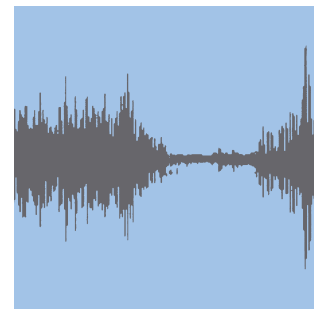
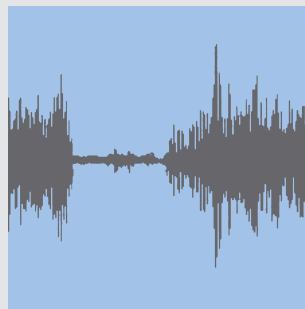


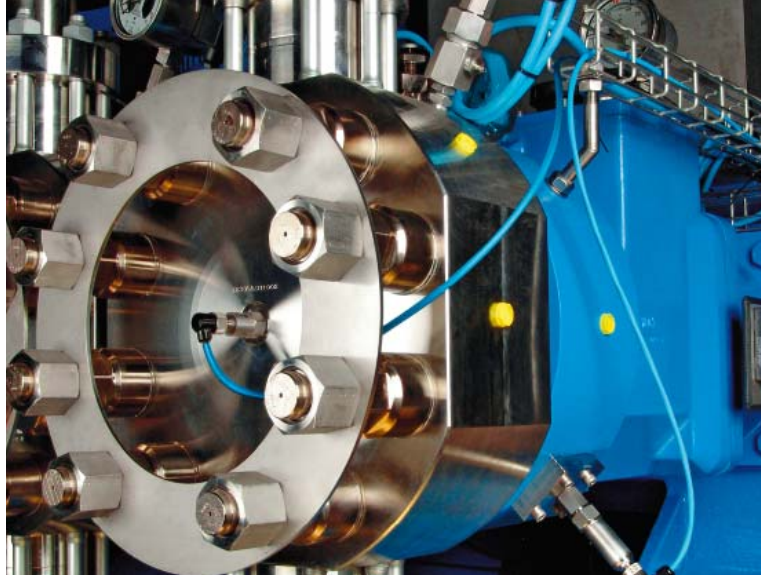
LEWA CMS

Condition Monitoring System offers
the most economic operation



- Reduce lifecycle costs
- Reduce machine downtime

LEWA CMS: Condition Monitoring System – Minimum Downtime



CMS: Pressure switch



CMS: Impact sound sensor

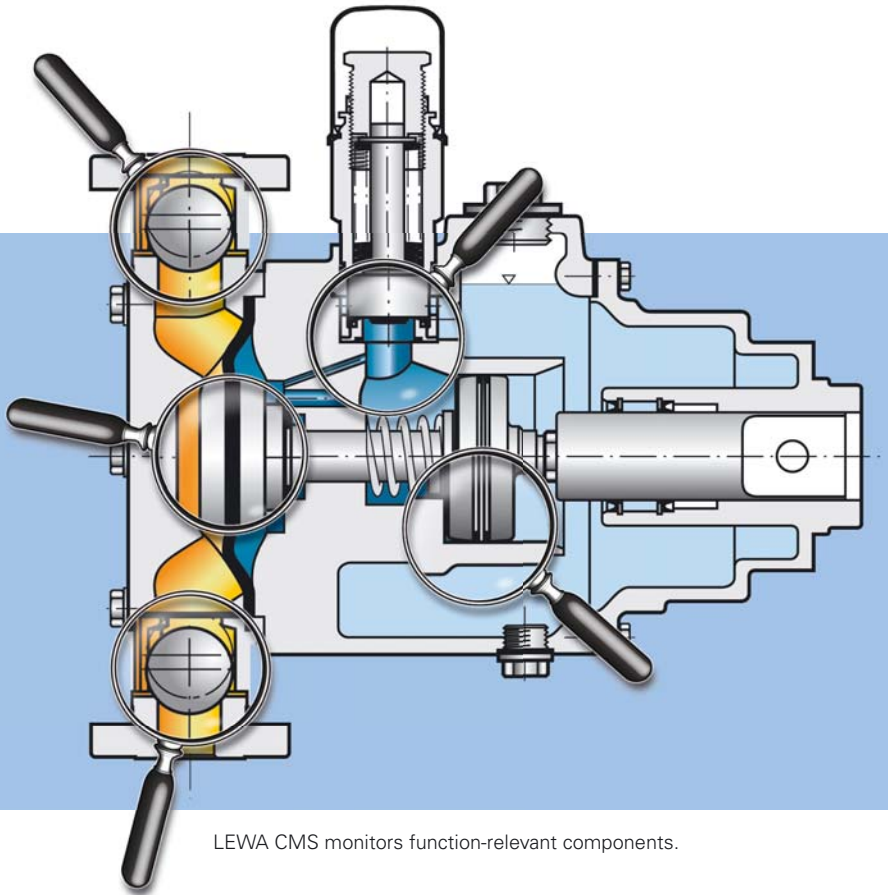


CMS: Pressure sensor

With LEWA CMS, pump lifecycle costs are lowered by reducing machine downtime, accomplished by progressing from preventive to condition oriented maintenance and further reducing the risk of pump breakdown.

- Parts are replaced only when their condition deteriorates.
- Potential failures are recognized at an early stage allowing for planned action, avoiding unplanned reaction.
- Costs due to production loss are reduced because downtimes can be scheduled and the required spare parts are on hand. Teardown surprises are significantly reduced.
- Goal-oriented maintenance results from clear, accurate condition diagnosis.
- Cooperation with the LEWA service department is optimized.





