SERVOLIFT

April 10, 2019

Nürnberg, Germany

POWTECH

Visit us in Hall 4 Booth 4-202

MODULAR WASHING SYSTEMS FOR VALIDATABLE CLEANING OF CONTAINERS AND PROCESS MACHINES IN THE PRODUCTION PROCESS

Presented by Nicolas Knobel, Director Product Standardization & Product Management, Servolift GmbH

- Processes around the container
- Cleaning as part of a process
- Multiple process approach
- Process & Mechanical engineering
- Modularity within Cleaning Systems

SERVOLIFT lifetime solutions

Processes around the container

Sieving

Dispensing

SERVOLIFT

Handling

Cleaning

Blending

Processes around the container: Video

SERVOLIFT lifetime solutions

Processes around the container

Sieving

Dispensing

SERVOLIFT

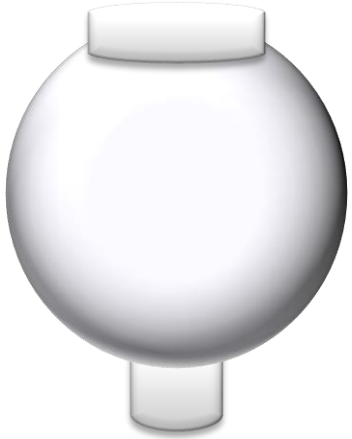
Handling

Cleaning

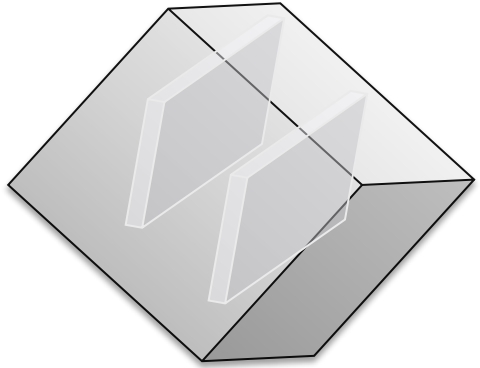
Blending

- **Cleaning as part of a process:**
  Resolution of conflicting requirements

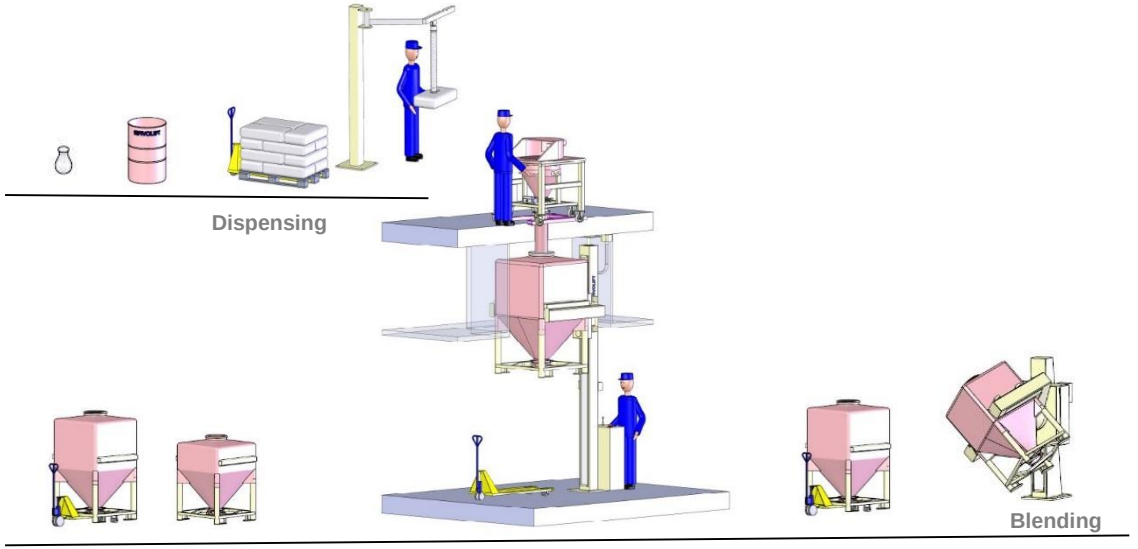
Requirement: Validatable cleaning

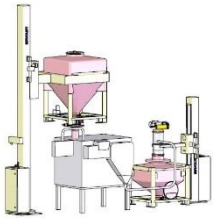


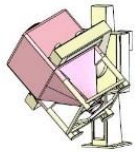
Requirement: Validatable blending

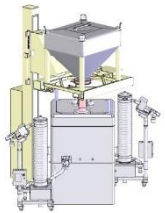


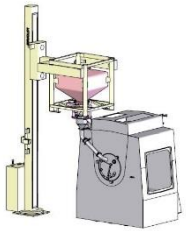
- **Cleaning as part of a process:**
  Process Flow Granulation

