INDUSTRY / SUGAR

The Art of Sugar Processing

A considered approach to heat, flow and resource recovery.



From the character of the juice to the demands of the steam system, effective sugar processing begins with understanding the duty. Lecoqimex brings together complementary technologies for heat exchange, liquid transfer, sludge handling and energy recovery, selected around the conditions of each plant.

SONFLOW / DANPUMPS / ABEL

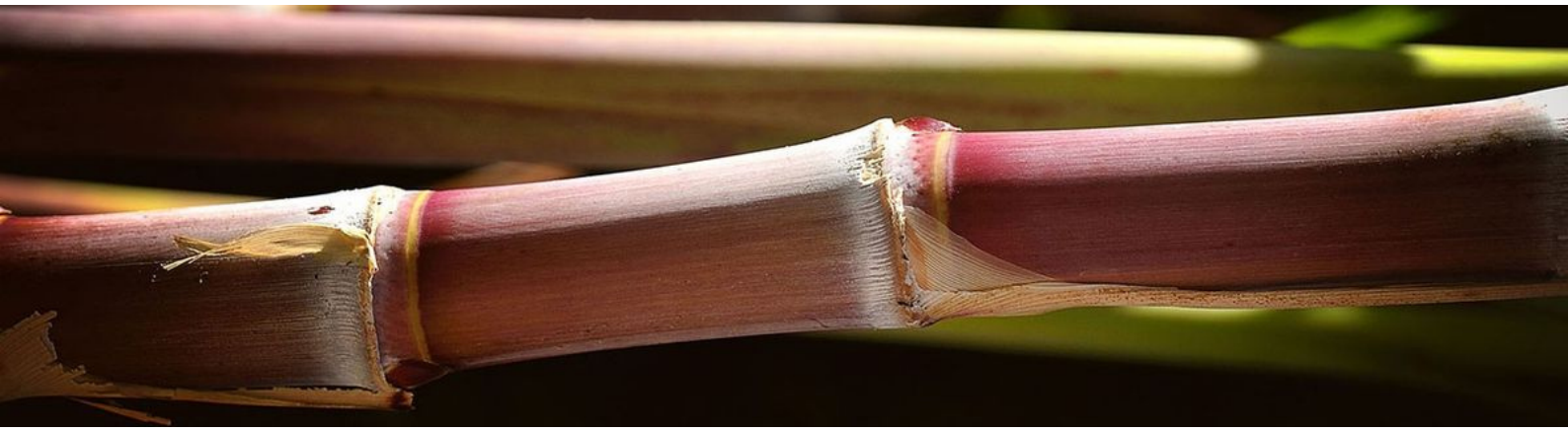
SKYVEN / MEHRER

PROCESS / STREAMS / DUTIES

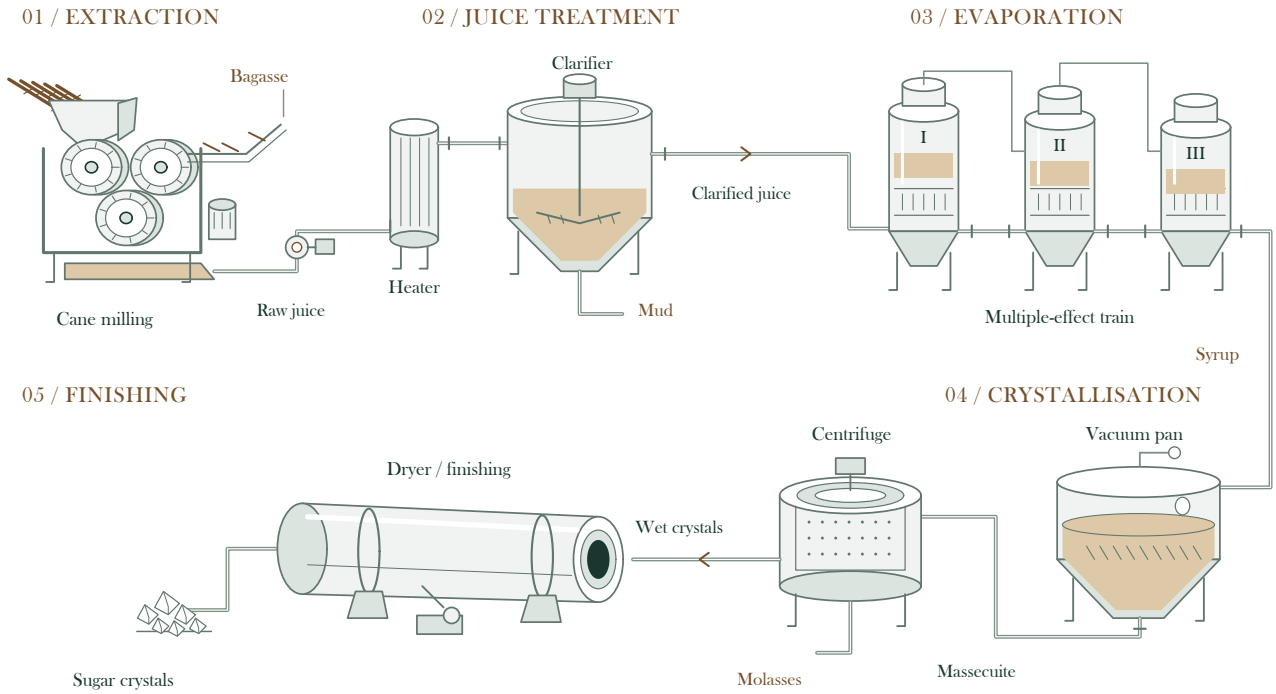
One process. Different demands.

