URACA

Internal vessel cleaning
with high pressure water

High Pressure Technology

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Proven under the toughest conditions

URACA pump units and cleaning systems are in operation worldwide under the toughest conditions. They easily withstand dirt and dust, extremely high and low temperatures and especially heavy duty conditions that such machines are subject to. Countless testimonials from enthusiastic users confirm the durability of URACA pump units and systems. You also can work with the best cleaning systems available.

Top performance
requires a strong heart

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

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

Know-how
Since more than 133 years, URACA is manufacturing high pressure pumps.

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

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

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

Quality without compromises

The daily, professional use is a tough challenge for a positioning device. Decisive for the functionality, endurance and highest economic efficiency of the systems is the strong heart: The URACA high pressure plunger pump.

For many vessels the question of an optimale cleaning comes up

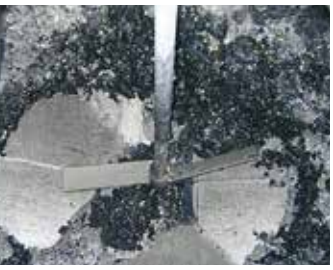
URACA: The market leader in vessel cleaning systems

In all plant of the chemical and petrochemical industry, of the plastics and pharmaceutical industry, tanks and vessels must be cleaned. Reactors, autoclaves, agitator vessels and tanks have to be freed of the most varied of residues and incrustations. Cramped space, the type of vessel openings, the required water pressure and how to generate it play an additional role in the selection of a cleaning system. Then a cleaning agent has to be selected. As a rule only cold water is used. For oil products oils and solvents may also be used.

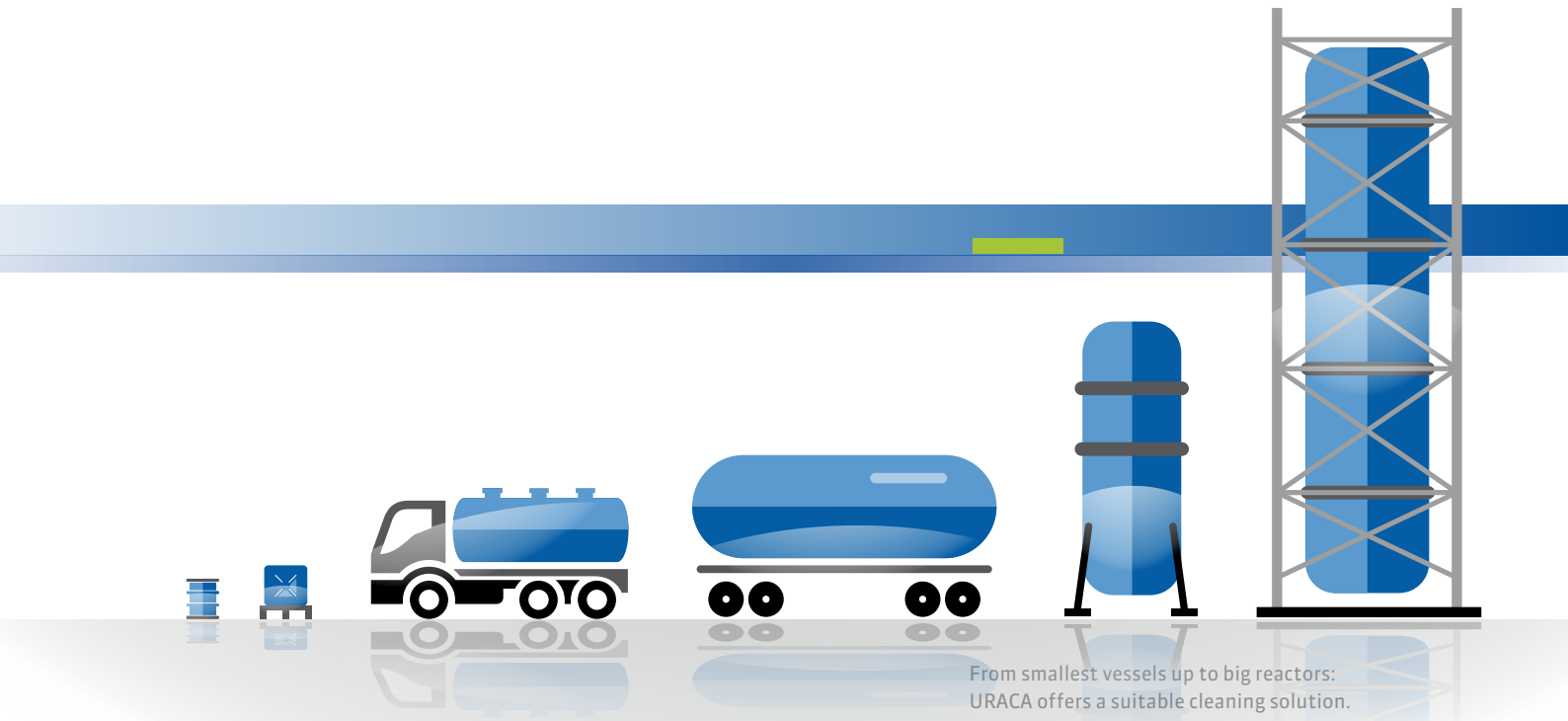
Many years of experience and international success in the design and manufacturing of high-pressure cleaning systems and equipment are the basis of URACA's engineering for the effective, economical and individual cleaning of the most varied of containers, tanks and vessels.

