

Displacement pumps for liquid CO₂



High Pressure Technology

Our philosophy: the **most reliable pumps** in the market



Developed for the future

As a leading manufacturer in the field of high pressure technology, URACA offers a wide range of specifically customised pumps and units for a professional use in delivery of liquid CO₂. We do not invent superlatives on paper, but develop workhorses for practice. URACA pumps and units are designed for maximum performance, efficient handling, durability and flexibility.

Proven under the toughest conditions

Highest extraction-pressures are reached with our high pressure pumps for an optimal extract-quality. URACA pumps and units are in operation worldwide under the toughest conditions. Our pumps easily withstand dirt and dust, extremely high and low temperatures and especially heavy duty conditions that such machines are subjected to. Countless testimonials from enthusiastic users confirm the durability of URACA units. You also can work with the best power units available.



Top performance requires a strong heart

Indestructible pumps with high-quality components allow efficient running costs for the units.

Industry standard

URACA plunger pumps are designed for uninterrupted heavy duty operation 24 hours a day – for decades.

Variety

The optimum pump of URACA's product family for each unit.

Energy efficiency

URACA products achieve highest efficiency. Cost-effective – year in and year out.

Quality

URACA high pressure plunger pumps are manufactured in-house considering the highest quality standards.

Know-how

Since more than 125 years, URACA is manufacturing high pressure pumps.

Performance

Maximum pressure level and maximum flow rate. Not only on paper.



Built for professionals

Design intelligence, the best plunger pumps as a basis, vertical integration up to crank shafts completely manufactured in-house, precise machining and careful assembling by qualified employees as well as extensive test procedures ensure the reliable functioning of our products. This offers the best possible economic efficiency and lasting value. Every day. For many decades.

Our philosophy

- Over 125 years of experience
- Production “Made in Germany”
- Highest vertical integration
- Comprehensive engineering know-how
- In-house testing operation
- Customised solutions
- Excellent price-performance ratio
- Highest energy efficiency

High-performance displacement pumps up to 1,000 bar

Carbon dioxide is used in many areas of the chemical industry as well as the food, drinks, cosmetics and pharmaceutical industry. As a supercritical solvent, it is used in extraction and cleaning processes and serves as a refrigerant, an inert gas or as an auxiliary agent during packing processes. In addition to these technical applications, CO₂ finds use as a raw material for chemical syntheses and in the energy sector. Disposal and storage of CO₂ are also gaining in importance.

For many of these applications oscillating positive displacement pumps can be employed, which are specifically designed for pumping liquid CO₂. Pressures of up to 1,000 bar, high mass flows and a maximum in reliability are what characterise the plunger pumps made by URACA. Pump assemblies with drive and control units turn the system concept in pump engineering into reality.

Our features

Your benefit

For URACA plunger pumps

Sophisticated pump design	<ul style="list-style-type: none"> Less energy consumption due to high mechanical and volumetric efficiencies Low-wear operation
Inclined splitted power end casing ¹⁾	<ul style="list-style-type: none"> Easy maintenance options
Integrated gear box ¹⁾	<ul style="list-style-type: none"> Compact design Small footprint
Tailor made liquid end	<ul style="list-style-type: none"> Optimum volumetric efficiencies for almost all liquid fluids
Individually selected materials	<ul style="list-style-type: none"> Highest resistance of all wetted parts Low wear and high availability
Custom, constructive adaptation to the conveyed media and to production conditions	<ul style="list-style-type: none"> Safe and efficient operation thanks to optimised dead space, contour adjustment and additional measures such as cooling, a nonferrous metal-free design and assembly using food-grade lubricants.

For URACA pump units

Compact design	<ul style="list-style-type: none"> Small footprint
Modular construction of the unit	<ul style="list-style-type: none"> Individual configuration options
Customised unit design	<ul style="list-style-type: none"> Compliance with individual, national and international standards and norms
Ex design (ATEX, NEC, IECEx)	<ul style="list-style-type: none"> Applications in explosion-proof areas or potentially explosive atmospheres

¹⁾ only for certain model ranges



High-pressure pump unit P3-10 E/1000 for pumping liquid CO₂ during the extraction process

Design options – maximum efficiency due to customised construction

Drive configuration

- Drive arrangement
- Electrically drive
- Pump arrangement
- Gear box / belt / direct coupled



Horizontal pump



Design: right



Design: left



With gear box



Without gear box

Design options

- stationary
- with/without noise protection
- open/in container/in frame/skid mounted
- ATEX conform design



Stationary



Noise protection



Container installation



Diff. pressure levels



Exi-control

Pump configurations and types

- Liquid end designs, valve designs
- Material selection
- Accessories
- Pulsation damping
- Test data recording

High-pressure pump unit KD724 for liquid CO₂ with belt drive and resonator for pulsation damping



There is always a **solution**

Process reliability, process control, efficiency and flexibility all place high demands on the production of liquid CO₂. Displacement pumps, therefore, are the preferred choice for pressure

generation and volumetric flow control. Continuous volumetric flow, optimised dead space as well as cooled liquid and power ends specifically designed for use with high primary

pressures all ensure reliability and a long service life of the pump and processes. This is where URACA steps in and designs and manufactures custom solutions for each application scenario.