Match the technology to the stream.

Sugar production moves through extraction, juice treatment, evaporation, crystallisation and finishing. Along that route, fibres, solids, concentration and temperature change the demands placed on equipment.



A CONCEPTUAL CANE-SUGAR ROUTE

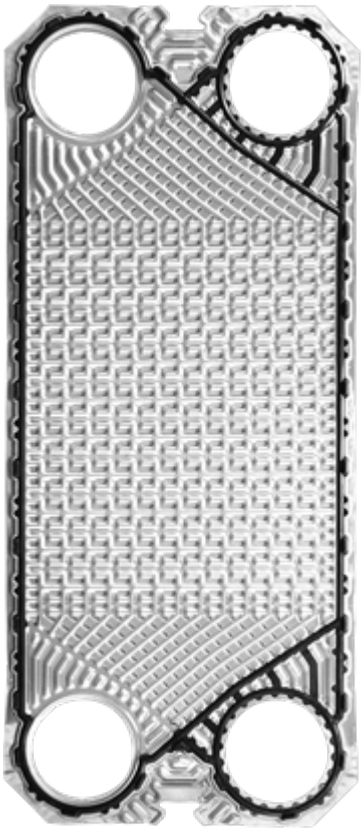


A plant-wide review distinguishes product-contact duties from cooling-water circuits, sludge handling and steam generation. This makes it possible to identify improvements without treating every stream as the same liquid or every heat source as equally valuable.

SONFLOW / FREE FLOW

Make room for the juice.

Heat exchange for streams with fibres and particles.



FREE FLOW / PLATE STUDY

Raw and mixed juice can carry the fibres and solids that make narrow passages unsuitable. SonFlow Free Flow plate heat exchangers are designed for demanding media containing particles, fibres and high viscosity, with sugar production among their stated applications.



FREE FLOW / EXCHANGER

Wide channels and a plate pattern without contact points in the flow direction help limit clogging. Selection starts with the actual solids, fibre length, viscosity and required thermal duty. The appropriate plate arrangement must balance heat transfer, pressure loss and access for cleaning.

