



**Product Portfolio 2022** 

**Pumps I Automation** 





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HGI	61	RPHb / RPHd / RPHbd	37		
HGM	61	RPH-LF	37		
HPH	33		66		
		RPH-RO			
HPK	33	RPH-V	37		
HPK-L	33	RSR	64		
HVF	54	RUV	64		
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# Our goal:

# Quality down to the smallest detail

At KSB, customer satisfaction, safety and reliability take top priority when it comes to quality assurance. Besides ensuring compliance with international quality standards, all KSB pumps and valves have to fulfil even higher internal quality standards.

Our integrated quality management system includes a detailed evaluation process for our production sites and suppliers worldwide. As a KSB customer, you can therefore rest assured that no matter where or when you order, you will always experience consistently high quality. Thanks to our continuous improvement process, we produce pumps and valves with a long service life, excellent efficiency and low wear – as guaranteed by our internal certification system and the "Made by KSB" quality seal.

#### How KSB puts quality into daily practice

- Quality is when our customers are satisfied: We focus all of our efforts on our customers. Our global customer satisfaction analysis shows us how well we're doing.
- Quality is what every employee delivers: Everyone at KSB plays a part in creating a positive customer experience. To ensure the best results, all employees undergo continuous professional development.
- Quality is how processes interlock: We continuously check and improve work processes and the working environment.
- Quality is what our supply chain contributes: We set our quality targets in cooperation with our partners. This helps us raise quality across the entire supply chain to the highest level.
- Quality is how mistakes are dealt with: If we detect quality deviations, we determine the causes in order to eliminate them permanently.



As a signatory to the United Nations Global Compact, KSB is committed to the ten principles of the international community in the areas of human rights, labour standards, environmental protection and anti-corruption.













# Creating the extraordinary. With passion.

We love what we do and that's why we go the extra mile to create truly extraordinary products for our customers. Our passion has been the secret to our success for 150 years and the reason why our pumps, valves and services continue to set new standards around the world.

KSB's superior products have the crucial edge in applications ranging from building services and industry to chemicals and petrochemicals, water supply and waste water treatment through to power stations and mining. Our innovative products and carefully devised solutions fulfil the highest requirements in terms of efficiency, availability and operating reliability. And that's just the start! Through our in-house research and development, unique engineering expertise and smart digital services, we are constantly expanding the boundaries of what is possible for our customers.

Our range of services is rounded off by a comprehensive service and spare parts portfolio that guarantees the highest quality, even when dealing with non-KSB products. Across KSB, our qualified and committed employees are passionately dedicated to keeping everything running smoothly for our customers.

KSB: Keeping everything flowing for 150 years.

# **General Information**

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BIM	https://www.ksb.com/en-gb/software-and-know-how/configuration-tools

# **Pumps**

			Factory-automated	Automation available	Water Transport and Water Treatment	Industry	Energy Conversion	Building Services	Solids Transport
Design / Application	Type series	Page	Fac	Au	× ×	<u>lu</u>	En	Bui	Sol
Drinking water circulators, fixed speed	Calio-Therm S NC/NCV	28							
Drinking water circulators, fixed speed	Calio-Therm NC	28							
Drinking water circulators, variable speed	Calio-Therm	28							
	Calio-Therm S	28							
	Calio S	29							
	Calio	29							
Circulators, variable speed	Calio Z	29	-						
	Calio Pro	29		_					
	Calio Pro Z Etaline	29 30							
	Etaline Z	30				-		-	
	Etaline-R	30							
In-line pumps	ILN	30				-		-	
in the pumps	ILNC	31		-					
	ILNR	31							
	Megaline	31							
	Etanorm	31							
	Etabloc	32							
	Etachrom B	32							
Standardised / close-coupled pumps	Etachrom L	32							
	Etanorm V	32							
	Meganorm	33							
	Megabloc	33							
	HPK-L	33							
Hot water pumps	НРН	33							
	HPK	33		-					
	Etanorm SYT / RSY	34		_					
Hot water / thermal oil pumps	Etabloc SYT	34		_					
	Etaline SYT	34							
	MegaCPK	34		-					
Standardised chemical pumps	CPKN CPKNO	35 35		_					
-		36							
	Magnochem Magnochem 685	36							
Seal-less pumps	Magnochem-Bloc	36		-					
Sear less parries	Etaseco / Etaseco-l	36							
	Etaseco RVP	36				_	-		
	RPH	37		_					
	RPH-LF	37							
	RPHb / RPHd / RPHbd	37							
	RPH-V	37							
	CTN	37							
Process numps	CHTR	38							
Process pumps	CHTRa	38							
	CINCP / CINCN	38							
	INVCP	38							
	Estigia	38			_				
	RWCP / RWCN	39							
	WKTR	39							
Rainwater harvesting systems	Hya-Rain / Hya-Rain N	40							
	Hya-Rain Eco	40							

Design / Application	Type series	Page	Factory-automated	Automation available	Water Transport and Water Treatment	Industry	Energy Conversion	Building Services	Solids Transport
									<u> </u>
	Multi Eco	40							
	Multi Eco-Pro	40							
Domestic water supply systems with automatic		40							
control unit / swimming pool pumps	Ixo N	41							
	Ixo-Pro	41							
	Filtra N	41							
	KSB Delta Macro	41							
	KSB Delta Solo/Basic Compact	41							
	KSB Delta Basic	42							
	KSB Delta Primo	42							
	KSB Delta Solo	42							
	Hya-Solo D	42							
Pressure booster systems	Hya-Solo D FL	42							
	Hya-Duo D FL	43							
	Hya-Solo D FL Compact	43							
	Hya-Duo D FL Compact	43							
	Hya-Duo D FL-R	43							
	Surpress Feu SFE	43							
	Safety Boost	44							
	AmaDrainer 3	44							
	AmaDrainer 4 / 5	44							
	AmaDrainer 80/100	44							
Drainage pumps / waste water pumps	Ama-Porter F / S	44							
	Rotex	45						Ŧ	
	MK / MKY	45							
	Amaclean	45							
	AmaDrainer-Box Mini	45							
	AmaDrainer-Box	45							
	Evamatic-Box N	46							
	mini-Compacta	46						-	
Lifting units / package nump stations	-	46							
Lifting units / package pump stations	CK 800 Rump Station	46							
	CK 800 Pump Station CK 1000 Pump Station	46						-	
	Ama-Porter CK Pump Station	47						-	
								-	
	SRL	47						-	
	SRA	47							
Color and the section are sec-	Amarex	48							
Submersible motor pumps	Amarex N	48							
	Amarex KRT	48							
	Amacan K	48							
Submersible pumps in discharge tubes	Amacan P	48							
	Amacan S	49							
	Amamix	50							
Mixers / agitators / tank cleaning units	Amaprop	50							
	Amaline	50							
	Sewatec	51							
	Sewatec SPN	51							
Pumps for solids-laden fluids	Sewabloc	51							
	KWP	51							
	KWP-Bloc	51							

Design / Application	Type series	Page	Factory-automated	Automation available	Water Transport and Water Treatment	Industry	Energy Conversion	Building Services	Solids Transport
	WBC	52							
	LSA	52							
	LCC-M	52							
	LCC-R	52							
	TBC	52							
	LCV	53							
Characteristics	FGD	53							
Slurry pumps	MHD	53							
	LHD	53							
	MDX	53							
	ZW	54							
	HVF	54							
	DWD	54							
	TDW	54							
	Etaprime L	55							
	Etaprime B	55							
Self-priming pumps	EZ B/L	55							
	AU	55							
	AU Monobloc	55							
	UPA C 100 EE	56							
	UPA C 100 EN	56							
	UPA C 150	56							
	UPA 200, UPA 250	56							
Submersible borehole pumps	UPA 300, UPA 350	56		-					
	UPA 400 - UPA 1100	57							
	UPA D	57							
	UPA S 200	57							
Vertical turbine pumps	B Pump	57							
	Comeo	58							
	Movitec H(S)I	58							
High-pressure pumps	Movitec	58							
	Movitec VCI	58							
	Multitec	58							
	Omega	59							
Axially split pumps	RDLO	59							
	RDLP	59							
	Vitachrom	59							
	Vitacast	60							
Hygienic pumps for the food, beverage and	Vitacast Bloc	60							
pharmaceutical industries	Vitaprime	60		-					
	Vitastage	60							
	Vitalobe	60							

Design / Application	Type series	Page	Factory-automated	Automation available	Water Transport and Water Treatment	Industry	Energy Conversion	<b>Building Services</b>	Solids Transport
	CHTA / CHTC / CHTD	61							
	HGB / HGC / HGD	61							
	HGI	61							
	HGM	61							
	YNK	61							
	LUV / LUVA	62							
	WKTB	62							
Pumps for power station conventional islands	SEZ	62							
	SEZT	62							
	PHZ	62							
	PNZ	63							
	SNW	63							
	PNW	63							
	Beveron	63							
	SPY	63							
	RER	64							
	RSR	64							
	RUV	64							
	PSR	64							
	RHD	64							
Pumps for nuclear power stations	LUV Nuclear	65							
	RHM	65							
	RVM	65							
	RHR	65							
	RVR	65							
	RVT	66							
Down for dealingting by account	RPH-RO	66							
Pumps for desalination by reverse osmosis	Multitec-RO	66							
Positive displacement pumps	RC / RCV	66							
Fire fighting quetous	EDS	67							
Fire-fighting systems	DU / EU	67							

