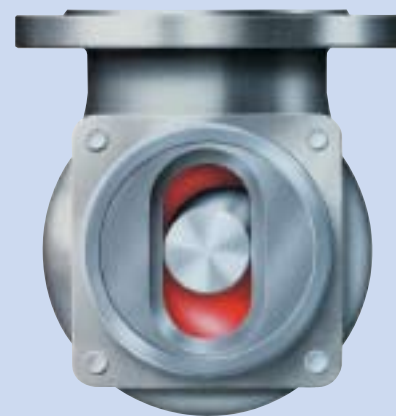




Progressing Cavity Pumps

>> Full Range of Progressing Cavity Pumps



Pumps Suited for Your Application

Your pumping requirements demand fluid transfer solutions that are engineered and manufactured with an in-depth knowledge of the unique advantages of progressing cavity technology. Allweiler PC pumps from Colfax deliver reliable, efficient and stable performance for a wide range of liquids including highly viscous, neutral or aggressive fluids with entrained air, or even with fiber and solids content.

ALLWEILER Progressing Cavity Pumps range from small dosing pumps, sanitary pumps, close coupled/block, equal wall stator pumps, vertical (stator immersed) pumps, to open-throat pumps. ALLWEILER offers a full range of pumps for a wide range of applications, which assures the most economical and reliable pumping solution for your individual pumping application.



Further Advantages

- High metering accuracy for dosing flocculants, precipitants, neutralizing agents or for sampling
- Continuous, extremely gentle, and non-pulsating pumping
- Low shear rates maintain liquid structure
- Excellent self-priming capability, including highly-contaminated and difficult-to-handle liquids.
- Available in various materials of construction.
- Suitable for products with dry solids content up to 45%.

>> Progressing Cavity Pumps

Pumping Principle

The ALLWEILER progressing cavity pump is a rotary self-priming positive displacement pump. The pumping elements are the rotating eccentric screw (rotor) and the fixed, abrasion resistant, elastomeric lined stator. In any cross-sectional plane, the stator elements are in contact with one another at three points (AE1L and Tecflow), or two points (AE and the other types). These points form three (2:3) or two (1:2) seal lines along the length of the stator elements. The material is contained in the sealed enclosed cavities, which are formed as the rotor rotates and is displaced axially and continuously from the suction to the discharge of the pump.

ALLWEILER supplies various pump types for horizontal, vertical and wet well installations. The pump design, bearing assembly, type of shaft seal, and the material selection can be adapted to optimally suit each particular application.

Pumps are supplied in either frame or close coupled/block design. Either design may be used with a speed reducer or various other types of drivers. Pump speeds may also be controlled by the use of a variable frequency drive.

Pumping Slurries Containing Abrasive Solids

Pumping slurries containing abrasive solids requires adjusting the maximum differential pressure per stage to maximize pumping element life. The table below shows all maximum pressure per stage based on a slurry's abrasive nature. Light abrasion would be water with some organic solids. Medium abrasion would be slurries with soft solids, such as clay slurries or gypsum slurries. Heavy abrasion would be slurries containing harder solids, such as emery dust, lapping compound, sand or grit slurries.

Pumping Slurries Containing Abrasive Solids

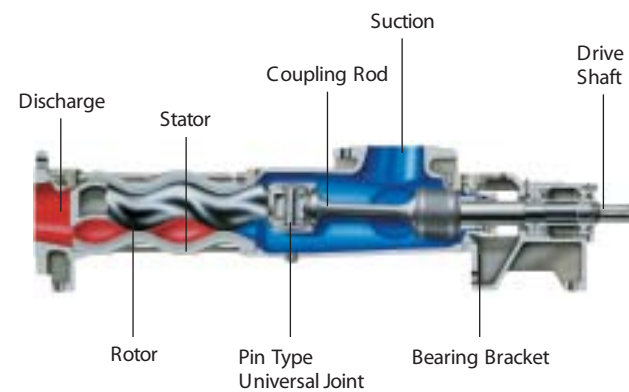
Max. Pressure Per Stage in PSI	None	Light	Medium	Heavy
2:3 Uneven Wall	58	58	52.5	22.5
1:2 Uneven Wall	87	60	35	15
1:2 Even Wall	174	120	70	30

Contact factory representative for viscosities greater than 250,000 cPs.

