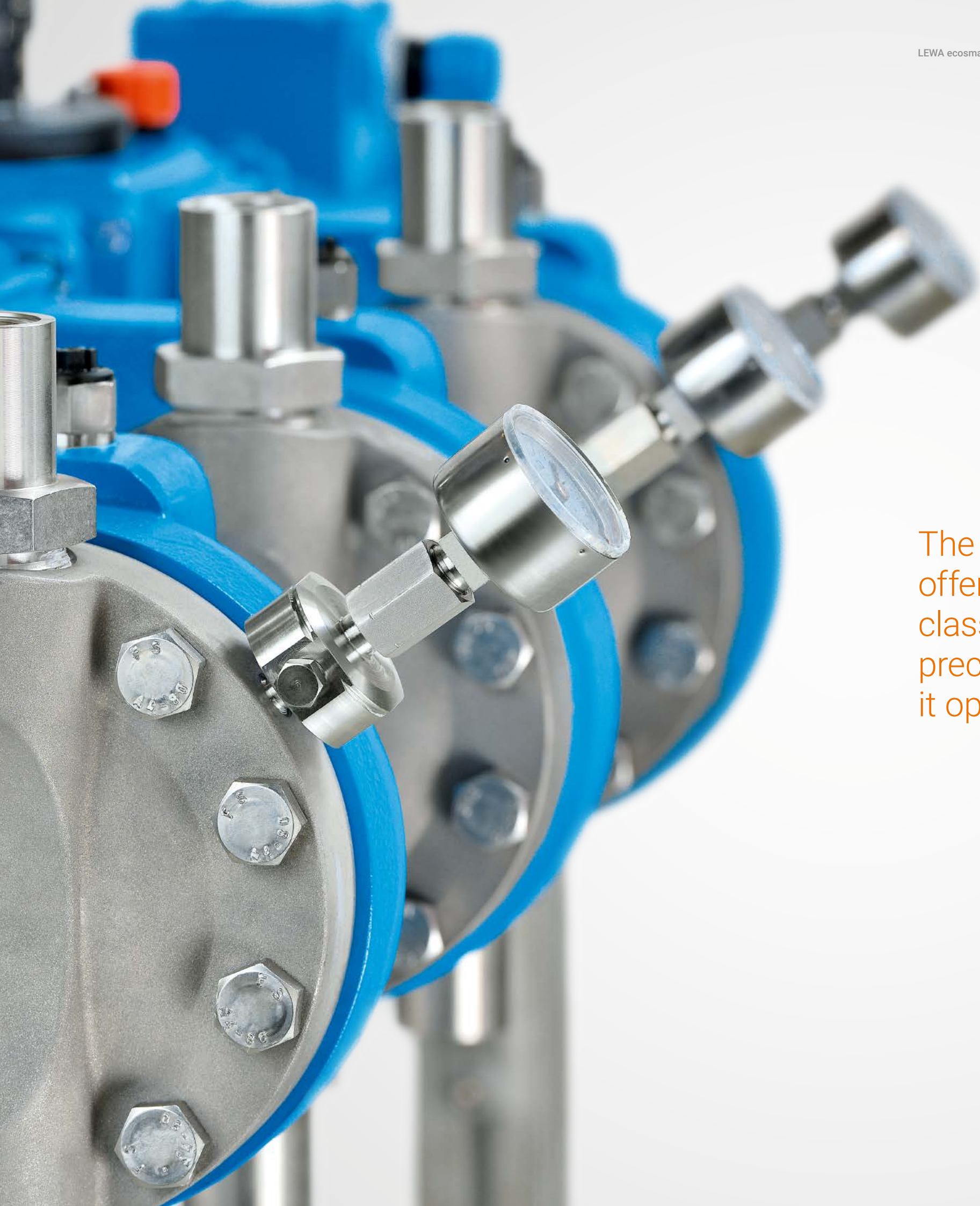


LEWA ecosmart®

Diaphragm metering pumps
at a smart price.





The LEWA ecosmart diaphragm metering pump offers the best price/performance ratio in its class and meters often costly fluids with high precision. As a positive displacement pump, it operates extremely efficiently.

The LEWA ecosmart's low investment and operating costs as well as its long service life and its robustness make it a winning choice. What's more, no other metering pump in this class offers the same compact dimensions – after all, every centimeter of space saved in the design and construction of a system leads to a reduction in costs.

