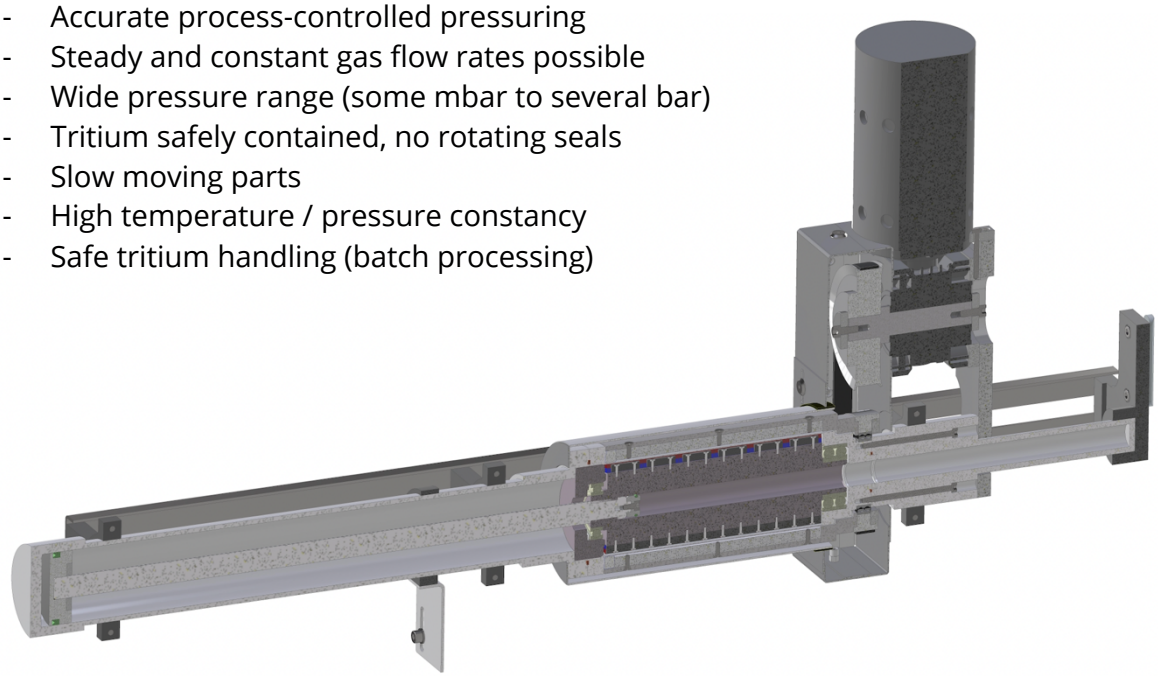
Protium/ Deuterium/ Tritium Ultra Syringe Pump

The smolsys ultra syringe pump allows the compression of gas in a steady and constant manner, up to a defined pressure. A pressure range of some mbar to several bar can be achieved. All pumps are based on the same layout but are configured to customer specification.

The pump is completely magnetic driven and thus doesn't have any rotating sealings to the exterior atmosphere. The pump housing itself is vented to a vacuum pipe system, allowing to collect even minute traces of gas this also acts as a second safety barrier.

Benefits of smolsys syringe type pump system

- Accurate process-controlled pressuring
- Steady and constant gas flow rates possible
- Wide pressure range (some mbar to several bar)
- Tritium safely contained, no rotating seals
- Slow moving parts
- High temperature / pressure constancy
- Safe tritium handling (batch processing)



Picture: Pump with motor cutaway model of the compression unit, plunger is moved to full extent (highest compression)

Things to be considered using a syringe type pump

- The volume flow is interrupted while the pump is "reloading". This issue can be solved by using multiple pumps and regulated valves.
- The pump is bulkier and heavier compared to standard compressors/pumps.

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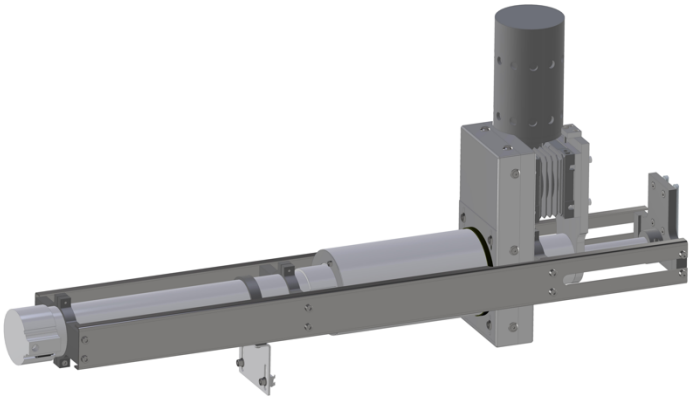
Compression/ volume ratio

The max/ min pressure, as well as the volume to be pumped will define the pumps size and technical layout. We design all pumps to customer's needs. Layouts with pressure up to 50 bar are possible with the existing design.

Pump size/ dimensions.
The size and dimensions are related to the requirements of maximum pressure and volume required. The pump pictured is 1.2m high, with a 20cm diameter plunger, weighting app. 60 kg.



Wetted materials in use:

- 1.4404-X2CrNiMo17-12-2
- FPM
- Copper

Contact us for more details:

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