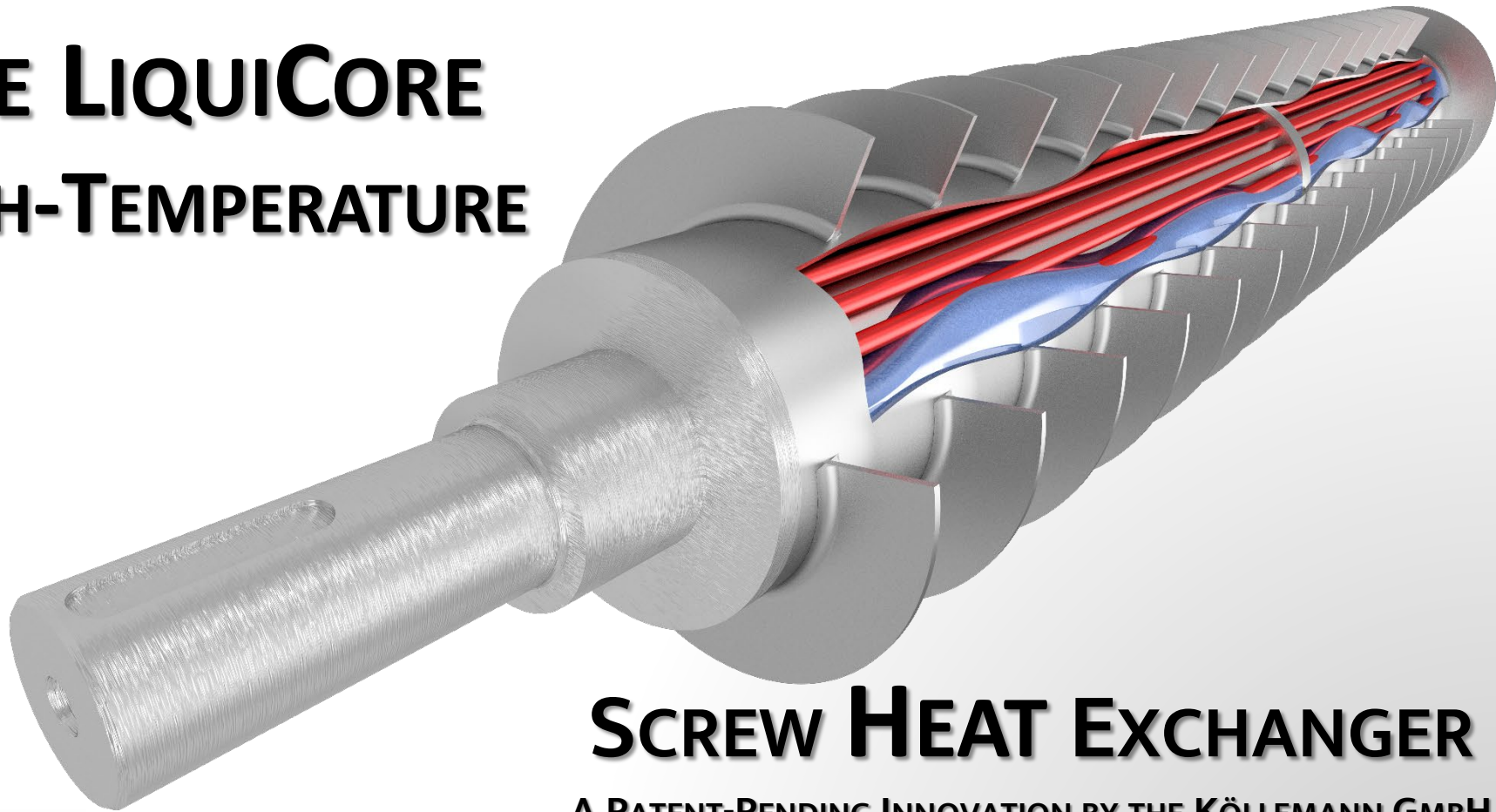


THE LIQUICORE HIGH-TEMPERATURE



SCREW HEAT EXCHANGER

A PATENT-PENDING INNOVATION BY THE KÖLLEMANN GMBH



PROCESS TECHNOLOGY

KÖLLEMANN GmbH

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HISTORY



The “Maschinenfabrik Adenau” was founded



A new owner acquires the company



Heat exchangers are added to the portfolio



Development of the self-cleaning screw



Polymer-Mixers up to 14.5m can be produced



Patent for a electrical HT-Screw

Establishment



1965

A.J. Köllemann



1977

Innovation



1982

SC-Technology



2000

Technology



2016

Liqui-Core-Screw



2019



The company's objective was mainly general metal works

Anton Köllemann focusses on conveying and process technology

Köllemann supplies equipment for heating cooling and drying

The self-cleaning screw is improved, now any sticky material can be handled

The worlds longest powder mixer is delivered to Petronas, Malaysia

It can reach temperatures up to 600°C and uses electricity. It utilizes liquid metal for heat transfer.



