PUMPING WASTEWATER EFFECTIVELY

A properly balanced system of Progressing Cavity Pumps, Peristaltic Pumps, Propeller Pumps and Macerators.

CIRCOR | ALLWEILER®

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CIRCOR | ALLWEILER®

ALLWASTE®: SPECIAL PUMPS FOR EVERY PROCESS

The ALLWASTE® product family is a refined modular system where you can find the right pump for your needs.

You can choose from an entire line of pumps that employ a variety of pumping principles in order to find the pump type that most ideally suits the needs of your plant and provides the most economic and environmentally friendly option:

- Progressing cavity pumps
- Macerators (wet choppers)
- Peristaltic pumps
- Centrifugal pumps
- Propeller pumps
- Screw pumps

The pumped liquids include raw wastewater, the various types of sludges (raw and preclarification sludge, return sludge, excess sludge, slurry and activated sludge), suspensions, flocculent aids, milk of lime, filtrates and service water.

Globally successful
All CIRCOR pumps reflect decades of experience with continuous improvements and optimisations for each process step. These pumps have been employed successfully for many years in plants of various sizes around the world.

Service and support guaranteed
If you decide to use an ALLWASTE® pump, you can count on rapid service at your location no matter where you are in the world. QuickServe® delivers original replacement parts within a defined reaction time. In addition, PumpService® will be on the job as soon as you need qualified experts at your plant.

Stators from our own production
Allweiler® offers a level of security that almost no other manufacturer can provide: stators from our own production. We can quickly and economically deliver stators for progressing cavity pumps made from about 20 different materials. All stators come directly from our plant, even unusual sizes and those using uncommon materials.

Maximum performance with ALLWASTE®*

	Progressing Cavity Pumps	Macerators Pumps	Peristaltic Pumps	Screw Pumps	Centrifugal Pumps	Propeller Pumps
Q	7,500 l/min 1,981 gpm	160 m /h 705 gpm	60 m /h 264 gpm	5,300 l/min 1,400 gpm	2,400 m /h 10,567 gpm	50,000 m /h 220,150 gpm
p_d	64 bar / 928 psi	10 bar / 145 psi	16 bar / 232 psi	280 bar / 4061 psi	25 bar / 363 psi	6 bar / 87 psi
t	150 °C / 302 °F	80 °C / 176 °F	80 °C / 176 °F	400 °C / 752 °F	400 °C / 752 °F	200 °C / 392 °F
ϑ	300,000 mm /s	-	100,000 mm /s	100,000 mm /s	-	-

* All performance data listed here and in the following tables apply to 50-Hz operation.

ALLWASTE®: IDEAL FOR ALL LIQUIDS IN A CLARIFICATION PLANT

The various pumping principles of the ALLWASTE® pumps ensure that you will always have the best pump type for each liquid you need to pump.

Pumped liquid	Pump type: Progressing Cavity Pumps	Macerators	Peristaltic Pumps	Centrifugal Pumps	Propeller Pumps	Screw Pumps
Untreated sewage	●	●		●	●	
Faecal/untreated/fresh sludge	●	●				
Excess sludge	●	●	●			
Return sludge	●		●		●	
Circulated sludge (Denitrification/Nitrification)					●	
Pre-setting sludge	●	●	●			
Digested sludge	●	●	●			
Lime milk suspension, neutralising agents	●		●	●		
Ferric chloride solution, precipitating agents	●		●	●		
Concentrated sludge	●	●	●			
Polyelectrolyte, flocculant parent solution	●		●			
Flocculating additaments	●		●			
Slurry, dewatered sludges with up to 45 % DS content	●		●			
Scum	●	●				
Press water, filtrate, centrate		●		●		
Sampling (sewage, sewage water, sludges)	●	●	●			
Fresh/industrial/process water				●		
Cleaning/sealing water				●		
Adsorbents/oxydants/disinfectants	●		●	●		
Thermal oil, hot water				●		
Light/heavy oils				●		●

