

Applications and Products





Pumping Solutions



More than a pump ...



Competence

SIHI has been providing high quality, liquid and gas, pumping solutions for almost 100 years.

Award winning solutions reinforce the Company-wide vision of liquid pumps, vacuum pumps, compressors and engineered systems for a better future.



Markets

Extensive application knowledge combined with a highly respected product range, within SIHI, provides our customers with total confidence.

Chemical, industrial, energy, and environmental markets all benefit from SIHI solutions.



Worldwide

Greater than 1600 employees are strategically located in excess of 60 countries in which to serve our customers.

Our partners can feel secure knowing that support is within easy reach.

Ongoing innovation underpins customer satisfaction, continual improvement, and ensures that the strong SIHI client base benefits from the latest proven technology.

Senior-level project management, communication, and product excellence from the SIHI team results in simple and timely integration of any engineered systems.



Liquid Technology

- + End-suction centrifugal pumps
- + Side channel self-priming pumps
- + Multi-stage centrifugal pumps
- + Pitot tube pumps
- + Vertical centrifugal pumps
- + Hygienic pumps
- + Mixers



Vacuum Technology

- + Vacuum pumps
- + Compressors
- + Lobular (Roots) blowers
- + Gas and steam ejectors
- + Dry vacuum pumps



Engineered Systems Technology

- + Vacuum systems
- + Compressor systems
- + Membrane recovery systems
- + Liquid systems

Flexible options

- + Variable speed drive
- + Condition monitoring SIHI^{detect}
- + Seal-less
- + Engineered sealant systems
- + Distributed Control System (DCS)
- + ...

Reducing Life-Cycle Costs ...