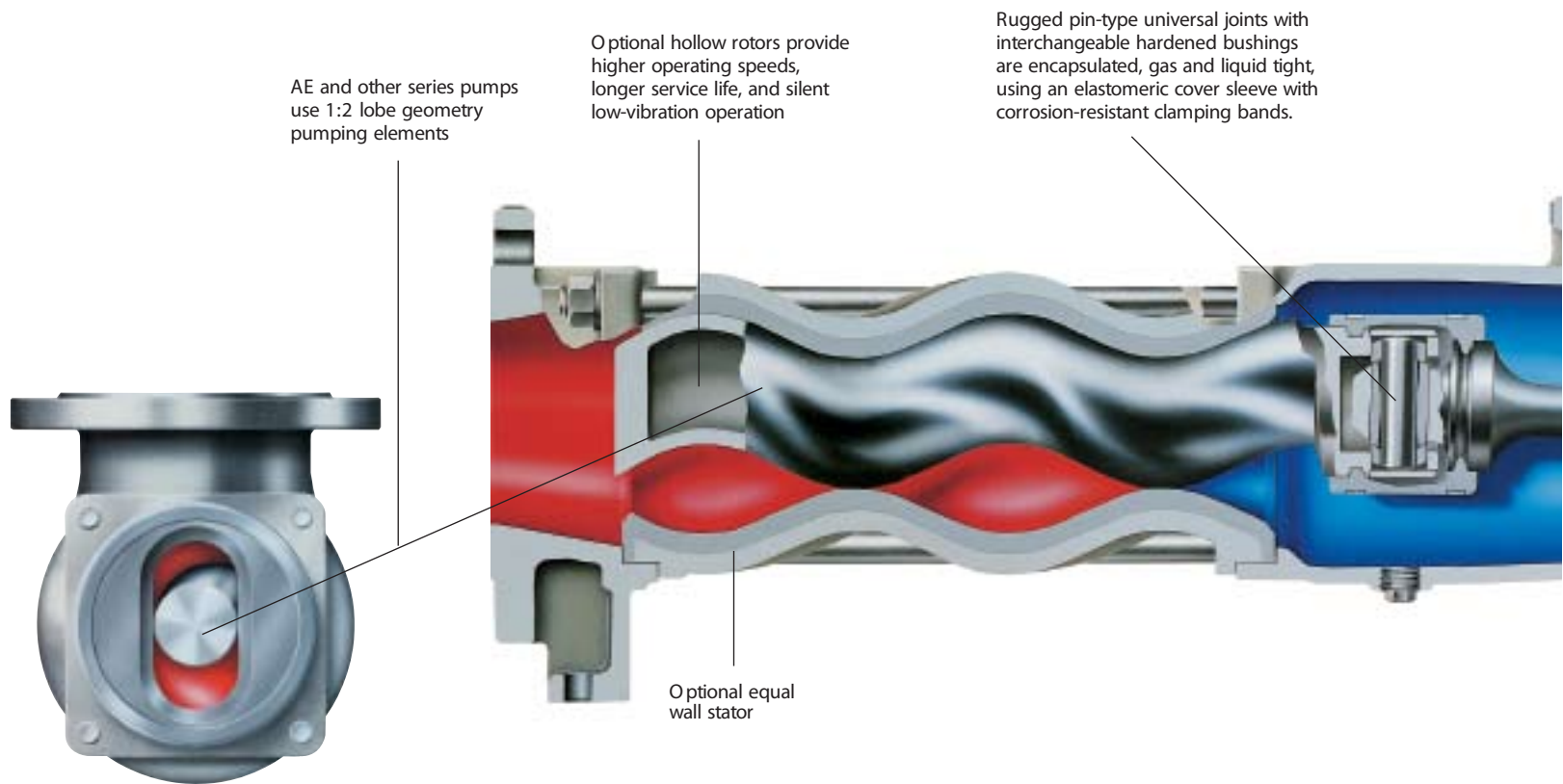
Applications

For pumping a wide range of liquids including highly viscous, neutral or aggressive fluids with entrained air, or with fiber and solids content.