# **Automation and drives**

Design / Application	Type series	Page	Water Transport and Water Treatment	Industry	Energy Conversion	<b>Building Services</b>	Solids Transport
Automation and drives	KSB SuPremE	26					
Automation and drives	KSB UMA-S	26					
	Controlmatic E	68					
	Controlmatic E.2	68					
Control units	Cervomatic EDP.2	68					
Control units	LevelControl Basic 2	68					
	UPA Control	68					
	Hyatronic N	69					
Veriable on and motors	PumpDrive 2 / PumpDrive 2 Eco	26					
Variable speed systems	PumpDrive R	26					
	PumpMeter	27					
Manitarina and dispussio	KSB Guard	27					
Monitoring and diagnosis	KSB Leakage Sensor	27					
	Amacontrol	69					

		Calio-Therm S NC/NCV	Callo-Therm NC	Calio-Therm	Calio-Therm S		Calio S	Calio	Calio Z	Calio Pro Calio Pro Z		Etaline	Etaline Z	Etaline-R	IIN	ILNC	Megaline		Etanorm Etablec	Etablor Etablom B	Etachrom L	Etanorm V	Meganorm	Megabloc							
Waste water with faeces	g		7	2		g					SO	3																	П	П	_
Waste water without faeces	spee		booms olderer			Circulators, variable speed					sawna							Standardised / close-coupled pumps												$\Box$	_
Aggressive liquids	ed	$\perp$		2		ole s	Ш				o e	2						d pa											Ш	Щ	
Inorganic liquids	ļ. Ę	4			_	rial	Ш				In-line	L	Ш		_	_	$\perp$	dr	_	$\perp$	$\perp$	_		Ш		4	_	_	Ш	$\dashv$	
Activated sludge	tors	$\perp$	- 5	, v	-	s, va	Ш		$\perp$	_		_	Ш		_	$\perp$	$\perp$	Ş	$\perp$	_	$\perp$			Ш	Щ	$\perp$	$\perp$	$\perp$	Ш	$\dashv$	_
Brackish water	nla.	+	- Lincing toric	<u> </u>	-	tor	Н		$\perp$	_	-	L	Н		-		+-	lose		•	+	-			Н	_	+	+	$\square$	$\vdash$	_
Service water	i.i.	- 1	<u> </u>		-	gnla	Н		$\vdash$	_		╚			-	•	4		- 1	•	•	-		Ш	$\vdash$	+	+	+	$\vdash$	$\vdash$	_
Distillate	ter	+		<u> </u>	+	نَّ	Н	$\vdash \vdash$	$\dashv$	+	-	-	Н	$\dashv$	$\dashv$	+	+	isec	+	+	+	╀	H	Н	H	+	+	+	Н	$\vdash$	—
Slurries Explosive liquids	× ×	+	- 2		+		$\vdash$		$\dashv$	-	-	$\vdash$	Н	$\dashv$	$\dashv$	+	+	lard	+	+	+	$\vdash$			$\vdash$	+	+	+	$\vdash$	$\vdash$	—
Digested sludge	ing	+	_	_	+		Н	H	$\dashv$	_	-	$\vdash$	Н	$\dashv$	$\dashv$	+	+	and	+	+	+	+		Н	$\vdash$	+	+	+	Н	$\vdash$	—
Solids (ore, sand, gravel, ash)	Drinking water circulators, fixed speed	+	OrinVina water	-	+		$\vdash$	$\vdash$	+	+			$\vdash$	$\dashv$	$\dashv$	+	+	St	+	+	+	$\vdash$		Н	$\dashv$	+	+	+	$\vdash$	$\dashv$	_
Flammable liquids		+	2.		+		$\vdash$	H	$\dashv$	+			$\vdash$	$\dashv$	$\dashv$	+	+		+	+	+	+		Н	$\forall$	+	+	+	$\forall$	$\dashv$	_
River, lake and groundwater		$\top$			$\top$		П	Н	$\dashv$	$\top$			Н	$\dashv$			1		- 1	1	$\top$	T	$\vdash$	Н	$\Box$	$\top$	$\dagger$	$\top$	Н	$\dashv$	_
Liquefied gas		$\top$											П												П				П	$\sqcap$	_
Food and beverages																														$\sqcap$	_
Gas-containing liquids																														$\Box$	
Gas turbine fuels																														$\Box$	
Filtered water		$\perp$					Ш	Ш		_			Ш		_	$\perp$	$\perp$		_		$\perp$	$\perp$		Ш	Щ	4	$\perp$	$\perp$	Ш	$\sqcup$	
Geothermal water		4	_				Ш						Ш					-	_			_						_	Ш	$\sqcup$	_
Harmful liquids	-	$\perp$	_	_	-		Н		$\perp$		_	L	Ш		$\rightarrow$	_	_	-	$\perp$	$\perp$	+			Ш	$\Box$	_	_	$\perp$	Ш	$\dashv$	_
Toxic liquids	-	+	_	_	+		Н		$\dashv$	_	-	Ŀ	H	$\vdash$	-	_	+_	-	_	+	_	$\vdash$	L	H	$\vdash$	+	+	+	Н	$\dashv$	_
High-temperature hot water Heating water	┨	٠.	_		+-				_			H				_		-	-			$\vdash$		H	$\vdash$	+	+	+	$\vdash$	$\vdash$	—
Highly aggressive liquids	╁	- "	4						-	-   -	-	Ŀ			-		-		-	-	+	+	-		$\vdash$	+	+	+	$\vdash$	$\dashv$	—
Industrial service water	╁	١,					Н	H	+										- 1						$\vdash$	+	+	+	Н	$\dashv$	—
Condensate	1	+	-		╫				$\dashv$	+		┢	Н	$\exists$	_		+			+	+-	╫	-		$\vdash$	+	+	+	$\vdash$	$\dashv$	_
Corrosive liquids		$\top$					П		$\dashv$				Н	$\Box$	$\dashv$		1		$\top$	$\top$		$\vdash$		П	H	$\top$		+	Н	$\dashv$	_
Valuable liquids																				$\top$					П				П	一	_
Fuels		$\top$											П		$\neg$				$\top$						$\Box$	$\top$			П	$\sqcap$	_
Coolants																															
Cooling lubricant																															
Cooling water				L					•		1	•				-   -			- 1		•		-		Ш		_		Ш	Щ	
Volatile liquids		$\perp$					Ш												$\perp$			$\perp$							Ш	$\sqcup$	
Fire-fighting water		4			1		Ш	Ш	$\sqcup$	$\perp$			Ш	Щ		• •			- 1	•	$\perp$	_			Ц	$\perp$	$\perp$	$\perp$	Ш	$\sqcup$	_
Solvents		$\perp$			-		Ш	Щ	$\sqcup$	_			Ш	Щ	$\dashv$	$\perp$	_		$\perp$	4	$\perp$	_		Ш	Ш	$\perp$	$\perp$	$\perp$	$\sqcup$	$\dashv$	_
Seawater		+	-		+		Н	$\square$	$\vdash$	-	-[		Н	$\sqcup$			4		-	4	+-	+		Н	$\sqcup$	-	+	+	$\vdash$	$\vdash$	_
Oils	-	+	-		+		$\vdash$	$\vdash \vdash$	$\dashv$	+	-[	-	$\vdash$	$\vdash \vdash$	$\dashv$	+	+		-			+	-	Н	$\vdash$	+	+	+	$\vdash \vdash$	$\dashv$	_
Organic liquids Pharmaceutical fluids		+	-	-	+		$\vdash$	Н	$\dashv$	+	-[		$\vdash$	$\dashv$	+	+	+		+	+	+	+		Н	$\vdash$	+	+	+	$\vdash$	$\vdash$	—
Polymerising liquids		+			+		$\vdash$	Н	$\dashv$	+			$\vdash$	$\dashv$	$\dashv$	+	+		+	+	+	+		Н	H	+	+	+	$\vdash$	$\dashv$	—
Rainwater / stormwater		+			+		Н	H	$\dashv$	+			Н	$\dashv$	$\dashv$	+	+		+	+	+	+		Н	H	+	+	+	H	$\dashv$	—
Cleaning agents		+			$\top$			Н	$\dashv$	$\top$			Н	$\forall$			1		1			T			H	$\dashv$	$\dagger$		Н	$\dashv$	_
Raw sludge		$\top$			$\top$			П	$\dashv$				П	П	$\dashv$		$\top$		+	+	1			П	$\Box$	$\top$	$\top$	$\top$	$\sqcap$	$\sqcap$	_
Lubricants																															_
Grey water																$\perp$	Г			I							$\perp$				_
Swimming pool water		$\bot$							П						$\rightarrow$	• •	_		_						П		$\perp$		Ш	$\square$	_
Brine		$\perp$			$\perp$		Ш	Ц	$\Box$	_			Ш	Ц	-	• •	_		- 1	•	$\perp$	_		Ц	Ш	$\perp$	$\perp$	_	Ш	$\sqcup$	_