The benefits of URACA cleaning systems are convincing

- Individual solutions for customer-specific cleaning problems.
- Fast, careful and effective cleaning, also in areas that are hard to reach.
- Short production downtime means higher productivity.
- Automatic cleaning with programmable and controllable systems.
- Process-integrated operating controlled by process control system.
- No retooling times for process-integrated cleaning systems.
- No evacuation of vessel due to gastight and pressure-tight cleaning systems.
- Prevention of waste matter or water due to product-specific reprocessing of cleaning agent.
- Cleaning in explosion-proof areas is possible.
- Fast amortization of the cleaning systems due to the increased productivty and higher quality of the final product.



Examples before/after



From smallest vessels up to big reactors:
URACA offers a suitable cleaning solution.

What hits your spot?

Different container sizes and properties as well as built-in components require individual solutions with regard to the diverse deposits. Our experience and tests – also at site – offer maximum safety. Take advantage of our know-how.

Residue	Pressure (bar)
Fats	< 400
Mineral oil products (white)	
Adhesives	
PVC	
Latex	< 900
Spray tower residues	
Concrete residues	
Mineral oil products (black)	
Plastics	
Plaster	< 1200
Dispersions	< 2000
Paints	
Silicon/PU	
Varnishes	
Coke	
Rubber	

URACA – flexible, customized solutions from one source

A system made to measure

In order to handle the different vessels with their different residues URACA has opted for an individual, modular cleaning system for the internal cleaning of vessels with neatly combinable components that can be added as required. Each individual element is conceived, developed and produced in accordance with the most stringent demands.

High-pressure pump units

In order to generate the necessary water pressure electric or diesel driven high-pressure pump units are needed. Depending on the application, strain, pressure and flow volume URACA offers a whole variety of pumps and pump units.

Cleaning heads

The TWK tank cleaning head from URACA, driven by high-pressure water, has two opposite-mounted nozzles, at an off-axis angle. The recoil forces of the flowing water cause the rotor to turn. With the simultaneous turning of the TWK on its vertical axis the water jets reach every nook and cranny and thus clean the entire internal surface of the vessel. Special nozzles and extensions make for a compact concentration of the water jet at great distances.

The type-examination certificate allows use in explosion-proof areas, zone 0 and 20. The KBR with electric or pneumatic drive is suitable for small vessels.

Positioning systems

To get the TWK tank cleaning head into the optimal position in the vessel a wide spectrum of options is available. Available as manual or automatic version such as reels and lances or any other combination.

The choice of positioning system depends on the kind of vessel, possible installations as well as accessibility and local conditions. In addition there is also the question of whether the cleaning system must be gas- and/or pressure-tight.

Flexible use of the positioning systems, either as stationary or mobile system. The most common installation variant with reel systems is floor- or ceiling-mounting.

Safety and unloading valves provide precise and timed availability of the high pressure water.

Specially programmed control systems for reel as well as for lance systems allows an automated cleaning process. The integration into the process control system enables an integrated operation.