LEWA ecosmart: the innovative, compact, and multiplex-capable diaphragm metering pump, featuring proven quality.

LEWA ecosmart.

The advantages at a glance.

1



Metering accuracy

Careful, precise conveying with outstanding reproducibility. An accuracy level of at least +/- 1% is achieved at constant basic conditions.

2



Operational safety and reliability

The pump can be started up with complete reliability from any operating state. We use a PTFE sandwich diaphragm with status monitoring as standard. An integrated pressure relief valve prevents the pump from entering potential overload situations.

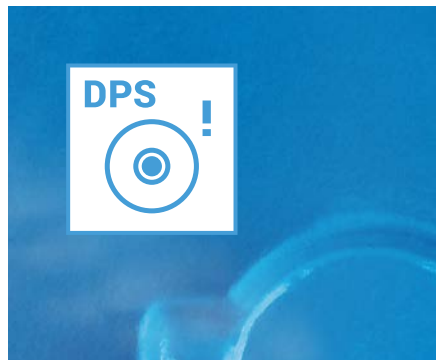
3



Hermetically tight

LEWA diaphragm pumps work without dynamic seals, due to their design. This permits a hermetically tight working area. There are no emissions to the outside.

4



State-of-the-art technology

The LEWA ecosmart has been developed with state-of-the-art LEWA technology, such as the DPS diaphragm protection system, which automatically positions the diaphragm correctly. The pump also features unrivaled suction capacity.

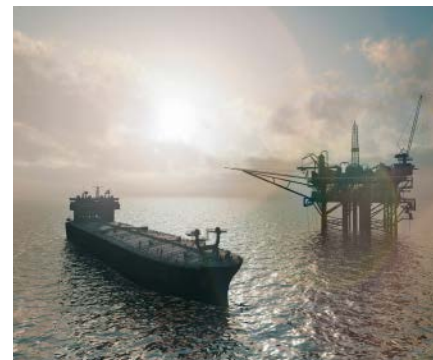
5



Cost-effectiveness

LEWA ecosmart pumps are very competitive priced. Their low lifecycle costs are based on extremely low failure-related costs as well as low energy costs. Long service intervals guarantee high cost effectiveness.

6



Worldwide service

LEWA is globally organized. Spare parts and service are quickly available worldwide.