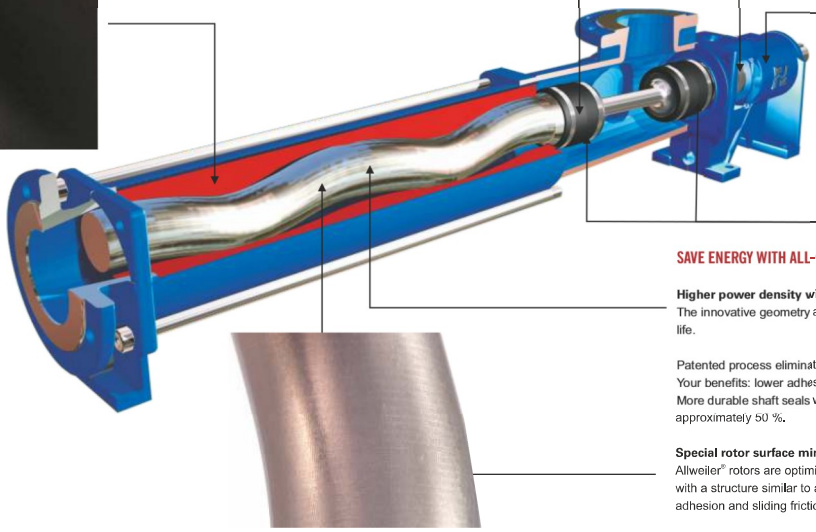
ALL-OPTIFLOW®: CUSTOM-MADE FOR SEWAGE PLANTS

THE PUMP WITH THE HIGHEST SAVINGS IN OPERATION

REDUCE SPARE PARTS COSTS WITH ALL-OPTIFLOW®

Lifetime oil-lubricated joint protected from overpressure and solids
As a result, damage to the collar is reliably prevented. Solids are guided over the durable face side of the joint collar and around the joint without causing damage to the joint collar. Optimized lubrication makes the joints very heavy duty and gives them an extraordinarily long service life.

Twenty different elastomer materials for the perfect stator every time
A special elastomer geometry, the facetted surface, and the optimized ALLDUR® elastomer minimize starting and operational torque, boost efficiency, stabilize the pump's performance curve, minimize wear during operation, and enable trouble-free starting even after extended downtime. The proprietary ALLDUR® stators extend service life by up to five times, even when pumping highly abrasive liquids.



REDUCE MAINTENANCE COSTS WITH ALL-OPTIFLOW®

Patented zero-play stub shaft connection
Patented zero-play stub shaft connection in block design, self-sealing, stainless connection between the drive and the pump that is highly insensitive to dirt. It assembles and disassembles easily and quickly. Shaft diameter is approximately 30 % smaller, reducing frictional losses at the shaft seal by up to 50 %.

Removable bearing bracket
The removable bearing bracket in bearing frame design pump can be removed from the drive shaft as a complete unit. The shaft seal is accessible without further disassembly of the pump.

Internal bearing
The internal drive shaft bearings may be relubricated and are protected against spray water.

High-quality joint design
Both ends of the ALL-OPTIFLOW® universal high-quality joint shaft end in gas- and liquid sealed encapsulated pin joints that are designed to be very simple and robust and absorb the rotor's eccentric movement without disturbances. The optimized and most compact design on the market has an incomparable long MTBF as force is transferred over exchangeable, hardened bushes and pins that reliably protect the remaining joint parts from wear and enable straightforward replacement.

SAVE ENERGY WITH ALL-OPTIFLOW®

Higher power density with innovative single-screw rotor
The innovative geometry achieves 20 % lower average sliding speed resulting in reduced energy consumption and extended service life.

Patented process eliminates scoring and produces instead a shark-skin structure on the surface.
Your benefits: lower adhesion and sliding friction, thereby reducing drive power and starting torque.
More durable shaft seals with less drive power required, thanks to small-diameter stub shafts which reduce seal friction by approximately 50 %.