System for the internal cleaning of vessels

highefficiency

Pump units
- Pump
- Drive
- Control
- Explosion-proof / ATEX

Cleaning opening
- Accessible according to local conditions
- Adaptation to vessel opening
- Non-leaking / work safety

Control / programming
- Automated systems
- Integration into the process control system via interfaces

Cleaning heads
- Tank cleaning heads TWK Explosion-proof / ATEX with type examination certificate
- Small container cleaner KBR

highefficiency

High pressure valves
- Safety and unloading valves ensure a smooth operation of the plant

Installation variants
- Permanently installed
- Mobile

Drive configurations
- Manual
- Electrically
- Hydraulically
- Pneumatically

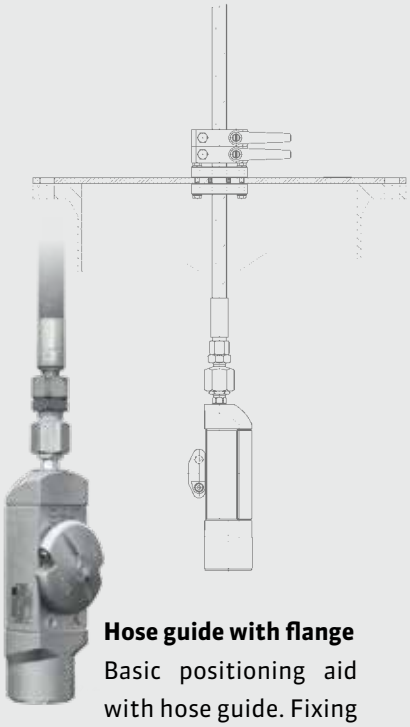
System variants
- Tube positioning device RPE
- Hose positioning device SPE
- Reel systems (manual and automatic)
- Lance systems (manual and automatic)
- Special systems
- Gastight
- Explosion-proof / ATEX

Design may be subject to modification. Weights, dimensions, illustrations and technical data are non-binding

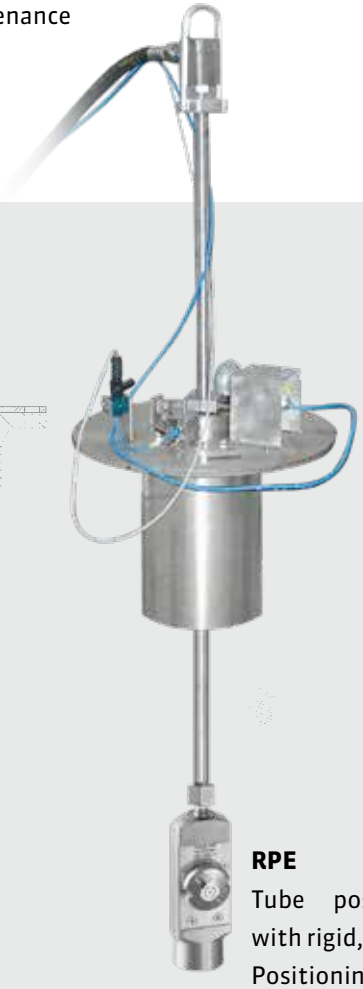
Manual systems – basic options for the vessel cleaning

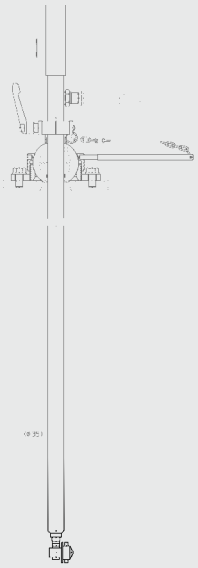
Special features of manual positioning devices:

- Easy to operate
- Mobility
- Flexible usage for different types of vessel
- Flexible installation positions
- Robustness with easy maintenance
- Reasonable costs

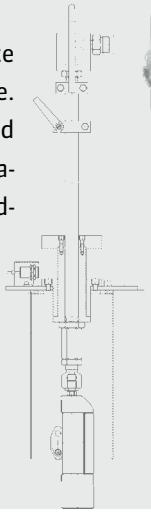


Hose guide with flange
Basic positioning aid with hose guide. Fixing by flange of tank cleaning heads working suspended freely on hose.