Some of the industries served are chemical, petrochemical, pulp and paper, soaps and fats, paint and latex, food and beverage, plastics, ceramics, sugar, water and wastewater, agriculture, and shipbuilding.



>> Progressing Cavity Pumps



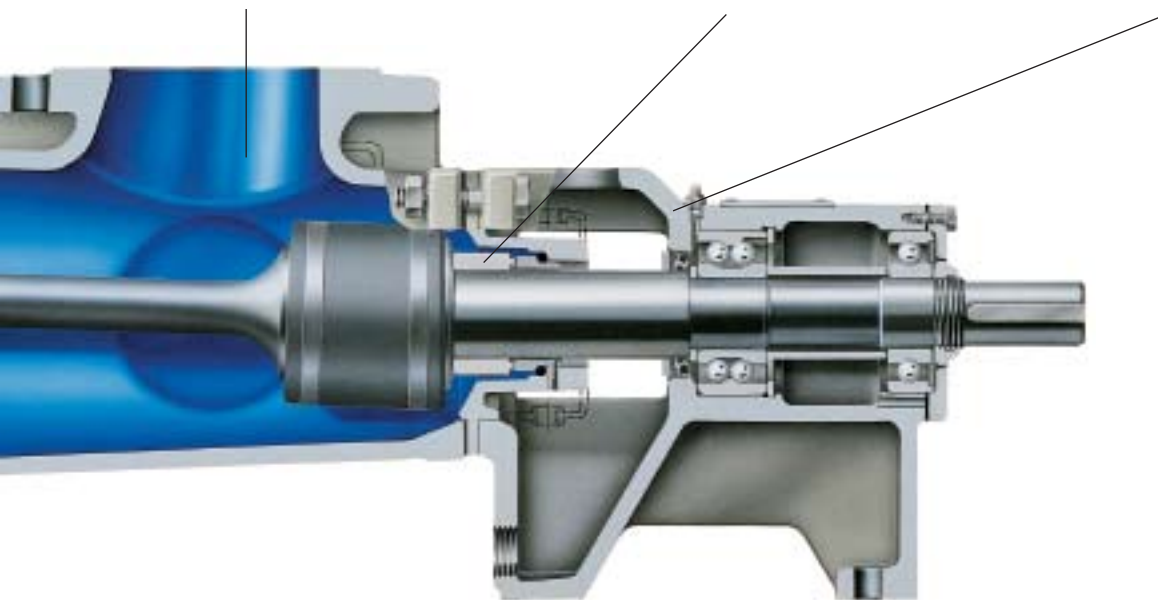


Series AE – Design ID Bearing Frame Configuration

Suction casing has a flow-efficient design.
Inlet can be rotated in 90° increments

Our modular designed seal chamber allows
for packing, single or double seals

Bearing as an assembly can be
completely pressed from the drive shaft.
Shaft seal accessible without completely
dismantling pump



>> Close Coupled/Block Type Progressing Cavity Pumps



ALLWEILER close coupled/block style progressing cavity pumps provide a space saving economical design for commercial, industrial, water and wastewater treatment industries.

The AEB pump is standard 1:2 rotor-stator geometry.

Tecflow and AEB1L pumps are 2:3 long rotor-stator geometry.

The Tecflow and AEB1L offer 100% greater flow at similar speeds when compared to conventional pumps with similar size 1:2 geometry pumping elements.