EXPLORE SONFLOW /

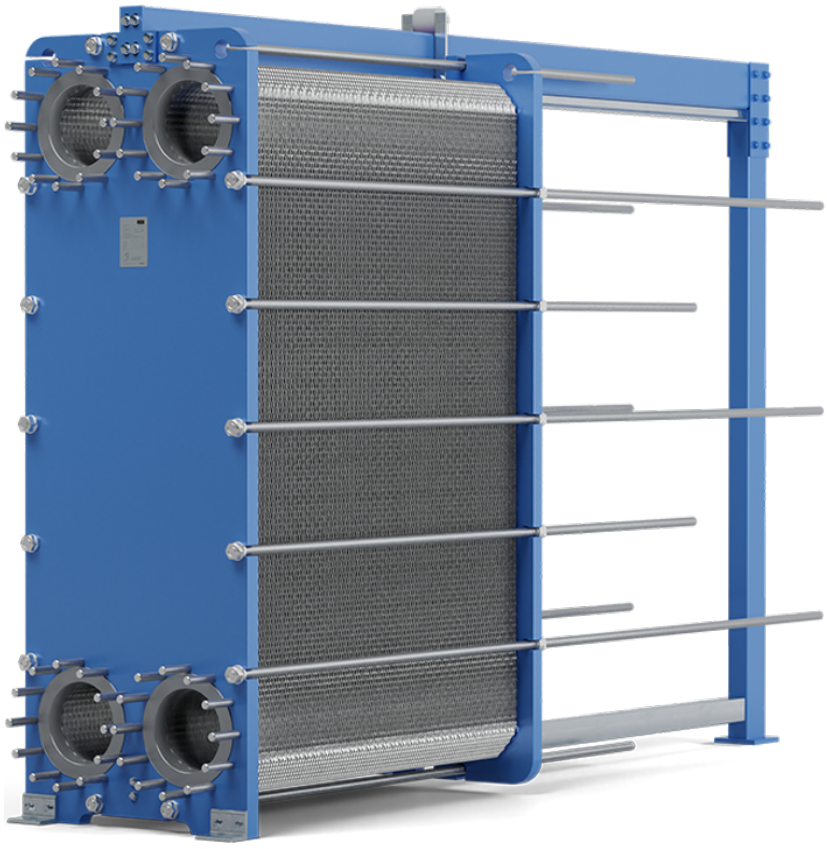
SONFLOW / GASKETED PLATE

Put heat to work. Again.

A heat-exchange arrangement suited to the liquid.



GASKETED / PLATE STUDY



GASKETED / EXCHANGER

For suitably clarified sugar solutions and compatible service fluids, a gasketed plate heat exchanger offers a compact way to arrange heating, cooling and heat recovery. SonFlow supplies traditional plate heat exchangers and lists sugar solutions within its food-processing applications.

The choice of plate pattern, material and gasket follows the medium and operating conditions. Product-contact requirements, fouling behaviour and cleaning access belong in the same assessment. Streams with remaining fibres or difficult solids may require a Free Flow arrangement instead.

EXPLORE SONFLOW /

EVAPORATION / SYSTEM DESIGN

Concentration, with care.

The heat-transfer duty
within the complete system.

Evaporation concentrates the juice and places sustained demands on heat transfer and operation. SonFlow's Condenser/Evaporator range is intended for low-pressure vapour condensation and evaporating duties, including applications in the sugar industry.

For an evaporation project, the exchanger is assessed alongside liquid distribution, vapour-liquid separation, circulation and cleaning. Capacity, final concentration and product residence time guide the wider design. An exchanger selection alone does not establish the performance of a complete evaporation system.



CONCENTRATION / FLOW

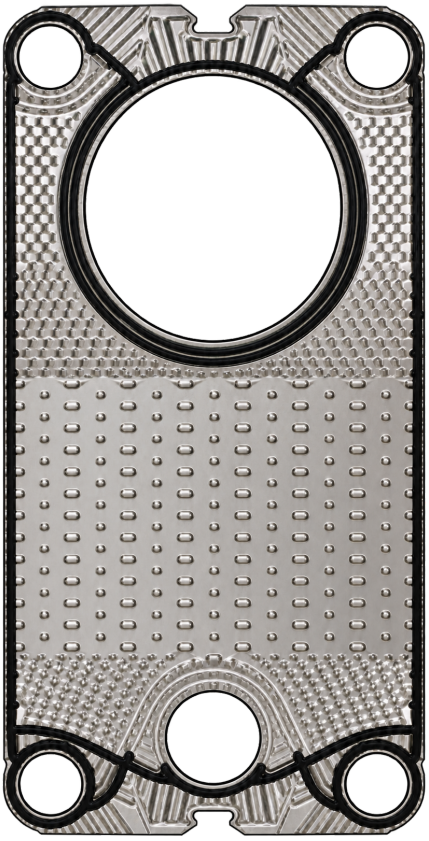
Illustrative liquid study

EXPLORE SONFLOW /

SONFLOW / CONDENSER-EVAPORATOR

Give vapour a purpose.

Condensation designed around the process.



CONDENSER / PLATE STUDY

SonFlow's condenser plate arrangement uses a large vapour connection and separate paths for cooling water and condensate. Its low-pressure vapour applications make the range a candidate for sugar-plant condensation duties.



CONDENSER / EXCHANGER

Vapour load, operating vacuum, non-condensable gases and allowable pressure drop define the selection. The value of recovered condensate depends on its quality and the requirements of the receiving process. Integration should address the condenser, cooling circuit and gas-removal arrangements together.

EXPLORE SONFLOW /

DANPUMPS / DUTY-LED SELECTION

Match the pump to the liquid.

Product transfer and utility circulation are different duties.



S-FP / PRODUCT TRANSFER

Viscosity defines the duty.



