

PHARMASEP



®

PHARMACEUTICAL ASEPTIC SEPARATOR

FILTER AND DRYER IN ONE MACHINE
WITH VIBRO-ENERGY VACUUM DRYING
TECHNOLOGY, CIP/SIP CAPABILITY, AND
CLASS 100 CLEAN ROOM DESIGN



PH46 PHARMASEP

COMPLETE CONTAINMENT

Asptic batch filtration and washing of pharmaceutical solids



PHARMACEUTICAL ASEPTIC SEPARATOR

SWECO PharmASep™ Filter/Dryers were designed for the aseptic batch filtration and washing of pharmaceutical solids and for their further de-watering and drying. All processes are completed within the sealed chamber without any need for intermediate transfer, handling, or exposure to the external environment.

The PharmASep™ uses gentle, patented Vibro-Energy motion to promote fluid separation at low differential pressures. The motion is then combined with nitrogen purge to fluidize the bed of solids for gentle, efficient drying. No mechanical stirring devices are required. Solids are generally discharged as a flow-able powder with consistent dryness and free of lumps.

WET SEPARATION/FILTRATION

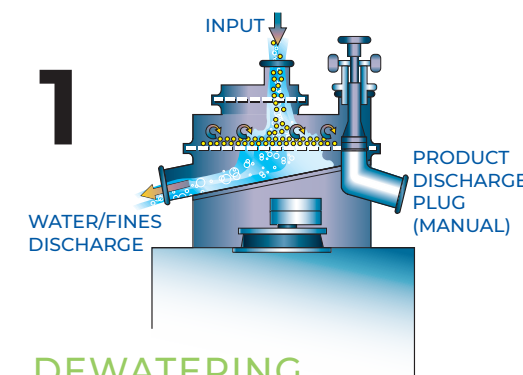
Once the screen is installed and the chamber is closed, SIP can be performed. When the chamber has cooled, product is introduced to the top (scalping) screen (1), which is used to remove occasional large particles or agglomerated solids from the product. Fines are carried through the top screen with the liquid and fall to the lower screen.

The lower (product) screen mesh is sized to retain particles above the desired size. The liquid phase passes through the mesh with the fines, leaving wet solids behind. The patented SWECO Vibro-Energy® motion promotes further dewatering and keeps the particles in motion. At the completion of the dewatering step, vacuum drying begins (2). Vacuum inside the chamber is set to a moderate level as dry nitrogen at a controlled temperature is introduced below the product screen. As drying proceeds, the solids spread evenly across the screen. The SWECO Vibro-Energy® motion continuously blends the solids to promote uniform drying while the nitrogen maintains temperature and carries away the moisture.

DISCHARGE

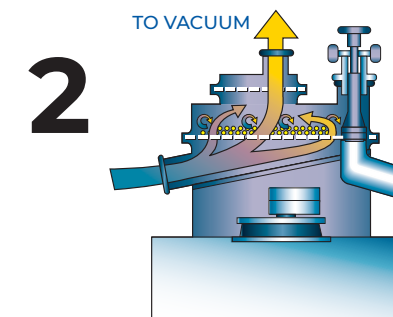
When separation and/or drying is complete, product discharge can begin (3). The product plug is retracted and the motion of the PharmASep™ is used to move the product across the top of the product screen to the discharge chute.

Following product discharge, the chamber can be wetted or rinsed as desired and the screens removed for inspection and cleaning. CIP Spray Balls can be inserted and CIP completed. After CIP, the spray balls are removed, clean screens are installed, the chamber is sealed, and SIP can be conducted (4) to begin the next cycle.



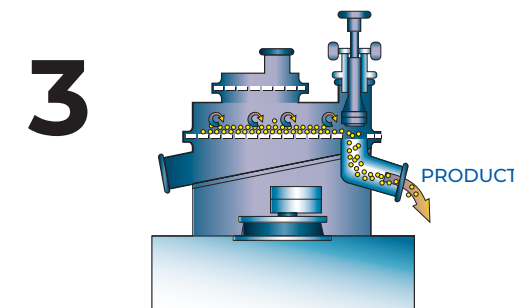
DEWATERING

RESIDENCE TIME IS MAINTAINED ON THE SCREEN TO FACILITATE REPRODUCIBILITY AND IMPROVE YIELD.