Compact design

Standard drives according to IEC and NEMA

Ex LEWA ecosmart pumps are suitable for ATEX zone 1 and zone 2

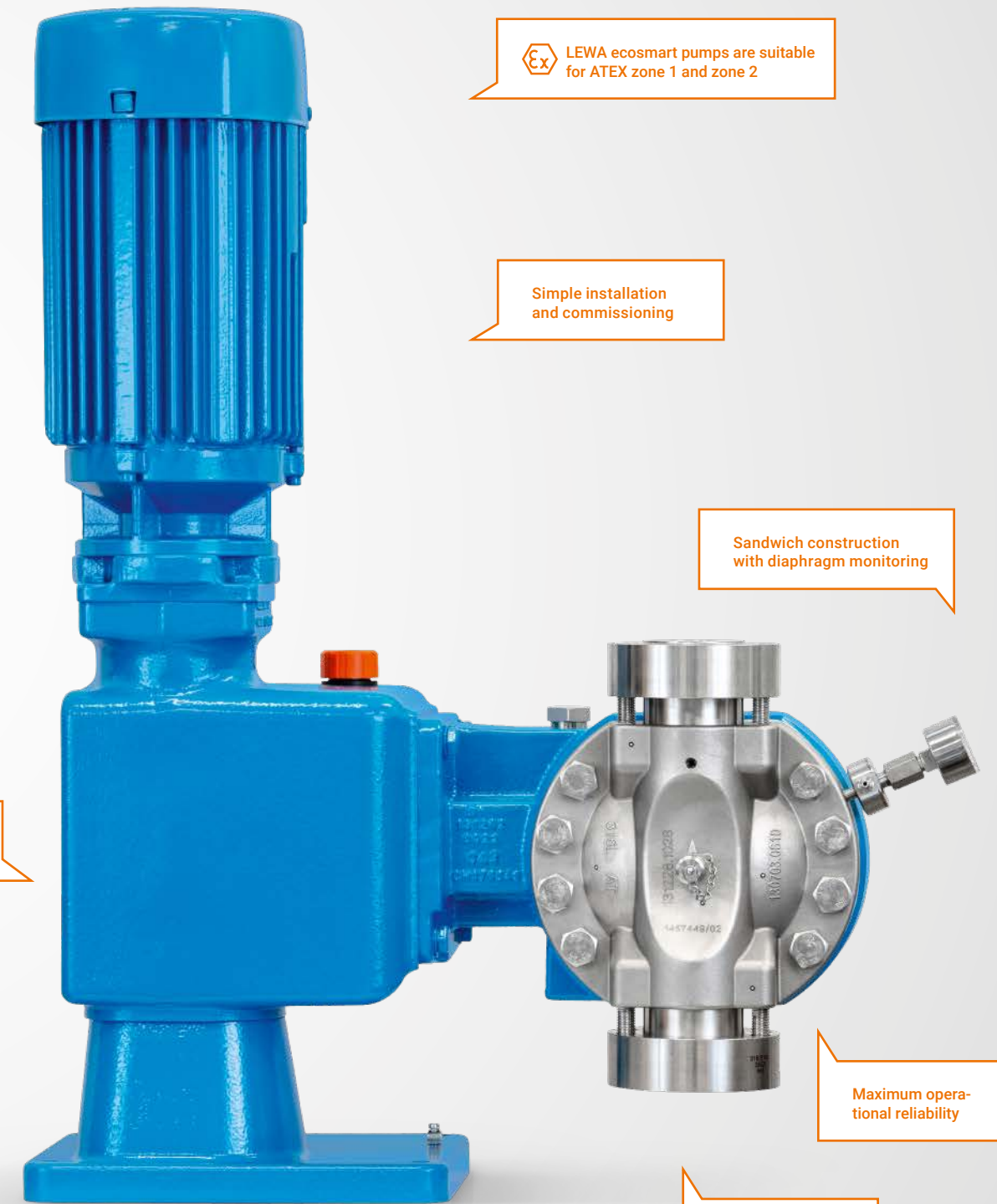
Simple installation and commissioning

Sandwich construction with diaphragm monitoring

Maximum metering accuracy

Maximum operational reliability

Suction pressure up to 0.1 bar abs.



Areas of application.

