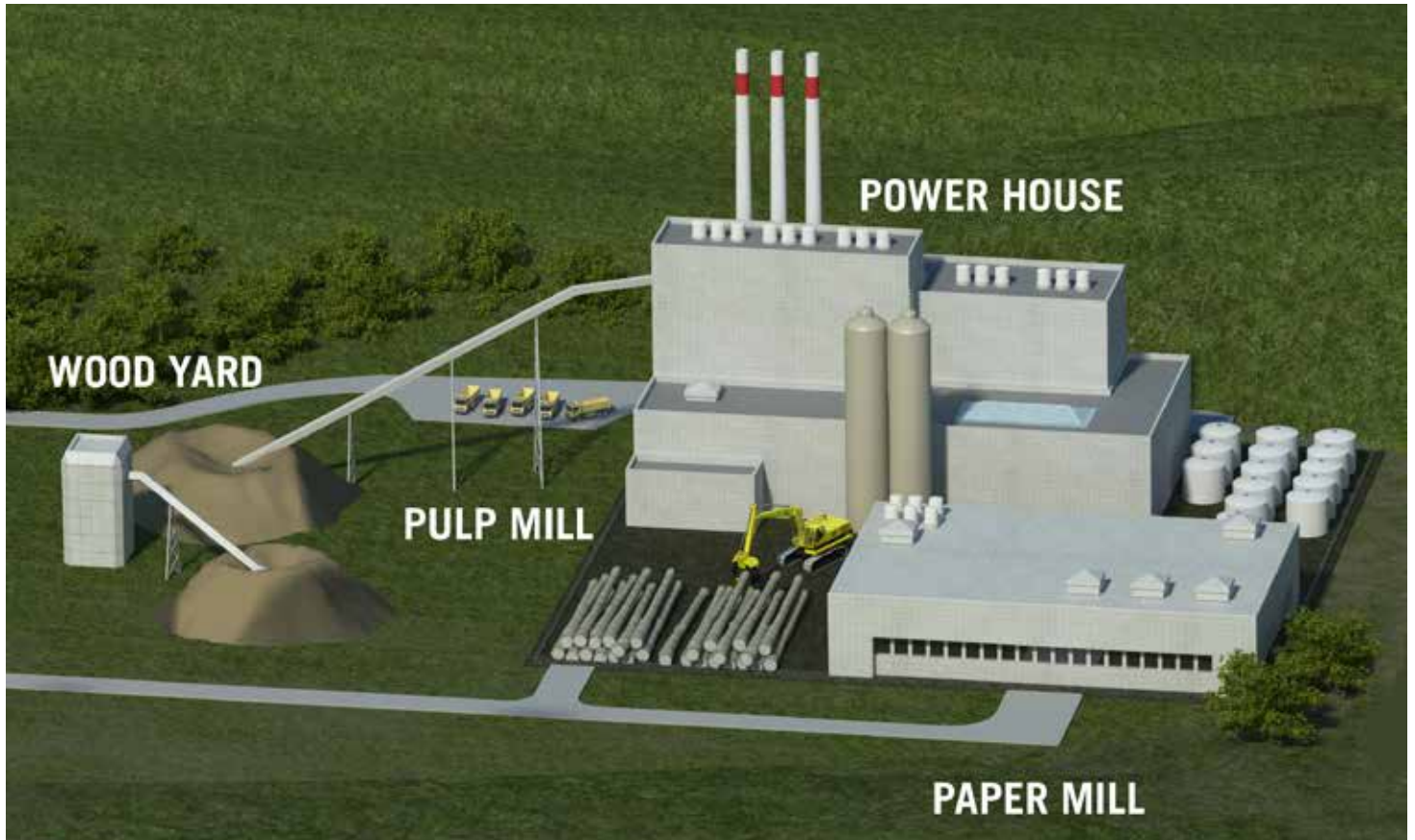


FLUID HANDLING PUMPS AND SYSTEMS FOR THE PULP AND PAPER INDUSTRY



INNOVATIVE, INDUSTRY-LEADING SOLUTIONS

As one of the largest positive displacement manufacturers in the world, with a broad range of centrifugal technologies, CIRCOR supplies the pumps and engineered systems you need to reliably deliver the quality pulp or paper required. It starts with Warren High Density pumps reliably moving high consistency stock to screens, washers, bleaching towers, storage or the paper machine with 50 plus years experience reducing water and chemical consumption. Building on our High Density twin-screw capability, three-screw pumps deliver fuel oil for recovery boiler operation or lube oil for reliable paper machine lubrication and Crown Roll hydraulics with either CIG or screw pumps. Additives, fillers, starch sizing and fragrances allow paper to be made in a wide range of types, sizes and applications. The progressing cavity or precision gear pumps make this possible ranging from brown Kraft to box board to tissue to high quality coated paper.