Feed water	-	$\perp$	-		1		Ш	$\square$		_	4		Ш	$\square$			_		$\perp$	$\perp$	4	1			Ш	$\perp$	_	+	$\sqcup$	$\dashv$	_
Dipping paints		_		-	+-		Н	$\sqcup$	$\vdash$	+	-	<u> </u>		$\dashv$	_		-		_	+			-		$\vdash$	+	+	+	$\vdash \vdash$	$\dashv$	_
Drinking water Thermal oil		•					$\vdash$	Н	$\dashv$	+	-	ľ		$\dashv$		-   -			•		•	$\vdash$			$\vdash$	+	+	+	$\vdash \vdash$	$\dashv$	—
Hot water		+-	-	-	-							-			-					1-	-	+			$\vdash$	+	+	+	$\vdash$	$\vdash$	—
Wash water		+			+				-	-   -	-								- -	+	-   -				$\vdash$	+	+	+	$\vdash$	$\dashv$	_
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	HPK-L	НРН	НРК	Etanorm SYT / RSY	Etabloc SYT	Etaline SY I	MegaCPK	CPKN	CPKNO		Magnochem 685	Magnochem-Bloc	Etaseco / Etaseco-l	Elaseto nvr	RPH	RPHb / RPHd / RPHbd	RPH-V	CTN	CHTR	CHTRa	CINCP / CINCN	Estigia	RWCP / RWCN	WKTR		Hya-Rain / Hya-Rain N	Hya-Rain Eco	
Waste water with faeces	sd			Sd			<u>a</u>			sd				sdi								1		$\Box$	ms	П		$\Box$
Waste water without faeces	m _	$\perp \perp$		bnmbs	$\sqcup$			$\perp$		≍ ⊢				Process pumps		$\perp$	$\perp$			_		1		$\perp$	stel	Ш	_	_
Aggressive liquids	er e	$\sqcup$	:	<u> </u>	$\sqcup$	_	<u> </u>			SS			_	■ SS b		1			П			_	+	-	g sy	Ш		$\dashv$
Inorganic liquids	wat	$\bot \bot$			$\sqcup$				•	ᇎᆝ				■ 000		1							-		tin	$\sqcup$	_	4
Activated sludge	Hot water pumps	$\vdash$	_	— erm	$\vdash$	_ 4	Standardised chemical pumps	_		×	_	-	$\vdash$	_ ~		$\perp$	_			_	$\perp$	$\perp$	-	$\vdash$	Rainwater harvesting systems	$\vdash$		$\dashv$
Brackish water	-	++	_ 3	된	$\vdash$	_	= =	_		-	-	-				-				$\dashv$	-			$\vdash$	ha	$\vdash \vdash$	_	$\dashv$
Service water		+	ᆗ.	te_	$\vdash$	_							_			• •			-	_			_	$\vdash$	ater			$\dashv$
Distillate	-		-	× —	$\vdash$	-6				-		•		•		+	+	$\vdash$	-	$\dashv$	+	-	+	⊢	- N	$\vdash$	-	$\dashv$
Slurries Explosive liquids		++		Hot water / thermal	$\vdash$	3	>ta	+		-			$\vdash$								+		+		Ra	$\vdash$	-	+
Digested sludge		++			$\vdash$			-		H		-	$\vdash$					$\vdash$		-	+	╀	+	<del> </del>	-	$\vdash$	$\dashv$	+
Solids (ore, sand, gravel, ash)		++	-[]		$\vdash$	-[		+			+	+	$\vdash$			+	+	$\vdash$	Н	+	+	+	-	$\vdash$		$\vdash$	$\dashv$	+
Flammable liquids		++	-[]		++	-[				1			$\vdash$										_			$\vdash$	$\dashv$	+
River, lake and groundwater		+			$\forall$			✝		ľ	+	┿	$\vdash$			+	+			_		+-		┮		$\sqcap$	$\dashv$	+
Liquefied gas								$\top$				$\top$				$\top$	$\top$	$\vdash$			$\top$	+	+			$\sqcap$		$\dashv$
Food and beverages		+			$\Box$							T										$\top$	T	T		П		寸
Gas-containing liquids		$\Box$			$\Box$							$\top$	$\Box$			$\top$	$\top$			$\dashv$	$\top$		$\top$	$\Box$		$\Box$		$\dashv$
Gas turbine fuels		П										İ										T	Т			П		$\neg$
Filtered water																						$\top$				П		$\exists$
Geothermal water																						$\perp$						$\Box$
Harmful liquids										L													$\perp$			Ш		$\perp$
Toxic liquids		$\perp$						_		_	•	-									$\perp$		$\perp$			Ш		_
High-temperature hot water							1			L						$\perp$					$\perp$	$\bot$	$\perp$	_		$\sqcup$		$\dashv$
Heating water		$\vdash$	4		$\vdash$	4	_	-			_	╄				$\perp$	_			_	$\perp$	$\perp$	$\perp$	$\vdash$	-	$\vdash$	_	$\dashv$
Highly aggressive liquids		+	_	-	$\vdash$	4				<u> </u>	-	-		-		1			-	-	_	+	+	$\vdash$	-	$\vdash$	-	$\dashv$
Industrial service water Condensate	_	++		_	$\vdash$	4	-			$\vdash$	-	+		-		+	+	-	=	_		_	-	⊢	-	$\vdash$		$\dashv$
Corrosive liquids	-	++	-		$\vdash$	-	ŀ	-		١.		+	$\vdash$	-					릠						-	$\vdash$	-	$\dashv$
Valuable liquids		++	+		$\vdash$	-		_			╬						_		-	-	-		_	₽	-	$\vdash$	-	$\dashv$
Fuels		+	+		+	-		_			╬						_		Н		+		-		-	$\vdash$	-	+
Coolants		+	-		+	$\dashv$	-	-		_	Ŧ	Ħ				-	+		-	-	١.			-	-	$\vdash$		+
Cooling lubricant		+	-		$\vdash$	-		+		ŀ		+-	<del>  -                                   </del>			+	+			$\dashv$	+			$\vdash$	-	$\vdash$		+
Cooling water					$\vdash$	$\dashv$											1			$\dashv$			_	$\vdash$		$\vdash$		+
Volatile liquids		+-+	-		$\vdash$					_		+	-			-					+		_			Н	_	$\dashv$
Fire-fighting water					$\Box$			_			_	╫		_		_	+=		$\overline{}$	_		╁	+	늘		$\Box$		$\dashv$
Solvents		$\Box$					1																			$\Box$		$\dashv$
Seawater		$\Box$					-					T				Т					•					П		$\neg$
Oils		П				-	-			Ī																П		$\neg$
Organic liquids										I																		
Pharmaceutical fluids					Щ								Щ									$\perp$	$\perp$	$\perp$		Щ		
Polymerising liquids		$\sqcup$			$\sqcup$		Ŀ				•	-	$\sqcup$			$\perp$	1		Ш	_	$\perp$	-	_	$\perp$		$\sqcup$	4	4
Rainwater / stormwater		$\vdash$			$\vdash$			_	Щ		_	-	$\vdash$			+	_		Щ	_	_		_	$\vdash$			•	$\dashv$
Cleaning agents		++	_	_	$\vdash$	4				<u> </u>		-				-				_		-	-	$\vdash$	-	$\vdash \vdash$	_	$\dashv$
Raw sludge		++	-1		$\vdash$	-[	ŀ	+		-			$\vdash$			_		$\vdash$	Н	$\dashv$		+	+	$\vdash$	-	$\vdash$	$\dashv$	$\dashv$
Lubricants		+	-		$\vdash$	-	-			-	╬	-		_			-		-	-	-	+		⊬	-	$\vdash$	-	$\dashv$
Grey water Swimming pool water		++	-		$\vdash$	-[]		+	$\vdash$	H	+	+	$\vdash$			+	+		$\vdash$	$\dashv$	+	+	+	$\vdash$	-	$\vdash$	$\dashv$	+
Brine		++	-[		$\vdash$	-[]				-		+				+	+	$\vdash$	Н	$\dashv$	+		+	+	-	$\vdash$	$\dashv$	+
Feed water					$\forall$			-	-	ď		+-	-			+	+	$\vdash$			+	+-	+	+		$\vdash$	$\dashv$	+
Dipping paints		+-+	-		$\forall$			+					$\vdash$			+	+			_	-	$\pm$	+	$\vdash$		$\sqcap$	$\dashv$	+
Drinking water		$\dagger \dagger$			$\sqcap$					_		_				$\top$	$\top$							$\vdash$		$\sqcap$	$\dashv$	$\dashv$
Thermal oil		$\top$								_		-	$\sqcap$				ı			$\rightarrow$		$\rightarrow$		$\Box$		$\sqcap$	$\dashv$	$\top$
Hot water										ı																		