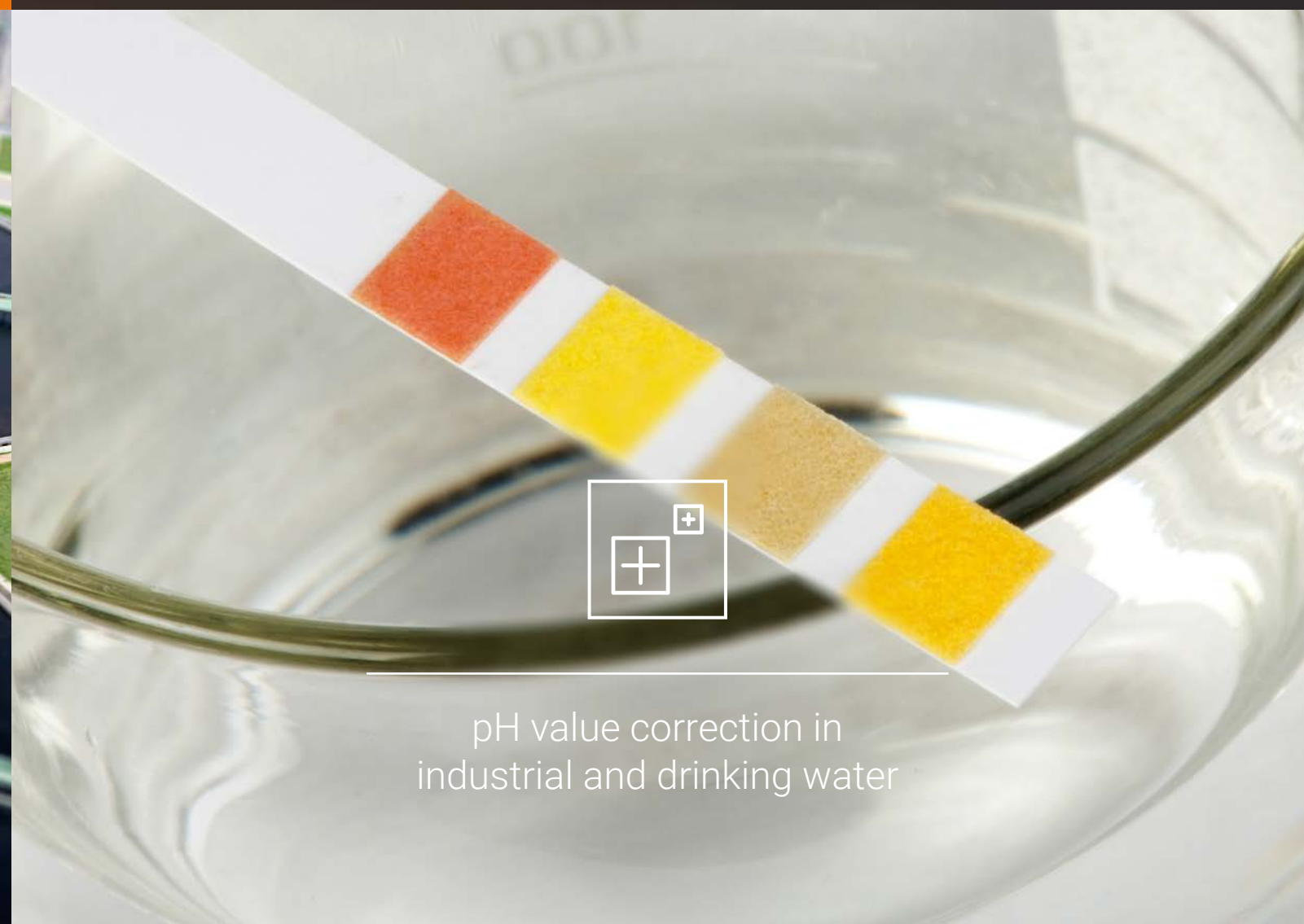
LEWA ecosmart pumps meet even the most stringent requirements in a whole range of application areas. Their conveying and metering features are safe, efficient, precise, and reliable. Regardless of the task, and in all kinds of industries.