Special rotor surface minimizes starting and operating torque
Allweiler® rotors are optimized with a proprietary process eliminating scoring and producing a precision-contoured, smooth surface with a structure similar to a shark skin. This patented process obtains optimized flow and sliding properties and is thereby reducing adhesion and sliding friction. Your benefit is improved service life and reduced starting torque and power consumption.

ALLWASTE® AE...:

THE INNOVATIVE TECHNOLOGY AND EXTENSIVE OPTIONS
INDIVIDUAL PUMPS MADE FROM STANDARDISED COMPONENTS

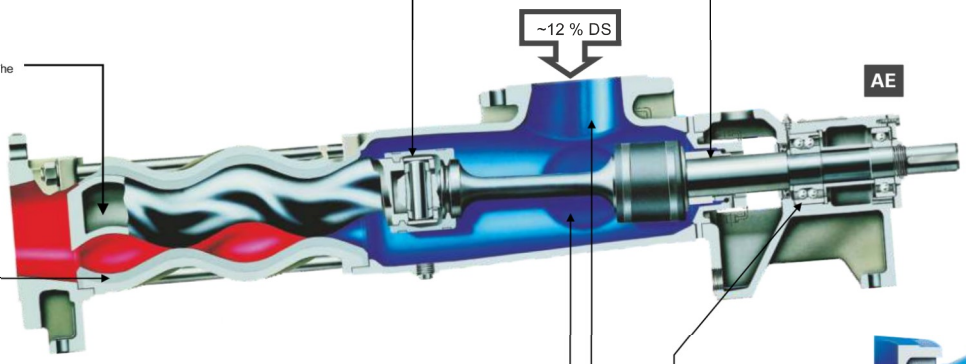
ALLWASTE® REDUCES MAINTENANCE COSTS

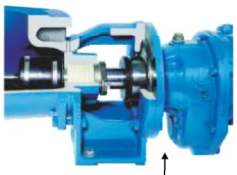
Technically optimized
Finish and materials of the shaft-seal (packing stuffing boxes and mechanical seals) adapted to the liquid.

Robust pin joints
With exchangeable, hardened bushes and pins, encapsulated against gases and liquids with joint collars and joint clamps.

Strong rotors
Hollow cast or hollow bored, they ensure lower centrifugal forces than full rotors, especially in the larger pump sizes. The pumping elements have significantly elevated service lives.

The "AE" and "AEB" series of pumps are self-priming, rotating displacement pumps. They move and meter thin to highly viscous liquids, neutral or aggressive liquids and liquids with a high percentage of solids. Your choice of horizontal, vertical, or immersed installation provides the options needed to meet your individual requirements. The modular system further ensures that the design type, shaft bearing and the materials used for the shaft seal and other parts will always be the most ideal possible.





ALLWASTE® AE REDUCES OPERATING COSTS

Two elastomer wall thicknesses
Uniform or nonuniform wall thickness, depending on the liquid. Nonuniform wall thickness is ideal for abrasive liquids and/or liquids with a high percentage of solids.
The benefits of uniform wall thickness:

- Low starting and operational torque
- Lower power requirement
- Quiet, low-pulsation running
- More stable characteristic curve

ALLWASTE® AE SAVES TIME

Rapid cleaning
Cleaning openings offset on the suction housing. This makes both pin joints easily accessible.

Flexible installation
Suction casing designed for favourable flow qualities. Suction branch can be rotated by 90 degrees.

Rapid maintenance
Greasable bearing that is protected against spray water and can be completely removed from the drive shaft. Shaft seal accessible without further disassembly of the pump.

THE "AEB" SERIES IN A BLOCK VERSION

- Shaft coated with a wear-resistant material in the area of the packing stuffing box.
- Split stuffing boxgland that is easy to remove
- Small shaft seal diameter. As a result, low sliding speed and friction.
- Clamping set provides tolerance-free, self-sealing plug-in shaft. German patent No. 19824847, US patent No. 6,227,829

ALLWASTE® AE...ZD/RG:

FOR LIQUIDS WITH A LARGE AMOUNT OF SOLIDS OR FIBERS

YOU CAN EXPAND THE AE AND AEB SERIES WITH ONE OR TWO AUGERS FOR HIGHLY VISCOUS LIQUIDS

The "AE" and "AEB" series also reliably pump your drained and thick sludges. They were designed especially to handle liquids that are highly viscous, non-free-flowing, neutral or aggressive, clean or abrasive and gaseous. Fibers and solids in the pumped liquid are not a problem.

