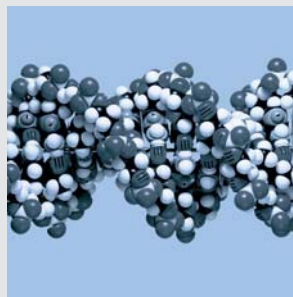


# LEWA hygienic

Diaphragm metering pumps  
for hygienic applications



- **Pharmaceutical**
- **Biotechnology**
- **Personal Care**

# For the highest demands concerning the cleanliness: LEWA hygienic



Specifically for the pharmaceutical market:  
Polypropylene pump heads



Hygienic design guarantees process integrity: LEWA ecodos made of stainless steel



For medium to high pressures:  
LEWA ecoflow M900

## **LEWA ecodos polypropylene:** **Cost-effective plastic pumps for low pressures.**

Economical but still meeting all hygienic requirements, a series of plastics with high chemical resistance:

- Reliable and efficient series for low operating pressures
- Excellent chemical resistance
- Polypropylene pump heads with excellent surface quality
- Up to 60°C (140°F), designed to be CIP
- EPDM\* or FFPM\* seals
- According to standard regulations (EHEDG, QHD)
- All wetted materials tested for FDA conformity and meeting USP class 6 requirements
- Valves seats made of low wear PEEK\*

## **LEWA ecodos stainless steel:** **The field-proven stainless steel pumps for standard applications.**

This high-quality metal series is corrosion proof and enables easy surface cleaning.

- Material 1.4435 (316L)
- Wetted parts  
Ra < 0.5µm, electro-polished
- Designed to be CIP
- Designed to be SIP up to 150°C (300°F)

## **LEWA ecoflow M900:** **Extremely safe pump heads for high pressures and all types of fluids.**

Universal and high-performance series with hydraulically actuated diaphragm and Diaphragm Protection System (DPS).

- Version for medium and high operating pressures
- Material 1.4435 (316L)
- Wetted parts  
Ra < 0.5µm, electro-polished
- Designed to be CIP
- Designed to be SIP up to 150°C (300 °F)
- Large modular system system, adaptable to any application

\*EPDM (Ethylene Propylene Diene Monomer): Highly elastic elastomer with excellent temperature resistance

FFPM (Perfluoroelastomer): Elastomer highly resistant to chemicals with excellent temperature resistance

PEEK (Polyether Ether Ketone): High-strength plastic with high alternating bending strength and excellent temperature resistance

# For complete safety: LEWA technology

## **Optimised hygiene valves: For perfect cleaning**

The minimum dead space sealing provided by the gaskets of the valves ensures optimum cleaning. The gaskets are fully chambered and cannot migrate to the product area. In short: The design of all valve components is optimized to offer minimum flow resistance and to remain sterile.

## **Aseptic pipe line connections: For quick changeovers**

Common pharmaceutical process connections guarantee simple disassembly for inspections, ease of maintenance and simple installation.

## **Patented 4-layer safety diaphragm: Hermetically tight**

It consists of 2 working diaphragms, 1 monitoring diaphragm and 1 pressure-resistant safety diaphragm. With its dry running capabilities, the diaphragm prevents fluid from escaping, i.e. contamination of fluids with drive unit oil is not possible.

## **Longer diaphragm service life: more than 16,000 operating hours**

LEWA ecodos safety diaphragms have a service life of more than 16,000 operating hours, i.e. two years of continuous operation. Therefore, the warranty period for diaphragms is two years.

## **Smooth surfaces: For simple cleaning**

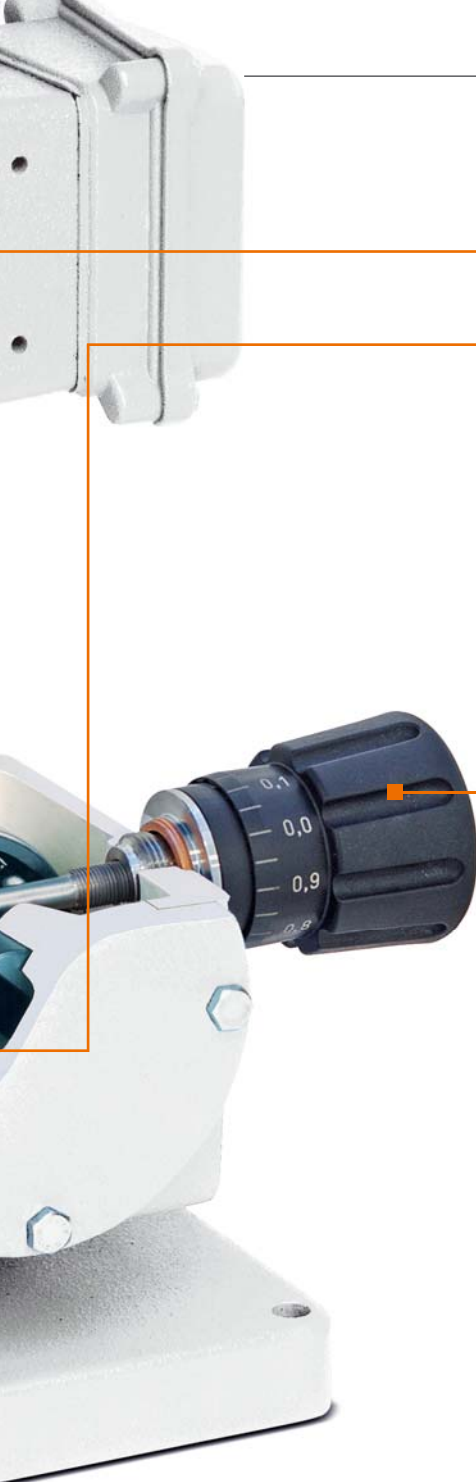
The pump head has a chrome-nickel steel 1.4435 (316L) construction with a delta ferrite content of < 1%. The wetted surfaces are mechanically polished and electropolished to achieve a surface roughness of less than 0.5 µm. The plastic version is injection moulded and also achieves roughness values of less than Ra 0.5 µm due to the highly polished tools used.