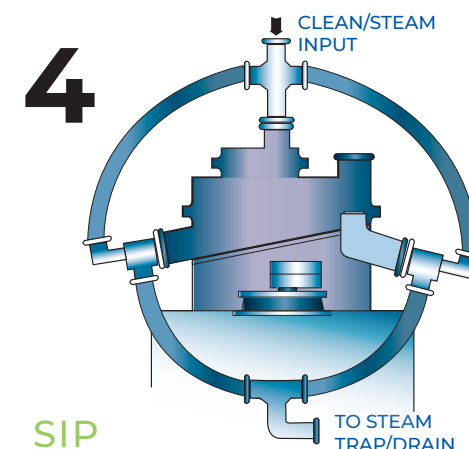
VACUUM DRYING

VACUUM DRYING OF PRODUCT WITHOUT ADDITIONAL HANDLING



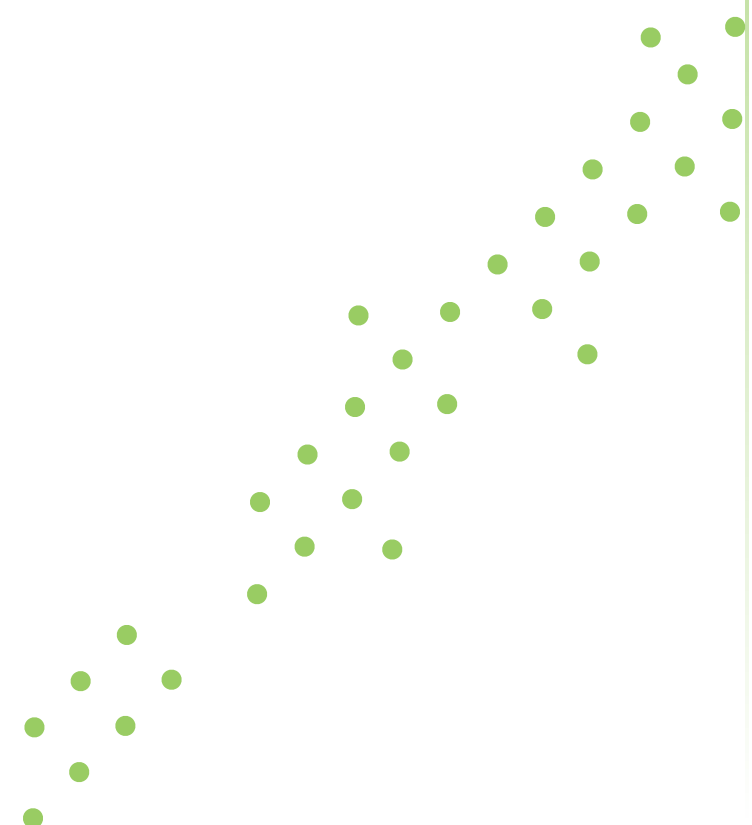
PRODUCT DISCHARGE

NO OBSTRUCTIONS TO PRODUCT DISCHARGE.



SIP

NO-GAP DESIGN ALLOWS FULL CIP/SIP CAPABILITY



LAB AND PRODUCTION SIZES

With validatable CIP/SIP capability and class 100 clean room design

LAB FILTER/DRYER

The SWECO PharmASep™ Filter/Dryer is available in lab-scale sizes that can be used to process up to 1kg (at .51 kg/m2 bulk density) of pharmaceutical-grade materials in an aseptic environment. The lab-friendly

designs are capable of the complete flexibility that today's R&D laboratories require. Results from the PH12 can be used to scale to production-size equipment.