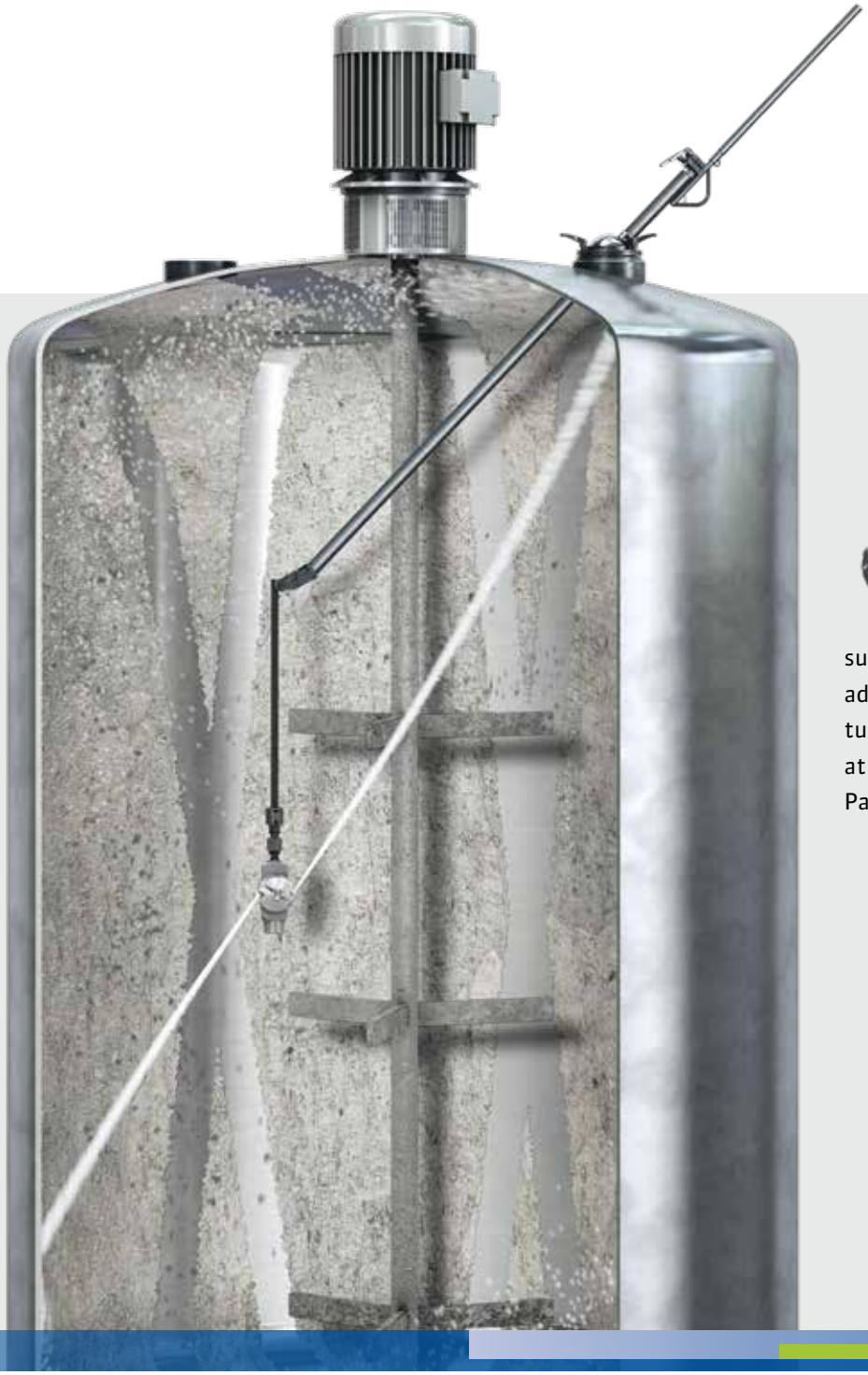


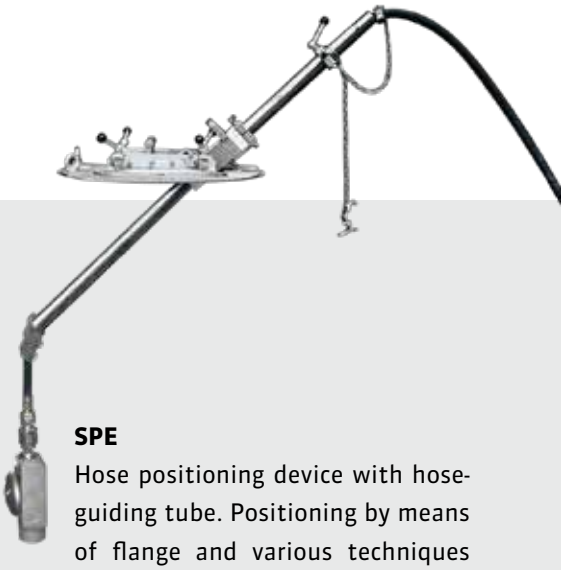


RPE
Tube positioning device with rigid, pressurized tube. Positioning with flange and different techniques such as lockable ball joint or simple lifting adjustments.