LEWA CMS monitors function-relevant components.

Use of sensory devices:

- Impact sound sensor
- Pressure sensor
- Inductive position sensor
- Pressure switch for diaphragm monitoring

LEWA CMS monitors the complete function of the pump head including any valve leakage – continuously and automatically.

LEWA CMS – flexible application

- Applicable to a wide range of metering and process pumps for different fluids and operating parameters
- Link-up to the process guiding system (Ethernet, RS 485)
- Can be retrofitted to the currently installed LEWA pumps
- Applicable for simplex and multiplex pumps
- Suitable for operation in hazardous environments

At pump commissioning the initial (prime) condition of all monitored parameters are recorded and stored as reference data. During operation the current condition of corresponding parameters is compared to the reference data.

LEWA CMS – user-friendly operation

- Permanent, automatic signal evaluation
- Intelligent error detection with plain text messages due to expert knowledge in electronics
- Differentiation of pre-alarm, alarm and shutdown conditions

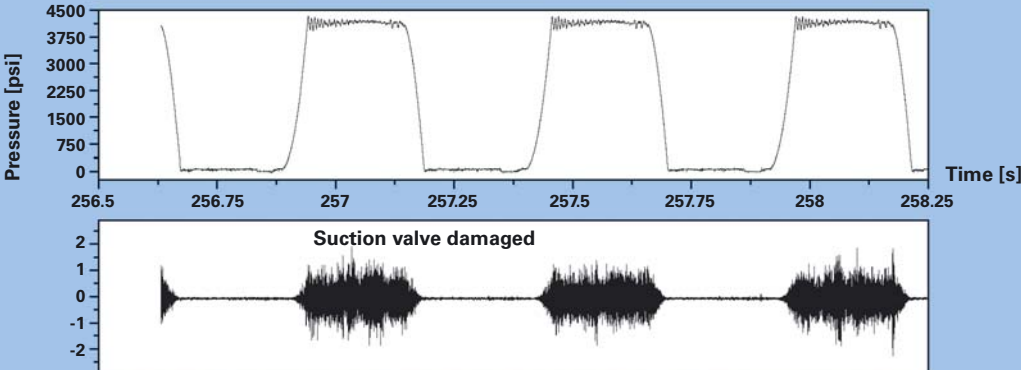
LEWA CMS – precise failure signalling

- Displays suction and discharge valve leak rate from 1%
- Complete breakdown of suction or discharge valve
- Blocked lines
- Operating pressure deviation
- Displays hydraulic leakage from 1%
- Diaphragm damage



LEWA CMS: Transparency for pump operators

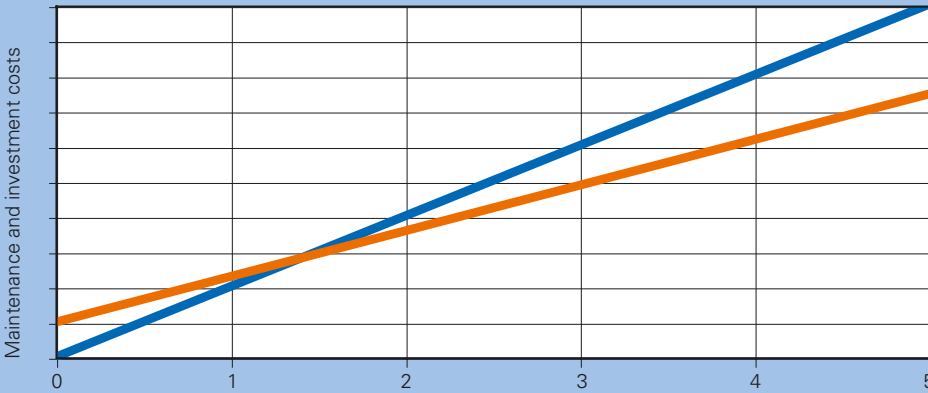
Diagnosis of the impact sound signal from a damaged suction valve indicates potential failure automatically



The intelligent signal evaluation supplies clear plain text messages

Suction valve not fully closed!	Suction valve not fully open!	Suction blocked!	Discharge blocked!
Diaphragm failure!	Discharge valve not fully closed!	Discharge valve not fully open!	
Suction valve leak!	Discharge valve leak!	Hydraulic leak!	
Operating pressure too low!	Operating pressure too high!		
System OK!			

Amortisation period of LEWA CMS (example)



LEWA CMS pays off in a short time

- n Without LEWA CMS
- n With LEWA CMS

LEWA – always close to the client



- **“We want to buy pumps, install them and then forget them.”**
- **“70% of lifecycle cost of a pump is associated with lost production resulting from unscheduled downtime.”**
- **“Advanced technology plays a decisive role in today’s pump industry, however system solutions, providing reliable, concise information regarding machine condition, that result in planned service are rapidly becoming more important.”**
- **“A basic requirement for us is monitoring the condition of hermetically tight pumps.”**
- **“It is fundamentally important to reduce the total lifecycle costs for liquid pumps. These costs include initial investment, spare parts and cost of lost production due to unscheduled downtime.”**
- **“Fully automatically operation and continuous monitoring of machines and systems are important application trends in today’s process industry.”**
- **“Today automatic diagnostic systems provide increased safety for critical applications, especially when availability of on-site service personnel is being reduced.”**

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