

Efficient drive solutions for wastewater technology

Powerful solutions for a clean future.



Reliable at every treatment stage

Maximum performance and reliability for wastewater technology

SEW-EURODRIVE is driving the industry.

Sewage treatment plants must reliably treat large volumes of water every day, while also maximizing operational dependability and minimizing downtimes. SEW-EURODRIVE offers robust, energy-efficient drive solutions for every stage of the process – from mechanical pretreatment to sludge utilization.

We have been advancing the development of drive technology for over 90 years – with tailored systems that make your processes more efficient, reliable, and future-proof.

We look at the bigger picture in everything we do.

- As an owner-operated family enterprise that takes quality and responsibility seriously.
- As a leading innovator that breaks new ground with pioneering ideas and plays a major part in shaping the future of drive technology.
- And as a contact that is always on hand with wide-ranging advice and services, whatever your needs and requirements.



**We are your reliable partner and
are always nearby.**



57 countries



Over 22 000
employees



110 000
active customers



20 million
individual parts/
month at 100+ sites



525 600 minutes
per year when
you can contact us



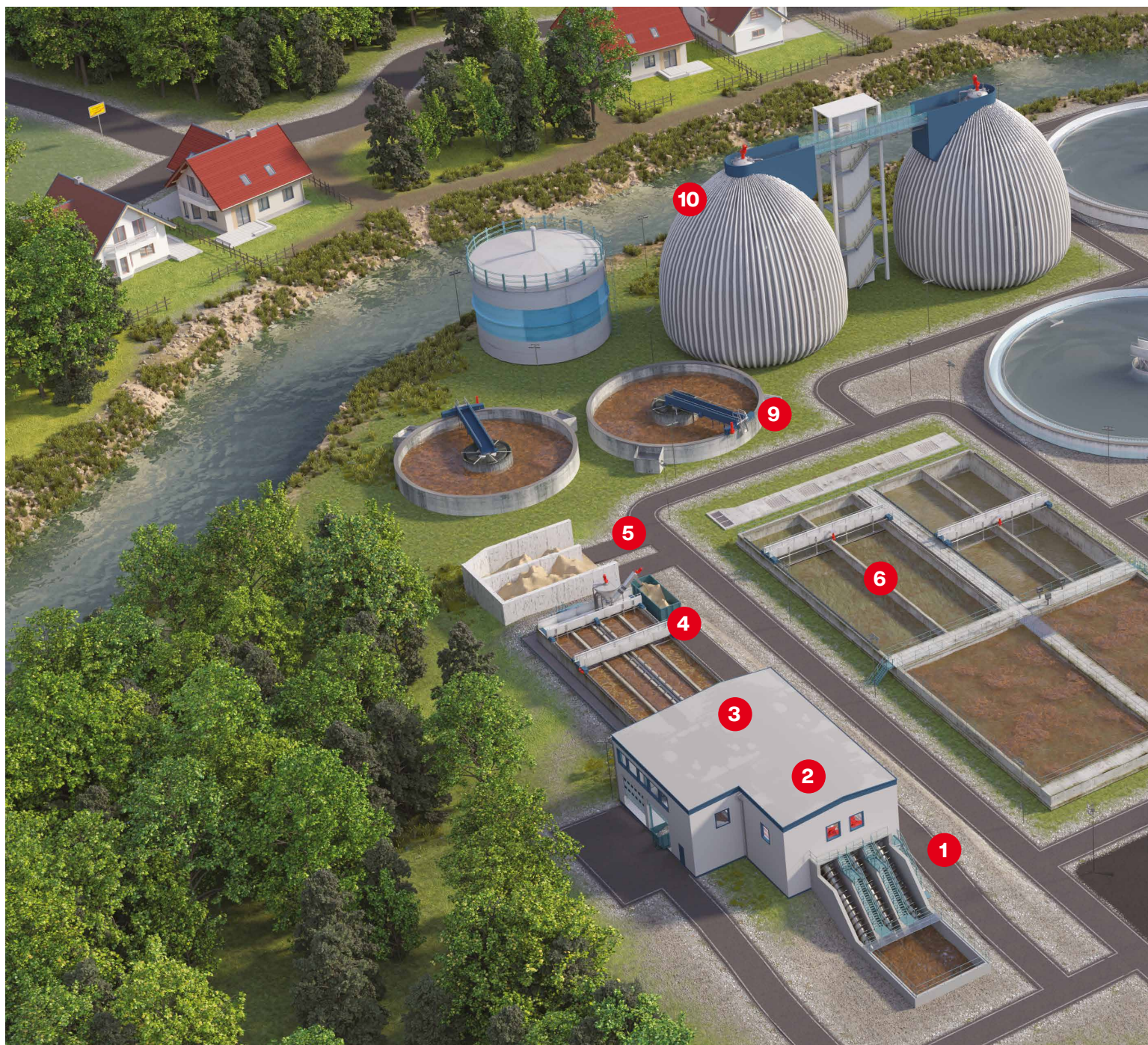
Solutions for
many different
industries



Always the right drive solution for wastewater technology

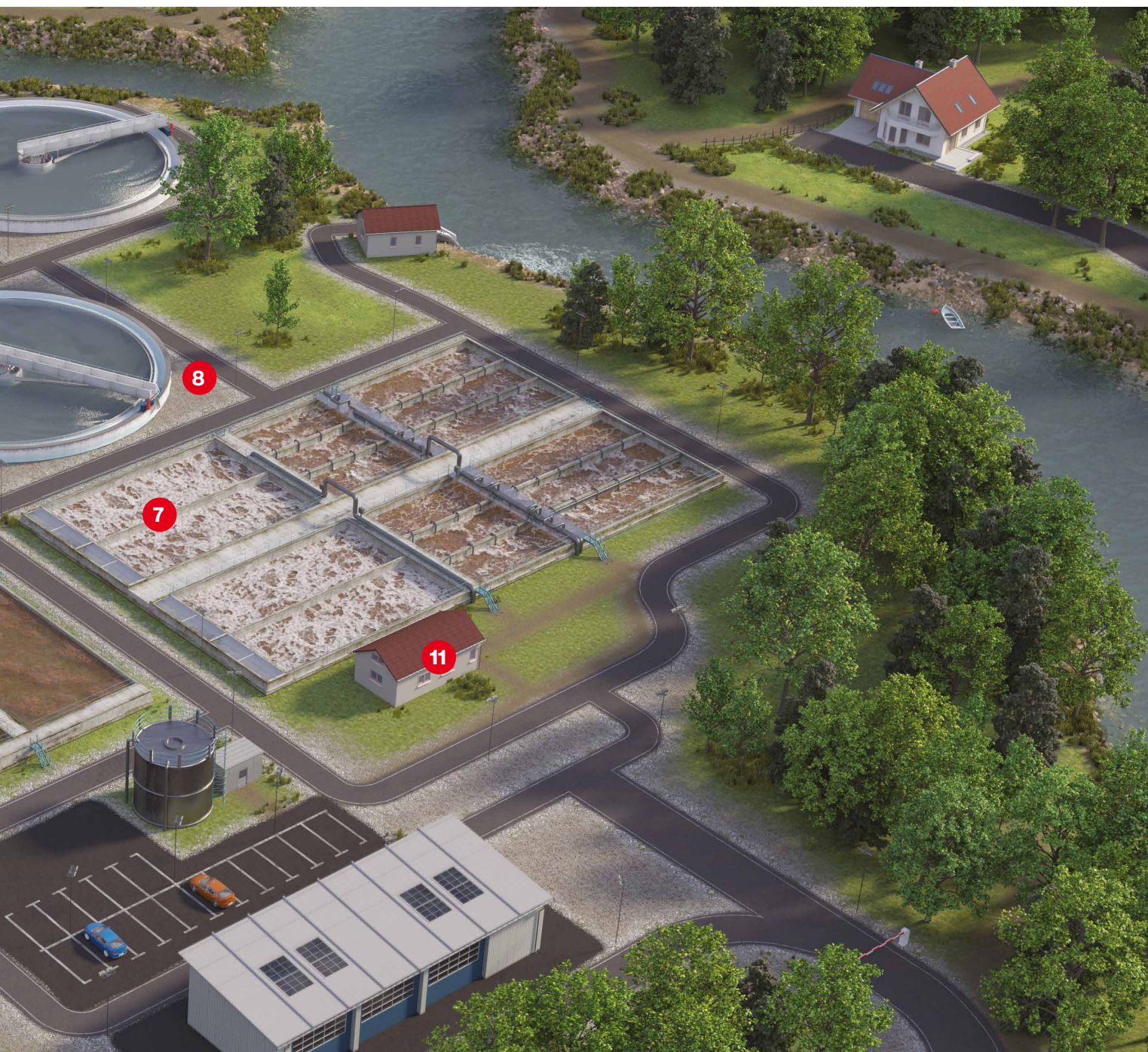
Impressive in all areas