Capital Investment

- + Highly efficient manufacture
- + Lean process culture
- + Staff development

Reducing Power Consumption

- + Enhanced hydraulic efficiencies
- + High efficiency motors

Improving Reliability

- + Robust construction
- + Quality manufacture
- + Low NPSH

Simplifying Maintenance and Operation

- + Ergonomic design
- + ISO/DIN/ASME standards
- + Quality sealing

Support the Global Market

- + Global Service network

Preserving the environment

- + Ecological responsibility
- + Reduced effluent and waste



Chemical Applications

Industrial Applications

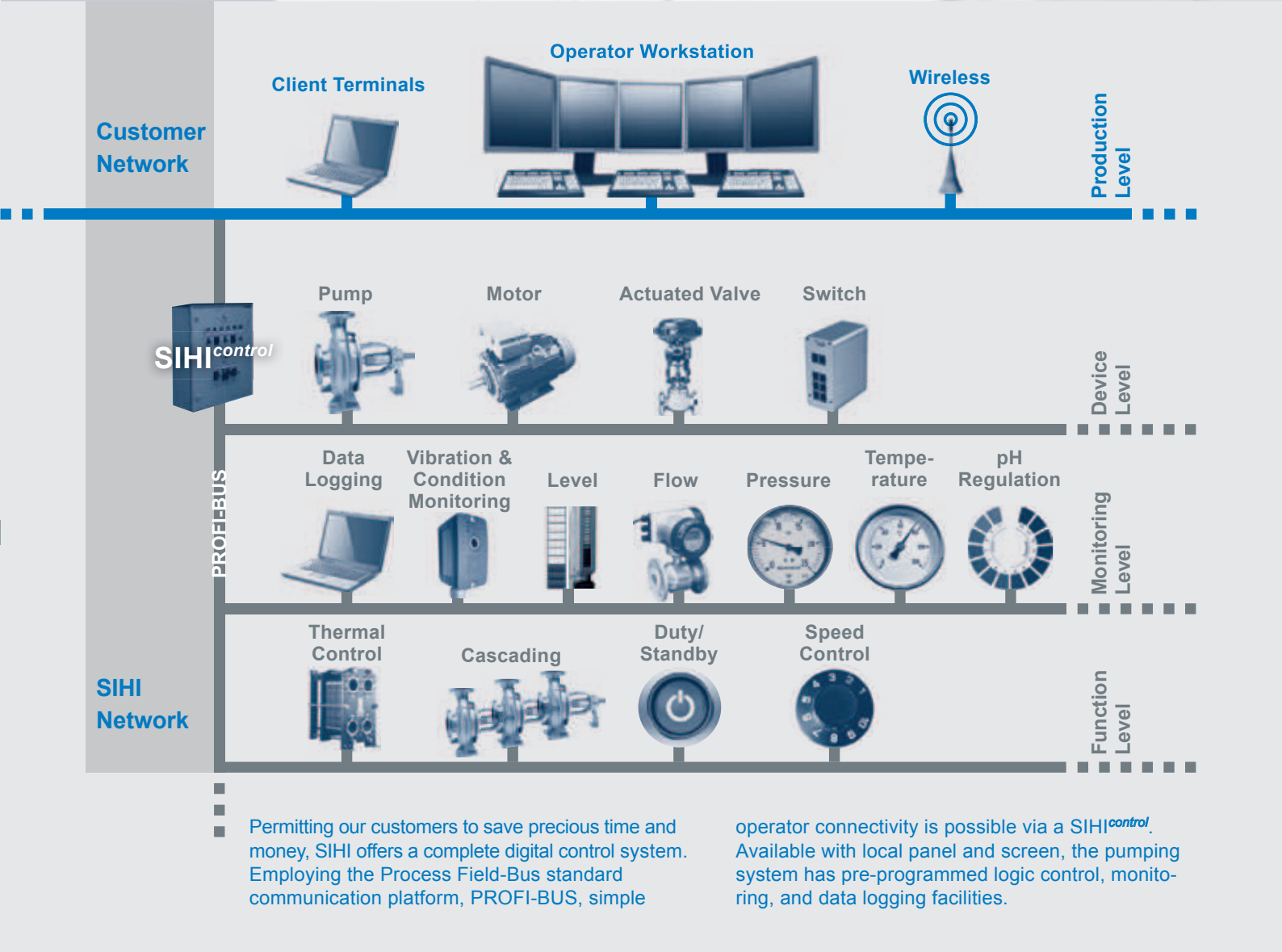


Energy & Environmental Applications

	For detailed information please see page																			
	8	8	8	9	9	9	10	10	10	11	11	11	12	12	12	13	13	14	14	14
	General Liquids	Hot water	Hot oil (Thermal media)	Chemicals, Fuels	Sewage and slurry	Self-priming	Self-priming	Self-priming, LPG & Fuels	High pressure	High flow	Sluge	Sanitary	Liquid ring vacuum	Liquid ring compressor	Roots blower	Gas and steam ejectors	Dry vacuum	Vacuum & compressor systems	Membrane recovery systems	Liquid systems
	Volute casing pumps End suction																			
	Side channel pumps Combination pumps																			
	Multi-stage pumps																			
	Mixers																			
	Hygienic pumps																			
	Vacuum pumps and Compressors																			
	Engineered systems																			
Boiler feed							x		x											
Cleaning	x									x										
Cooling water	x																			
Condensate	x						x		x											
Condenser evaporation													x			x				
De-scaling (Metal)									x											
Drainage	x			x	x															
Irrigation	x			x					x	x										
Pressure boosting							x		x											
Product transfer	x			x	x		x	x	x				x		x		x			
Reverse osmosis	x			x	x		x		x											
Sludge Mixing	x				x						x			x						
Solvent recovery	x			x			x						x	x	x	x	x	x	x	x
System priming						x	x													x
Tank farms / storage	x			x				x												
Thermal media (hot oil)	x			x	x															
Thermal transfer (hot water)	x	x		x																
Vacuum drying													x				x		x	
Washing	x							x	x											



From concept to integration



Reduce Life Cycle Cost ...

... with SIHI

- Capital Cost
- Energy (Power)
- Installation & Alignment
- Maintenance & Operation
- Down time
- Environmental Cost

Volute casing pumps – End suction

General Liquids

Performance

Flow rate	1800 m³/h
Head	140 m
Temperature	170 °C
Pressure	16 bar
Speed	3600 rpm

Features

- + High efficiency
- + Modular design
- + Highly reliable

Configuration

- + Horizontal or vertical
- + Bare shaft or close coupled

Standards

EN 733, ISO 9908

Priming

- + Flooded

Shaft Sealing

- + Mechanical seal
- + Packed gland

Materials

Cast iron, stainless steel

SIHI Type

ZLN, ZLK, ZLI

Hot water

Performance

Flow rate	600 m³/h
Head	95 m
Temperature	230 °C
Pressure	40 bar
Speed	3600 rpm

Features

- + Uncooled seals
- + High efficiency
- + Secondary vapour separator

Configuration

- + Horizontal
- + Bare shaft

Standards

EN 733, EN 22858

Priming

- + Flooded

Shaft Sealing

- + Mechanical seal

Materials

Nodular cast iron, cast steel

SIHI Type

ZHN, ZDN, ZEN

Hot oil (Thermal media)