Pump Features

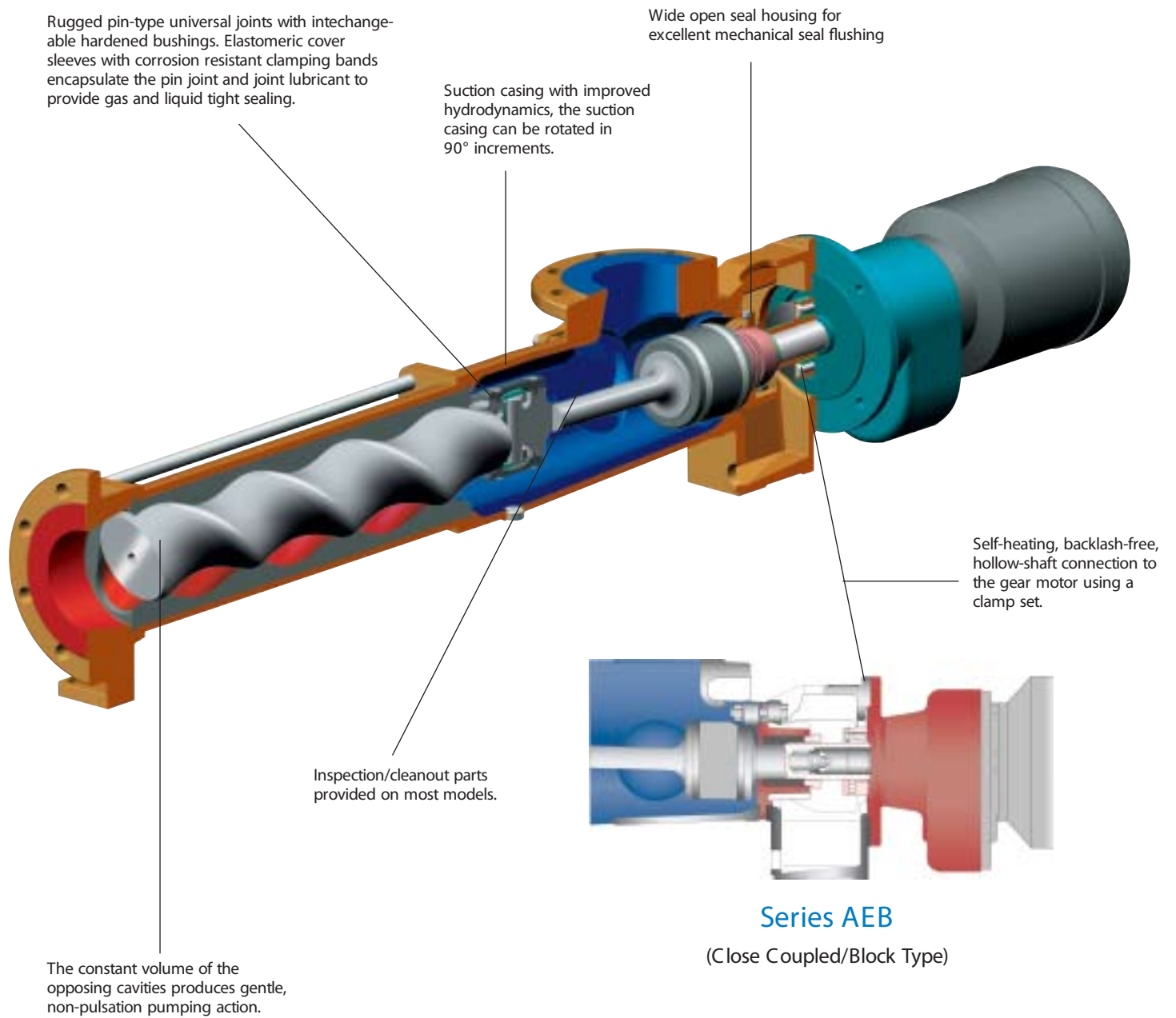
- Quick pump delivery due to the use of standard, reliable components successfully used in thousands of field applications
- Easily removable split packing gland
- Smaller shaft seal diameter reduces face velocity and friction rate
- Easily accessible shaft seal area results from a smaller drive flange diameter and easily removable split packing gland
- Shaft with wear-resistant coating in the stuffing box area

Pump Benefits

- Stable performance
- High metering accuracy
- Short, space-saving design as a close coupled/block pump
- Improved overall efficiencies due to three enclosed pump cavities and more consistent elastomer wall thickness reduces slip