With the ability to handle up to about 45-percent dry substances, these pumps have virtually no competition. Depending on your requirements, these pumps will be equipped at the factory with one or two feed screws.

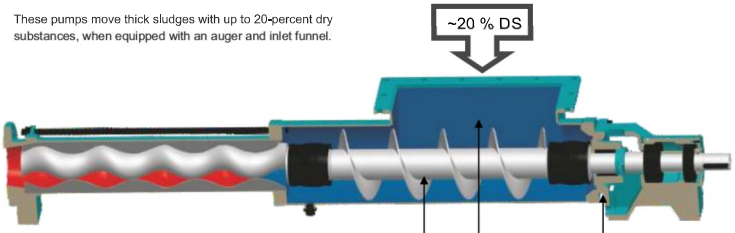
Thanks to the CIRCOR's Allweiler brand modular system, the feed screws are easily mounted between the rotor and drive shaft. All other parts are unchanged. Both pumps will save you money, both at procurement and in operation, since they are constructed of standardised components. Another benefit is that the replacement and wearing parts you need will be delivered to your plant quickly and you will need to hold fewer parts in stock.

SPECIAL BENEFITS OF ALLWASTE® ESP:

- Also available as a special portable or mobile version for special application.
- High pumping and metering accuracy. They meter precisely, examples include: flocculation, precipitation, or neutralisation agents and sample extraction.
- Extremely gentle, continuous, low-pulsation pumping that does not alter the liquid's structure.
- Strong self-priming. Your pumps will work at full performance even when pumping highly contaminated liquids.
- All materials are available, ensuring extended service times and long maintenance intervals

AE.ZD

These pumps move thick sludges with up to 20-percent dry substances, when equipped with an auger and inlet funnel.



HIGH PROCESS STABILITY

Continuous pumping
Optimised auger prevents bridging and clogging.

Clean and free
The shape of the trough and the inlet funnel/suction housing prevent deposits.

Seal type can be changed quickly
Exchangeable stuffing box/mechanical seal housing between suction housing and bearing base/lantern base.

AE.RG

They pump dewatered sludges with up to 45-percent dry substances, when equipped with two feed or mixing augers in the inlet funnel.

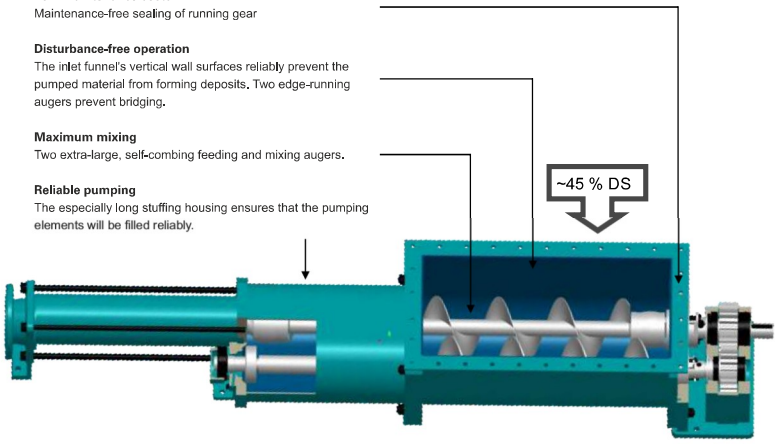
HIGHLY TOLERANT OF SOLIDS

Low maintenance costs
Maintenance-free sealing of running gear

Disturbance-free operation
The inlet funnel's vertical wall surfaces reliably prevent the pumped material from forming deposits. Two edge-running augers prevent bridging.

Maximum mixing
Two extra-large, self-combing feeding and mixing augers.