Performance

Flow rate	1000 m³/h
Head	95 m
Temperature	350 °C
Pressure	16 bar
Speed	3600 rpm

Features:

- + Uncooled seals
- + High efficiency
- + Secondary containment

Configuration

- + Horizontal or vertical
- + Bare shaft or close coupled

Standards

EN 733

Priming

- + Flooded

Shaft Sealing

- + Mechanical seal
- + Radial lip seal

Materials

Nodular cast iron, cast steel

SIHI Type

ZTN, ZTK, ZTI

Volute casing pumps – End suction

Chemicals and Fuels

Performance

Flow rate	2200 m³/h
Head	150 m
Temperature	400 °C
Pressure	16 bar
Speed	3600 rpm

Features

- + High efficiency
- + Highly reliable
- + Modular design

Configuration

- + Horizontal
- + Bare shaft or close coupled

Standards

EN 22858, EN 25199, ISO 2858, ISO 5199

Priming

- + Flooded

Shaft Sealing

- + Mechanical seal
- + Packed gland
- + Magnetic coupling

Materials

Cast iron, nodular cast iron, cast steel, stainless steel, special alloys

SIHI Type

CBS, CBM, CBE, CBT, RBS, EO, SZ

Sewage and slurry

Performance

Flow rate	800 m³/h
Head	100 m
Temperature	120 °C
Pressure	10 bar
Speed	3600 rpm

Features

- + Free flow impeller
- + Non-clogging
- + High efficiency

Configuration

- + Horizontal
- + Bare shaft

Standards

EN 22858, ISO 2858

Priming

- + Flooded

Shaft Sealing

- + Mechanical seal
- + Packed gland

Materials

Cast iron, stainless steel

SIHI Type

DBS

Self-priming

Performance

Flow rate	300 m³/h
Head	90 m
Temperature	120 °C
Pressure	16 bar
Speed	3000 rpm

Features

- + Gas handling
- + Solids handling
- + Highly reliable

Configuration

- + Horizontal
- + Bare shaft

Standards

EN 733

Priming

- + Self-priming

Shaft Sealing

- + Mechanical seal

Materials

Cast iron, bronze, special alloys

SIHI Type

UHL, UPL, ULN



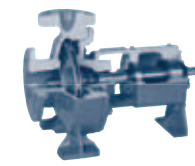
ZLND



ZENC



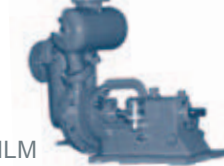
ZTNC



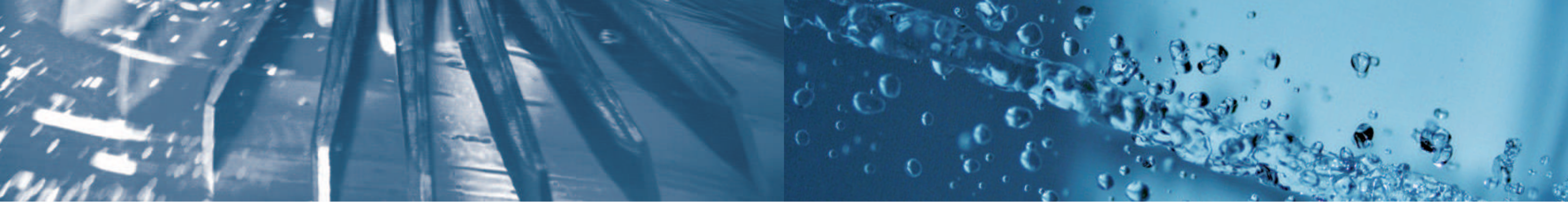
CBSD



DBS



UHLM



Side channel pumps

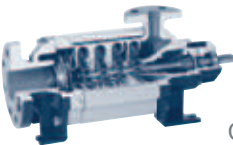
Combination pumps

Multi-stage pumps

Pitot tube pumps

Hygienic pumps

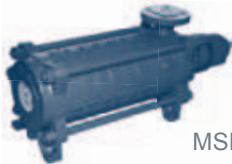
Self-priming	Self-priming, LPG & Fuels	High pressure	High flow	Sludge	Sanitary
Performance Flow rate 35 m³/h Head 354 m Temperature 180 °C Pressure 40 bar Speed 3600 rpm	Performance Flow rate 350 m³/h Head 200 m Temperature 120 °C Pressure 40 bar Speed 3600 rpm	Performance Flow rate 450 m³/h Head 1600 m Temperature 180 °C Pressure 160 bar Speed 3600 rpm	Performance Flow rate 100000 m³/h Head 150 m Temperature 80 °C Pressure 16 bar Speed 1800 rpm	Performance Flow rate 7200 m³/h Digester vol. 22000 m³ Pressure 10 bar Speed 1500 rpm	Performance Flow rate 200 m³/h Head 85 m Temperature 130 °C Pressure 16 bar Speed 3000 rpm
Features + Low NPSH + Modular design + Secondary containment	Features + High efficiency + High reliable + Modular design	Features + High efficiency + Patented balancing device + Low NPSH	Features + High efficiency + Variable pitch blades + Highly reliable	Features + Non-clogging + Reverse flow + Low maintenance	Features + Highly reliable + Solids handling + Surface roughness < 3.2 µm