Series AEB – Design IE Close Coupled Configuration



>> Non-Equal Wall or Equal Wall Thickness

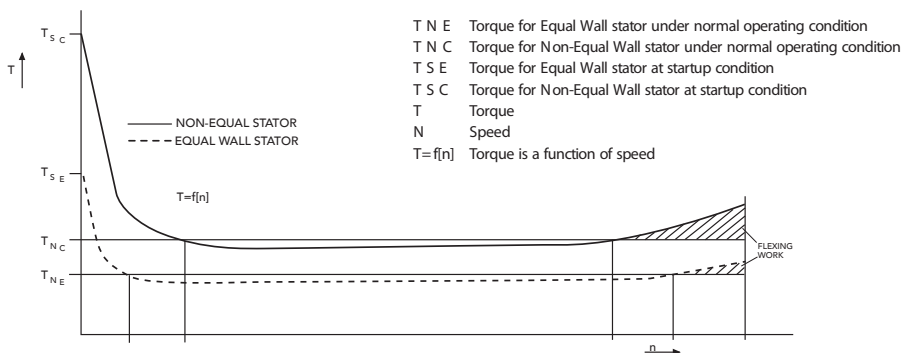
Advantages of Equal Wall Stators

Depending on the liquid pumped, elastomeric stators are available either with Un-Equal Wall or Equal Wall thickness. Advantages of stators with Equal Wall thickness include:

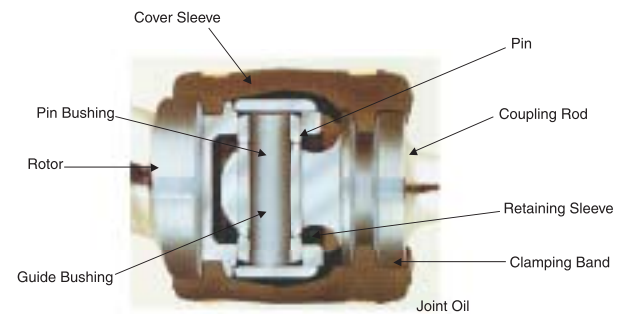
- Lower starting and running torque
- Reduced power requirements, quiet operation, non-pulsating pumping
- More stable flow characteristic, better volumetric efficiency
- Higher pressure capability
- Lower replacement costs with expensive elastomers



Torque Requirements



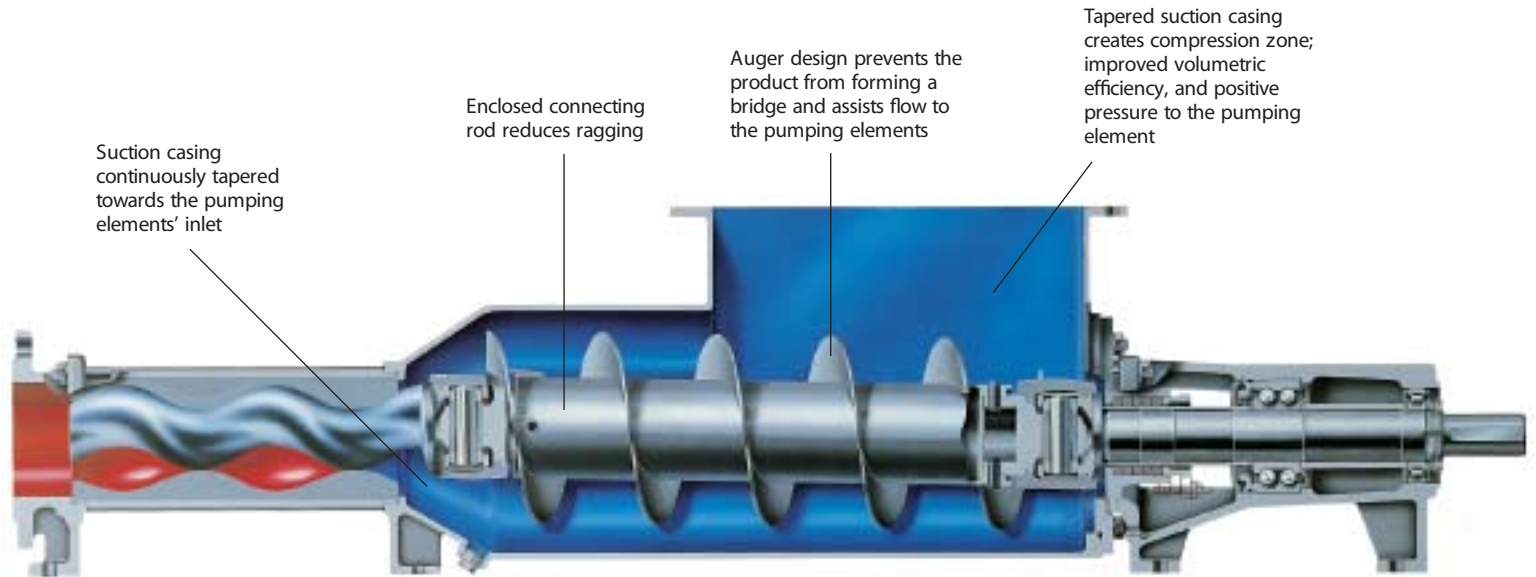
The motor power required to overcome the friction created by the interference fit of the rotor and stator on an Equal Wall stator is approximately 60% that of a Non-Equal Wall stator. This is a result of smaller surface contact.