Reliable pumping
The especially long stuffing housing ensures that the pumping elements will be filled reliably.



ALLDUR®:

ORIGINAL ALLWEILER ALLDUR® STATORS
UP TO FIVEFOLD SERVICE LIFE, EVEN WITH ABRASIVE LIQUIDS

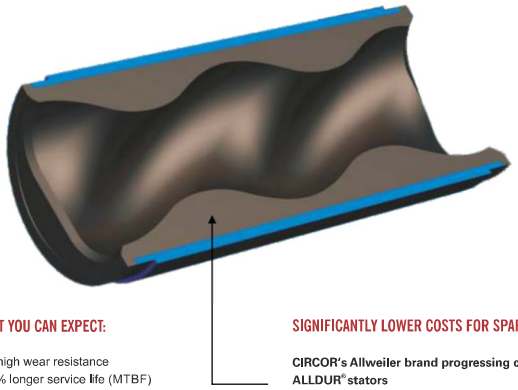
ALLDUR® STATORS

A stator's chemical formula determines how long it will deliver its original pumping capacity without maintenance. Therefore, the formula also determines how much you will spend on maintenance and spare parts. The savings or extra expense will be a factor for many years.

Economical
With this in mind, CIRCOR's Allweiler brand developed the new ALLDUR® formula specifically to maximize durability and efficiency. With ALLDUR® stators, you can now even pump extremely abrasive liquids economically!

Guaranteed quality
Each of our elastomer mixtures and the entire production process is subject to stringent and continuous quality control. Therefore, as an operator, you will experience uniform quality for years, even decades. We also fulfill the most stringent safety standards, since ALLDUR® stators employ cutting edge technology in compliance with current regimes and regulations.

Cutting edge technology
Modern technologies and processes reliably ensure that every stator leaves our plant in flawless condition. In-house manufacturing, strict production monitoring, final quality inspections, and continuous inspections of elastomers ensure that every single stator exhibits top quality.



HERE'S WHAT YOU CAN EXPECT:

- Extremely high wear resistance
- Up to 500 % longer service life (MTBF)
- Longer maintenance intervals
- Less downtime (MTTR)
- Lower maintenance costs
- Extended pump service life

SIGNIFICANTLY LOWER COSTS FOR SPARE PARTS

CIRCOR's Allweiler brand progressing cavity pumps with ALLDUR® stators
Up to fivefold service life

- Ready to handle heavy and dynamic loads
- High impact resilience
- Low compression set
- High tear-growth resistance
- High aging resistance
- Extreme durability

ALLWASTE®:

WHEN YOU HAVE TO MAKE SOLIDS PUMPABLE

ALLWASTE® MACERATORS

Macerators (wet choppers) break up solids or fibrous components contained in wastewater, sludges, or other liquids and make them pumpable.

Another result is that

- concentrated sludges without coarse solids can be more easily drained and
- the broken up pieces have a larger surface area. As a result, the digestion process will be faster and more thorough.

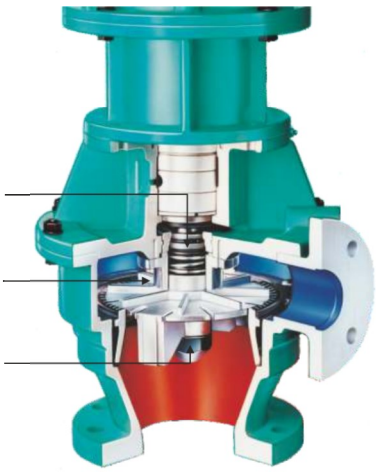
CIRCOR's Allweiler brand wet choppers are delivered as collective macerators with a three to five-meter pumping head (installation on basins, containers) or as inline macerators with a downstream progressing cavity pump for direct installation in the piping.

RELIABLE AND EASY TO MAINTAIN

Securely sealed for a long time
Long-life mechanical seal with buffer-water connection. This flushes the mechanical seal and protects it from the entry of solids.

Long maintenance intervals
Resistant due to cast impeller with soldered, very strong stellite cutting tips.