S-IP / UTILITY CIRCULATION

The DanPumps S-FP sanitary centrifugal-pump catalogue includes molasses solution among its listed media. This provides a starting point for assessing suitable liquid-transfer duties, with viscosity, solids, suction conditions and cleaning requirements determining the selection.

For lower-viscosity service liquids, DanPumps S-IP/S-MP inline pumps offer another route. Cooling-water and other compatible utility circuits can be assessed separately from product-contact pumping.

Dense molasses containing crystals requires its own pump review. A centrifugal pump should not be specified as a universal substitute for a rotary lobe pump.

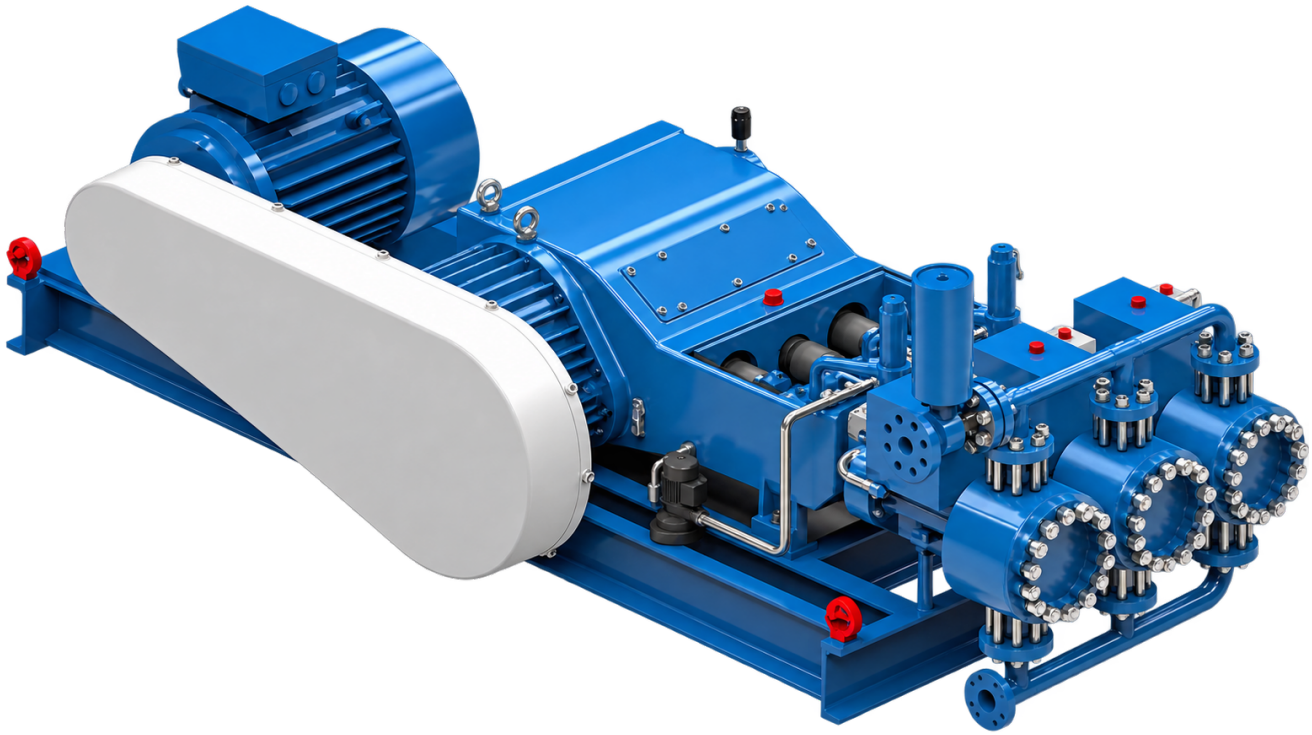
EXPLORE DANPUMPS /

ABEL / FILTER-PRESS FEED

Control the sludge duty.

Pump selection within a defined dewatering arrangement.

Flow. Pressure. Cycle.



ABEL HM / FILTER-PRESS FEED

Where a plant uses filter presses, sludge feeding becomes a distinct pumping duty. ABEL piston diaphragm pumps are designed for challenging media and filter-press feed applications. Their suitability for a particular sugar-process or wastewater sludge must be established from the slurry properties and filtration cycle.