From mechanical pretreatment to sludge utilization



From saving energy and protecting the environment to pushing ahead with digitalization – wastewater management requirements are growing. Anyone investing in this sector right now needs robust and efficient drive solutions that can be controlled intelligently. SEW-EURODRIVE will support you with technologies that are perfectly tailored to state-of-the-art sewage treatment plants – for reliable processes and a long-lasting impact.

- | | |
|---|---------------------------------------|
| 1 Infeed with screw pump | 7 Aeration tank with surface aeration |
| 2 Screening system and infeed to wash press | 8 Final sedimentation with scraper |
| 3 Screening treatment (wash press) | 9 Sludge thickener |
| 4 Sand trap with scraper | 10 Digestion tower |
| 5 Grit classifier | 11 Sludge dewatering (screw press) |
| 6 Primary sedimentation with scraper | |



1 Infeed with screw pump

As soon as the wastewater reaches the sewage works, the screw pumps in the infeed section lift it to the level of the actual sewage treatment plant. Various drive solutions can be used, including helical and bevel-helical gear units with belt drive. A more maintenance-friendly solution – X.e series helical gear units with a motor adapter and elastic coupling – is becoming increasingly popular.

Our solutions

- X.e series helical or bevel-helical gear units
- DRN../DRU.. asynchronous AC motors or DR2C.. synchronous motors
- Frequency inverters from the MOVI-C® modular automation system