		Multi Eco Multi Eco-Pro	Multi Eco-Top	N oxl	Ixo Pro Filtra N	III III II	KSB Delta Macro	KSB Delta Solo/Basic Compact	KSB Delta Basic	KSB Delta Primo	KSB Delta Solo	1ya-solo D	Hya-Solo D FL	Hya-Solo D FL Compact	Hya-Duo D FL Compact	Hya-Duo D FL-R	Surpress Feu SFE	Safety Boost													
Waste water with faeces			_					_							_	_	0,	, 										Т			$\overline{}$
Waste water with faces	m	+	+		+	em	$\vdash$	Н	$\vdash$	+	+	+	+	+	+	+				$\dashv$	-	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	+	+		+	+
Aggressive liquids	D	+	+		+	syst		Н	H	$\dashv$	+	+	+	+	+	+			H	$\dashv$	-	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	+	+		+	+
Inorganic liquids	sdwnd lood	$\top$			+	te		Н		1	+	+								$\neg$		$\dashv$		$\dashv$							+
Activated sludge	ng F				$\top$	Pressure booster systems		П		$\dashv$	$\top$	$\top$				T						一		寸						1	+
Brackish water	iE					e b					$\top$	T																			$\top$
Service water	win					nssa						T																			$\top$
Distillate	t/s					Pre																									
Slurries	run																														
Explosive liquids	Domestic water supply systems with automatic control unit / swimming							Ш			1	$\perp$							Ш		$\Box$	_[		_							$\perp$
Digested sludge	ont	$\perp$	_					Ш		_	$\perp$	$\perp$	_	_	1	_	_	_	Щ		_	4	$\perp$	_	_		_	1		$\perp$	$\perp$
Solids (ore, sand, gravel, ash)	tic	4	_	$\sqcup$	_			Ш		4	$\perp$	$\perp$	_	_	$\perp$	_			Ш		_	4	$\downarrow$	4	4	$\perp$	$\perp$	_	$\sqcup$	_	$\perp$
Flammable liquids	ma	$\perp$	$\perp$	$\sqcup$	$\perp$		L	$\sqcup$	$\square$	$\perp$	$\perp$	$\downarrow$	4	$\bot$	$\perp$	₩	_	_	Щ	_	4	4	$\dashv$	4	4	$\perp$	4	$\perp$	$\sqcup$	4	+
River, lake and groundwater	nto	+	$\vdash$	$\vdash \vdash$	+		_	$\vdash$	-	+	+	+	+	+	+	$\vdash$	-	_	Н	_	4	4	$\dashv$	_	+	+	+	+	$\vdash$	+	+
Liquefied gas	th a	+	+		+	-	$\vdash$	$\vdash$	$\vdash$	+	+	+	+	+	+	+				$\dashv$	_	$\dashv$	$\dashv$	$\dashv$	+	+	-	+		+	+
Food and beverages	<u>×</u>	+	+		+	-	H	Н	$\vdash$	+	+	+	+	+	+	$\vdash$	H	-	Н	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	-	+		+	+
Gas-containing liquids Gas turbine fuels	ems	+	+	$\vdash$	+		$\vdash$	Н	$\vdash$	+	+	+	+	+	+	╁				$\dashv$	-	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	+	+		+	+
Filtered water	syst	+	+		+	+	$\vdash$	Н	$\vdash$	+	+	+	+	+	+	+				$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	+	+		+	+
Geothermal water	Sic	+	+		+	-	$\vdash$	Н	$\vdash$	+	+	+	+	+	+	+	-		H	$\dashv$	-	$\dashv$	$\dashv$	$\dashv$	+	+	+	+		+	+
Harmful liquids	dns	+	+	$\vdash$	+		$\vdash$	$\vdash$	$\vdash$	+	+	+	+	+	+	+				$\dashv$	-	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+		+		+	+
Toxic liquids	ter :	+	+		+			Н	H	$\dashv$	+	+	+	+	+	+				$\dashv$	_	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	_	+		+	+
High-temperature hot water	wa	$\top$	+		$\top$			Н	$\vdash$	$\top$	$\top$	$^{\dagger}$	$\top$	$\top$	$\top$	$^{+}$	Н		П	$\dashv$	$\neg$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\top$	$\top$	$\top$		$\top$	+
Heating water	stic	$\top$			$\top$			П		T	$\top$	$\top$	T	T	$\top$	T						一		$\exists$	T			$\top$		T	+
Highly aggressive liquids	me							П														T									$\top$
Industrial service water	۵																														
Condensate																															
Corrosive liquids																															$\perp$
Valuable liquids			$\perp$		$\perp$			Ш		_	$\perp$	4	_	$\perp$	$\perp$	_						_	_	4	4	$\perp$		$\perp$		$\perp$	
Fuels		4	$\perp$		$\perp$		L	Ш		_	4	4	4	$\perp$	$\perp$	$\perp$				_		_	_	4	4	4		$\perp$		$\perp$	$\perp$
Coolants		_	_		_			Ш		_	_	_	_	_	_	╄				_	_	_	_	_	4	_	_	$\perp$		_	$\perp$
Cooling lubricant	-	_	_		$\perp$	4	L	Ш		_	$\perp$	$\downarrow$	_	$\perp$	$\perp$	╀				_	_	_	_	4	4	$\perp$	_	+		_	₩.
Cooling water		+	+		+	_	L	Н	$\vdash$	$\dashv$	+	+	-	+	+	$\vdash$	L		Ш	$\dashv$	-	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	_	+		+	+
Volatile liquids		+	+	$\vdash$	+		$\vdash$	$\vdash$		+	+	1	_	+-	-	+	L	-	Н	-	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	+	-	+	$\vdash$	+	+
Fire-fighting water Solvents		+	+	$\vdash$	+		$\vdash$	$\vdash$	$\vdash$	+	+	+	4	1		-	-		Н	$\dashv$	$\dashv$	-	$\dashv$	$\dashv$	+	+	+	+	$\vdash$	+	+
Seawater		+	+	$\vdash$	+			$\vdash$	$\vdash$	+	+	+	+	+	+	$\vdash$	$\vdash$		Н	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	+	+	+	$\vdash$	+	+
Oils		+	+	$\vdash$	+			$\vdash$	$\dashv$	+	+	+	+	+	+	+			Н	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	+	+	+	$\vdash$	+	+
Organic liquids		+	+	$\vdash$	+			$\vdash$	$\vdash$	$\dashv$	+	+	+	+	+	+	$\vdash$		H	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	+	+	+	$\vdash$	+	+
Pharmaceutical fluids		+	+	$\vdash$	+			$\forall$	$\vdash$	$\dashv$	+	+	+	+	+	+			H	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+	$\top$	+	$\vdash$	$\top$	+
Polymerising liquids		+	+	$\vdash$	+			$\forall$	$\vdash$	$\dashv$	+	+	+	+	$\top$	$\top$		Ť	Н	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	+		$\top$	$\vdash$	+	+
Rainwater / stormwater		$\top$	$\top$	$\sqcap$	$\top$								$\top$	$\dagger$	$\top$	$\top$			П	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\dashv$	$\top$	$\top$	$\vdash$	$\top$	+
Cleaning agents		$\top$																													
Raw sludge																					J										
Lubricants												I																			
Grey water				Щ				Ш																							
Swimming pool water							•				•	•							Ш		$\Box$	_[	_	_[							$\perp$
Brine		$\perp$	_	$\sqcup$	$\perp$			Ш		$\perp$	_	4	$\perp$	_	$\perp$	_			Ш		_	4	_	4	_	$\perp$	_	$\perp$	$\sqcup$	_	$\perp$
Feed water		$\perp$	-	$\sqcup$	$\perp$		_	$\sqcup$		_	$\perp$	$\perp$	_	_	+	1			Ш		$\downarrow$	4	$\dashv$	4	4	$\perp$	_	1		4	+
Dipping paints		_	+	$\vdash \vdash$	+		L			_	_	+	+	+	+	$\vdash$	-	L	Н	_	$\dashv$	4	$\dashv$	4	+	+	+	+	$\vdash$	+	+
Drinking water		-   -		$\vdash$	+		Ŀ			<u> </u>		+	+	+	+	+			Н	_	-	$\dashv$	+	$\dashv$	+	+	+	+	$\vdash$	+	+
Thermal oil		+	+	$\vdash$	+	-	$\vdash$	$\vdash$	$\vdash$	+	+	+	+	+	+	+		-	Н	-	$\dashv$	-	$\dashv$	4	+	+	+	+	$\vdash$	+	+
Hot water Wash water		+	+	$\vdash$	+		$\vdash$	$\vdash$	$\vdash$	+	+	+	+	+	+	$\vdash$	$\vdash$	-	Н	$\dashv$	$\dashv$	$\dashv$	+	$\dashv$	+	+	+	+	$\vdash$	+	+
vvdSii Watei																			ш												