## **Diaphragm monitoring system: For reliable status display**

The standard diaphragm monitoring system immediately and reliably indicates a damaged diaphragm. Nevertheless, the pump can still be operated to ensure production is completed without risks. Signalling occurs via a pressure switch, pressure gauge and contact pressure gauge.



Photo: LEWA ecodos hygienic



**Minimum dead spaces:  
shorter dwell period**

The optimised construction of the pump head ensures that the amount of process fluid in the operating chamber is kept to a minimum. The design of the fluid passages results in perfect flushing, draining and drying procedures.

**High metering accuracy,  
gentle conveying**

The metering pumps provide high metering accuracy and gentle conveying. Precise adjustment of the stroke (manually or electrically) and adjustment of the stroke frequency via a frequency inverter are possible. Reproducibility of the settings is better than  $\pm 1\%$ .

**Materials for your complete safety**

Only physiologically safe materials are used for wetted parts. All the plastics and elastomers satisfy FDA and USP class 6 requirements.



We also offer complete solutions – please contact us for more details.

**LEWA ecodos hygienic – Technical data**

Type/Flow rate eff. (Qmax at pmax)	2	4	6	12	25	50	90	180	350	550	750	1100	1500	l/h		
Stroke frequency at 50 Hz	27	54	80	160	80	160	80	160	160	145	113	170	228	min -1		
Performance, simple pump	0,18	0,25	0,18	0,25	0,18	0,25	0,37	0,55	0,55	0,75	0,75	1,5	1,5	kW		
Approx. weight (simplex incl. motor)	15	15	15	15	15	15	23	23	30	60	76	76	76	kg		
<b>Stainless steel 1.4435 (316L) pump head</b>																
Operating pressure	20	20	20	20	10	10	10	10	7,5	7,5	5	5	5	bar		
Permissible operating temperature	-10/+80													°C		
Valve type	Ball valve													Plates		
Standard connections	1/4"			1/2"			3/4"			1"			Triclamp			
Optional connections	Sterile connections, e.g. acc. to DIN 11864															
<b>Polypropylene (PP) pump head</b>																
Operating pressure					6	6	6	6	6						bar	
Permissible operating temperature					-10/+60										°C	
Valve type	Ball valve															
Standard connections					1/2"			3/4"								Triclamp
PTFE sandwich diaphragm																
Stainless steel version: Ball valves with 316L ball, PTFE seal rings																
PP version: Ball valves with oxide ceramic ball, EPDM seal rings, optional FFPM																

# For numerous applications: From engineering to documentation



The pharmaceutical industry:  
LEWA diaphragm pumps in hygienic design meet the high demands of the pharmaceutical industry for extruding tablets for example.



The biopharmaceutical industry:  
LEWA Diaphragm pumps and metering systems in up and downstream areas, for continuous sterile filling processes for example.



The cosmetics industry:  
LEWA diaphragm pumps with a hygienic design guarantee excellent cleaning for the production of personal care products for example.

## **LEWA hygienic for sterile processes**

LEWA hygienic metering pumps meet all aseptic and sterile demands reliably and efficiently. They are hermetically tight and offer zero leakage with absolutely no shaft connection to the product area, thus ensuring contamination-free metering – over long periods of time. This applies to the pharmaceutical & life science as well as the cosmetics & personal care sector. Hygienic pumps can also be used as multiplex pumps, e.g. for recipe metering, i.e. various pumps can be assembled side by side on a single drive shaft.