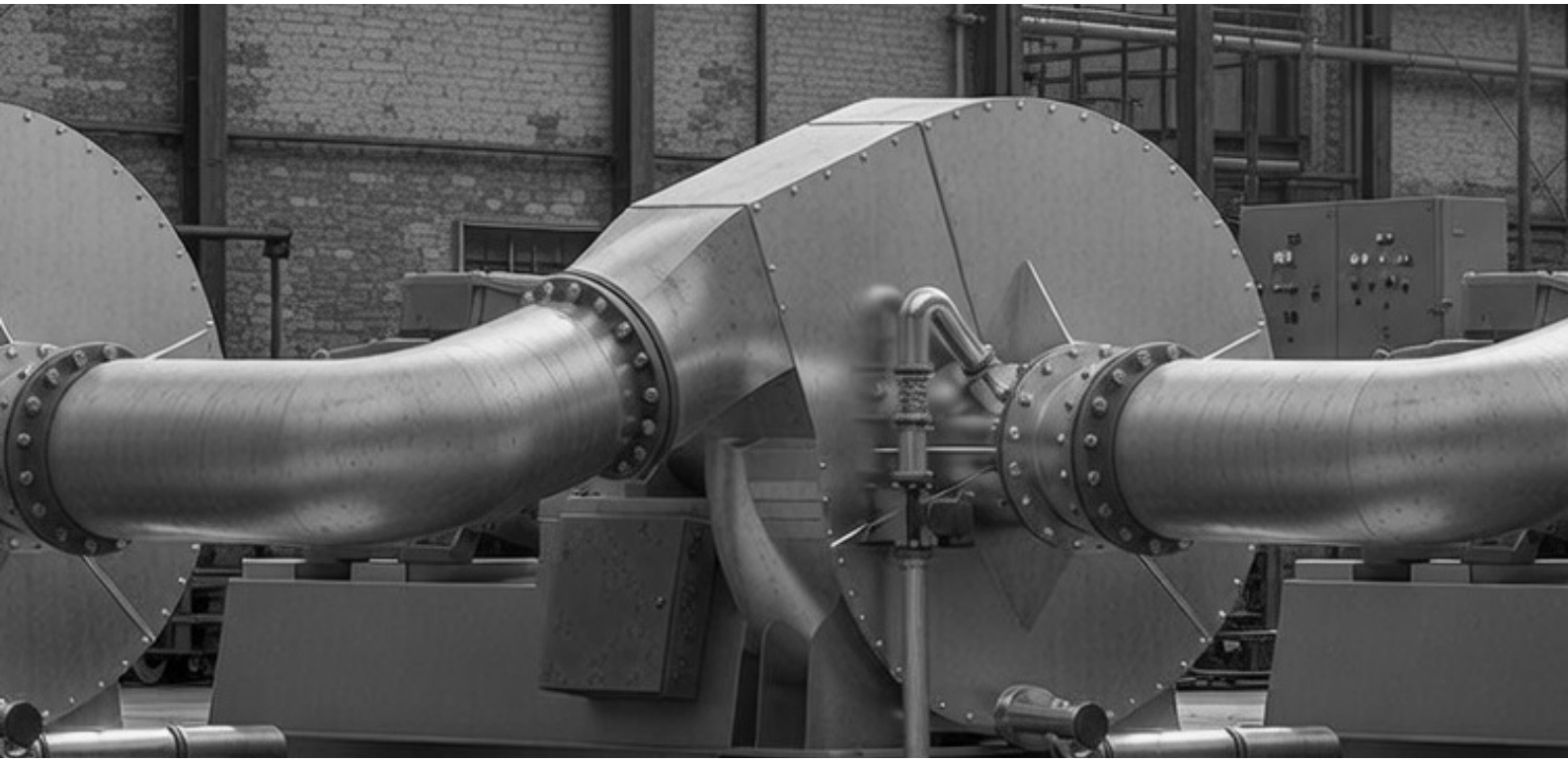
Flow and pressure requirements change as the press fills and the filter cake develops. That operating pattern should guide selection and control. The pump supplies the press; separation is carried out by the dewatering equipment.

EXPLORE ABEL /

SKYVEN / ARCTURUS

Give heat a second life.

Recovered heat. Electricity. Process steam.



ARCTURUS / PARALLEL STEAM SUPPLY

Skyven Arcturus uses electricity to upgrade recovered low-temperature heat into industrial steam. It connects in parallel with existing steam-generation systems, allowing boilers to remain available for backup and peak demand.

A sugar-plant study can investigate suitable heat from cooling or condensation circuits, then compare it with steam demand and the operating schedule. Source temperature, available heat, required steam pressure and energy prices determine the case. Seasonal operation and the value of existing bagasse-based steam and power also belong in that assessment.