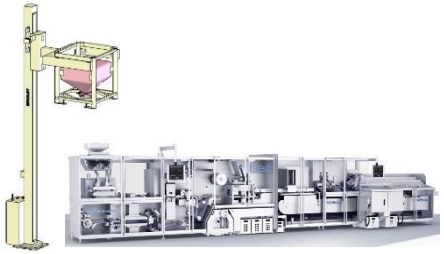


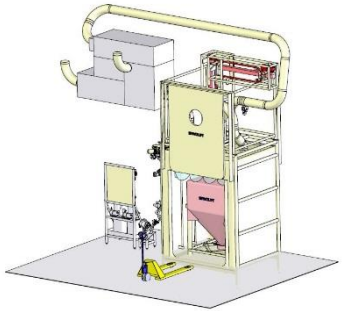

Roller-Compacting


Blending


Compressing


Coating


Blistering


Washing and Drying

Multiple process approach

Optimize the use of resources to coordinate all the interests

Reduces the risk of overestimating or underestimating a requirement

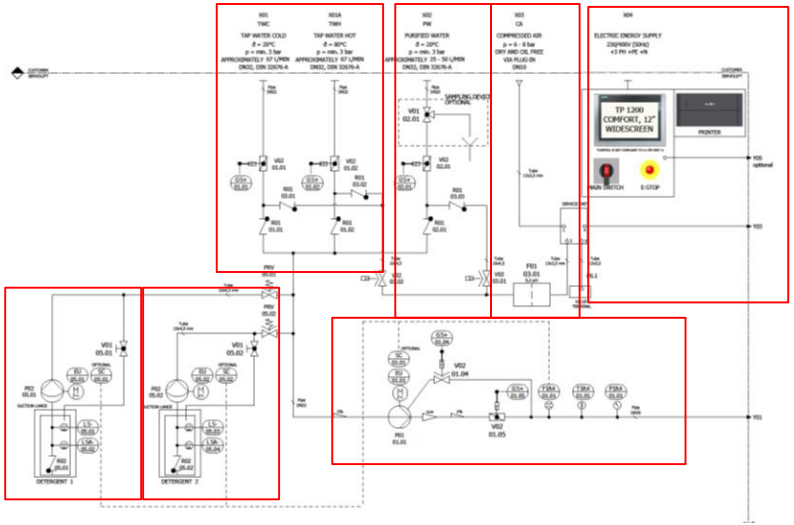
Reduce the processing time

→ What is a multiple process approach in practice?

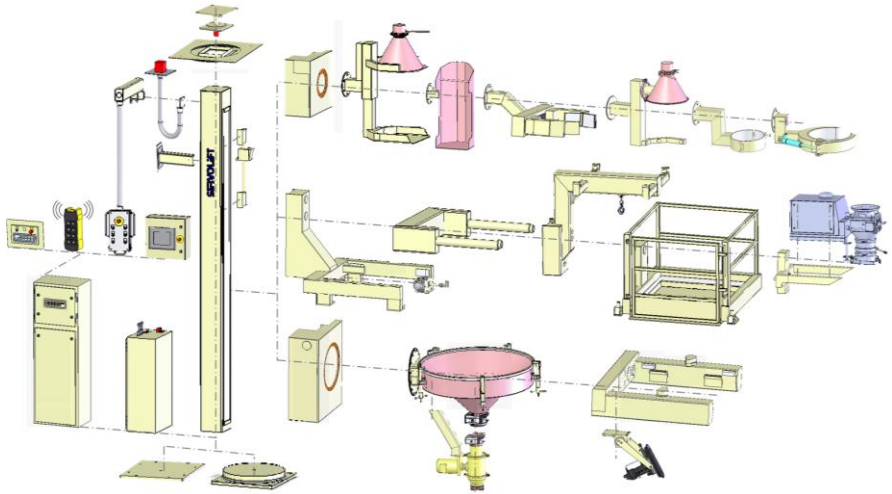
→ What is the relation between a multiple process approach and modularity?

