

SULZER

Medium-consistency technology

Innovative MCE™ pumping systems for process upgrades



High performance technology

Medium consistency (MC) pumping and chemical mixing systems are the most important stock transfer equipment in the modern O₂ delignification and bleaching processes, recycled fiber and mechanical pulp lines. With the MCE pumping technology, a new record level of performance over a wide consistency, temperature and pressure range is provided by the unique Fluider™ impeller, having effective multifunctional turbulence generation, gas separation, pumping hydraulics and degassing combined with a wide-passage gas removal system of high capacity.

Features and advantages

Wide range of process applications matching industry standards.
 High pump heads up to 240 m.
 High production rates from 20 to 10'000 ADMT/d.

Proven reliable mechanical design with degassing alternatives:

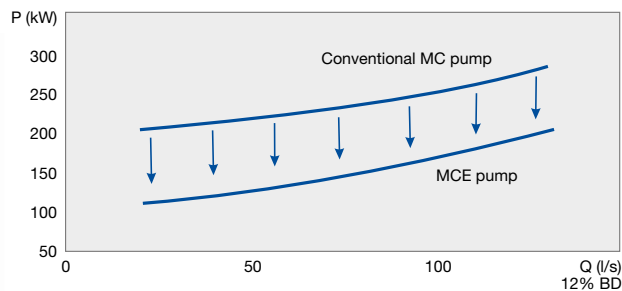
- a separate external MDS degassing system
- a built-in degassing system
- degassing without using a vacuum pump

High temperature and high consistency pumping:

With the new MCE pump innovations, stock with a consistency of 8-18% and temperatures of over +95°C can now be pumped from a low-level pumping drop leg. This gives a significant saving in process costs (steam) plus layout advantages.

Fluider pumping hydraulics for high efficiency performance:

Remarkable power consumption savings with the same pumping head.



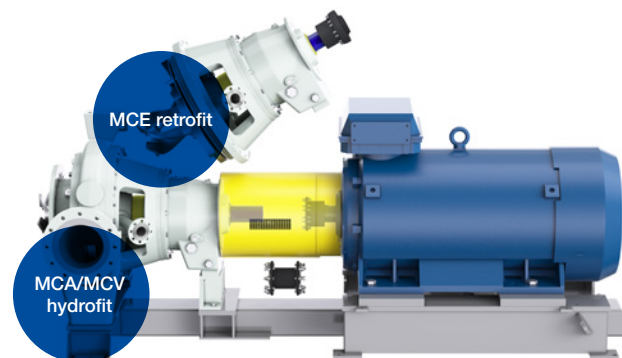
Remarkable power consumption savings with the same pumping head

- ① Dropleg
- ② SX chemical mixer
- ③ Fluider pumping hydraulics
- ④ MCE pump
- ⑤ MDS degassing system

Energy savings and process upgrades

Fluider technology is used successfully in production rate and process upgrades through the installation of a retrofit unit or the replacement of an existing earlier generation MC pump. Piping changes and drive unit changes are not necessary in most cases.

Increased bleaching efficiency and lower energy or chemical consumption has given very short reported payback times, even as short as 2-3 months.



Benefits of the MCE / MCE-V retrofit and MCA / MCV hydrofit performance improvements

- Higher production rates with the same existing basic MC pumping system
- Cost savings because no need to change to bigger MC pump size
- Higher pump efficiency and remarkable energy savings are possible
- Higher pumping heads provide possibilities for process upgrades e.g. increased bleaching efficiency with higher pumping consistencies and higher reactor pressures
- Remarkable chemical and steam savings when running the MC equipment with higher consistency
- Lower operation costs as less dilution water is needed
- Increased storage tower capacity with higher storage consistency
- Possible to eliminate belt or gear drive units that require a lot of maintenance
- Extended lifetime of equipment and drive units are possible

MCE / MCE-V retrofit upgrades for existing 1st generation Sulzer MC pumps

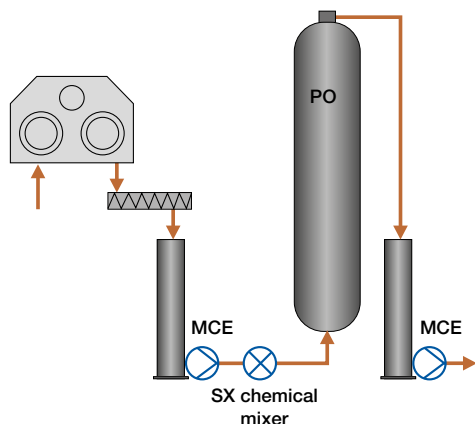
- New more efficient Fluider impeller
- New casing cover
- New bearing unit adapter
- New shaft seal alternatives with cheaper single or double mechanical seal
- New vacuum pump parts for the internal degassing

MCE / MCE-V hydrofit upgrades for the existing 2nd generation Sulzer MCA and MCV pumps

- New MCE pump casing
- New more efficient Fluider impeller
- New O-rings and gaskets
- For some MCA / MCV pumps also new more efficient Fluider impeller upgrade

References

Reliable MCE/MCE-V retrofit and MCA/MCV hydrofit upgrades are running in Brazil, Canada, Finland, France, Indonesia, Japan, Spain, Sweden, South Africa, and United States.



Pressure increase of 3 bar in the reactor or in the pre-reactor with existing drive unit

The Sulzer Flow division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.

The Flow division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.

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