Configuration + Horizontal or vertical + Bare shaft or close coupled	Configuration + Horizontal + Bare shaft	Configuration + Horizontal + Bare shaft	Configuration + Vertical + Bare shaft or close coupled	Configuration + Vertical + Close coupled	Configuration + Horizontal + Close coupled
Standards EN 734	Standards ANSI or ISO	Standards EN 25199, ISO 5199	Standards ANSI or ISO	Standards	Standards Food great standard 3A1
Priming + Self-priming, gas handling	Priming + Flooded, self-priming	Priming + Flooded	Priming + Flooded	Priming + Flooded	Priming + Flooded or self-priming
Shaft Sealing + Mechanical seal + Packed gland + Magnetic coupling	Shaft Sealing + Mechanical seal + Packed gland + Magnetic coupling	Shaft Sealing + Mechanical seal + Packed gland	Shaft Sealing + Mechanical seal + Packed gland	Shaft Sealing + Lip seal system	Shaft Sealing + Mechanical seal
Materials Cast iron, nodular cast iron, bronze, stainless steel, special alloys	Materials Cast iron, nodular cast iron, bronze, stainless steel	Materials Cast iron, nodular cast iron, bronze, stainless steel, special alloys	Materials Cast iron	Materials Cast iron	Materials AISI 316L stainless steel
SIHI Type AOH, AKH, ASH, AKL, AKV, CEH, CEB, SC	SIHI Type UEA, TKH	SIHI Type MSL, MSM, MSC, MSH	SIHI Type RA, RK, RT	SIHI Type MFS	SIHI Type NHK, SHK



CEHX



TKH



MSL



RT



MFS



NHK



Vacuum pumps

Liquid ring vacuum

Performance	
Suction capacity	15000 m³/h
Operating pressure	33 mbar
Temperature	200 °C
Speed	3600 rpm

Features	
+ Modular design	
+ Highly reliable	
+ Cavitation protection	

Configuration	
+ Horizontal	
+ Bare shaft or close coupled	

Standards	
ANSI or ISO	

Priming	
Vacuum	

Shaft Sealing	
+ Mechanical seal	
+ Packed gland	
+ Magnetic coupling	

Materials	
Cast iron, bronze, stainless steel, special alloys	

SIHI Type	
LEM, LEMS, LEMS, LEH, LOH, LPHX, LPH, SL	



Liquid ring compressors

Performance	
Suction capacity	15000 m³/h
Operating pressure	11 bar
Temperature	200 °C
Speed	3600 rpm

Features	
+ Highly reliable	
+ Cool operation	
+ Low maintenance	

Configuration	
+ Horizontal	
+ Bare shaft	

Standards	
ANSI or ISO	

Priming	
Vacuum	

Shaft Sealing	
+ Mechanical seal	
+ Packed gland	

Materials	
Cast iron, bronze, stainless steel, special alloys	

SIHI Type	
LOH, LPHX, LPH, KPH, KSH, KPH	



Roots blower

Performance	
Suction capacity	14000 m³/h
Operating pressure	1 mbar
Temperature	60 °C
Speed	3600 rpm

Features	
+ Low leakage rate	
+ Highly reliable	
+ Low maintenance	

Configuration	
+ Horizontal	
+ Close coupled	

Standards	
ANSI or ISO	

Priming	
Vacuum	

Shaft Sealing	
+ Mechanical seal	

Materials	
Nodular cast iron	

SIHI Type	
WNM	



Vacuum pumps

Gas and steam ejectors

Performance	
Suction capacity	7500 m³/h
Operating pressure	4 mbar
Temperature	200 °C

Features	
+ No moving parts	
+ Low maintenance	
+ Highly reliable	

Configuration	
+ Horizontal or vertical	

Standards	
ANSI or ISO	

Priming	
Vacuum	

Shaft Sealing	
+ none	

Materials	
Grey cast iron, stainless steel, special alloys	

SIHI Type	
GVP, GOV	



Dry vacuum industrial

Performance	
Suction capacity	1500 m³/h
Operating pressure	0.001 mbar
Temperature	135 °C