	AmaDrainor 3	AmaDrainer 4 / 5	AmaDrainer 80/100	Ama-Porter F / S	Rotex	MK / MKY	Amaclean	AmaDrainer-Box Mini	AmaDrainer-Box	Evamatic-Box N	mini-Compacta	Compacta	CK 800 Pump Station	CK 1000 Pump Station	Ama-Porter CK Pump Station	SRL	SRA		Amarex	Amarex N	Amarex KRT											
Waste water with faeces	bS					2	2											bs														
Waste water without faeces	틸						<b>8</b> ■											m <sub>n</sub>					П									
Aggressive liquids	r p	Т			П	■ {	STG											r D		$\neg$			П			Т						$\top$
Inorganic liquids	/ate					2												otc														$\top$
Activated sludge	e					2	od :											Submersible motor pumps														
Brackish water	vast					2	age											ldis														
Service water	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					<b>=</b>	ack											ner														
Distillate	mps					2	<u>م</u>											d														
Slurries	l nd					1												S					Т									
Explosive liquids	Drainage pumps / waste water pumps				T		Litting units / package pump stations													J		$\Box$		$oldsymbol{\bot}$	$\bot$						$\bot$	
Digested sludge	ain					2.																										
Solids (ore, sand, gravel, ash)	۵					-																	$oxed{T}$	$\perp$		I	I	$\perp$				
Flammable liquids																			J	J			I	I	I	I	I	I				
River, lake and groundwater	•																															
Liquefied gas																																
Food and beverages																										$\perp$						$\perp$
Gas-containing liquids							L																									$\perp$
Gas turbine fuels																Ш																$\perp$
Filtered water		$\perp$		Ш	_		L													_		_	$\downarrow$	4						Ш		$\perp$
Geothermal water																																$\perp$
Harmful liquids		$\perp$	$\perp$		_			$\perp$	$\perp$							Ш			_	_		4	$\perp$		$\perp$	$\perp$	$\perp$			Ш	$\perp$	
Toxic liquids		$\perp$	╄	Ш	_	4	L	+	╄	_	L			_		Ш			_	4	4	_	$\downarrow$	_	$\perp$	$\perp$	4	_	_	Щ	4	$\perp$
High-temperature hot water		$\perp$	_		_		L	+	$\perp$							Ш		-	_	$\dashv$		_	4	_	$\perp$	$\perp$	$\perp$	_	-	$\sqcup$	$\perp$	$\bot$
Heating water		+	╀-	Ш	_	4	L	$\perp$	$\perp$	_	<u> </u>	L				Ш	Ш	-	_	_	4	4	$\perp$	$\perp$	+	+	$\perp$	+	+	$\sqcup$	$\perp$	+
Highly aggressive liquids	_	+	╀	$\vdash$	$\dashv$	4	L	+	+	-	L	_		_		Ш		-	_	$\dashv$	4	_	+	+	+	+	+	+	+	$\vdash$	+	+
Industrial service water	<u> </u>	-	-		$\rightarrow$		H	+	+	-						Ш	-	-	-		-	$\dashv$	+	+	+	+	+	+	+	$\vdash \vdash$	+	+
Condensate	-	+	$\vdash$	Н	$\dashv$	-	H	+	+	-	•					Ш	-	-	4	-	_	4	+	+	+	+	+	+	-	$\vdash$	+	+
Corrosive liquids		+	╀	$\vdash$	+	-	H	+	+	-	H	_				Н	-	-	-	$\dashv$	-	-	+	+	+	+	+	+	+	$\vdash$	+	+
Valuable liquids		+	$\vdash$		$\dashv$	-	$\vdash$	+	+	-	<u> </u>	_				Н	-	-	$\dashv$	$\dashv$	$\dashv$	+	+	+	+	+	+	+	+	$\vdash$	+	+
Fuels		+	╀	$\vdash$	$\dashv$	-	H	+	+	-	H	_		-		$\vdash$	-	-	-	$\dashv$	$\dashv$	-	+	+	+	+	+	+	+	$\vdash$	+	+
Coolants	_	+	$\vdash$	$\vdash$	$\dashv$	-	H	+	+	-	-	_		-		Н	-	-	$\dashv$	$\dashv$	$\dashv$	+	+	+	+	+	+	+	+	$\vdash$	+	+
Cooling lubricant Cooling water		+	+		$\dashv$	-		+	+	-	_	_				Н	-	-	_		_	+	+	+	+	+	+	+	+	$\vdash$	+	+
	_	+	$\vdash$	$\vdash$	$\dashv$	-	H	+	+	-	H	_		H		Н	-	-	-	-	-	+	+	+	+	+	+	+	+	$\vdash$	+	+
Volatile liquids		+	+		-	-		+	+	-						Н	-	-	-	$\dashv$	-	+	+	+	-	+	+	+	+	$\vdash$	+	+
Fire-fighting water Solvents		+	+	$\vdash$	+	-		+	+	+	H	_		_	H	$\vdash$	$\vdash$		$\dashv$	$\dashv$	+	+	+	+	+	+	+	+	+	$\vdash$	+	+
Seawater		+	+	$\vdash$	$\dashv$			+	+	$\vdash$		F	H	$\vdash$	H	$\vdash$	$\vdash$		_		_	+	+	+	+	+	+	+	+	$\vdash$	+	+
Oils		+	+	$\vdash$	+			+	+	-					$\vdash$	$\vdash$	$\vdash$		-	-	-	+	+	+	+	+	+	+	+	$\vdash$	+	+
Organic liquids		+	+	$\vdash$	$\dashv$	-		+	+	+	$\vdash$	<u> </u>	H	$\vdash$	$\vdash$	$\vdash$	$\vdash$		$\dashv$	$\dashv$	+	+	+	+	+	+	+	+	+	$\vdash$	+	+
Pharmaceutical fluids		+	+	$\vdash$	+			+	+	$\vdash$	$\vdash$	-	H	$\vdash$	Н	$\vdash$	$\vdash$		$\dashv$	$\dashv$	+	+	+	+	+	+	+	+	+	$\vdash$	+	+
Polymerising liquids		+	+	$\vdash$	$\dashv$			+	+	$\vdash$						$\vdash$	$\vdash$		$\dashv$	$\dashv$	$\dashv$	+	+	+	+	+	+	+	+	$\vdash \vdash$	+	+
Rainwater / stormwater		+	+	$\vdash$	$\dashv$			+	+	$\vdash$		$\vdash$	Н		Н	Н	$\vdash$		$\dashv$	$\dashv$		$\dashv$	+	+	+	+	+	+	+	$\vdash$	+	+
Cleaning agents		+	+	$\vdash$	$\dashv$			+	+	+	$\vdash$	-		$\vdash$	Н	$\vdash$			+	$\dashv$	_	+	+	+	+	+	+	+	+	$\vdash$	+	+
Raw sludge		+	+	$\vdash$	$\dashv$			+	+	+	$\vdash$	$\vdash$				$\vdash$	$\vdash$				-	+	+	+	+	+	+	+	+	$\vdash$	+	+
Lubricants		+	+	$\Box$	$\dashv$	-		+	+		$\vdash$	$\vdash$				Н	$\vdash$	-	_	_	_	$\dashv$	+	+	+	+	+	+	+	$\vdash$	+	+
Grey water															•							+	+	+	+	+	+	+	$\top$	$\vdash$	+	+
Swimming pool water		+-	╁		_			+	┿	1	ī	-	_	Ē	_	$\vdash$			7	_	$\exists$	$\dashv$	+	+	+	+	+	$\top$	+	$\vdash$	+	+
Brine		$\top$	+	$\Box$	$\dashv$			$\top$	+	$\vdash$	Ē	Ē	П		П	Н			7	$\dashv$		$\dashv$	$\dagger$	+	+	$^{\dagger}$	+	$\top$	$\top$	$\vdash$	+	+
Feed water		$\top$	$\top$	П	$\dashv$			$\top$	$\top$	$\vdash$					П	П			$\dashv$	$\dashv$	$\dashv$	$\top$	$\dagger$	$\dagger$	$\top$	$\dagger$	$\top$	$\dagger$	$\top$	$\vdash$	$\top$	+
Dipping paints		$\top$	$\top$	$\Box$	$\dashv$			$\top$	$\top$							П			$\dashv$	$\dashv$	$\dashv$	$\top$	$\dagger$	$\dagger$	$\top$	$\dagger$	$\top$	$\top$	$\top$	$\vdash$	$\top$	$\top$
Drinking water		$\top$	1	П	$\dashv$				1						П	$\Box$			$\dashv$	$\exists$		$\neg$	$\uparrow$	$\uparrow$	$\top$	$\dagger$	$\top$			$\sqcap$	$\top$	$\top$
Thermal oil		1	T	П	$\dashv$			1	1						П	П			$\dashv$	$\dashv$	$\dashv$	$\top$	$\dagger$	$\uparrow$	$\top$	$\top$	$\top$	$\top$	Ť	$\sqcap$	$\top$	
Hot water		1		П	$\neg$			1								П	П			$\dashv$	1	$\dashv$	$\uparrow$	$\uparrow$	$\top$	$\uparrow$	$\top$	$\top$		$\sqcap$	$\top$	$\top$
Wash water																								1								