2 Screening system

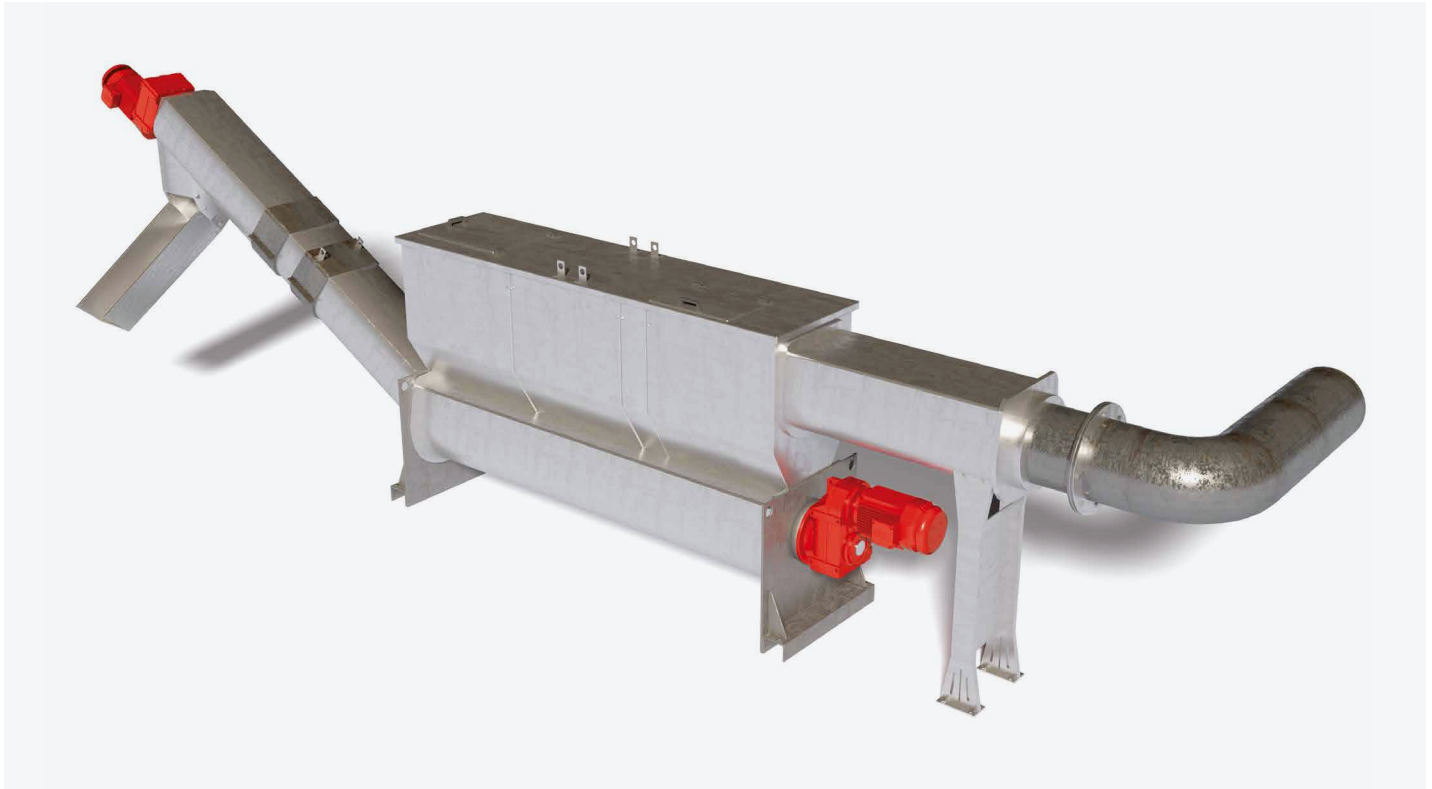
The first step in the mechanical treatment process is to remove coarse solids from the wastewater in the screening system. Anything that shouldn't be in the water is reliably prevented from passing through. Screen cleaners then ensure that the substances separated out are taken for further processing. F..DR.. parallel-shaft helical gearmotors are used to power the drives in the screening system – an exceptionally space-saving solution. Their compact design makes them ideal for use in tight spaces and ensures reliable continuous duty.

Our solutions

- F.. parallel-shaft helical gear units
- K.. helical-bevel gear units
- DRN../DRU.. asynchronous AC motors



3 Screening treatment (wash press)



Screenings are generally fed into the wash press either directly from the screen or via conveyor systems. A screw conveyor transports the material to the wash area, where organic residues such as fecal matter are removed using a washboard and friction process. Water is then removed from the washed screenings in the pressing zone.

Using F.. parallel-shaft helical gear units and K.. series helical-bevel gear units in conjunction with energy-efficient DR.. AC motors – together with frequency inverters that can be controlled with a high level of precision – ensures the wash press benefits from energy-efficient operation and a long service life.

Our solutions

- F.. parallel-shaft helical gear units
- K.. helical-bevel gear units
- DRN../DRU.. asynchronous AC motors
- Frequency inverters from the MOVI-C® modular automation system

4 Sand trap with scraper



In the sand trap, the flow rate of the wastewater is reduced so that heavier solids such as sand, gravel, and soil can settle. Having settled, these particles are fed to the grit classifier under pressure. K.. series helical-bevel gear units

in conjunction with energy-efficient DR.. AC motors are the preferred option for the reliable drive in the sand trap.

Our solutions

- K.. helical-bevel gear units
- DRN../DRU.. asynchronous AC motors

5 Grit classifier

In sewage treatment plants, grit classifiers are used to remove sand and other heavy particles from the flow of wastewater. Separating out these substances stabilizes the treatment process and relieves the strain on downstream process steps. F..DR.. series parallel-shaft helical gearmotors are used for the grit classifier's drive.

Our solutions

- F.. parallel-shaft helical gear units
- DRN../DRU.. asynchronous AC motors
- Frequency inverters from the MOVI-C® modular automation system

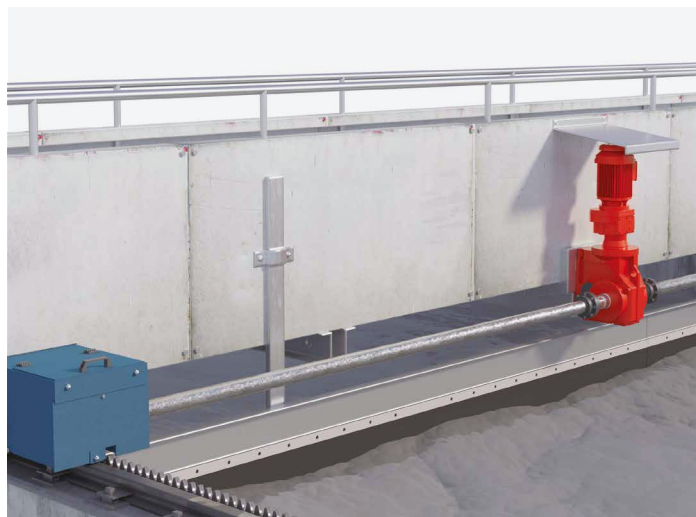


6 Primary sedimentation with scraper

Reducing the wastewater's flow rate in the primary sedimentation tank means lighter organic solids can also settle. A scraper bridge continuously removes this sediment. W..9HG series SPIROPLAN® right-angle gear units with a high gear ratio or K.. series helical-bevel gear units with R..DR.. primary gearmotor are used as the drive solution for the scraper bridge.