Chemical metering in industrial and municipal water treatment systems



Water and fuel conditioning in power plants



pH value correction in industrial and drinking water



Dosing of colorings and flavorings
in the food industry



Metering of various solvents
in the chemical industry



Injection of chemicals
in the oil and gas industry

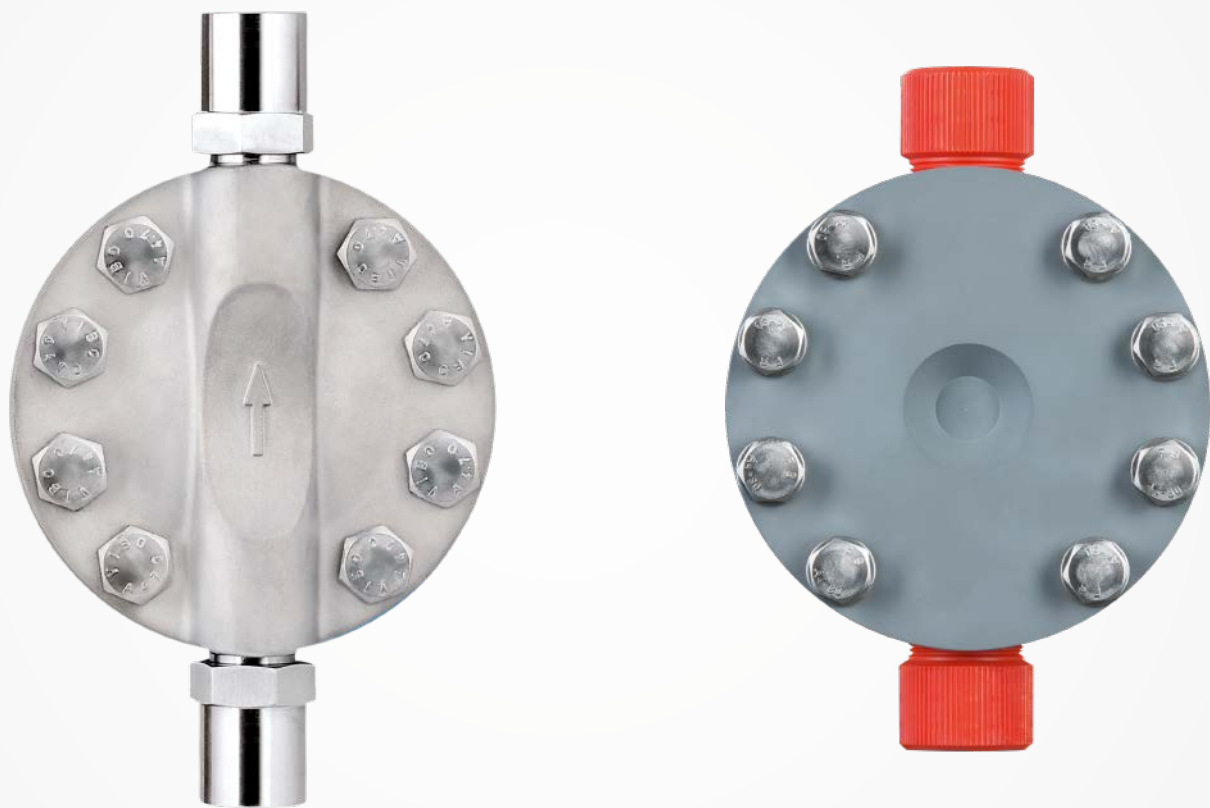


Metering additives
in the plastics processing industry

For a wide variety of requirements.
The LEWA ecosmart pump heads.

M900 pump head series for fluids of any kind

Innovative, state-of-the-art diaphragm pump head series for maximum operational reliability and safety. The patented LEWA DPS technology also enables a suction capacity that is unrivaled by any other solution worldwide in the field of hydraulically actuated diaphragm pumps.



M910

M910 in stainless steel design with PTFE sandwich diaphragm

M930

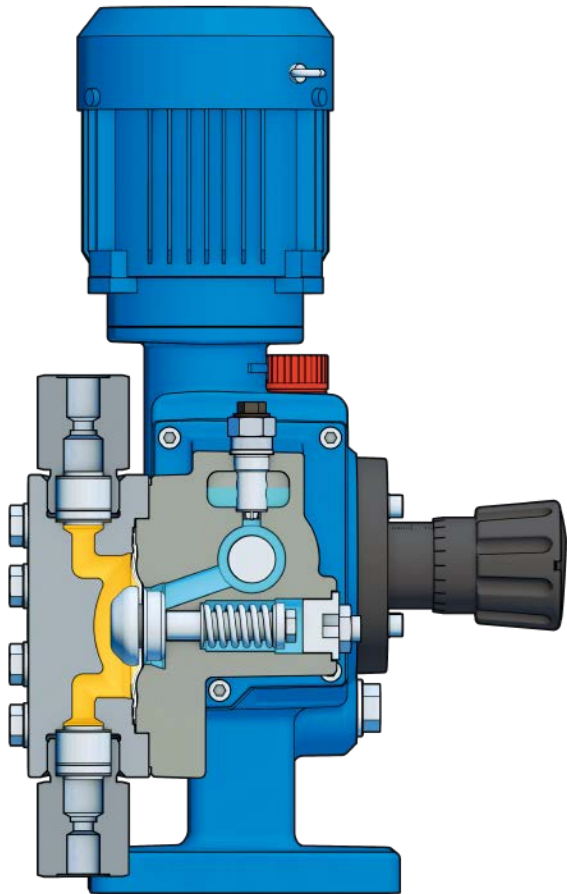
M930 in PVC design with PTFE sandwich diaphragm

For fluids of any kind.
The diaphragm pump head with cutting-edge technology.

Pump heads of series M900 are innovative, state-of-the-art diaphragm pump heads with a PTFE sandwich diaphragm for maximum operational reliability.

They feature large safety reserves, especially during the startup. The patented LEWA DPS technology also enables a suction capacity that is globally unique in the field of hydraulically actuated diaphragm pumps.