Convenient maintenance
Easy to exchange the chopping elements without removing the piping.



Block design
Also available mounted on a base-plate.

ALLWASTE® DOSING PUMPS:

PUMPING WITH PRECISION

HIGH PUMPING ACCURACY

These pumps are generally three-stage units. The resulting long sealing line between the rotor and stator enables extraordinarily high metering accuracy. Capacity up to 42 l/min (11 gpm).

- Ideal for laboratory work in sewage plants and dosing of additives like suspensions and flocculants during wastewater treatment.
- Available as base-plate or block versions.

LOWER TOTAL COSTS

Flexibly adaptable and expandable
Basis pumps can be easily converted to another size. Using the same suction casing, bearing, shaft seal, and universal joint shaft, simply insert or remove the reducing ring (between suction casing and stator) and then exchange the rotor and stator.

Maintenance-free bearing
The two groove ball bearings are lifetime lubricated. They absorb all radial and axial forces.

Long service life and rapid installation
The stator is vulcanized in a stainless steel pipe and provided with threaded connections on both ends. These connections provide a reliable seal to the suction and pressure line while protecting the stator casing from corrosion.

Universal in use
The various shaft seals enable adaptation to a variety of operating conditions.

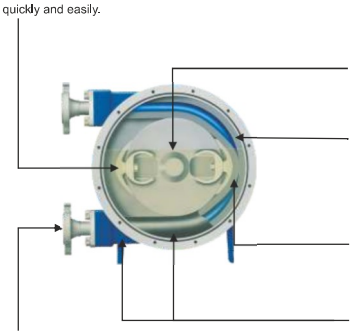
ALLWASTE® ALLMOVE®:

PATENTED DETAILS GUARANTEE EFFICIENT, TROUBLEFREE OPERATION

All ALLMOVE® pumps combine the safety and favourable price of a widely used, standard device with the options of an individual pump. The tried and tested equipment is fitted in our factory with the precise materials you require. Depending on the pumped liquid, the pump is made from natural rubber, perbunan, EPDM or Hypalon.

EXTENDED AVAILABILITY

Quickly adjustable
The sliding blocks of the one-piece rotor can be adjusted quickly and easily.



LOW INSTALLATION COSTS

Choose your connections
ALLMOVE® ASH is delivered with a flange as standard equipment. Other connections are available.

ALLMOVE® LOWER MAINTENANCE COSTS

Maintenance-free permanent lubrication
The glycerine filling provides permanent and effective lubrication of the hose and all moving parts.

Only one wearing part
Only the pump hose is subject to wear. It can be exchanged quickly without opening the pump casing.

Low working temperature
The patented design of the sliding block and rotor results in high circulation velocity of the glycerine filling. In conjunction with the low pitch of the sliding block, this results in an unusually low working temperature, which gives the hose a very long service life.

Long hose service life
Patented elastic inclusion of the pump hose; pump hoses in four different elastomer qualities – specially wound, fabric reinforced, and polished. Qmax 60 m3/h / 264 gpm; 16 bar / 232 psi; max. suction height 9.5 mWs / 31 ft. w.c.

As an optional extra for standard equipment, you have the choice of innovative technical individual solutions. These can even be tailored to meet special usage requirements:

Pulsation damper
An elastic damper hose changes its chamber volumes depending on the fluctuating pressure stresses in its chamber volumes, thereby evening out volume flow and pressure variations. The pulsation damper protects both pumps and pipelines. Pulsing is reduced by up to 95 %.

Safety devices
A hose fracture detector ("capacitive approximation switch") immediately stops the drive, by means of a control switch, as soon as pumped liquid enters the pump casing. Thereby ensuring that, if there is any disruption, there is no damage to the mechanism.

Vacuum support
The vacuum installation can help you achieve extended suction heights of up to 9.5 mWs, rapidly pump liquids of high viscosity, or meter liquids very precisely. In addition, the pump hose will retain its full suction force throughout its entire service life.