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THE STATUS QUO: CONVENTIONAL SYSTEMS

Traditional heating methods



Heating Medium

Relies on thermal oil or steam.

Temperature Limit

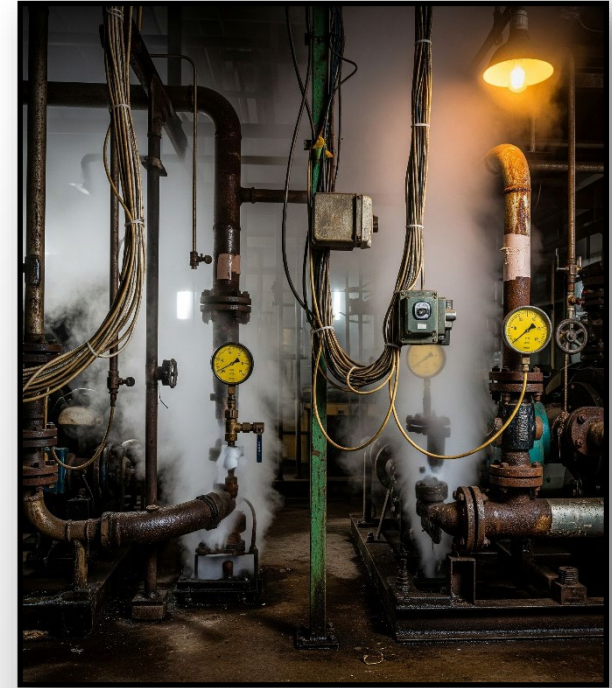
limited to approx. 300-400°C.

Infrastructure

Requires complex peripherals
(boilers, extensive piping, pumps).

Maintenance

High effort due to flanges,
potential leaks, and boiler upkeep.



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THE INNOVATION: HOW LIQUICORE WORKS