Process & Mechanical engineering

Typical approach in process engineering: PID



Typical approach in mechanical engineering: Subassemblies Division

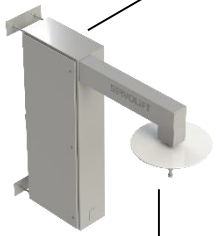


- **Process & Mechanical engineering**

Case: high containment cleaning system

SERVOLIFT lifetime solutions

Process machines



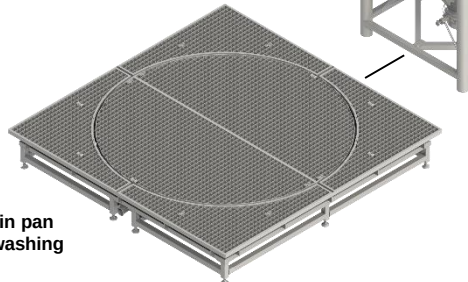
Washing head height adjustable

Washing lid for container

Washing System CSW mobile or stationary

PW Sampler

Hose set for connection between washing system and accessories



Turntable with drain pan for easier exterior washing

Triple washing device for drums

Single washing device for drums

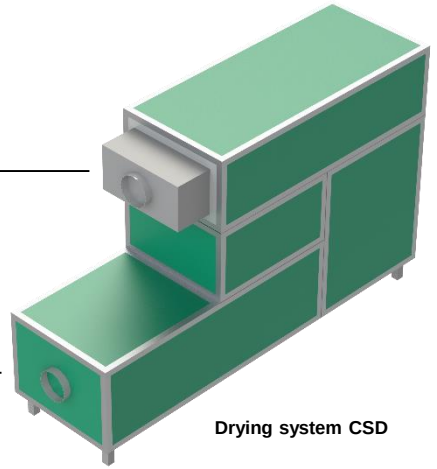
Outside washing tool

SERVOLIFT lifetime solutions

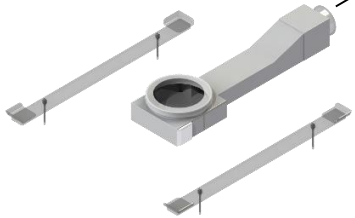
Operation by touch panel in drying room

Drying head height adjustable

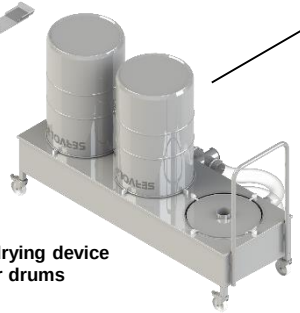
Drying lid for container



Drying system CSD

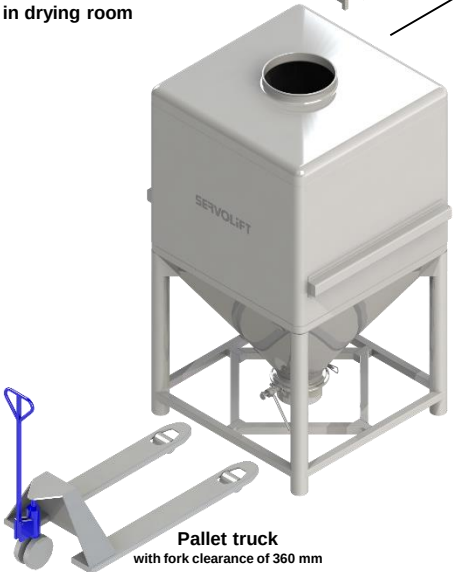


Air collector with mechanical stops for the positioning of the container



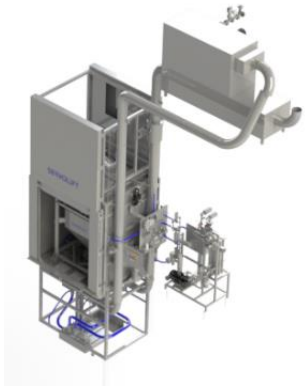
Triple drying device for drums

Single drying device for drums



Pallet truck with fork clearance of 360 mm

Modularity within Cleaning Systems

Cleaning System CS			Cleaning in place	Cleaning Chamber
Washing system	Accessories	Drying system		
CSW	CSA	CSD	CP	CC
				

Conclusion

- Different process requirements have to be taken into account

- Multiple process approach reduce
  - Complexity
  - Risks
  - Time

- Modularity within the Cleaning Systems increases
  - Scalability
  - Flexible use
  - Application versatility

POWTECH

Visit us in Hall 4 Booth 4-202

Thank you for your attention!

Contact:

Nicolas Knobel
Director Product Standardization
& Product Management

Servolift GmbH
Albert-Einstein-Strasse 9
77656 Offenburg
Deutschland

Fon	+49 (0) 781 / 61 00 - 141
Fax	+49 (0) 781 / 61 00 - 841
E-Mail	knobel@servolift.de
Web	www.servolift.de