

Sewage network and treatment







Numerous installations throughout the world prove the competence of TALIS in matters of sewage technology. The range of applications is supplemented with biogas generation plants.

The central task of sewage technology is the storage, transporting and cleaning of wastewater as well as industrial sewage and rainwater runoff. Depending on the type of wastewater the valves used have to meet very specific requirements. With its broad range, TALIS offers an extensive spectrum of products on this market.

For use in sewage technology protection against blockage of the passage is the order of the day. Smooth and abrasion-resistant passage surfaces are also required. Particularly in the case of heavily contaminated sewage, great importance is attached to the choice of suitable materials and optimum protection against corrosion. The competence of TALIS is proven in numerous projects that have been realised throughout the world.

The range is supplemented by a broad product range for the use in biogas plants, where depending on the circumstances (e. g. with regard to the pH value, the proportion of organic acids or the temperature) TALIS can provide the correct valve in each case.



Our products for sewage transport and sewage treatment

- Metal-seated gate valves
- Knife gate valves
- Ball valves
- Air valves
- Non-return valves for sewage
- Sewage pumping stations and wastewater lifting units
- Control systems and chambers

The TALIS product range for sewage transport and treatment

Metal-seated gate valves

The **ERHARD wedge gate valve** as a metal-seated gate valve is suitable for numerous fields of shut-off applications: for the supply with and the distribution of water, wastewater and industrial water. It corresponds to the DIN EN 558 construction length, series 14, and is equipped with a metallic-seated wedge and internal spindle screw. The spindle sealing is maintenance-free but can be replaced under pressure if required.



Knife gate valves

Knife gate valves belong to the most-used valves and are suitable for being used to regulate liquid, solid and paste-like media. An important advantage is the fully free passage when the valve is open. The **ERHARD ERU® K1 knife gate valve**, furthermore, has a free flush invert so that no solids can remain clinging to it there. It can be deployed as an intermediate flange or a terminal gate valve and has an external spindle screw that is not exposed to the medium. The knife gate valve is sealing on both sides thus ensuring high functional reliability in both directions. Low operating torques allow the use of smaller drives and the adjustable transverse seal can be replaced without removing the knife gate valve. The EKB fusion bonded epoxy coating to GSK requirements ensures corrosion protection thus enabling a wide range of applications. The modular concept provides for numerous options.



Thanks to its two-piece body made from rust and acid-proof steel as well as the valve plate manufactured from the same material, the **ERHARD ECO knife gate valve** is perfectly protected against intrinsic and contact corrosion. The body is pressed dimensionally stable and is, therefore, light and easy to install offering a full discharge opening without passageway constriction through lateral plate guides. The sliding shells made from ultra-high molecular weight low-pressure polyethylene, glass fibre reinforced polyester resin or polyamide have optimal anti-friction properties as well as high abrasion resistance. A bonnet serves to fasten the switching and control devices as well as, at the same time, to fasten the numerous drive options.



Air valves

For the de-aeration and aeration of pressure pipes in the sewage sector, two-stage systems such as the **STRATE BEV air valve** are used. The combination of fine air release and coarse air release ensures the reduction of water hammers and the correct and energy-saving operation of the whole sewage pipeline system, raw sewage and slurry included. The STRATE BEV air valve is available in different variants dependent on the application. A number of accessory options, such as venting connectors, venting connections or air-intake stops, complete the system.



The **BAYARD VENTUSE sewage** air valve is a single orifice air valve for sewage networks to eliminate pressurized air pockets in pipelines. All mechanical parts and sealing systems are protected from the fluid by a large air gap to prevent from any fouling up. The large shaped body is designed in order to avoid clogging up. It is water tight even at low pressures thanks to a lever mechanism on the small orifice. A quick dismantling of the bonnet enables an easy maintenance. A drainage cock is included in the standard.



Non-return valves

In the case of the **BELGICAST ball check valve**, the closing ball being in open position is pressed out from the flow cross-sectional area by the medium. This opens the valve. Ball check valves are therefore especially suitable for wastewaters posing a high risk of clogging. When in open position, the ERHARD ball check valve has a low flow resistance. It does not have any mechanically moved parts making it extremely maintenance friendly.



The **ERHARD SWING® check valve** is a non-return valve that can be flexibly used for water and sewage. Featuring a 93 % opening value, it guarantees an extremely low zeta value, a head loss of less than 8 mbar in the fully opened position and a high degree of cost-effectiveness. Moreover, it is thereby piggable in flow direction. The ball-shaped bearing pin ensures self-centring of the valve disc in the body seat which always guarantees sealed closure, even at low back pressures. The shaft is supported in the cover, thereby medium free, permanently smoothly running and can easily be replaced.