Direct Electric Heating

Integrated in the shaft itself



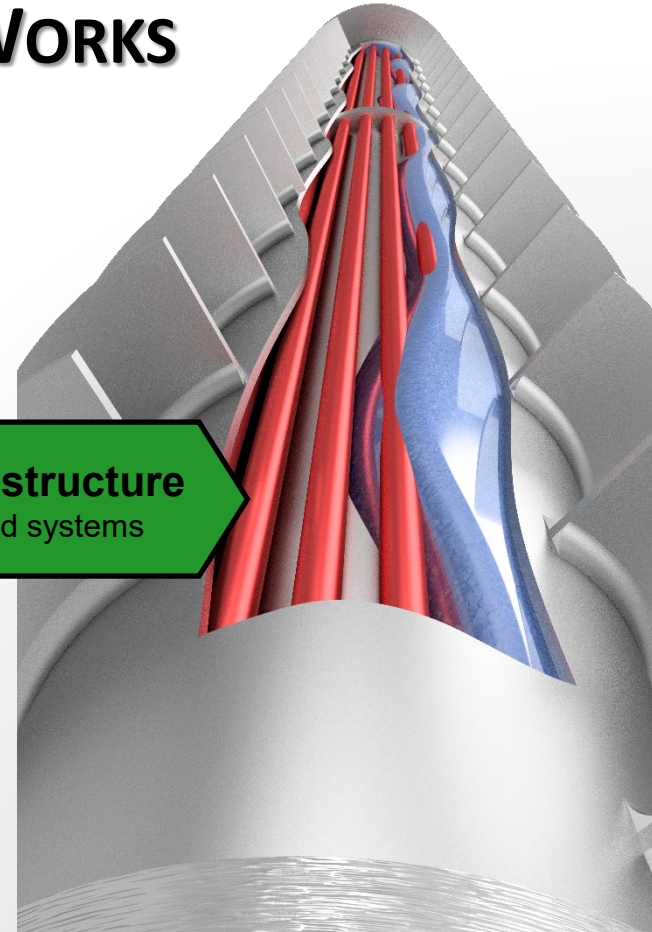
Molten Metal Core

Efficient and uniform heat transfer



Simpler Infrastructure

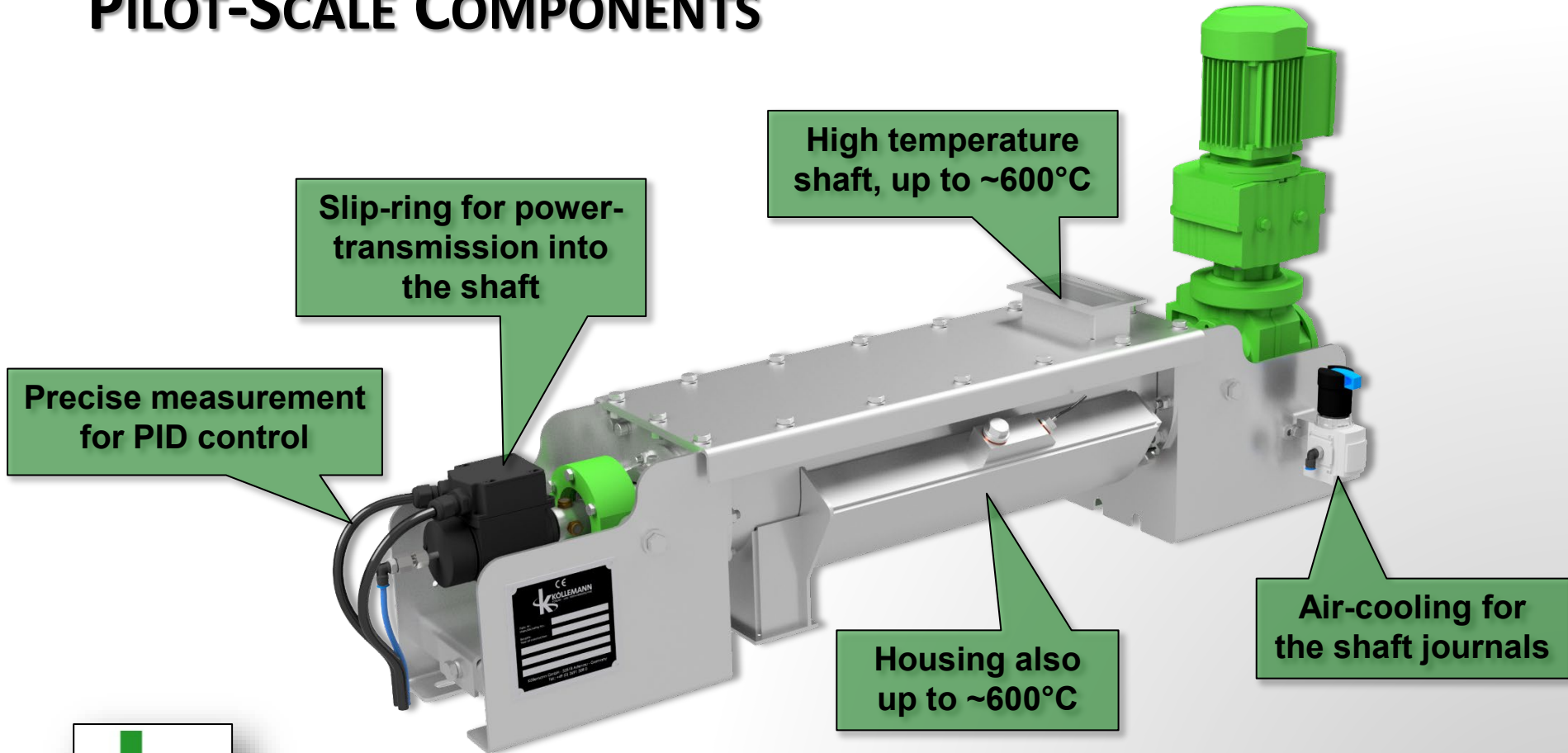
No complex fluid systems



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PILOT-SCALE COMPONENTS



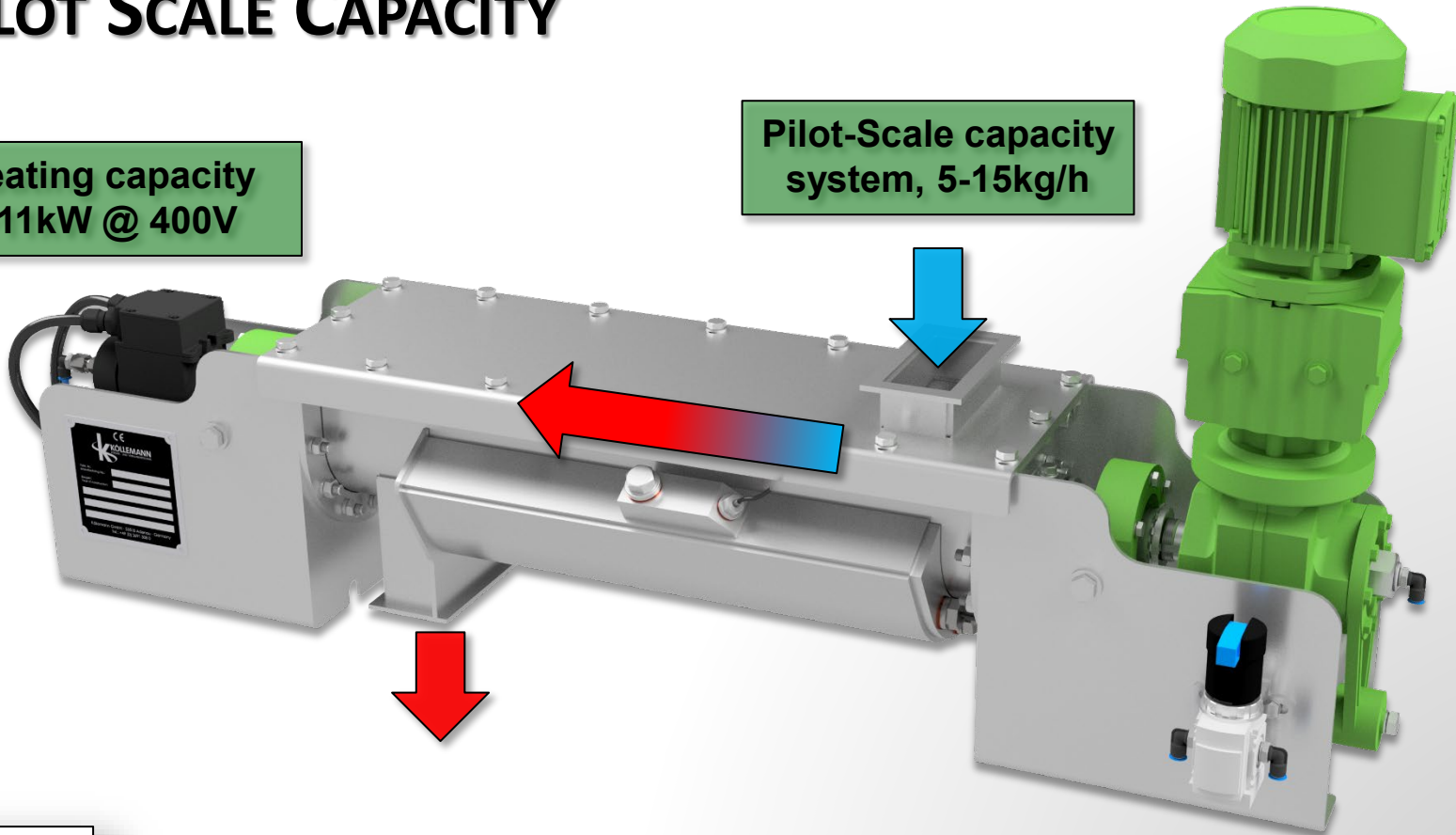