	7 2000	Amacan P	Amacan S		Amamix		Amaline		_	Sewatec SPN	_	_	KWP-Bloc	WBC	LSA	M-CC-M	LCC-R	TBC	FGD	MHD	ГНБ	MDX	ZW	HVF	DWD	IDW		Etaprime L	Etaprime B	AU AU	AU Monobloc	
Waste water with faeces Waste water without faeces	in discharge tubes	+		units		$\rightarrow$	H	luids	-	-	-	_		<u> </u>	+		H		-	+		_		-	+	$\dashv$	Self-priming pumps	+	+			+
Aggressive liquids	le tr	+		J gr				<del>-</del>	-		_							$\vdash$		+	$\vdash$		$\dashv$	$\dashv$	+	$\dashv$	nd I	•	-	15	_	
Inorganic liquids	Jarç	$\top$		anii	П	Н	$\exists$	Pumps for solids-laden	$\neg$	$\top$	Ť				╁		Ē			$\top$					$\dagger$	7	ning	+	+	+=	Ħ	+
Activated sludge	disc	•		cle	П	П	╗	-spi	•	1	•		7	7											T		prin	$\top$			T	
Brackish water	.⊑			tank				los .																			el <del>-</del>	- 1				
Service water	∎ Inps			rs / .	Ш	Ш	_	for	_	$\perp$	1		•		_		Ш		$\perp$	$\perp$	Ш			4	4		ا	<b>-</b>	-	$\perp$	$\perp$	$\perp$
Distillate	nd_	$\perp$		ato	Ш		_	mps	_	$\perp$	$\perp$	4		L	$\perp$	_	Ш	$\perp$	_	$\perp$				4	$\perp$	4		$\perp$	$\perp$	$\bot$	$\perp$	$\perp$
Slurries	ible	+		agit			$\dashv$	Pu	_	+	- -	4		4		-								•	-		-	+	+	+	+	$\vdash$
Explosive liquids Digested sludge	ners	+	$\vdash$	rs/	Н	$\vdash$	$\dashv$			+.	+	+		-	+	$\vdash$	H	$\vdash$	+	+	$\vdash$	_	$\dashv$	$\dashv$	+	-		+	+	+	+	+
Solids (ore, sand, gravel, ash)	Submersible pumps	+	$\vdash$	Mixers / agitators / tank cleaning	Н	$\vdash$	$\dashv$		-	+	_			H								_				-		+	+	+	+	+
Flammable liquids	S	+		_	Н	$\vdash$	$\exists$	-	$\dashv$	+	Η,	+	_	F	+	┢	⊢		+	+-	⊢	_		_		-		+	+	+	+	+
River, lake and groundwater					П	П		-					-	Г			П							$\exists$	$\top$				•			$\top$
Liquefied gas											T														T			$\top$			T	
Food and beverages											I		•												$\Box$			$\perp$	$\perp$	$\perp$	$\perp$	
Gas-containing liquids							_				1	1		L						1				_	4			$\perp$	$\perp$	$\perp$	$\perp$	$\perp$
Gas turbine fuels		+	-		Н		4	-	_	+	$\perp$	$\perp$	4	L	+				_	$\perp$				4	+	4	-	+	+	+	+	$\perp$
Filtered water		+	$\vdash$	-	Н	H	$\dashv$	-	-	+	+	+	-	H	+	-	Н	$\vdash$	+	+	$\vdash$	_	$\dashv$	$\dashv$	+	-	H	+	+•	•	+	+
Geothermal water Harmful liquids		+	$\vdash$		Н	$\vdash$	$\dashv$	-	$\dashv$	+	+	+	-	H	+			$\vdash$	+	+	$\vdash$	_		$\dashv$	+	$\dashv$	-	+	+	+	+	+
Toxic liquids		+			Н	H	$\dashv$	-	$\dashv$	+	+	+		╟	+		Н	$\vdash$	+	+	$\vdash$	_	$\vdash$	$\dashv$	+	$\dashv$	-	+	+	+	+	+
High-temperature hot water					Н	$\Box$	$\exists$	-	$\dashv$	+	$^{\dagger}$	$^{+}$		H			Н	$\vdash$		+	Н		$\dashv$	$\dashv$	$^{\dagger}$	7		+	+	+	+	+
Heating water		$\top$			П	П	$\exists$	-			$\top$									$\top$				$\exists$	$\top$			$\top$	$\top$	$\top$	$\top$	$\top$
Highly aggressive liquids																																
Industrial service water		•			Ш	Ш	_	_	$\perp$	$\perp$	1		•	L	$\perp$				$\perp$	$\perp$				4	4			$\perp$	$\perp$	$\perp$	$\perp$	$\perp$
Condensate	-	$\perp$			Ш		4	-	_	$\perp$	4	4		L	_	-			$\perp$	$\perp$				4	4	4		- 1	-	$\bot$	$\perp$	$\perp$
Corrosive liquids	-	+			Н		-		_	+	4	4	-	L	+	-		$\vdash$	-	4	$\vdash$	_	$\Box$	-	+	4	-	+	+	+	+	$\perp$
Valuable liquids Fuels	-	+	-		Н	$\vdash \vdash$	$\dashv$	-	$\dashv$	+	+	+		-	+	$\vdash$		$\vdash$	+	+	$\vdash$	_		$\dashv$	+	$\dashv$	-	+	+	+	+	+
Coolants		+	$\vdash$		Н	H	$\dashv$		$\dashv$	+	+	+	-	H	+	$\vdash$	Н	$\vdash$	+	+	$\vdash$	_	$\dashv$	$\dashv$	+	$\dashv$	-	+	+	+	+	+
Cooling lubricant		+			Н	$\vdash$	$\dashv$	-	+	+	+	+	-	H	+		Н	$\vdash$		+	$\vdash$		$\dashv$	$\dashv$	+	-		+	+	+	+	+
Cooling water		+			Н		$\exists$	-		$\dashv$	1			H	+					+		_		$\dashv$	$\dagger$	$\exists$		- 1				1
Volatile liquids					П	П	$\neg$			$\top$	$\top$	$\top$		Г			П			T				T	$\top$			$\top$	$\top$	$\top$	T	$\top$
Fire-fighting water																																
Solvents		$\perp$			П				$\Box$	T	Ţ	T												$\Box$	Ţ			$\perp$	$\perp$	$\perp$	L	$\perp$
Seawater		+	_		Ш		_		_	_	1	•			_	-	Щ	$\sqcup$	_	1				_	4	_	_			-	▮■	4
Oils		+	-		Н	$\vdash$	4		-	+	+	+		_	+	-	H	$\vdash$	-	+		_	$\square$	-	+	-		- 1	•	+	+	+
Organic liquids Pharmaceutical fluids		+	$\vdash$		Н	$\vdash$	$\dashv$		+	+	+	+	-[	-	+	+	H	+	+	+	$\vdash$		$\dashv$	+	+	-	-	+	+	+	+	+
Polymerising liquids		+	$\vdash$		Н	$\vdash$	$\dashv$		+	+	+	+		-	+	+	$\vdash$	$\dashv$	+	+			$\dashv$	+	+	-	-	+	+	+	+	+
Rainwater / stormwater			•		Н	$\vdash$	$\exists$			- 1	1	$\dagger$			+	$\vdash$	Н	$\vdash$		+	$\vdash$		$\dashv$	$\dashv$	$\dagger$			+	+	+	+	+
Cleaning agents					П						1														$\top$			•	-		$\top$	
Raw sludge											•				L														工	$\perp$	I	$\perp$
Lubricants					Ш						1	_					$\Box$				$\Box$		Ш	_	1			$\perp$	$\perp$	$\perp$	$\perp$	$\perp$
Grey water		$\perp$	-		Ш		_			- 1	•   •	•	-		+	-			•	-		_		_	$\perp$	_		$\perp$	$\perp$	-		4
Swimming pool water		+	-		Н	$\vdash$	$\dashv$		+	+	4.	_		-	+	-	$\vdash$	$\vdash$	+	+	$\vdash$	_	$\dashv$	4	+	_	_		-	+	+	+
Brine Feed water		+	$\vdash$		Н	$\vdash \vdash$	$\dashv$		+	+	+	4			+	$\vdash$	H	$\vdash$	+	+	$\vdash$	_	$\dashv$	$\dashv$	+	-		- 1		-	+	+
Dipping paints		+	$\vdash$		H	$\vdash$	$\dashv$		$\dashv$	+	+	+			+	$\vdash$	Н	$\vdash$	+	+		_	$\dashv$	$\dashv$	+	-		+	+	+	+	+
Drinking water					Н	$\vdash$	$\dashv$		$\dashv$	+	+	+			$^{\dagger}$	$\vdash$	П	$\vdash$		$\top$	Н		$\dashv$	$\dashv$	$^{+}$				_	+	$\dagger$	+
Thermal oil		T			П	$\sqcap$	$\exists$		$\dashv$	$\top$	$\top$	$\top$		Ī	$\top$		П	$\sqcap$	T	1	П		$\Box$		$\top$			+	$\top$		$\top$	$\top$
Hot water											ļ	•																		•	I	
Wash water			1			Ιſ			- [	- [	- 1					1							ı		- [			- [	- 1			