ALLWASTE® PROPELLER PUMPS:

THE ECONOMICAL WAY TO ACHIEVE HIGH PUMPING PERFORMANCE. DRY INSTALLED PUMPS WITH STANDARD MOTORS THAT ARE SPECIALLY DESIGNED FOR HIGH FLOW RATES IN CLARIFICATION BASINS

HIGH RELIABILITY

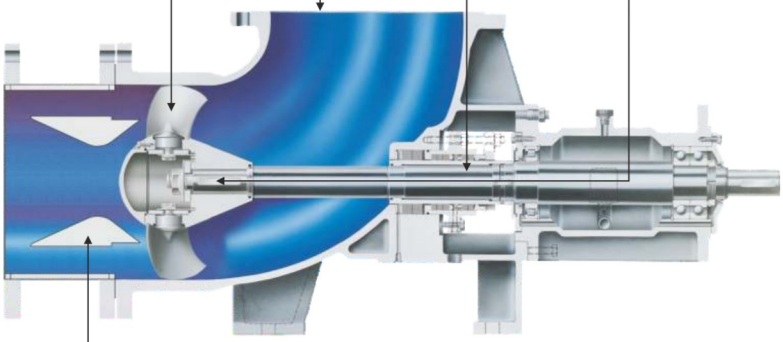
Long service life and safe
Pressure-safe pump housing with anti-corrosion coating; cast or welded and with or without wear ring.

Insensitive
Spatially arcuated, dirt-resistant, fiber-resistant propeller blades with a cutting edge.

EASY MAINTENANCE

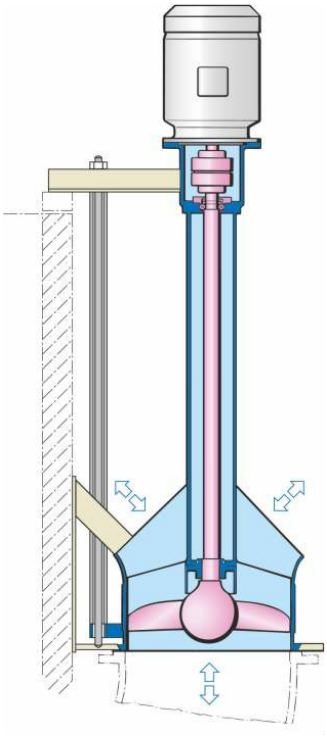
Permanently sealed
Special torsion-proof, dynamically optimised shaft in conjunction with an optimally designed bearing ensures high truth-of-running and therefore optimal conditions for the shaft seal.

Low maintenance
Intermediate pipe piece with integrated flow guides and cleaning connection.



LOW OPERATING COSTS

Long-term efficiency
Intermediate pipe piece with integrated flow guides and cleaning connection.



Single-stage propeller pumps intended for horizontal or vertical dry installation in overflow-safe areas.

Recirculation pumps in wastewater and clarification engineering; used to return nitrate-laden wastewater and activated sludge from the nitrification basin into the denitrification basin. Also used to pump return sludge and rainwater.

The design type, material selection and installation/drive types of the pumps can be adjusted to the operational conditions.

ALLWASTE® PT VERTICAL PROPELLER PUMP

This pump will be your first choice when you need a recirculation pump. The drive is placed dry in the overflow-safe area.

This eliminates the need for:

- Special motors. In their place you can use any economical and proven standard motor.
- Shaft seals. You will save time for otherwise necessary maintenance and money for new shaft seals.
- Maintaining the sleeve bearings. The sleeve bearings are maintenance-free, wear-resistant and receive lubrication from the pumped liquid.

Other benefits:

- The pump housing's inlet area is designed for positive flow qualities.
- Very good feed properties on the propeller blades.
- Propeller blades are insensitive to dirt, resist fibers and have a cutting edge.
- A sole plate enables a secure, screw-free connection between the pump and pipe.
- Available with adjustable blades upon request.