Our solutions

- W..9HG SPIROPLAN® right-angle gear units
- K..R.. compound gear units
- DRN../DRU.. asynchronous AC motors



7 Aeration tank with surface aeration

The aeration tank is where biological treatment starts. Micro-organisms are added to the wastewater to convert harmful substances such as ammonia into nitrogen. Rotary surface aerators continuously supply the tank with oxygen to keep the bacteria moving. They are driven by X.e series helical gear units in the /HM agitator design, which are ideal for high torques combined with high overhung loads.

Our solutions

- X.e series helical gear units in the /HM agitator design
- DRN../DRU.. asynchronous AC motors
- Frequency inverters from the MOVI-C® modular automation system

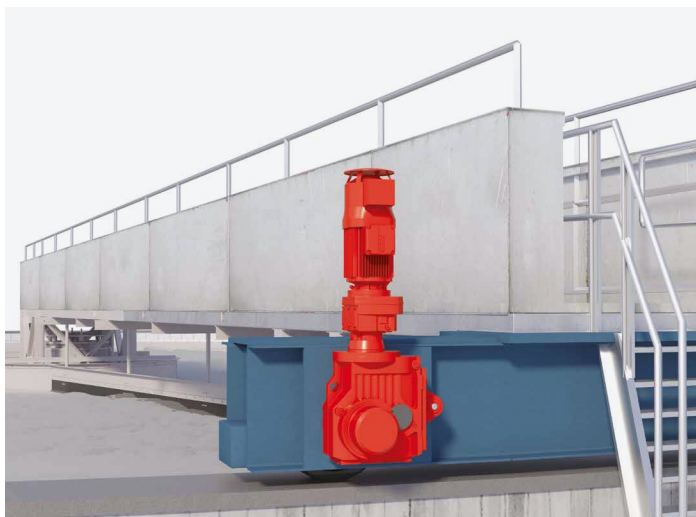


8 Final sedimentation with scraper

In the final sedimentation tank, the wastewater's flow rate is greatly reduced so that settleable solids such as saturated micro-organisms are deposited on the bottom. Scraper arms convey this "secondary sludge" toward a central funnel, and it is then removed. W..9HG series SPIROPLAN® right-angle gear units with a high gear ratio or K.. series helical-bevel gear units with an upstream R..DR.. helical gearmotor are the preferred option for use in the final sedimentation tank.

Our solutions

- W..9HG SPIROPLAN® right-angle gear units
- K..R.. compound gear units
- DRN../DRU.. asynchronous AC motors





9 Sludge thickener



A sludge thickener is used to reduce the sewage sludge's water content and thus its volume. This creates sludge with a thicker consistency, which makes subsequent treatment easier. W..9HG series SPIROPLAN® right-angle

gear units with a high gear ratio or K.. series helical-bevel gear units with an upstream R..DR.. helical gearmotor are also suitable for the low travel speed in the sludge thickener.

Our solutions

- W..9HG SPIROPLAN® right-angle gear units
- K..R.. compound gear units
- DRN../DRU.. asynchronous AC motors

10 Digestion tower

The treatment of wastewater produces sewage sludge. In the digestion tower, this sludge creates gas that is used to generate heat. To ensure an optimal digestion process, the temperature in the digestion tower must be maintained consistently between 36 and 37 degrees. An agitator continuously circulates the sludge. Agitator design variants of the FM..DR.. or FAM..DR.. series parallel-shaft helical gearmotors are used to accommodate the forces generated during this process.

Our solutions

- FM.. series parallel-shaft helical gear units in the agitator design
- DRN../DRU.. asynchronous AC motors
- Frequency inverters from the MOVI-C® modular automation system



11 Screw press

A screw press is used to remove water from sewage sludge. The flocculated sludge is pumped into a drum screen, where a rotary screw presses it against a counter-pressure cone. The water is forced through the screen and the dewatered sludge is discharged as a solid cake. The screw press is powered by an F..DR.. parallel-shaft helical gearmotor.

Our solutions

- F.. parallel-shaft helical gear units
- DRN../DRU.. asynchronous AC motors
- Frequency inverters from the MOVI-C® modular automation system



Overview of the entire portfolio

Electronics/software

Controllers



MOVI-C® CONTROLLER
Control cabinet controllers for cyber-physical control, automation control, or motion control



MOVI-C® FIELD CONTROLLER
Decentralized controller for motion control



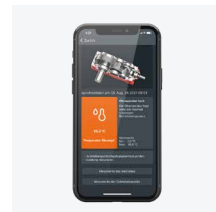
Software



MOVISUITE®
engineering software
Drive train startup and diagnostics



MOVIKIT®
software modules
Startup of everything from drive to motion control functions



DriveRadar® IoT Suite
(condition monitoring, predictive maintenance) and IoT Suite (industrial gear units)

Electronics/software

Control cabinet technology



MOVITRAC® basic
Control cabinet inverter
0.55 – 1.5 kW



MOVITRAC® classic
Control cabinet inverter
0.25 – 11 kW



MOVITRAC® advanced
Control cabinet inverter
0.25 – 315 kW



MOVIDRIVE® modular
– Multi-axis system
2 – 180 A
– Power and Energy Solutions



MOVIDRIVE® technology/system
Control cabinet inverter
0.55 – 315 kW



MOVIGEAR® performance, synchronous motor with parallel-shaft helical gear unit up to 2.2 kW

