



CONTAINMENT & PROCESS

APORT

Containment & Process

In API manufacturing and solids handling, high demands are placed on occupational and operational safety.

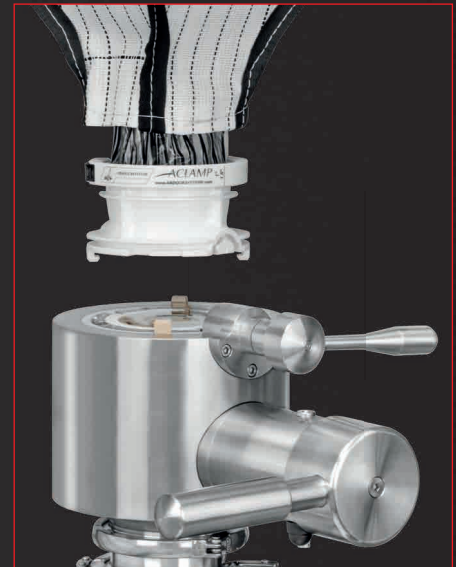
Open charging and discharging processes are a thing of the past!

Highly active ingredients have increased the requirements for primary packaging systems and they now play an ever more important role.

Nowadays a modern and innovative packaging system must be able to fulfill many functional criteria:

Single-use, Containment in the OEB 5 range, compatible with varied filling and emptying interfaces, suitable for contained sampling, UN certified transportation box for hazardous goods and can also achieve hybrid functions.

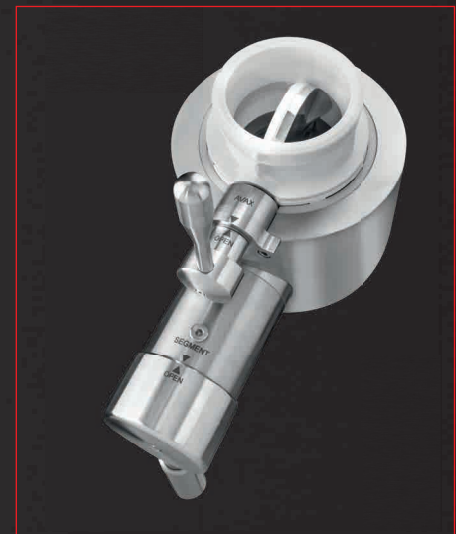
Currently, complex and difficult to clean systems are being installed for pressure, vacuum, temperature, CIP/SIP and solvent resistance applications.



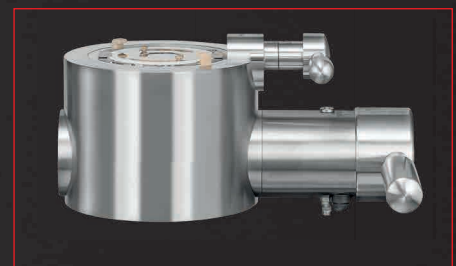
Hybrid connection or disconnection: AVAX single-use on top and APORT with integrated AVAX stainless steel



Starting situation of charging process



APORT locked and open



APORT interface closed

For the first time due to technological improvements, we have succeeded with APORT in delivering exceptional performance in one compact valve and thereby improving the overall process.

Flexible disposable bags like ACUBE with contained AVAX split butterfly valve as well as stainless steel vessels can be docked to the APORT.

The APORT is used in applications that include process vessels with explosive atmospheres such as reactors, blenders and dryers with high demands for containment, vacuum and pressure shock resistance.



Single-use reactor charging with vacuum & pressure resistant APORT

APORT is the worldwide first and the only valve which meets all these requirements.



Emptying out of vacuum dryer via APORT into ACUBE packaging unit

Advantages:

- Meets OEB 5 requirements (STTW $\leq 1 \mu\text{g}/\text{m}^3$)
- Intuitive and secure handling
- Compact and robust construction with flexible ACUBE
- Integrated AVAX-interface with passive to passive design
- Tri-Clamp seal integrated (4" BS 4825-3)
- Hybrid operation with AVAX single-use
- CIP & SIP execution available
- Compliance to ATEX guidelines
- Full vacuum and pressure rating up to 20barg
- FDA approval of all seals
- Temperature-resistant: -20°C to 280°C (material depending)
- Cooled or heated valve housings
- Inflatable sealing technology with scraper
- Cost-effective system

AVAX

One valve one system

Sharpened in form and performance

The revolutionary new AVAX split butterfly valve technology is also available in stainless steel.

This allows AVAX to be used for applications with higher pressure and or temperature requirements.

Moreover it can be operated as a multi-cycle device like the market-leading Andocksysteme SBVs.

Due to its complementary **passive to passive design** it is fully compatible with the single-use version. A hybrid operation like stainless steel and plastic valves is integrated standard.



Passive-Passive design



Hybrid operation

Disposable passive docked with stainless steel passive

The system can be operated either manually or automated by use of a retrofitted actuated opening device.