, etc) and thus provides a efficient production. Increase of production is often possible with this optimizations.

TECHNICAL DATA	SRU-320	SRU-450	SRU-650	SRU-1500	SRU2000	SRU-3000
Overall capacity (l)	320	450	650	1500	2000	3000
Operating capacity min. - max. (l)	150-180	250-300	350-400	1000-1200	1200-1500	1800-2000
Nominal distillation rate (l/h) ⁽¹⁾	50-80	70-130	80-160	200-500	300-600	400-900
Process pressure (bar)	-1,0 to +0,5					
Process temperature max (°C) ⁽²⁾	200°					
Thermal oil heating	integrated	integrated	integrated	separate ⁽⁸⁾	separate ⁽⁸⁾	separate ⁽⁸⁾
<u>Protection class</u>						
- With inerting and suction	EX II 3 G c IIA T3					
<u>Power consumption</u>						
- Normal operation (kW) approx.	12	15	21	35	50	65
- Heating (kW)	15	20	30	50	60	80
Voltage, frequency ⁽³⁾	230/ 400V, 3Ph, 50Hz					
Coolant requirements (m³) ⁽⁷⁾	1,8	1,8	2,0	2,5	3,0	3,5
Width (mm)	1250	2400	2800	2800	2800	3200
Height (mm) ⁽⁴⁾	1400-2750	2800-3000	3250-3400	3800-4000	4000-4200	4600-4800
Depth (mm)	1750	1800	1800	1800	1800	2000
Net weight (kg) approx.	700	1000	1200	1600	1800	2300
RELATED VACUUM UNIT	DT-30	DT-30	DT-50	DT-95	DT-110	DT-130
Vacuum pressure max. (mbar) ⁽⁵⁾	35	35	35	35	35	35
Max. suction capacity (m³/h) ⁽⁶⁾	25	25	50	80	100	110
Weight (kg) approx.	65	65	100	140	165	180

(1) depending on solvent, operating conditions, level of contamination and water content, (2) higher temperatures possible, (3) further on request (4) depending on residue container, (5) vacuum system for max. 1mbar possible, (6) operating liquid H₂O at 15°C, at 50Hz, (7) at max. 15°C, (8) integratable on request

The technical data stated above are to be regarded as orientation, as every unit is built and developed according to your wishes and requirements. // Version: 03/2014
Changes, errors and omissions excepted. // Photos and images can differ from actual quotation. // © DesbaTec Anlagentechnik GmbH