PH06



PH12



PH12 ON CART

TECHNICAL DATA	PH06	PH12	PH12 ON CART
SOLIDS CAPACITY	0.75 L (0.2 gal)	3.75 L (1.0 gal)	3.75 L (1.0 gal)
PRESSURE CAPACITY	1 Bar (15 psi)+Full Vacuum	2 Bar (30 psi)+Full Vacuum	2 Bar (30 psi)+Full Vacuum
CONSTRUCTION			
Wetted Parts	316L SS	316L SS	316L SS
Screens	316L SS	316L SS	316L SS
Exterior	316L SS & 304 SS	316L SS & 304 SS	316L SS & 304 SS
DIMENSIONS			
Height	730 mm (28.7 in)	1135 mm (44.7 in)	1220 mm (48.0 in)
Length	838 mm (33.0 in)	575 mm (22.6 in)	1225 mm (48.2 in)
Depth	488 mm (19.2 in)	540 mm (21.6 in)	597 mm (23.5 in)
WEIGHT	102 kg (225 lb)	132 kg (291 lb)	295 kg (650 lb)
POWER	0.10 kW (0.13 hp)	0.28 kW (0.37 hp)	0.28 kW (0.37 hp)
SCREEN SIZES			
Top	50 mm (2 in)	150 mm (6 in)	150 mm (6 in)
Bottom	150 mm (6 in)	300 mm (12 in)	300 mm (12 in)

PRODUCTION FILTER/DRYER

Production-scale SWECO PharmASep™ Filter/Dryers can process batches of up to 25kg (0.51 kg/m2 bulk density) of solids. They can also be used in a “continuous-batch” mode where wet separation is required without drying. The sealed pressure vessel design, with its highly-polished, crevice-free interior, maximizes yields and reduces potential for

contamination while containing potent pharmaceuticals for safer handling. Unique Vibro-Dry technology, developed by SWECO, promotes vacuum drying while the product is gently tumbled and blended on the screen surface, accelerating drying and minimizing the potential to form agglomerates.

PH22



PH30



PH46



TECHNICAL DATA	PH22	PH30	PH46
SOLIDS CAPACITY	12.5 L (3.3 gal)	23.0 L (6.1 gal)	55.0 L (14.5 gal)
PRESSURE CAPACITY	2 Bar (30 psi)+Full Vacuum	2 Bar (30 psi)+Full Vacuum	2 Bar (30 psi)+Full Vacuum
CONSTRUCTION			
Wetted Parts	316L SS	316L SS	316L SS
Screens	316L SS	316L SS	316L SS
Exterior	316L SS & 304 SS	316L SS & 304 SS	316L SS & 304 SS
DIMENSIONS			
Height	1335 mm (52.5 in)	1500 mm (59.1 in)	1615 mm (63.6 in)
Length	900 mm (35.4 in)	1080 mm (42.5 in)	1460 mm (57.5 in)
Depth	815 mm (32.1 in)	1080 mm (42.5 in)	1350 mm (53.1 in)
WEIGHT	630 kg (1,389 lb)	725 kg (1,598 lb)	1187 kg (2,617 lb)
POWER	1.87 kW (2.5 hp)	1.87 kW (2.5 hp)	1.87 kW (2.5 hp)
SCREEN SIZES			
Top	300 mm (12 in)	450 mm (18 in)	800 mm (30 in)
Bottom	600 mm (22 in)	800 mm (30 in)	1200 mm (46 in)



CREVICE-FREE, FULLY-DRAINABLE

FEATURES

- Chamber design is crevice-free and fully-drainable
- Interior Ra < 0.3 microns and electropolished
- Exterior Ra < 0.6 microns and passivated
- Temperature-control jackets available
- Certified explosion-proof motors
- Custom control panels available
- Hydraulic lift devices facilitate screen change and internal inspection
- ASME rated for full vacuum and internal pressure up to 30 PSIG (2 bar)
- No internal scraping or rotating mechanical devices or seals
- Full line of PharmASep™ screens complete with certifications and traceability to suit your process needs



Manufacturers worldwide rely on SWECO.

We span five continents with 9 manufacturing and support facilities and over 100 sales and service representative offices.

So, wherever you are, be assured that SWECO – the global leader in screening technology – is there when you need us.

SWECO has sales agents and/or licensees in most countries.