Pin Type Universal Joint

- Only 4 wearing parts
- Wearparts hardened to 64 HCR
- No axial seals
- Oil lubricated
- Inexpensive to replace
- Easy maintenance
- Rugged pin-type universal joints with interchangeable hardened bushings are encapsulated, gas and liquid tight, using an elastomeric cover sleeve with corrosion-resistant clamping bands

>> Progressing Cavity Pumps – Open Throat Type



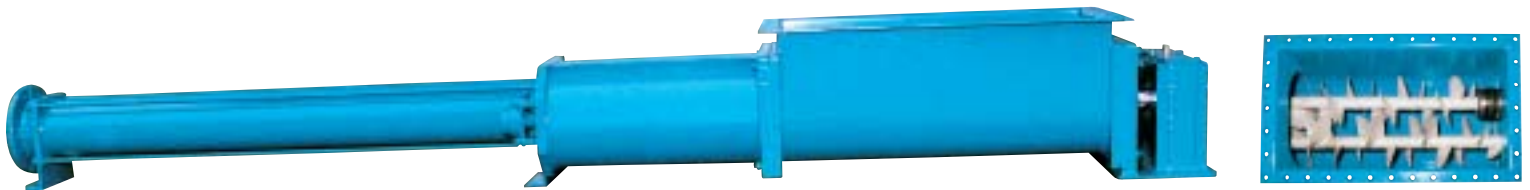
Suction casing continuously tapered towards the pumping elements' inlet

Enclosed connecting rod reduces ragging

Auger design prevents the product from forming a bridge and assists flow to the pumping elements

Tapered suction casing creates compression zone; improved volumetric efficiency, and positive pressure to the pumping element

Series AE-ZD



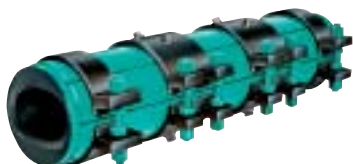
Series AEN_RG

Twin auger open throat pump with compression zone design; no need for a bridge breaker.



Thermal dry-running protection

Temperature measurement using a temperature sensor in the stator elastomer shuts off pump motor when high temperature set point is exceeded. Suitable for all liquids to be pumped.



Adjustable stator (Patent-No. DE 3641 855)

For adjusting the compression of the stator elastomer on the rotor. As the stator and rotor wear, the compression can be adjusted to an "as new" condition, extending pump life. Can also be used for loosening the compression fit between rotor and stator to lessen the starting torque requirement.