	UPA C 100 FF	UPA C 100 EN	UPA C 150	UPA 200, UPA 250	UPA 300, UPA 350	UPA 400 - UPA 1100	UPA D	0rA 3 200	B Pump		Comeo	Movitec H(S)I	Movitec	Movinec vol		Omega	RDLO	RDLP		Vita cout With cout Bloc	Vitabrime	Vitastade	Vitalobe		CHTA / CHTC / CHTD	HGB / HGC / HGD	HGI	HGM	LUV / LUVA	WKTB	
Waste water with faeces	bs							ž											es			Τ					П	Т	Т	Т	Т
Waste water without faeces	Submersible borehole pumps							nimba	5	High-pressure pumps					Axially split pumps				industries					lan				$\perp$			
Aggressive liquids	ер							٥	2	Э					it p				Bu					al is				$\Box$			
Inorganic liquids	eho						_	Vertical turbine		nssa	_		_	$\perp$	ds /	_	_			$\perp$	4	$\perp$	$\perp$	ion	Ш	$\square$	_	$\perp$	$\perp$	$\perp$	$\perp$
Activated sludge	bor	+	-		_	_	4	_  <u>₹</u>	_	-pre	_	4	4	$\perp$	_ <u> </u>	<u> </u>	╄	Ш	<u>ğ</u>	$\perp$	_	+	+	/ent	Ш	$\dashv$	$\dashv$	+	+	╄	╄
Brackish water	ole -	_	_					<u>;</u>		igh	_	$\dashv$	-				-		Jace	+	+	+	+	lon	$\square$	$\vdash$	$\dashv$	+	+	╀	╀
Service water Distillate	ersib	-	-		-	- 1		_ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			-				_	Ŀ			arı	+	+	+	+	ouo	$\vdash$	$\dashv$	$\dashv$	+	+	╀	╀
Slurries	l l l	+	$\vdash$		$\dashv$	_	+	-	-	-	$\dashv$	-	-		-	$\vdash$	$\vdash$	Н	힐	+	+	+	+	tati	$\vdash$	$\vdash$	$\dashv$	+	+	╁	$\vdash$
Explosive liquids	S	+	$\vdash$	$\vdash$	$\dashv$	$\dashv$	+				$\dashv$	$\dashv$	+	+				$\vdash$	beverage and pharmaceutical	+	+	+	+	Pumps for power station conventional islands	$\vdash$		$\dashv$	+	+	+	+
Digested sludge			$\vdash$	$\Box$	$\dashv$	$\dashv$	+				$\dashv$	$\dashv$	+	+			T	$\forall$	age	+	$^{+}$	$^{\dagger}$	$\dagger$	MOC	$\vdash$	_	$\dashv$	+	+	+	+
Solids (ore, sand, gravel, ash)			T		$\dashv$	$\dashv$	$\dagger$				$\dashv$	$\dashv$	$\top$	$\top$			T	П	ever	$\dagger$	$^{\dagger}$	$\dagger$	$\dagger$	or		$\neg$	$\dashv$	$\top$	$\top$	$\vdash$	$\vdash$
Flammable liquids																				Ţ	T			1 Squ							Γ
River, lake and groundwater			•										1		_				for the food,	I	I	T		Jum						$\Box$	
Liquefied gas		$\perp$			_		$\perp$				_	$\perp$	4				$\perp$	Ш	he	$\perp$	$\perp$	$\perp$	$\perp$		Ш	$\square$	_	_	$\perp$	$\perp$	$\perp$
Food and beverages		$\perp$	_		_	_	4	_	_		_	4	4	$\perp$		L	<u> </u>	Ш	or t			1		4	Ш	$\dashv$	$\dashv$	$\perp$	$\perp$	╄	╄
Gas-containing liquids	-	-	_		-	_	_	_	_	-	_	_	_	+	4	L	╄	Ш	bs [	+	_	+	+		Ш		$\dashv$	+	+	╄	$\vdash$
Gas turbine fuels Filtered water	-	+	-		$\dashv$	$\dashv$	+	-	H		$\dashv$	$\dashv$	+	+_	_	$\vdash$	╀	$\vdash$	Hygienic pumps	+	+	+	+	-	$\vdash \vdash$		$\dashv$	+	+	╀	$\vdash$
Geothermal water	$\vdash$	+	$\vdash$	H	$\dashv$	-	-	-	_	-	$\dashv$	$\dashv$	+			$\vdash$	╁	Н	.일  -	+	+	+	+	-	$\vdash$	$\dashv$	$\dashv$	+	+	⊬	⊬
Harmful liquids		+	$\vdash$		$\dashv$	$\dashv$	-	_		-	$\dashv$	$\dashv$	$\dashv$	╅	-	H	$\vdash$	Н	gie_	+	+	+	+		$\vdash$	$\dashv$	$\dashv$	+	+	+	+
Toxic liquids		+			$\dashv$	$\dashv$	+		H		$\dashv$	$\dashv$	$\dashv$	+			$\vdash$	Н	₹	+	+	$^{+}$	+		H	$\dashv$	$\dashv$	+	+	+	+
High-temperature hot water		$\top$		$\Box$	$\dashv$	$\top$	$\top$				$\dashv$							П		$^{\dagger}$	$\top$	$^{\dagger}$	$^{\dagger}$							+	$\top$
Heating water		T																П		$\top$	$\top$	T	$\top$		П	$\Box$	$\Box$	$\top$	$\top$	$\top$	$\top$
Highly aggressive liquids																															
Industrial service water														•			-	Ш		$\perp$	$\perp$					Ш	_	$\perp$	$\perp$	Ļ	Ļ
Condensate		_			_	_	_	_	_		_	•	<u> </u>			•	-	◾		$\perp$	_	$\perp$	$\perp$						1	-	╄
Corrosive liquids	$\vdash$	+	_		_		_	_	_	_	_	4	-	+	_	$\vdash$	-	Ш	_	+	+	+	+	_	$\square$	$\vdash$	$\dashv$	+	+	╀	╀
Valuable liquids Fuels	$\vdash$	-	-		-	-	-	_		-	-	$\dashv$	-	-	_	$\vdash$	╁	Н		+	+	+	+	-	$\vdash \vdash$	$\vdash$	$\dashv$	+	+	+	+
Coolants	-	+	$\vdash$		$\dashv$	$\dashv$	+	-	-	-	$\dashv$	$\dashv$	+	┦	-	$\vdash$	$\vdash$	$\vdash$	-	+	+	+	+	-	$\vdash$	$\dashv$	$\dashv$	+	+	╁	$\vdash$
Cooling lubricant					-		+	-	$\vdash$	-	$\dashv$		٦,	•	-		$\vdash$	$\vdash$	-	+	+	+	+		$\vdash$	$\dashv$	$\dashv$	+	+	+	+
Cooling water													_							+	+	+	+		$\vdash$		$\dashv$	+	+	+	+
Volatile liquids		$\top$	Т	П	$\Box$		$\top$				$\dashv$	$\dashv$	$\top$	$\top$			$\vdash$	П		$\top$	$\top$	$\top$	T			$\Box$	$\neg$	$\top$	$\top$	$\top$	$\top$
Fire-fighting water																					j	İ	İ						I	Γ	Γ
Solvents					Ţ						Ţ	J	Ţ							I	Ţ	I	$\perp$			J	Ţ	$\perp$	T	$\Box$	Ĺ
Seawater		_	-		•		•				_		4			Ŀ				$\perp$	$\perp$	$\perp$	_		Ш	$\sqcup$	4	$\perp$	$\perp$	$\perp$	$\perp$
Oils		1	_		4	_	+				_	4	$\perp$		_	_	_	$\sqcup$		$\perp$	+	$\perp$	$\perp$		$\sqcup$	$\dashv$	4	$\perp$	+	$\perp$	$\perp$
Organic liquids		+	$\vdash$	$\square$	$\dashv$	_	+				$\dashv$	$\dashv$	+	-	-		$\vdash$	$\vdash$	-	_	+	+	+		$\square$	$\dashv$	$\dashv$	+	+	$\vdash$	$\vdash$
Pharmaceutical fluids Polymerising liquids		+	$\vdash$	$\vdash$	$\dashv$	+	+				$\dashv$	$\dashv$	+	+		-	$\vdash$	$\vdash$			•	1	1	4	$\vdash$	$\dashv$	$\dashv$	+	+	+	+
Rainwater / stormwater		+	$\vdash$	$\vdash$	$\dashv$	+	+				$\dashv$	$\dashv$	+	+		H	$\vdash$	$\vdash$	-	+	+	+	+		$\vdash$	$\dashv$	$\dashv$	+	+	+	+
Cleaning agents		+	$\vdash$		$\dashv$	$\dashv$	+				$\dashv$	$\dashv$	+	1			+	$\vdash$		+	+	+	+		H	$\dashv$	$\dashv$	+	+	+	+
Raw sludge		+	+		$\dashv$	+	+				$\dashv$	$\dashv$	+	+				$\forall$		+	+	$^{+}$	+		H	$\dashv$	$\dashv$	+	+	+	+
Lubricants		$\top$	T	$\Box$	$\dashv$	$\top$	$\dagger$				$\dashv$	$\dashv$	T <sub>1</sub>					П		$\dagger$	$\dagger$	$\dagger$	$\dagger$		$\Box$	$\dashv$	$\dashv$	+	+	$\top$	$\vdash$
Grey water																														Γ	I
Swimming pool water							I													I	I	I	I					$\perp$		$\Box$	F
Brine			Ĺ	Щ	_[		Ţ				Ţ	[	$\bot$			L	Ĺ	П		$\perp$	_	Ţ	L		Ш	$\square$	Ţ	$\perp$	$\perp$	Ļ	Ļ
Feed water		_	_		_	_	_				$\dashv$	_	$\perp$					$\sqcup$		$\perp$	_	1	1				_	-	•	$\perp$	$\perp$
Dipping paints		+	L		_	_	+		Ŀ		_	_	_	_		L	<del> </del>			_	+	+	+		$\sqcup$	$\dashv$	$\dashv$	+	+	$\vdash$	$\vdash$
Drinking water Thermal oil	•	-	-			- 1			-		-	-	- 1		4	H				-   1		1		1	$\vdash \vdash$	$\dashv$	$\dashv$	+	+	$\vdash$	$\vdash$
Hot water		+	$\vdash$	$\vdash$	$\dashv$	+	+		-		$\dashv$	$\dashv$	+	-		H		$\vdash$	-	+	+	+	+		$\vdash \vdash$	$\dashv$	$\dashv$	+	+	$\vdash$	$\vdash$
Wash water			$\vdash$	$\vdash$	$\dashv$	+	+							╬		F	-	$\vdash$		+	+	+	+		$\vdash$	$\dashv$	$\dashv$	+	+	$\vdash$	$\vdash$
			-																							_	_				