Technical data	
Discharge pressure	up to 80 bar (LCA) up to 50 bar (LCC/LCD)
Flow rate	up to 2,000 l/h per pump head
Temperature	from -30 to +120°C
Viscosity	up to 100,000 mPa·s
Design	1.4404 (316L) and PVC



Outstanding advantages

- Easy operation and maintenance due to shared oil bath for drive unit and pump head
- Smallest footprint thanks to compact design
- Unique suction lift capability
- Suitable for vacuum extraction
- Simple, reliable start-up, even under extreme conditions
- DPS diaphragm protection system
- Very low maintenance costs and long service intervals
- Suitable for slurry applications
- Dry run safe
- Integrated, individually adjustable pressure relief valve

Robust technology and proven quality.

Reliable components are one of the keys to safe processes

LEWA ecosmart pumps are based on the robust technology that LEWA is renowned for. As a result, they are also easily able to fulfill the strict safety requirements of API 675 (American Petroleum Institute). The pumps use key components from LEWA's proven range – like the PTFE sandwich diaphragm with diaphragm monitoring, the patented DPS diaphragm protection system and flow efficient check valves.



DPS diaphragm protection system

Diaphragm pumps are used when leak tightness and operational reliability are in demand. Especially for hazardous, abrasive, environmentally harmful, or sensitive fluids. The diaphragm is hydraulically actuated to ensure a balanced load. In combination with the DPS (Diaphragm Protection System) a long diaphragm service life, maximum operational reliability and an unrivaled suction capacity are ensured.



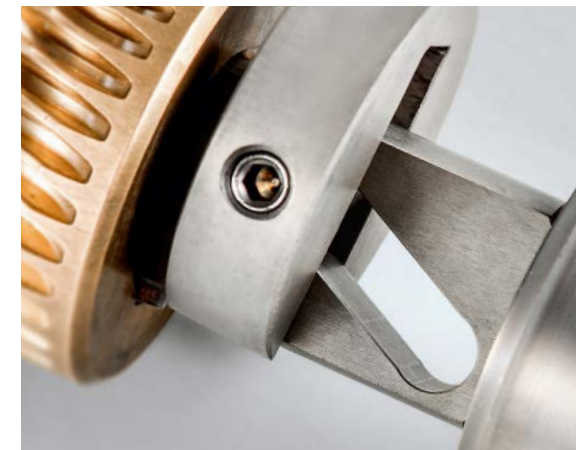
Diaphragm monitoring

Any diaphragm damage is displayed reliably by the diaphragm monitoring feature. The safety sandwich construction allows the pump to keep running without any problems until the next planned shutdown. Diaphragms can be replaced very easily when this work is due.



Flow efficient check valves

Operational reliability and failure risk are critically dependent on check valve quality. The valve design is therefore adapted to the specific application.



Variable eccentric principle for flow adjustment

For the liquid flow adjustment, LEWA uses its proven variable eccentric principle; this also enables easy operation. The stroke length is adjusted directly on the eccentric shaft. The handwheel can be used to make a linear stroke adjustment in 0.05 mm increments, either during standstill or operation. The plungers move in harmony even in the partial stroke range, preventing additional, disruptive pulsations in this range. The solid dimensioning and high-quality materials, oil bath lubrication, and protection against weather and splash water ensure a long service life. Maintenance work is extremely easy to perform. The equipment is driven using 3-phase motors and AC motors as standard. In multiplex versions, a range of drive unit stroke frequencies enables adjustment in line with different fluids and other basic conditions.



Stroke adjustment

The drive units are equipped with manual stroke length adjustment as standard. As an option, it is also possible to equip the LEWA ecosmart with an electrical actuator for stroke length adjustment.

Options.

Individual configurations are available on request, such as painting for seawater applications, material test certificates, and acceptance in accordance with API (American Petroleum Institute) criteria.

Customized valves
Diverse connection geometries
PVC wetted parts
Integration into process control systems via analog and digital signals, using a frequency inverter or electrical stroke adjustment.
Features and advantages of electrical stroke adjustment:
– Power supply with large voltage range of 90 to 264 VAC (single-phase)
– Servomotor technology for high precision
– Manual operation (handwheel does not move during automatic operation)
– Analog input signals 0-10 V; 0/4-20 mA or fieldbus
– Integrated active feedback signal 0-10 V; 0/4-20 mA
Explosion protection
Multiplex capability
– As single drive unit with space-saving vertically installed motor
– Multiple drive units that can be combined with identical or different output, for higher output, pulsation reduction or recipe metering, for example



At a glance.