Dec. technology

Decentralized drives / mechatronics

Decentralized technology



MOVIONE®
Decentralized drive unit / decentralized inverter
0.25 – 1.5 kW



MOVIMOT® advanced, DRN.. async. motor
0.37 – 7.5 kW, IE3
DR2C.. sync. motor
0.7 – 2.4 kW, IE5



MOVIMOT® performance, CM3C.. synchronous motor
0.75 – 4.2 kW



MOVIMOT® performance ELV
Compact drive
DC 48 V, 180 – 356 W



MOVIMOT® flexible
for synchronous and asynchronous motors
0.25 – 7.5 kW



MOVIPRO® technology
for synchronous and asynchronous motors
4 – 30 kW

Decentralized technology

Contactless energy transfer

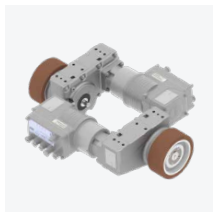


MOVITRANS®, floor/rail installation, DC supply 30 – 500 V, capacitive energy storage units

MAXOLUTION® system solutions



Rail-guided systems with ASI-5



FL.9 series travel drives for mobile systems



Logistics assistant for pallet transport

Motors

AC motors



DRN.. series asynchronous motors
0.12 – 375 kW
IE3



DRU.. series asynchronous motors
0.75 – 375 kW
IE4

Motors



DR2S.. series asynchronous motors
0.03 – 90 kW
IE1



DR2S.. series asynchronous motors
0.03 – 95 kW (S3 or S9)
0.004/0.20 –
12/24 kW (S1 or S3)



DR2M.. series torque motors
0.5 – 8 Nm

Synchronous motors



DR..J series synchronous motors
0.12 – 4 kW
IE2 (DRE..J)
IE4 (DRU..J)



DR2C.. series synchronous motors, IE5
DR2C_A: 0.25 – 17 kW
DR2C_U: 11 – 90 kW

Servomotors



DR2L.. series asynchronous servomotors
0.25 – 220 Nm

Motors



CMP.. series synchronous servomotors
0.5 – 95 Nm



CM3C.. series synchronous servomotors
2.7 – 40 Nm



LM3S.. series electric cylinders
up to 26 kN

Gearmotors

Gear units / gearmotors



R/RX.. series helical gear units
 M_{amax} : 50 – 20 000 Nm



F.. series parallel-shaft helical gear units
 M_{amax} : 130 – 20 000 Nm



K.. series bevel-helical gear units
 M_{amax} : 80 – 53 000 Nm

Gearmotors



S.. series helical-worm gear units
 M_{amax} : 92 – 4300 Nm



W.. series SPIROPLAN® right-angle gear units
 M_{amax} : 30 – 600 Nm

Adapters



AMS.. series adapters:
 IEC: 63 – 280
 NEMA: 56 – 364/365
 Stainless steel:
 IEC: 63 – 112
 NEMA: 56 – 184



AQSA../AQSH.. series servo adapters:
 Sizes: 50 – 190
 Stainless steel:
 80 – 140

Application gear units



RM agitator series – helical gear units
 M_{amax} : 450 – 20 000 Nm



FM agitator series – parallel-shaft helical gear units
 M_{amax} : 820 – 20 000 Nm

Gearmotors



KM agitator series bevel-helical gear units
 M_{amax} : 820 – 20 000 Nm



HS/HW/HK electrified monorail series bevel-helical gear units
 M_{amax} : 20 – 820 Nm

Gear units

Stainless steel gear units



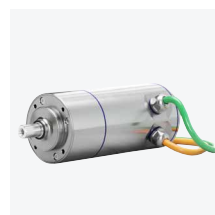
RES.. stainless steel series helical gear units
 M_{amax} : 130 – 200 Nm



KES.. stainless steel series bevel-helical gear units
 M_{amax} : 230 – 870 Nm



WES.. stainless steel series SPIROPLAN® right-angle gear units
 M_{amax} : 80 – 200 Nm



PSH.. stainless steel series servo gear-motor
 M_{amax} : 1.0 – 103.6 Nm

Gear units

Servo gear units



PxG® series planetary gear units
 M_{aN} : 27 – 6150 Nm
 Rotational clearance: 1 – 4



PS.F.. series planetary gear units
 M_{amax} : 25 – 3000 Nm
 Rotational clearance: 1 – 10



PS.C.. series planetary gear units
 M_{amax} : 30 – 320 Nm
 Rotational clearance: 10 – 15



BS.F.. series helical-bevel gear units
 M_{amax} : 40 – 1220 Nm
 Rotational clearance: 3 – 6

Precision planetary gearmotors



PxG® integrated series
 Peak torque: 70 – 990 Nm

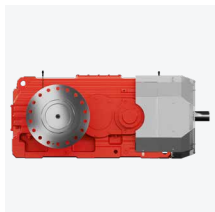
Precision cycloidal gear unit



ZN.. series
 M_{aN} : 41 – 20 460 Nm
 Rotational clearance: < 1

Industrial gear units

Helical and bevel-helical gear units



X.e series –
helical and bevel-helical gear units
 M_{N2} : 7.2 – 500 kNm



ML..2 series –
helical and bevel-helical gear units
 M_{N2} : 470 – 1480 kNm



ML1 series –
single-stage helical gear units
 M_{N2} : 277 – 1603 kNm



M1..N series –
single-stage helical gear units
 M_{N2} : 0.5 – 248 kNm



Application-specific
gear units for hoists,
bucket elevators,
agitators, and conveyor
belts