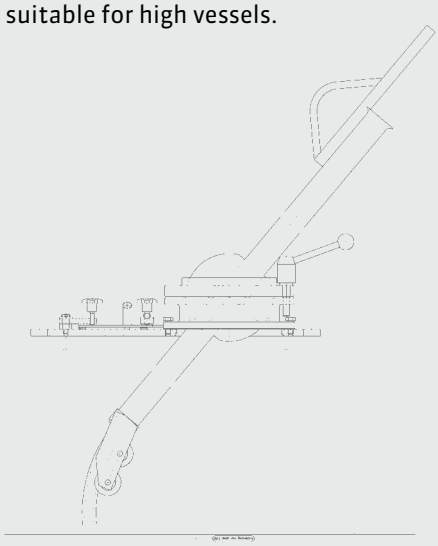
Telearm and telescope
Positioning device with retractable and extendable tube by means of mechanical adjusting system. Suitable for enamel vessels or with complex vessel installations.





SPE

Hose positioning device with hose-guiding tube. Positioning by means of flange and various techniques such as lockable ball joint or simple lifting adjustments. Besides positioning by the tube, the TWK can be positioned vertically at different heights by feeding the hose. Particularly suitable for high vessels.



Automatic reel systems – convenient solutions for small footprints

Double reel system for vessels with two openings. Ideal for floor-mounting or flexible positioning by crane

Reel systems

Reel systems are particularly suitable for vessels with several vertical cleaning positions in cramped conditions. Characteristic of them are their compact construction and their variable applications. The reel provides for simple coiling and decoiling of the hose. Lifting lengths of up to 25 m can be easily executed with these systems.

Combinations and systems extensions with other positioning devices such as SPE, telearm, lance or knee-bend systems add enormously to possible applications. It goes without saying that reel systems can also be used in explosion-proof environments.

The operating of cleaning devices can therefore range from manually to electronically freely programmable control.

The systems can be easily adapted to local conditions, for example by

- Ceiling, wall-mounting or floor-mounting
- Direct mounting on vessel
- Being traversable on floor or on ceiling

Due to their high mobility reel systems are particularly suitable for the cleaning of lines of vessels. In accordance with the production requirements the systems can also be provided gas- or pressure-tight.

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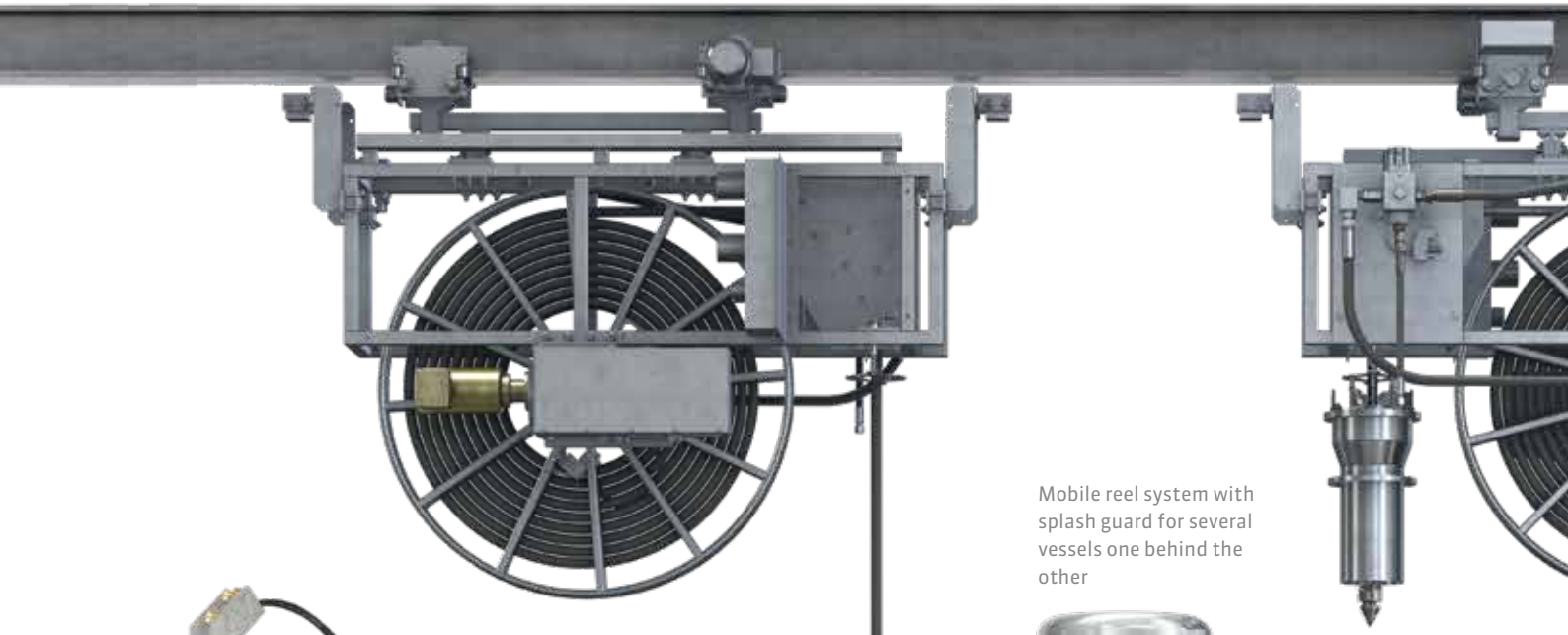
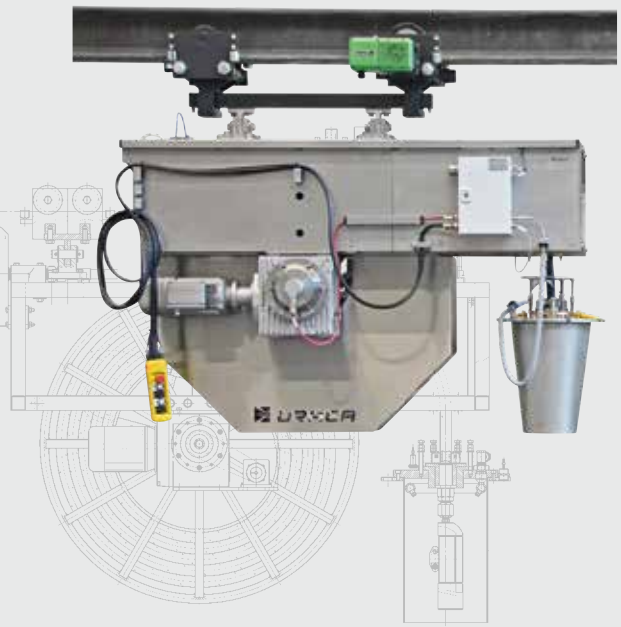