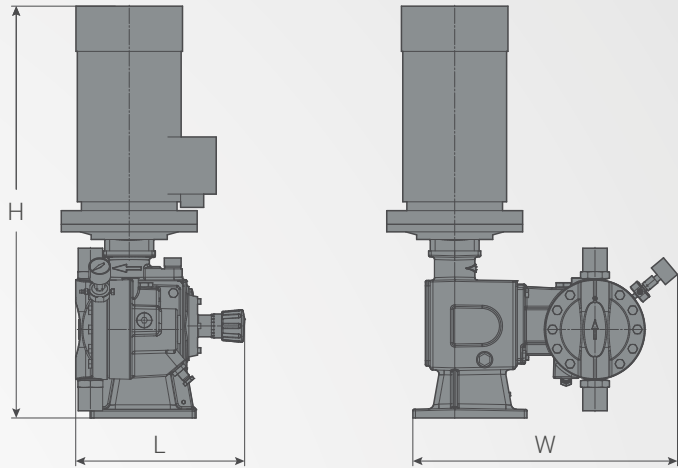
Technical data.

Performance overview to determine stroke frequency and pump head size

Type	Plunger ø [mm]	Q _{theor} [l/h] for each pump head, at full stroke length and stroke frequency n [rpm]					P _{max} discharge pressure [bar] 1.4404 (316L)	P _{max} discharge pressure [bar] PVC
		80	109	136	163	218		
LCA	6	2.0	2.8	3.5	4.1	5.5	80	12
	8	3.6	4.9	6.2	7.4	9.9	80	12
	11	6.8	9.3	11.6	13.9	18.6	80	12
2	14	11.1	15.1	18.8	22.6	30.2	80	12
	17	16.3	22.3	27.8	33.3	44.5	56	12
3	22	27.4	37.3	46.5	55.8	74.6	33	12
	28	44.3	60.4	75.4	90.3	120.8	19	12
4	35	69.3	94.4	117.8	141.1	188.8	12	10
	42	99.8	135.9	169.6	203.2	271.8	7	7
		82	112	140	168	224		
LCC	22	28.1	38.3	47.9	57.5	76.6	50	12
	28	45.4	62.1	77.6	93.1	124.1	46	12
2	35	71.0	97.0	121.2	145.5	194.0	28	12
	42	102.2	139.7	174.6	209.5	279.3	19	12
3	46	122.6	167.5	209.4	251.3	335.0	15	12
	52	156.7	214.1	267.6	321.1	428.1	11	11
	58	195.0	266.3	332.9	399.5	532.6	9	9
4	66	252.5	344.9	431.1	517.3	689.7	6	6
	74	317.4	433.5	541.9	650.3	867.0	4	4
	82	389.7	532.3	665.4	798.5	1064.7	3	3
		114	143	171	228			
LCD	34	183.0	233.7	279.5	372.6	50	12	
	38	228.6	291.9	349.1	465.4	41	12	
	42	279.3	356.6	426.4	568.6	33	12	
2	46	335.0	427.8	511.5	682.0	27	12	
	52	428.1	546.6	653.7	871.6	21	11	
	58	532.6	680.1	813.2	1084.3	16	9	
3	66	689.7	880.6	1053.0	1404.1	12	6	
	74	867.0	1107.0	1323.8	1765.1	9	4	
	82	1064.7	1359.3	1625.5	2167.3	7	3	