Connection systems

Of course the TALIS range also provides all components for an easy and secure connection of valves like:

- **FRISCHHUT fittings** according to DIN EN 545, Series A, made of EN-JS1050 ductile cast iron with epoxy coating, flanged connections or TYTON® socket
- **FRISCHHUT fittings for sewage** made of ductile cast iron and with a number of coatings
- **UNIJOINT flange adapter** with flange connection on one side and insertion socket for the pipe on the other side, offers an adjustability of ± 25 mm as well as an angular deflection of 3° ; absorbs vibrations in the pipeline, overcomes axial offset and guarantees a permanently leaktight connection
- **UNIJOINT PAS20 dismantling joint** with a length compensation up to ± 25 mm for an easy installation and removal of valves, with connection flanges to both ends, 100 % tension with sturdy, continuous threaded rods for the required safety





Sewage pumping stations and wastewater lifting units

STRATE AWALIFT sewage pumping stations are used to drain storeys lying below the backflow level, as well as for disposing of municipal sewage. They are fully automatic sewage pumping stations with one or several pumps. By combining the centrifugal pump and the solids collection chamber they provide extraordinary reliability. The sewage passes through the inlet pipe, into the solids collecting chamber where any coarse material is retained by separating flaps. The solids-free sewage passes through the separating flap and pump and into the collection tank. As soon as the tank is full, the pump switches itself on and pumps the "pre-cleaned" sewage back into the solids collecting chamber and into the pressure pipe. During the process, the coarse material is also flushed and the solids collecting chamber is cleaned without residue.

This design optimally protects the pump against clogging and allows use of high-efficiency impellers. The discharging sewage cleans the plant and enables a long life. The dry installation systems with gas-tight tanks prevent foul or toxic gases from escaping.

AWALIFT stations are available for capacities of 0.4 m³ to 800 m³ per hour and for pressure heads up to 120 m. In combination with numerous motor options, they provide an economical solution for every task. For residential units or smaller buildings, the innovative **STRATE AWALIFT 80** is used. This wastewater lifting unit's most important material is polyurethane (PUR), which is used for the tanks, solids collecting chamber, check valve, pump housing and impeller. Using PUR, instead of the frequently used polyethylene (PE), and the special RIM injection system results in a design with greater stability and torsional rigidity. Additionally, PUR has the best abrasion resistance, which results in less wear and significantly longer service life. It also allows extremely quiet operation and the design allows compact, efficient centrifugal pumps to be used. Furthermore, the STRATE AWALIFT 80 is extremely economical with lower installation and maintenance costs, a high availability and lastly considerable lower energy costs thanks to efficient, demand-oriented pump hydraulics, and optimally shaped flow channels.

Systems and chambers

With the right **control and telecontrol technology**, like AWAmaster compact controls, AWAcontrol control technology, telecontrol systems for monitoring of pumping stations and flow meters and data recording devices, sewage pumping stations become a complete solution.

STRATE AWALIFTshaft prefabricated chambers are a composite structure made of fibreglass and steel-reinforced concrete, which make the shaft watertight and traffic-proof. The system is delivered completely assembled. In diameters of 1,000 mm to 2,900 mm and heights up to 10 m, they are used in private and municipal areas if sewage pumping stations cannot be set up inside buildings. **STRATE AWASTATION plant buildings** are one-piece prefabricated concrete structures to be set on top of the AWALIFTshaft or next to it for the installation of the electric or ventilation system.

References



Ulm/Neu-Ulm and Sindelfingen are just two examples, where TALIS valves are used for sewage treatment.

Top performance on both sides of the Danube – wastewater in Ulm and Neu-Ulm

The waste management companies of the city of Ulm have invested around 2.6 million euros in their new inverted siphon inlet structure, which channels rainwater from an underground rain overflow basin into the Danube, but at the same time transports wastewater through two pipes to the sewage plant on the opposite bank of the Danube. Numerous penstocks of the type ERHARD WAGU are used in the plant, some with electric drive, some with handwheel. The sizes range from DN 200 to DN 2000 for the main pipes and 2200 x 2500 mm for shutting off channels.

ERHARD valves are also used in the Steinhäule sewage plant in Neu-Ulm, which is responsible for water treatment for Ulm and Neu-Ulm as well as for numerous towns and communities in the area. ERHARD ERU K1 knife gate valves in sizes DN 80 to 1400, for example, are used to safely shut off the transport pipes within the enormous plant which treats 80,000 to 100,000 m³ of wastewater every day. ERHARD SWING check valves are used in the aeration tanks.

Economic efficiency in Swabia – wastewater treatment works in Sindelfingen

The town of Sindelfingen (Germany) invested over ten million euros in new technology for the Böblingen-Sindelfingen wastewater treatment works, which treats more than 40,000 cubic metres of wastewater daily. For construction of the very modern contact filter system, emphasis was placed both on the reliability of the system parts and on maximum economic efficiency, because then the wastewater charges in Sindelfingen will continue to be the most reasonable in the state of Baden-Württemberg. ERHARD ROCO butterfly valves and other valves from ERHARD contribute their share too.



TALIS is always the number one choice whenever water transport or control is required. TALIS has the best solution for water and energy management, as well as for industry and municipal applications. With a varied range of products we offer comprehensive solutions for the entire water cycle. From hydrants to butterfly valves. From the knife-gate valves to the needle valves. Our experience, innovative technology, global expertise and individual consultation process form the basis for developing sustainable solutions for the efficient handling of the vital resource "water".



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