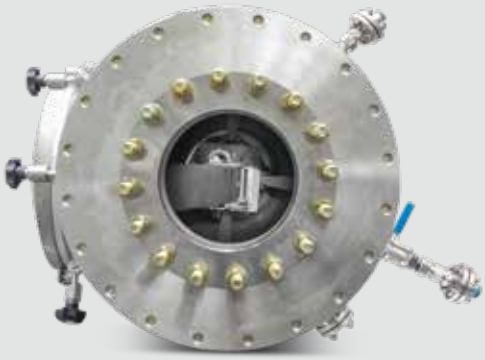
Mobile reel system with splash guard for several vessels one behind the other

Combination of manual positioning device, automatic reel system and self-sufficient control unit

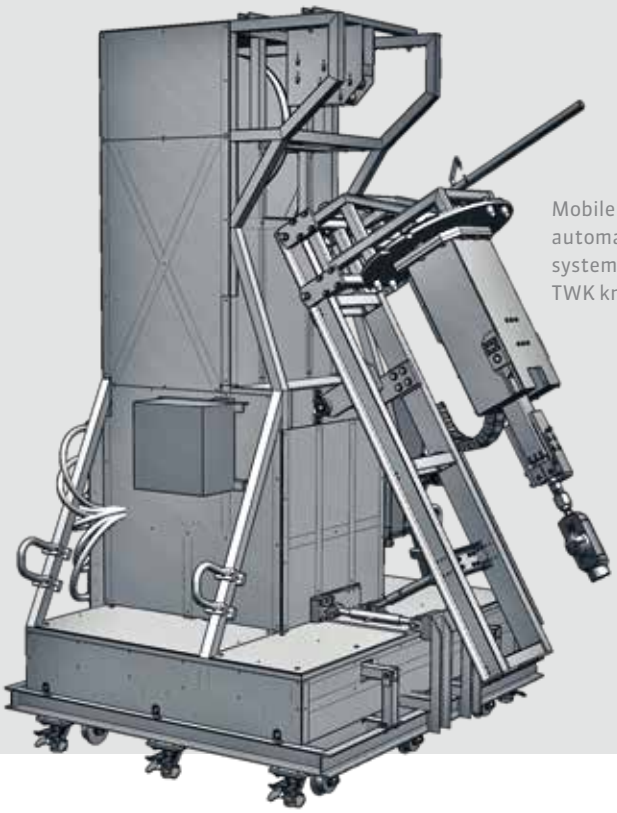


Automatic reel systems – combined solutions, individually adapted

Gastight parking vessel for TWK



Bottom view:
Combined gastight knee system with lateral revision opening



Mobile semi-automatic reel system with TWK knee

Special design of a mobile reel system with horizontal lance function for vessels with lateral opening

Combined gas-tight knee system for the automatic cleaning inside of vessels including built-in components.