Pump heads

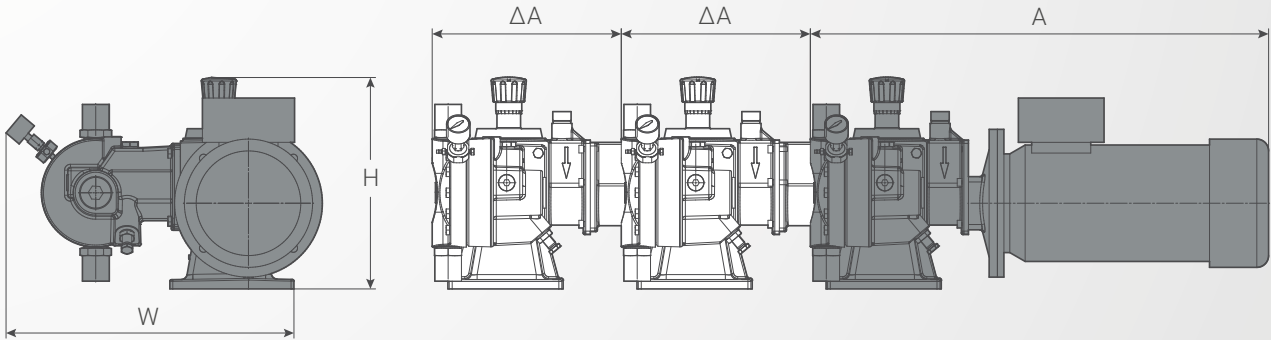
Type	Discharge pressure	Flow rate	Temperature	Viscosity	Material
M910	max. 50 bar (LCC/LCD), max. 80 bar (LCA)	max. 2,000 l/h	-30/+120°C	100,000 mPa·s	1.4404 (316L)
M930	max. 12 bar	max. 2,000 l/h	-10/+60°C	100,000 mPa·s	PVC



Assembly dimensions single pump

in mm	LCA				LCC				LCD		
Type	1	2	3	4	1	2	3	4	1	2	3
Plunger ø	6 - 11	14 - 17	22 - 28	35 - 42	22 - 28	35 - 42	46 - 58	66 - 82	34 - 42	46 - 58	66 - 82
L	220	230	270	285	290	305	310	365	505	545	575
W	355	365	375	405	440	470	490	550	610	650	680
H _{0.18KW}	436	436	436	436	—	—	—	—	—	—	—
H _{0.37KW}	456	456	456	456	—	—	—	—	—	—	—
H _{0.55KW}	527	527	527	527	—	—	—	—	—	—	—
H _{3.00KW}	—	—	—	—	720	720	720	720	—	—	—
H _{5.50KW}	—	—	—	—	—	—	—	—	910	910	910

The H values relate to the standard motors used by LEWA.



Assembly dimensions multiplex pump

in mm	LCA				LCC				LCD		
Type	1	2	3	4	1	2	3	4	1	2	3
Plunger ø	6 - 11	14 - 17	22 - 28	35 - 42	22 - 28	35 - 42	46 - 58	66 - 82	34 - 42	46 - 58	66 - 82
W	355	365	375	405	440	470	490	550	610	650	680
A	600				780				850		
ΔA	265				220	320	320	320	415		
H	322				360				610		

Creating Fluid Solutions. For more value created.



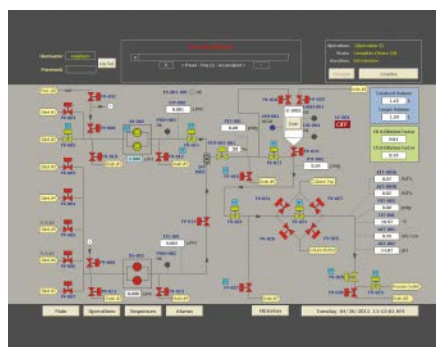
Technical consulting



Fluid and process
engineering tests



Lifecycle concepts and
energy optimization



Process automation



Pulsation studies and
pipeline calculations



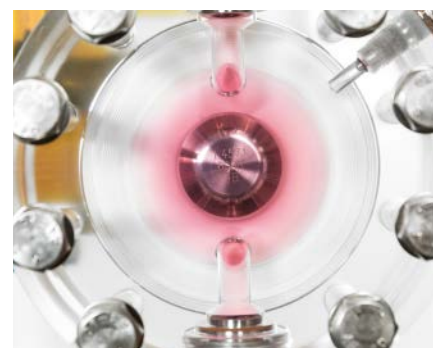
System layout and integration



Creative development
and refinements



Commissioning and
maintenance service



Spare part and service
concepts

Creating Fluid Solutions.

Driven by our commitment, our trendsetting products and innovative technologies have set benchmarks for diaphragm pumps and metering systems for over 70 years. We solve complex tasks from a single source. That ranges from custom pump design, basic and system engineering, global project management, and pretesting to commissioning and maintenance on site. Our consistent drive always to develop the best solutions for the customer provides you with a competitive advantage and visible added value.

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