Planetary gear units



P series –
planetary gear units
 M_{N2} : 24.8 – 631 kNm

Industrial gear units



P2.e series –
planetary gear units
 M_{N2} : 24.8 – 124 kNm



P-X.e series –
planetary gear units
 M_{N2} : 100 – 500 kNm

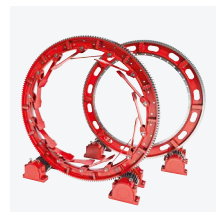


XP series –
planetary gear units
 M_{N2} : 600 – 5200 kNm



PPK series –
planetary gear units
 M_{N2} : 10.7 – 17.6 kNm

Girth gears



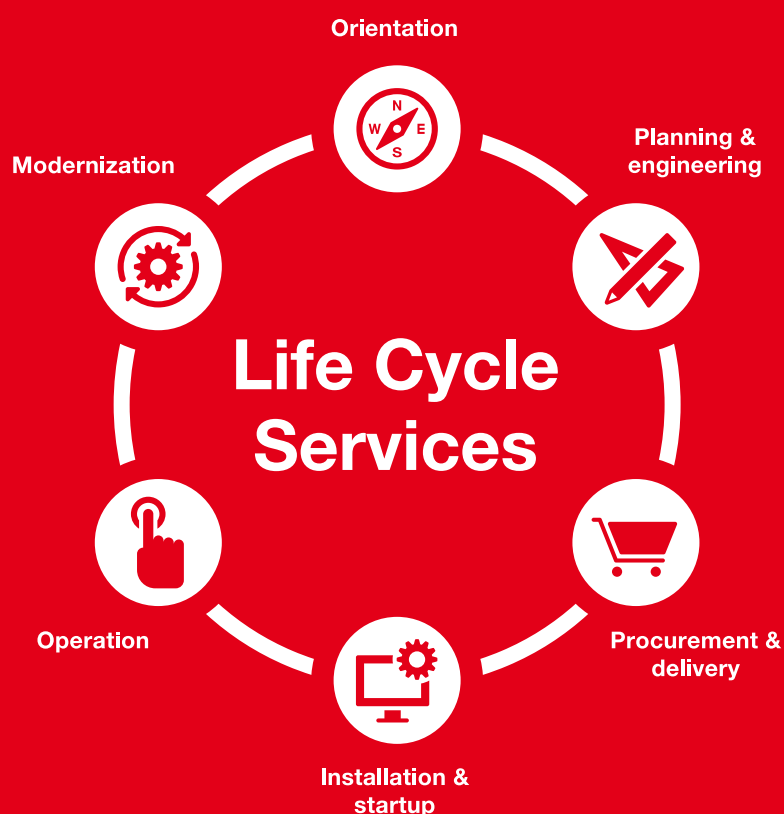
Girth gear
with pitch diameters
up to 16 m

Service solutions for wastewater technology

Here at SEW-EURODRIVE, Life Cycle Services encompass services, tools, and resources throughout the entire system life cycle. This starts in the initial orientation phase and continues all the way through to the operation and modernization of your machinery and systems. No matter what point in the life cycle you currently find yourself at, we want to support you with our scalable and tailor-made solutions from a single source. As a strong partner, we are there for you – even when everything is running smoothly.

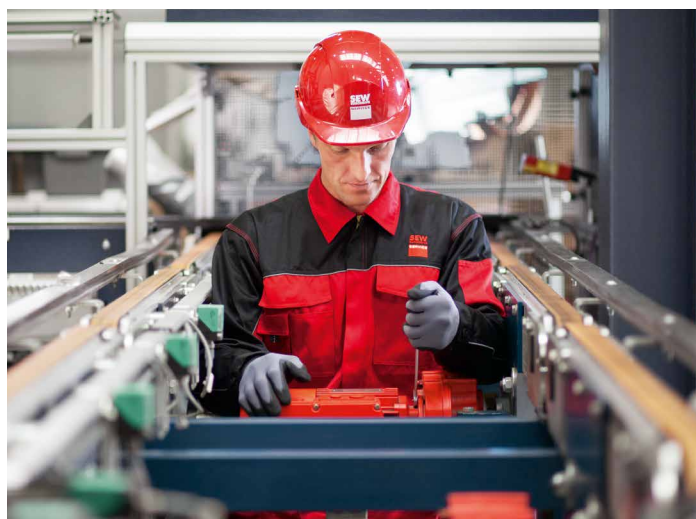


More information on
Life Cycle Services is available at
[www.sew-eurodrive.de/en/
life-cycle-services](http://www.sew-eurodrive.de/en/life-cycle-services)



Inspection and maintenance

As a sewage treatment plant operator, it is important to you that your drive technology is always in reliable working order. If the intake pumping station stops working, for instance, you need to act fast. Our inspection and maintenance service is effective in helping you prevent such breakdowns.



Examination with an inspection scope

Our inspection scope service saves you time and money, providing a thorough condition assessment and ensuring early damage detection without any need to dismantle the industrial gear unit. Using a video inspection scope, all parts in the gear unit housing, such as gearing components and rolling bearings, undergo a meticulous on-site inspection. The results are documented in the service report along with any recommended courses of action. By enabling the early detection of gear unit damage, inspection scope examinations reduce costly downtime or even prevent it altogether.