- Precise metering
- Hermetically sealed
- High operational safety
- Minimum dead spaces
- Optimised operating chamber
- Gentle, low shear handling of fluids
- Reliable, economical, low maintenance
- Designed to be CIP/SIP

## **We not only provide the perfect pump, but also the right documentation:**

- Performance tests and pressure tests
- 3.1 certificates for all wetted materials, also for plastic parts and gaskets
- Surface roughness certificates

## **The hygienic series covers numerous application areas:**

- Continuous, proportional blending of sensitive, expensive fluids
- Exact addition of fluids in the chromatography process
- Metering of sensitive liquids, such as enzymes, vitamins or flavours
- Aseptic transfer of proteins and cells, e.g. micro-organisms or blood
- Addition of additives, such as colourants, toxic chemicals, etc.
- Injection of fluids for extrusion or spray mechanisms for the production of active ingredients and tablets
- Filtration and ultra filtration

## **These LEWA pumps comply with standard regulations for hygienic installations:**

- Materials with FDA conformity
- Materials tested to meet USP class 6 requirements
- Design with 3A conformity
- EHEDG tested
- ASME-BPE conformity

# For short distances: LEWA at your service worldwide



## Germany / Headquarters

### LEWA GmbH

Ulmer Str. 10  
71229 Leonberg  
Phone +49 7152 14-0  
Fax +49 7152 14-1303  
lewa@lewa.de  
www.lewa.de

### LEWA HOV GmbH + Co KG

Neue Ramtelstr. 48  
71229 Leonberg  
Phone +49 7152 6091-0  
Fax +49 7152 6091-59  
hov@hov.de  
www.hov.de

## Austria

### LEWA Pumpen GmbH

1150 Vienna  
Phone +43 1 8773040-0  
info@lewa.at  
www.lewa.at

## Brazil

### LEWA Bombas Ltda.

04378-400 São Paulo - SP  
Phone +55 11 56770466  
info@lewa.com.br  
www.lewa.com.br

## Bulgaria

### LEWA – Technical Office Sofia

1421 Sofia  
Phone +359 2 8654088  
lewa.bg@lewa.at  
www.lewa.bg

## China (P.R.C.)

### LEWA Pumps (Dalian) Co., Ltd.

116600 Dalian  
Phone +86 411 8758-1477  
sales@lewa.cn  
www.lewa.cn

## Czech Republic

### LEWA Pumpen spol. s.r.o.

602 00 Brno  
Phone +420 5 43236052  
office@lewa.cz  
www.lewa.cz

## France

### LEWA S.A.S.

78500 Sartrouville  
Phone +33 1 308674-80  
info@pompes-lewa.fr  
www.lewa.fr

## Hungary

### LEWA Kft.

1012 Budapest  
Phone +36 1 2240403  
info@lewa.hu  
www.lewa.hu

## Italy

### LEWA S.R.L.

20020 Arese (MI)  
Phone +39 02 935826-60  
info@lewa.it  
www.lewa.it

## Mexico

### LEWA México – Technical office

01210 México D.F.  
Phone +52 55 91 72 92 10 280  
info@lewa.es  
www.lewa.es

## Norway

### LEWA AS

4319 Sandnes  
Phone +47 52 9091-00  
info@lewa.no  
www.lewa.no

## Poland

### LEWA Sp. z o.o.

00-159 Warsaw  
Phone +48 22 6358204  
info@lewa.pl  
www.lewa.pl

## Romania

### LEWA Romania s.r.l.

050579 Bucharest  
Phone +40 21 4107340  
info@lewa.ro  
www.lewa.ro

## Singapore

### LEWA PTE LTD

Singapore 129808  
Phone +65 686 17127  
info@lewa.sg  
www.lewa.sg

### Pump Alliance PTE LTD

Singapore 129808  
Phone +65 646 86802  
pbeddard@cpccasia.com.sg  
www.pumpalliance.sg

## Spain

### LEWA Hispania, S.L.

08020 Barcelona  
Phone +34 93 2247740  
info@lewa.es  
www.lewa.es

## Switzerland

### LEWA Pumpen AG

4153 Reinach 1  
Phone +41 61 7179400  
info@lewa-pumpen.ch  
www.lewa-pumpen.ch

## UAE / Dubai

### LEWA GmbH (LEWA Branch)

Dubai Airport Free Zone, UAE  
Phone +971 4 2993969  
lewa@lewa-dubai.ae  
www.lewa.ae

## Ukraine

### LEWA Ukraine LC

03039 Kiev  
Phone +380 44 52796-31  
lewa.ua@lewa.at  
www.lewa.at

## USA / North- and Middle America

### LEWA, Inc.

Holliston, MA 01746  
Phone +1 508 429-7403  
sales@lewa-inc.com  
www.lewa-inc.com

## USA / Gulf Coast Oil & Gas Production

### Capital Process Management, Inc.

Houston, TX 77086  
Phone +1 713 673-5161  
rfletcher@capitalprocess.com  
www.capitalprocess.com

Find more LEWA subsidiaries  
at [www.lewa.com](http://www.lewa.com)