TECHNOLOGY STRENGTHS

- ◀ Moves highest pulp consistency
- ◀ Smooth, pulsation-free flow
- ◀ Same pump handles broad viscosity range
- ◀ Low shear
- ◀ Abrasion resistant materials
- ◀ High pressure capability

APPLICATIONS IN PULP AND PAPER MILLS

- ◀ Machinery lubrication
- ◀ Hydraulic performance
- ◀ Fuel transfer & feed
- ◀ Moving high solids pulp
- ◀ Moving a slurry or sludge
- ◀ Process heating-circulating heat transfer fluids
- ◀ Precise metering of
 - Dye
 - Adhesives
 - Fragrances



ALLWEILER® HOUTTUIN™
IMO® TUSHACO®
WARREN® ZENITH®

PUMPS IN PULP AND PAPER WIDE RANGE OF PRODUCT TECHNOLOGIES

Your toughest challenges are addressed with more than just an off-the-shelf product when you partner with CIRCOR. You get 160 years of application experience, technology that's relied on to support numerous Pulp and Paper plants every day worldwide, and a team of product and service specialists tasked with maximizing the efficiency of your operation – from the very start to the finish of your project. All of this is enabled by a broad portfolio of pumps and engineered systems from brands you and know and trust — Allweiler, Houttuin, Imo, Warren and Zenith — ensuring that you get the reliability your operations demand and expert levels of service that you require during design, commissioning and throughout operation.



PROGRESSING CAVITY

- ◀ Low shear
- ◀ Smooth, pulsation-free flow
- ◀ Same pump handles broad viscosity range
- ◀ Abrasion resistant



TWIN-SCREW

- ◀ Moves highest pulp consistency
- ◀ Increased production capacity
- ◀ Significantly lower operating costs
- ◀ Better sustainable design
- ◀ Reduced energy costs



THREE-SCREW

- ◀ Smooth, pulsation-free flow
- ◀ Same pump handles broad viscosity range
- ◀ Abrasion resistant
- ◀ Consistent flow as pressure changes



INTERNAL GEAR

- ◀ Compact design
- ◀ Smooth, very low pulsation flow
- ◀ Extremely quiet operation
- ◀ Dual pump circuit configuration



PERISTALTIC (HOSE)

- ◀ Sealless and self-priming
- ◀ Dry-running safe
- ◀ Abrasion resistant materials
- ◀ Can handle large solids



PRECISION GEAR

- ◀ High precision, accurate flow
- ◀ Reliable, smooth pulse free operation
- ◀ Single pump with multiple circuits (optional)
- ◀ Sealless Mag-drive design (optional)



CENTRIFUGAL

- ◀ For all heat-transfer oils, even low- viscosity oils
- ◀ Durable seals, temperatures to 350C / 662F
- ◀ Seals are stable without external cooling
- ◀ Replace traditional centrifugal pumps with special seals








FIND YOUR PULP AND PAPER APPLICATION

CIRCOR provides support to many of the Pulp and Paper segments with pumps and systems capable of handling liquids over a range of viscosities, pressures, flows and composition. Applications can include:

Pulp Mill Applications	Pump Type			
	2 Screw	Progressing Cavity	3 Screw	Precision Gear
Thick Stock Pulp	•			
Brown Stock	•			
Bleached Stock	•			
Black Liquor - Weak		•		
Black Liquor - Strong		•		
Fuel Oil - Unloading			•	
Fuel Oil - Transfer			•	
Fuel Oil - Feed			•	
Lime Mud		•		
Caustic (NaOH)		•		
DeInk Sludge		•		
Sizing Starch		•		
Filler		•		
Dye		•		•

Paper Mill Applications	Pump Type				
	Internal Gear	3 Screw	Progressing Cavity	Precision Gear	Centrifugal
Crown Roll Hydraulics	•	•			
Machine Lubrication	•	•		•	
Sizing			•		
Starch			•		
Latex			•		
Filler			•		
Coating, Clay			•		
Coating, Calcined Clay			•		
Coating, Ti O2			•		
Coating, Calcium Carbonate			•		
Dye			•	•	
Calendar Roll Hot Oil					•
Wastewater Sludge			•		
Polymer Water Treatment			•		
Off- Machine or Converter Applications					
Adhesives		•	•	•	
Fragrances				•	
Dye				•	
Coating, Clay			•		
Coating, Calcined Clay			•		
Coating, Ti O2			•		
Coating, Calcium Carbonate			•		
Latex			•		
Wax			•		

SUMMARY – PUMPS & APPLICATIONS

TECHNOLOGY	BRAND	FLUID	APPLICATION
 TWIN SCREW	WARREN	LOW OR HIGH CONSISTENCY PULP STOCK / BLEACHED PULP STOCK	TRANSFER / FEED
 THREE SCREW	IMO OR ALLWEILER	FUEL OIL OR LUBE OIL	RECOVERY BOILER FUEL OR ROLL LUBE
 PROGRESSING CAVITY	ALLWEILER	BLACK LIQUOR, GREEN LIQUOR OR WHITE LIQUOR, CAUSTIC SODA, BLACK LIQUOR SOAP STARCH OR LATEX SIZING; PIGMENTS, CALCIUM CARBONATE, TITANIUM DIOXIDE, SATIN WHITE, BENTONITE CLAY, KAOLIN CLAY - EITHER DISPERSED OR CALCINED, POLMER, SLUDGE	COATING, ADDITIVE FEED OR TRANSFER
 INTERNAL GEAR	IMO	HYDRAULIC FLUID OR LUBE OIL	CROWN ROLL OR ROLL LUBE
 PRECISION GEAR	ZENITH	DYE, COATING, ADHESIVE, FRAGRANCE	ADDITIVE TRANSFER / FEED
 CENTRIFUGAL	ALLWEILER	HEAT TRANSFER FLUID	CALENDAR ROLL HEATING
 PERISTALTIC HOSE	ALLWEILER	COATING	RECYCLE COATING EXCESS



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 IMO® TUSHACO®
 WARREN® ZENITH®

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