>> Performance Range



Series	Pump Design					Rate of Flow at $\Delta p = 0$ bar max.			Temperature of Fluid Pumped		Delivery Pressure max. Δp		Discharge Pressure max. p_d	
	Bearing Housing	With Bracket †	Feeding Screw	Quick Cleaning	Cleaning in Place	USgpm	m ³ /h	l/min	°F	°C	PSI	bar	PSI	bar
AE. E-ID	•					1980	450	7500	300	150	† 85	† 6	230	16
AEB E-IE		•				765	174	2900	210	100	85	6	230	16
AE.N-ID	•					1280	290	4850	300	150	232	16	230	16
AEB N-IE		•				490	111	1850	210	100	175	12	230	16
AE.H-ID	•					765	174	2900	300	150	350	24	360	25
AEB 4H-IE		•				53	12	200	210	100	350	24	360	25
AE. N-RG	•		•			132	30	500	300	150	† 230	† 16	† 230	† 16
TECFLOW		•				820	186	3100	104	40	58	4	230	16
AE.N-ZD	•		•			198	45	750	300	150	260	18	275	19
AEB.N-ZE		•	•			198	45	750	210	100	175	12	190	13
ANP	•					11	2.5	42	300	150	175	12	230	16
ANBP		•				11	2.5	42	210	100	175	12	230	16
ASP	•			•		11	2.5	42	300	150	175	12	175	12
ASBP		•		•		11	2.5	42	210	100	175	12	175	12
ADP	•					3	0.6	10	300	150	175	12	320	22
ADBP		•				3	0.6	10	210	100	175	12	320	22
ACNP	•		•	•		125	29	480	266	130	175	12	175	12
ACNBP		•		•	•	125	29	480	210	100	175	12	175	12

† Pump in block design † 20 bar/290 PSI possible for sizes 380, 750, 1450, 2700
 † 10 bar/145 PSI in case of stator with uniform wall thickness † 25 bar/360 PSI possible for sizes 380, 750, 1450

The listed performance data is to be used as a reference only. Pumps for discharge pressures up to 150 bar/2175 PSI are available upon request. Contact factory representative for exact limits of operation.

The following materials can be used depending on the type of pumpage and pump series used:

Rotor	Stator Elastomers			
304 Stainless Steel X5CrNi 18 10	WB	Natural Rubber/Butadien	B	Butyl Rubber
Tool Steel X210CrW 12	P	Perbunan/Buna N	HP	High Nitrile Perbunan/Buna N
316 Stainless Steel X6CrNiMoTi 17 12 2	N	Neoprene	SL	Silicone Rubber
	Y	Hypalon	VU	Polyurethane
	E	EPDM	PE	Polyethylene
	V	Fluoroelastomer	PTFE	Polytetrafluorethylene

Contact factory representative for materials not shown.

Colfax and Allweiler At-A-Glance

Colfax Corporation

Colfax Corporation is a world leader in the development, engineering, manufacturing, distribution, service and support of pumping and fluid-handling systems. Specializing in positive displacement and centrifugal technologies, our products support a wide range of industries, from Power Generation and Oil & Gas to Commercial and Navy Marine to a broad range of Industrial applications. For over 10 years, Colfax has remained at the forefront of fluid-handling management by focusing on customer needs for reliable performance around the world.

Colfax Americas

Colfax Americas serves as the solution provider in fluid handling applications throughout North and South America. Our comprehensive network of direct salespeople, independent distributors and representatives allows us to provide our customers with the local sales support and inventory they require.

Our customers represent diverse end use markets including power generation, crude oil transport, refinery, machinery manufacture, marine, hydrocarbon processing, pulp and paper, polymer and various other process industries. Colfax products meet the strict requirements of our customers' applications and can offer precise, pulseless, and reliable performance. Our experienced engineering staff can help you solve complex design, application, and process issues. We design and develop systems to meet our customers' unique needs—in the Americas and throughout the world.

Allweiler

With over 140 years of experience, Allweiler AG, A Colfax Business Unit, is Germany's oldest pump manufacturer and serves many different industries around the world. Allweiler is a fully integrated operation with the broadest product offering of precision centrifugal, three-screw, progressing cavity, propeller, peristaltic, rotary-lobe and macerator pumps, as well as large skid systems. Allweiler continually invests in design and production methods. As a result, you will save money as early as the proposal phase and continue to benefit from simplified installation, maintenance, and service. Located in Radolfzell, Bottrop and Gottmadingen, Allweiler is a technical leader in commercial marine, oil and gas, chemical processing, specialty chemical, and waste and wastewater applications.

Colfax Americas



Colfax Europe



Colfax Asia-Pacific





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