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Automatic lance systems – for fully automatic cleaning

Lance systems
A particular feature of lance systems is the fixed positioning of the cleaning head (TWK or KBR). In both the vertical and in the slanted mounting version the cleaning head can be positioned exactly as an extension of the lance axis.
The reachable lifting capacity with lances is approx. 6 – 7 m, in individual cases with an exactly vertical working radius even greater lifting capacity can be realized.

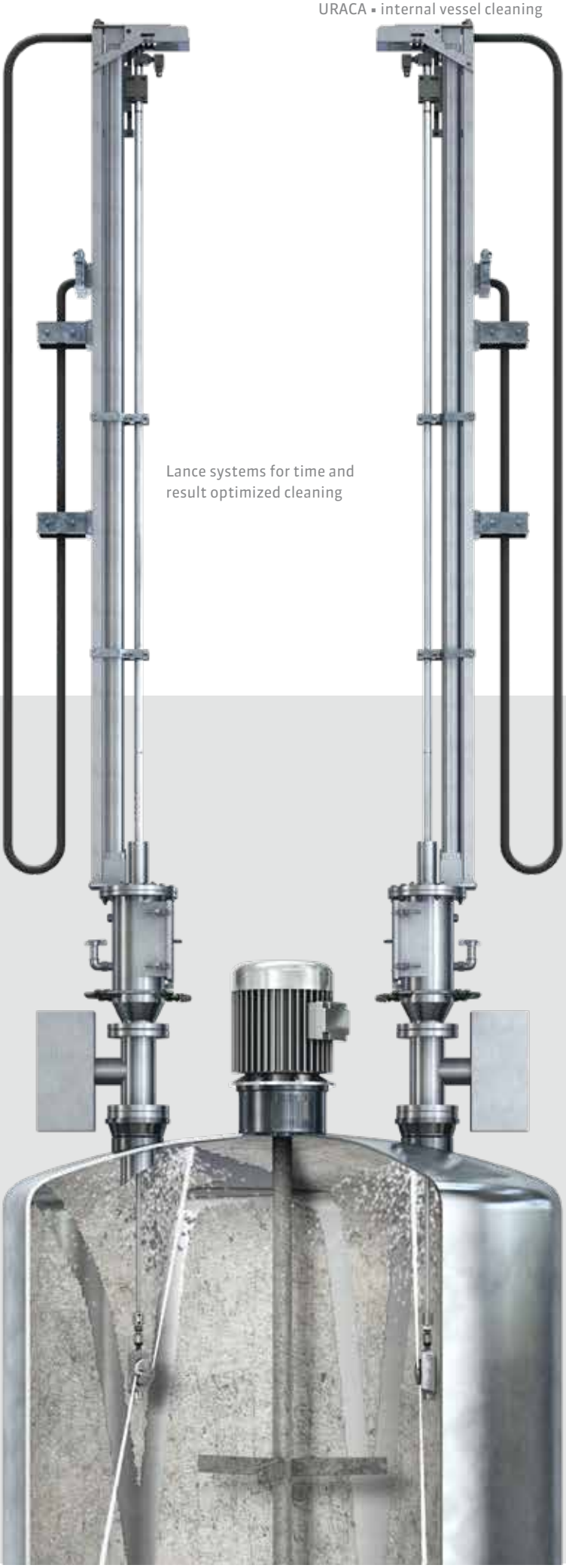
Pneumatically driven KBR lance

Gastight lance with chain drive

Types of drive
Different types of drive and operating facilitate optimal adaptation to the respective conditions:

- Electrically operated chain lances as robust units are a standard for most applications.
- Pneumatically driven lances are particularly suitable for use in explosion-proof areas.

Gastight lance



Lance systems for time and result optimized cleaning

Gas- and pressure-tight lances

For process-integrated cleaning without prior evacuation of the vessel the cleaning devices are provided in a gastight or if necessary pressure-tight version.

- Gastight systems seal off only the lance tube to prevent gases from escaping during the cleaning phase.
- Pressure-tight cleaning devices hold out against the process pressure via the pressure-encapsu lated housing, also outside the cleaning intervals.