EXPLORE SKYVEN /

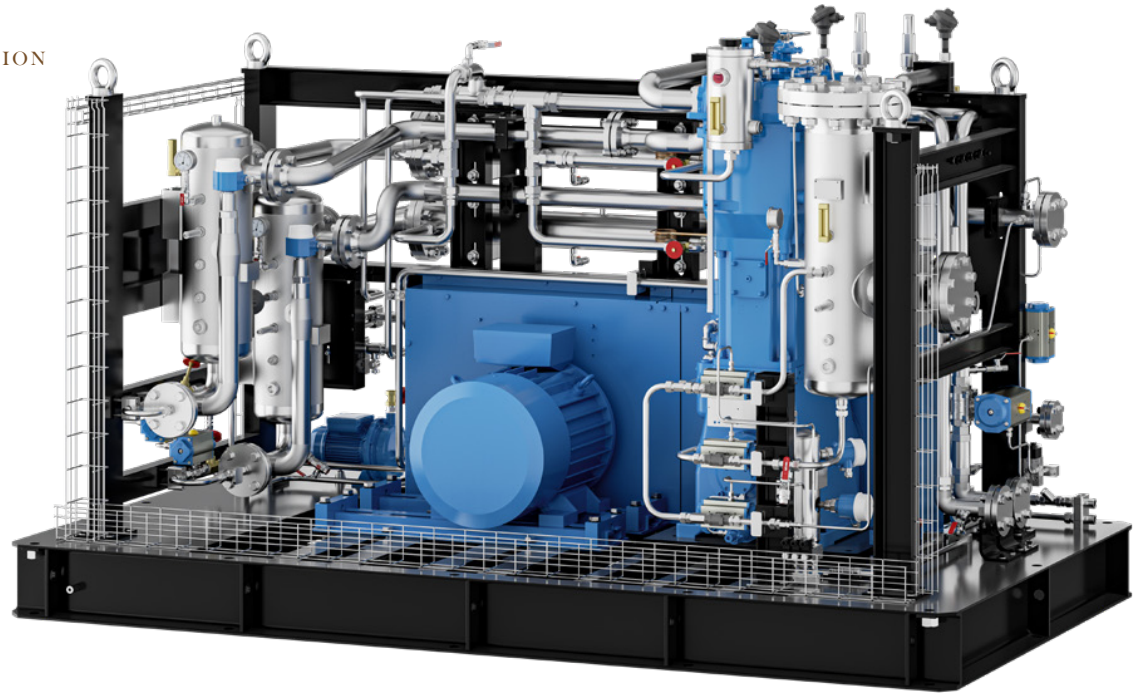
MEHRER / OIL-FREE COMPRESSION

When the process calls for CO_2.

Oil-free compression for a defined gas duty.

OPTIONAL GAS APPLICATION

CO_2 quality. Gas duty.



FOOD-LINE 300 / CATALOGUE ILLUSTRATION

Some sugar-processing routes use lime and carbon dioxide for juice purification. Plants with an associated fermentation operation may also have a separate CO_2-recovery opportunity.

Mehrer provides oil-free gas-compression technology, with its Food-Line range addressing food-and-beverage CO_2 duties. A suitable compressor must be selected for the actual gas composition, moisture, inlet pressure and delivery conditions. Compression forms one part of a gas-handling system; treatment, quality monitoring and process dosing require their own design.

EXPLORE MEHRER /

APPLICATION / SELECTION / INTEGRATION

Begin with the duty.

The right questions come before the equipment.

Product requirements

For each liquid stream, establish flow, concentration, viscosity at operating temperature, solids and fibre content, pressure and cleaning requirements.

The thermal duty

For thermal duties, add inlet and outlet conditions, allowable pressure drop and the available heating or cooling medium.

Sludge & steam

For sludge, establish its composition and the dewatering cycle. For steam recovery, assess source temperature and heat availability against the demand profile and utility costs.

Plant operation

Existing connections, maintenance access and seasonal operation complete the picture.

A coherent specification gives each technology a clear role in the plant.



PRODUCT / PROCESS REQUIREMENTS

FROM THE STREAM TO THE SYSTEM

A more considered sugar plant.



Build the proposal around the stream, the operating duty and the existing plant. Start with one well-defined improvement, then review how it connects to the wider process.

HEAT EXCHANGE / LIQUID TRANSFER / SLUDGE HANDLING / RESOURCE RECOVERY

BEGIN THE CONVERSATION

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