

VORTI-SIV

Powder Case Study - SLS Recovery

The application

Recycling loose batches of Nylon™ powder material after a parts build during the SLS® process. Process rates of 1 – 2 Kg. / min. at #70 TBC mesh/269 micron are required. An additional #94 TBC mesh/180 micron is specified for a separate recovery.

The problem

The need to remove small contaminates and oversize powder from the process. This prevents streaks on the part bed. The sieve must be compact and portable to fit beneath a parts breakout cabinet.

The solution

The installation of a high-speed center-discharge 1/6HP TENV 3600RPM VORTI-SIV® Model RVM-15E with sealed inlet cover, flexible RCN 8" dia. outlet boot and stainless steel sanitary-type contact parts.

The benefit

Minimum Clean-up & Dust-free Processing-

Only two (2) stainless steel sanitary product contact parts allows faster powder clean-up. The contact parts are secured by four (4) quick-release camps, which enables easy screen access. A removable clear Lexan™ dome cover enables dust-free screening.

Compact Sieve –

The 34" high portable center-discharge unit is typically mounted inside the BOS cabinet. Four (4) casters are supplied. An optional stand-alone or in-line XP 1/3 HP or 1/2HP production version Model RVM-15E is available for metal powder recovery. See additional case study.

SFA® Ultrasonic Deblinding Kit – Optional

A single phase 110/220 VAC 100 watt x 33-37kHz Ultrasonic auto-tuned generator with an externally mounted stainless converter supplies additional high-frequency energy to the 3450RPM mechanical gyrating screen/sieve. This eliminates screen blinding of the powder. Process rates increase up to 5 times.

*Screen elements furnished with each system:
#94 TBC /180 micron & #70 TBC/269 micron.*



Model RVM-15E with cover & discharge boot, located beneath breakout cabinet



Sieve on-site with Dust Collection System



VORTI-SIV®
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TECHNICAL DATA:

- Electric Vibrating Motor 1/6, 1/3 or 1/2HP, 1 or 3 Phase, continuous duty, DIV II or XP, ATEX Zone 20-22, 50/60HZ, 1800 or 3600RPM.
- Variable Frequency Drive-Optional
- Clamps: Four(4) Sanitary Heavy-Duty or Toggle/Pan. Nickel Plated Carbon Steel or all Stainless Steel.
- Contact Parts: 304/316 Stainless Steel with brush finish or 15ra/electro-polish.
- Non-Contact Parts: Carbon Steel Powder Coated Finish or all 304/316 Stainless Steel.
- Motor: All 304 Stainless Steel Enclosure or Powder Coated Safety Orange or FDA White Epoxy.
- Screens: Pre-tensioned epoxy bonded or silver solder. Removable Mesh Ring with Clip. Stainless or Nylon Mesh.
- Ultra-sonic fine mesh de-blinding kit available on all types.
- Dimensions: 20" x 20" x 2" high square tube base only, 3/8" plate base only or Four-legged portable support frame with discharge height as required. Optional telescoping legs.
- Weight: 105-200lbs. depending on options or motor size.



Model RVM-15E shown with open cover. Ultrasonic wave guide and resonator ring, with converter mounted externally.

Product Contact Parts



Sieve with waveguide and resonator.



Sieve

Funnel



Model RVM-15E with Vac-U-Max® vacuum feed recovery system.



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