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Automatic lance systems – for fully automatic cleaning

Lance system with cleaning device for tank cleaning head TWK

Lance systems with chain drive

A common feature of the lance system is the chain drive. The electrically driven units are used particularly for large strokes. Even slanted constructions are possible.

Installed chain driven lance system with revision opening for TWK

Backside of a reel system with valves and control unit. Necessary for precise and correct timed availability of high pressure water

Installed lance systems over several floors for big strokes

Detail:
Chain drive
of a lance

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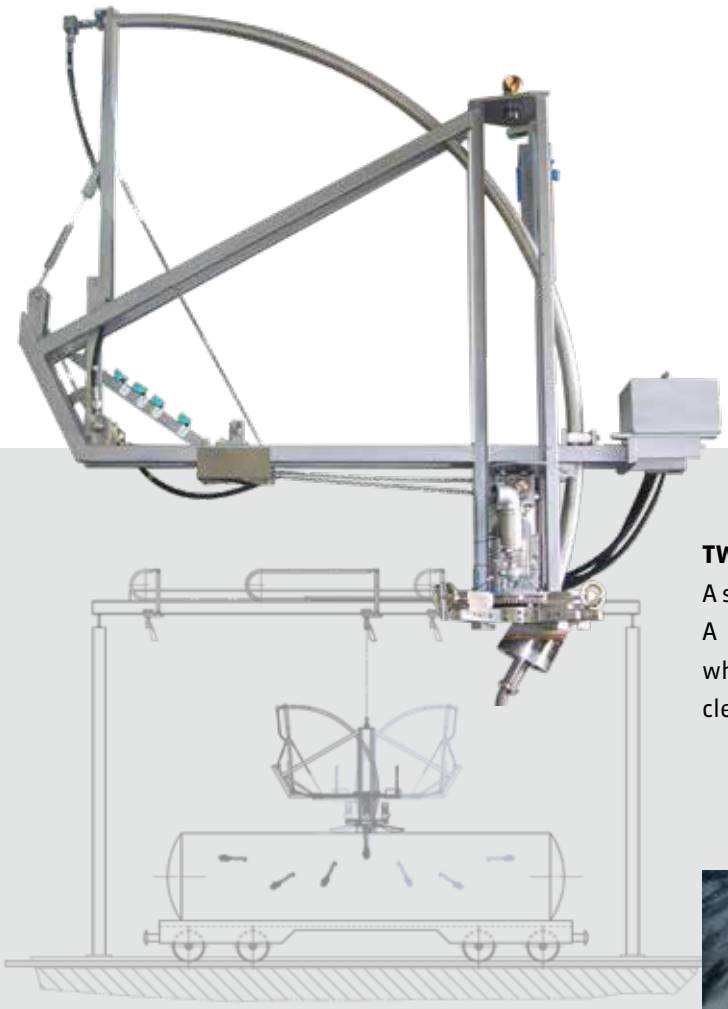
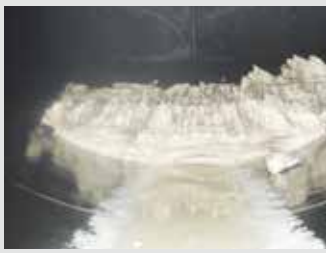
Special lance systems – solutions for special cleaning tasks



TWK-Trunkojet
A special form of the lance systems is the TWK Trunkojet. A bent tube is fed into railway tankers. URACA equips whole washing facilities both with interior and exterior cleaning systems.



Tailor-made solutions for reactors

Regular high-pressure cleaning of reactor vessels not only ensures a clean process, but also promotes production times and stabilizes sensitive processes.

The URACA engineering team designs the appropriate system solution depending on the requirements and local conditions.

Retractable lance systems

Individual solutions for container cleaning with combined reel-telescopic lance systems ensure thorough and environmentally friendly cleaning..

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

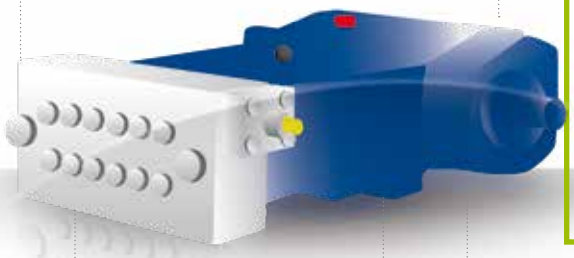
The core of the URACA technology: Superior quality, powerful high pressure positive displacement pumps, also for high-demanding continuous use. URACA pumps are designed acc. to API 674 on demand.

- 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
- Rotary feedthrough units
- 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!

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