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PILOT SCALE CAPACITY

Heating capacity
~11kW @ 400V

Pilot-Scale capacity
system, 5-15kg/h

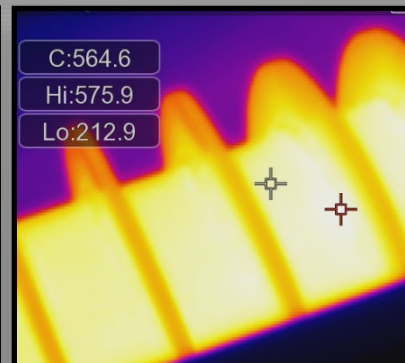
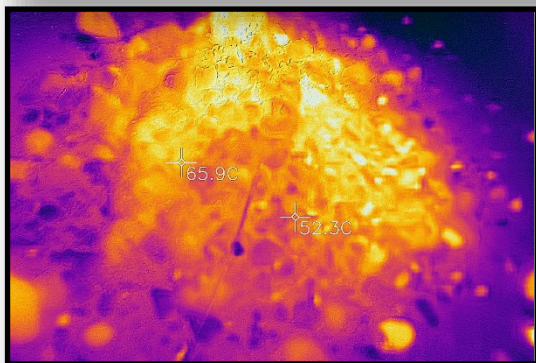


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APPLICATIONS

Pyrolysis & Recycling & PFAS reduction



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