Oil analysis

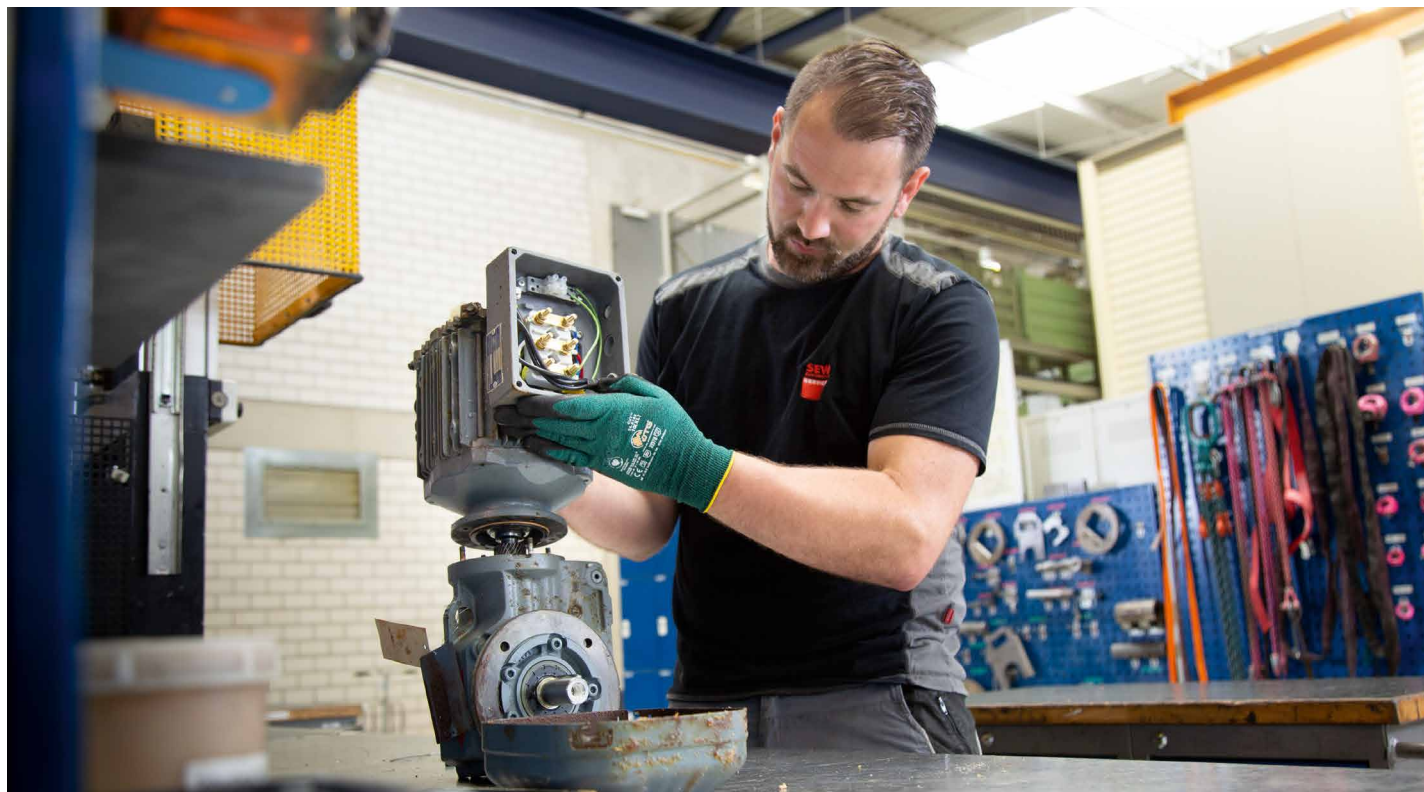
Oil is an essential part of every gear unit. However, high loads and the natural aging process limit its service life. An oil analysis can detect gear unit wear early on and prevent unscheduled downtime. Information on the condition of the lubricant also prevents premature oil changes, helping you save on resources. We can take care of the entire process for performing a lubricant analysis and any necessary follow-up measures.

Quick Check

The scope of this service includes everything from inspecting the unit for external damage and checking the oil level and the degree of oil contamination through to inspecting the terminal box and checking the running noise of the gear unit and motor bearings. SEW-EURODRIVE also gives you a 12-month functional warranty for the drive technology components that have been inspected and found to be in good working order.

Repair

Our repair service encompasses emergency, functional, and as-new repairs with a 24-month or 36-month warranty for defects covering the drive as a whole – including for other manufacturers' products. If speed is of the essence, you can request a rush job or use our on-site repair service.



Our services at a glance

- **Manufacturer-independent repair**
- **Inspection and diagnostics** for defective parts by experts
- **Repair and reworking** of individual parts and housings
- **Manufacture of spare parts** based on a sample or drawing
- **Modification and optimization** of gear unit components
- **Cost estimate:**
 - Including inspection report and photo documentation
 - Offer of a new gear unit or retrofit in the event that a repair would be uneconomical (optional)
 - Inspection and diagnostic costs are not charged if an order is placed

Your added value

One central contact person

For all repairs to your drive technology, including across different manufacturers, with standardized support and efficient implementation via SEW-EURODRIVE

High-quality repairs with warranty

A 24-month or 36-month warranty for defects on repaired components, plus a longer service life and lower maintenance costs thanks to the use of durable original parts

Minimal downtimes

Fast response times, quick availability of spare parts, and flexible repair options, including rush jobs

Transparent costs

Assurance that no repair will exceed the price of a new product, with fixed cost estimates available on request

Less work for you

On-site service or pick-up and delivery service, including logistics, plus the alternative of convenient ordering via the online customer portal

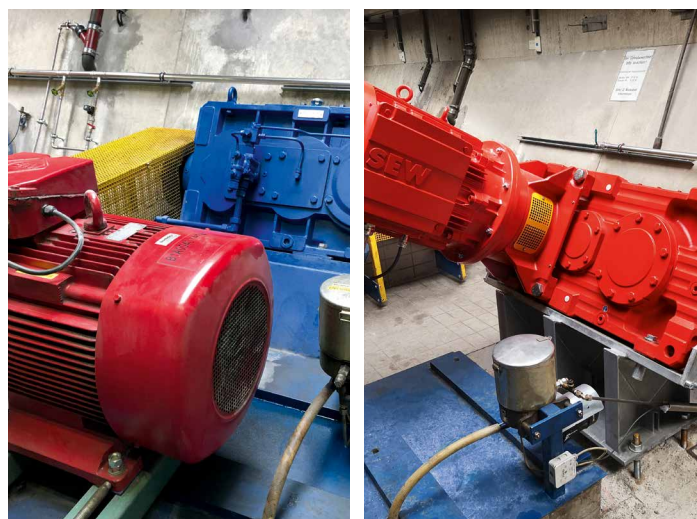
Retrofit

Our retrofit service gives you scalable solutions – from replacing old drive technology through to modernizing entire systems. For us, retrofitting means replacing technology with components from the current SEW-EURODRIVE product portfolio.