URACA offers **tailor-made solutions**



Applications

- Extraction processes: For extracting natural and active substances, aromas, fats, oils, waxes, polymers, enzymes, colourants etc. for the food, chemical and pharmaceutical industry
- Cleaning
- Impregnation / conservation, e.g. of structural timber
- Food preservation
- Cooling
- Packing processes
- Chemical syntheses
- Foaming of plastic materials
- Storing in geological formations (injection)
- Generation of energy, e.g. turbine injection

Pump features

- Optimised dead space
- Specific material selection
- Cooling channels in stuffing boxes and a valve block for controlling the temperature of the medium
- Power end bearing for high supply and operating pressures
- Nonferrous metal-free design for use in the food and pharmaceutical industry
- Low-maintenance, easy accessibility
- Leakage control thanks to a sight glass
- Operating pressures of up to 1,000 bar





Extensive product portfolio

- Pumps
- Units
- Drives
- Control systems
- Monitoring

CO₂ pumps

The pumping of liquid carbon dioxide comes with a special set of requirements. Our high-pressure plunger pumps have been specifically optimised to meet these challenges. The wide range of CO₂ pumps we offer shows our many years of experience in this area.

Pump types

Type	Power	Pressure
P3-10	25 kW	1,000 bar
P3-70	150 kW	1,000 bar
P4-70	200 kW	1,000 bar
P5-70	250 kW	1,000 bar
P3-80	240 kW	1,000 bar
P5-80	400 kW	1,000 bar
KD719	60 kW	1,000 bar
KD724	80 kW	1,000 bar
KD629	220 kW	1,000 bar
KD825	310 kW	400 bar
KD827	500 kW	400 bar

η **high efficiency**

High-pressure plunger pump
P3-10 for liquid CO₂



High-pressure plunger pump
KD827 for CO₂ extraction

URACA – professional high pressure system supplier



Products and services



— Pump units

Unit assembly and drives at your convenience in stationary or mobile design. Whether in container, on skid or on trailer.

- Electrically driven units
- Engine driven units
- Hydraulically driven units
- Tailor made pump control systems

— Pumps

The core of the URACA technology: Superior quality, powerful high pressure positive displacement pumps, also for high-demanding continuous use. URACA pumps are designed acc. to API 674 on demand.

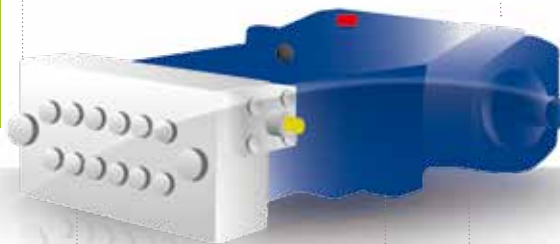
- Process and industrial pumps – reciprocating plunger pump or diaphragm design
- Test pumps
- High pressure water jetting pumps
- Sewer cleaning pumps



— High pressure water jetting systems

URACA gathered a lot of experience and engineering competence in the field of water jetting. URACA designs and manufactures complete systems, from simple cleaning head positioning devices up to semi-automatic and automatic operated systems for

- Reactor and vessel cleaning
- Pipe and tube cleaning
- Surface conditioning
- And others – just give us your request!



— Tools

URACA manufactures a wide range of cleaning tools for any application.

- Spray guns
- Tank cleaning heads
- Sewer cleaning nozzles
- Rotating nozzles
- Floor cleaners



— Accessories and components

URACA's pump range is completed with a wide range of high pressure accessories and components, like

- Nozzles
- Remote controls
- Hoses
- High pressure valves
- 90 degree rotary joint
- Multi-consumer systems
- Resonators and pulsation dampers



— Service

After sales service is URACA's top priority. The qualified and specially trained personnel and technicians are prepared to support you at any time, whether for

- Spare parts
 - Revamps
 - Upgrades in case of changed process conditions
 - Training
 - Supervising
 - Or answers to any questions you may have in terms of URACA equipment
- Please do not hesitate to contact us!