Features	
+ No effluent	
+ Simply service	
+ Very quiet	

Configuration	
+ Vertical	

Standards	
ANSI or ISO	

Priming	
Vacuum	

Shaft Sealing	
+ Hermetically sealed	

Materials	
Nodular cast iron	

SIHI Type	
Dry V, S	



Dry vacuum chemical

Performance	
Suction capacity	1000 m³/h
Operating pressure	0.01 mbar
Temperature	135 °C

Features	
+ No effluent	
+ Simply service	
+ Very quiet	

Configuration	
+ Vertical	

Standards	
ANSI or ISO	

Priming	
Vacuum	

Shaft Sealing	
+ Hermetically sealed	

Materials	
Nodular cast iron	

SIHI Type	
Dry M, H	



Engineered systems

Vacuum & Compressor systems

Performance
Suction capacity 15000 m³/h
Operating pressure 0.1 mbar
Discharge pressure 9 bar

Features
+ Simple integration
+ Project managed
+ Highly reliable

Configuration
+ On request

Standards
ANSI, ISO, EN, DIN, NACE

Shaft Sealing
+ Mechanical seal
+ Packed gland
+ Magnetic coupling

Materials
Client choice

SIHI Type
PL, PLN, PK, PLG, PN

Membrane recovery systems

Performance
Suction capacity on request
Recovery rate 99 %
Outlet concentrations European clean air regulations

Features
+ Regeneration free
+ Simple & compact
+ High recovery rates

Configuration
+ On request

Standards
Client choice

Shaft Sealing
+ Mechanical seal
+ Packed gland
+ Magnetic coupling

Materials
Client choice

SIHI Type
LPM, PKM, PKLM, PM

Liquid systems

Performance
Capacity on request
Discharge pressure: on request

Features
+ Simple integration
+ Project managed
+ Highly reliable

Configuration
+ On request

Standards
Client choice

Shaft Sealing
+ Mechanical seal
+ Packed gland
+ Magnetic coupling

Materials
Client choice

SIHI Type
UNIP

Your process partner Committed to engineering excellence

Understanding the process

+ 100 years of experience
+ Staff trained to communicate at all levels
+ Deep application knowledge
... Solutions with minimal customer effort

Optimum product range

+ Unique process can be treated with simplicity
+ Reduced cost of design, manufacture, and documentation
+ Predictable site testing and commissioning
... Customised solutions for standard capital costs

Design

+ Advanced design tools
+ Highest level of machine efficiency
+ Long lasting reliability
... Reduced energy, maintenance, and environmental costs

Manufacturing

+ Centre of excellence structure
+ High level of skill and competence
+ Ongoing people and process development
... Reduced integration costs

Testing & Documentation

+ Factory and Site Acceptance Tests
+ Certified documentation
+ Witnessed customised testing
... Reduced validation and commissioning costs

Quality assurance

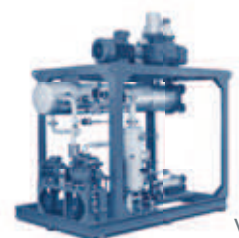
+ Total Quality Management
+ ISO9000
+ Rigorous health and safety culture
... Long term security

Aftermarket – a local approach

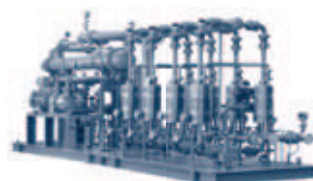
+ Dedication to process uptime
+ Locally positioned service & technical centres
+ Easy access to support, on a worldwide level
... Highest level of customer care

Competence Centre

+ Centralised design, purchasing, production, compliance, and local support
+ De-centralised (local) quotation and project management teams



Vacuum



Membrane



Liquid



SIHI^{detect} – Condition Based Monitoring

Detect wear before damage occurs
+ Cavitation and process turbulence
+ Simple to connect
+ LED display
+ Available Ex
+ All rotating machinery
+ DCS integration and continual monitoring

Noise and Vibration analysis allows this compact device to diagnose the (often hidden) symptoms of longer term damage *even* before vibration occurs.



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www.SIHI.com

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BLUECOMPETENCE

Alliance Member

Partner of the Engineering Industry
Sustainability Initiative

STERLING

HALBERG

LaBour

DARWINS

Pumping Technology For A Better Future