Left (before): bevel-helical gear unit (third-party drive) with belt drive

Right (after): bevel-helical gear unit from the current series with belt drive



Left (before): bevel-helical gear unit (third-party drive) with belt drive

Right (after): helical gear unit from the current series with motor adapter

Our services at a glance

- **Analysis of current situation and condition of technology**
- **Project planning** for new drives, factoring in aspects such as durability, maintainability, and energy efficiency
- **Customized engineering** of mechanical and electronic components as well as the entire control cabinet
- **Provision** of a complete drive package or individual drive components – gear unit, motor, belt, coupling, steel supports, frequency inverter
- **Replacement and startup** of drive technology components and peripherals by SEW-EURODRIVE or by the customer itself
- **Acceptance inspection**

Your added value

Project planning tailored
to the specific features of your screw pump

Everything from a single source
Comprehensive drive solutions and services prevent interface problems

Maximum availability
Reduced downtimes

Reliable supply of spare parts
for long-term operation

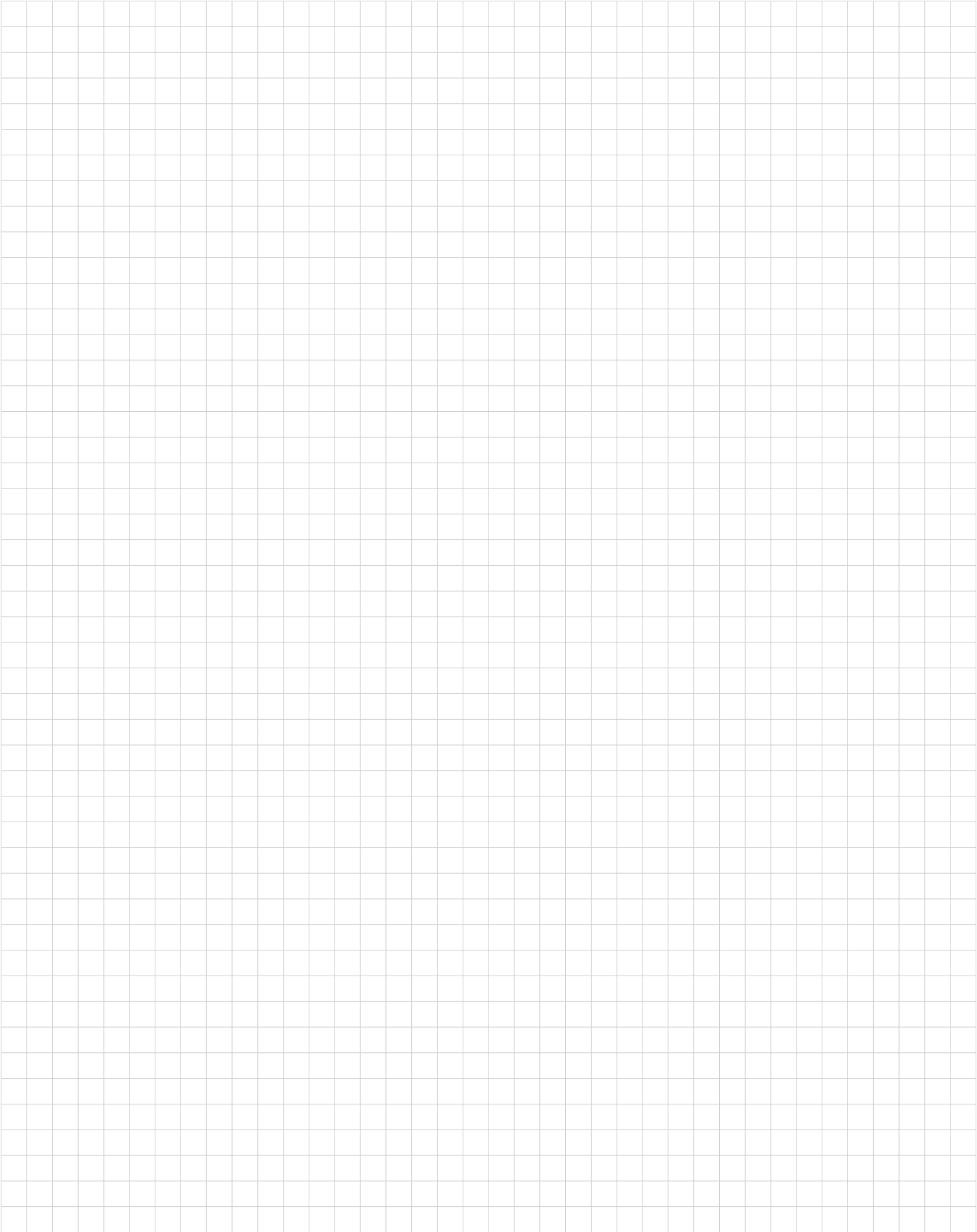
Efficient startup
by our specialists

Sustainable optimization
for enhanced service life, maintainability, and energy efficiency



Retrofit insight – see our Life Cycle Services in action at a sewage works
youtu.be/zPg_eDwLTRk

Notes



Further information is available at:
www.sew-eurodrive.de/wastewater-technology



SEW-EURODRIVE GmbH & Co KG
Ernst-Blickle-Str. 42
76646 Bruchsal/Germany
T +49 7251 75-0
F +49 7251 75-1970
sew@sew-eurodrive.com
www.sew-eurodrive.com