ON-SITE SERVICE:

LOW OPERATING COSTS, LOW AND PREDICTABLE MAINTENANCE COSTS, OPTIMIZED POWER CONSUMPTION

How can you operate your pumps in the most cost-effective way possible? Our consultation will provide you with concrete tips for using your pumps efficiently. We will help you reduce energy costs and expenses for spare parts and maintenance.
You will benefit directly from our experience with hundreds of installations around the world. We have decades of experiences in a wide variety of industries and with all types of liquids and pumping tasks.

Our evaluations have shown that the greatest potential for savings is in energy and maintenance costs. So we do more than just hold presentations and training events. We take the time to analyze and fully document the status and operating conditions of your pumps.

Based on this, our experts provide you with practical tips on how you can lower energy expenses by improving the efficiency of your pumps. We also introduce you to proven methods for optimizing your usage of spare parts and minimizing costs associated with keeping stocks. If problems do arise, our experts will be ready to provide assistance.
They are eager to show you proven methods for lowering operating costs and optimizing the way you use your pumps.

Installation before consultation

Optimized with frequency converter after consultation

AT A GLANCE: ONE-SITE PUMP OPTIMIZATION

- Evaluate the situation and analyze your CIRCOR's Allweiler brand pumps
- Optimize your spare parts requirements and reduce inventory costs
- Expert training on-site and at Allweiler® plants
- Consultation on minimizing total costs for each pump over its entire service life (Total Cost of Ownership, TCO)

It does not matter which pump you have: The pump specialists from CIRCOR are prepared to provide on-site consultation. We will show you how to get the most out of your pumps. You will find new ways to lower costs and save cash. This extends both to wearing parts and operational costs.

ALLWEILER® ORIGINAL PARTS:

THE SECURITY OF KNOW-HOW

Plant operators are often unable to distinguish between cheap copies (from product pirates) and Allweiler® original parts.
The parts usually appear to be the same.

The differences are inside:
- Designed with advanced tools vs. copied without any knowledge.
- Produced from material combinations carefully developed over years and decades vs. simply copied with low-cost materials.

As the original pump manufacturer, only CIRCOR's Allweiler brand offers the security of uniformly high quality. Quality is assured by a conscientious design and high-quality materials. Every part meets our DIN/EN/ISO-certified quality standards. For these reasons, the investment in original parts is always prudent: Longer service lives of the parts, longer maintenance intervals, higher efficiency, and predictable maintenance cycles are a few of the benefits that boost the value of original parts.

AT A GLANCE: CHEAP COPY AND ORIGINAL

Cheap copy: Failed after short time operation due to delamination of stator parts.

Cheap copy: Rotor made of an unknown metal with high wear and poor efficiency.

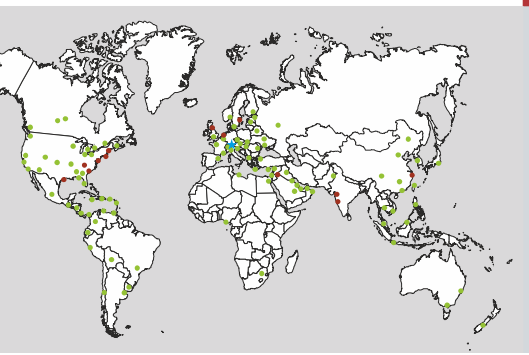
Original: Virtually no signs of wear under the same operating conditions.

Original: Metallurgically refined combination of materials with high durability and uniformly high efficiency.

ALLWASTE®: REDEFINING EFFICIENT PUMPING AT SEWAGE PLANTS

ALLWASTE® combines high engineering knowledge with application expertise that allows us to optimize your sewage plant performance.

Our commitment to you also includes unmatched understanding of your business challenges and global responsiveness to your needs. Our global team of experts ensure you have what you need when you need it. We are committed to being a partner in your success by redefining what's possible for you and your customers.



REDEFINING WHAT'S POSSIBLE

CIRCOR has a global network of sales, production, and service capabilities to ensure that our customers receive competent and optimal support.

- Headquarters
- Regional production and consultation centers
- Global sales network

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Power & Industry Products & Services

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