	SEZ / SEZT / PHZ / PNZ	SNW / PNW	Beveron	SPY		RER	RSR	RUV	PSR	RHD	RHM	RVM	RHR	RVR	RVT		RPH-RO	Multrec-KO	RC / RCV		EDS	DU / EU	7, CD C.: D.: CD C.: D.: CD C.: D.: CD C.: D.: CD C.: D.: CD CD C.: D.: CD CD CD CD CD CD CD CD CD CD CD CD CD	KSB UMA-S		PumpDrive 2/PumpDrive 2 Eco	PumpDrive R		PumpMeter	KSB Guard	KSB Leakage Sensor
Waste water with faeces	ds				ns											sis		Š	3	ms			sə.		ms			sis			$\Box$
Waste water without faeces	islands				stations			4					Ш			by reverse osmosis	_	Docition displacement	_	Fire-fighting systems			Drives	•	Variable speed systems			and diagnosis	$\Box$		$\perp$
Aggressive liquids	a is				r St											9 O S		+	_	gsy					1 5			diac			
Inorganic liquids	station conventional	_		Ш	power	Ш	_	_	_	$\perp$	$\perp$	_			_	/ers	_	2		ti		_		•	Je e			p	$\dashv$		
Activated sludge	/ent	$\perp$	_	Ш	r po	$\sqcup$	_	_	_	$\perp$	$\perp$	_	Ш		_	ē	_	_ 2		fig		_		•	e St				$\dashv$		$\dashv$
Brackish water	lo:	$\perp$	-	Н	lea	$\square$	-	$\dashv$	$\dashv$	$\perp$	+	-			_	کو آ		<u> </u>		i-e-		_	4	•	-iab			Monitoring	$\vdash$		
Service water	ou c				nu	$\vdash$	$\dashv$	$\dashv$	+	+	+	+				ţi	+	_	<u></u>	-		-		-	\ Var	Ŀ	H	, ji	$\rightarrow$		-
Distillate Slurries	tati	+	+	Н	for	$\vdash$	$\dashv$	$\dashv$	+	+	+	+	H			- lina	+	- 1	_			-	_	-	-	H		ž	$\vdash$		
Explosive liquids	er s	+	$\vdash$	$\vdash$	Pumps for nuclear	$\vdash \vdash$	$\dashv$	$\dashv$	+	+	+	+	$\vdash$	Н	$-\parallel$	Pumps for desalination	+	- 6	-		$\vdash \vdash$	$\dashv$		_	-	H	H		$\vdash$		+
Digested sludge	power	+	$\vdash$	$\vdash$	Pur	$\vdash$	$\dashv$	$\dashv$	+	+	+	+	$\vdash$	Н	$-\parallel$	or a	+				$\vdash \vdash$	$\dashv$				H			$\rightarrow$		+
Solids (ore, sand, gravel, ash)	or p	+	+	$\vdash$		$\vdash$	$\dashv$	$\dashv$	+	+	+	+	$\vdash$	Н		os fe	+					$\dashv$				H	H		$\dashv$	_	+
Flammable liquids	os fc	+	$\vdash$	Н		$\vdash$	$\dashv$	$\dashv$	$\dashv$	+	+	+			$\dashv$	Ĕ.	+		-			$\dashv$			-	H			$\dashv$		+
River, lake and groundwater	Pumps for					H	$\dashv$	$\dashv$	+	+	+	+	$\vdash$	H	$-\parallel$	۵	+				H	$\dashv$	_				_		$\rightarrow$		
Liquefied gas	<u>-</u>	+-	╁	-			$\dashv$	$\dashv$	$\dashv$	+	+	+				-	$\dashv$								-	F			$\exists$	-	_
Food and beverages						H	$\dashv$	$\dashv$	$\dashv$		$\top$	+				-	$\top$					$\neg$	_		1						
Gas-containing liquids				П		П	$\exists$	$\neg$					П				$\top$										П		$\rightarrow$		
Gas turbine fuels							T	T									$\top$										П		$\Box$		$\top$
Filtered water																															
Geothermal water																															
Harmful liquids																															
Toxic liquids																							1	•		•			$\Box$		
High-temperature hot water		$\perp$		Ш			_	_	_	$\perp$	$\perp$	_	Ш				$\perp$					_	4	•		•					
Heating water	$\square$	_	_	Ш		Ш	_	4	$\perp$	$\perp$	_	_			_	-	$\dashv$	4				_		•	4		_				
Highly aggressive liquids		_	<del> </del>			$\vdash \vdash$	$\dashv$	$\dashv$	$\dashv$	+	+	+	Ш	Ш	_	-	$\dashv$	_	_			$\dashv$	_		-						_
Industrial service water	•					$\vdash$	-	$\dashv$	$\dashv$	+	+	+			-	-	$\dashv$	-	_			-			-				$\vdash$		-
Condensate	$\vdash$	+	$\vdash$			$\vdash$	$\dashv$	$\dashv$	+	+	+	+	H	$\vdash$	$\dashv$	-	$\dashv$	-	-			$\dashv$		-	-	Ŀ			$\rightarrow$		-
Corrosive liquids Valuable liquids	$\vdash$	+	+	Н			$\dashv$	$\dashv$	+	+	+	+	$\vdash$	$\vdash$		-	+	-	-			$\dashv$		-	-	H	H		$\rightarrow$		
Valuable liquids Fuels		+	$\vdash$	Н		$\vdash$	$\dashv$	$\dashv$	$\dashv$	+	+	+	$\vdash$		$\dashv$	-	+	-				$\dashv$			-	H			$\rightarrow$		-
Coolants	$\vdash$	+	+	Н										Н	П	-	$\dashv$	-	-		$\vdash$	$\dashv$			٠,	H	_		$\vdash$	-	
Cooling lubricant		+	+	$\vdash$		-	-	-	-	+	+	-	-		-1	-	+		-			$\dashv$			۱,	H	-		$\dashv$		
Cooling water						H	$\dashv$	$\dashv$	$\dashv$	+	+					-	$\dashv$	-	-			$\dashv$	ď		-	F			$\vdash$		
Volatile liquids		-	-	-		$\vdash$	$\dashv$	$\dashv$	+	+	+	+	-		-1		+				$\vdash$	$\dashv$		#7		ь			$\rightarrow$		_
Fire-fighting water		+	$\vdash$	$\vdash$		$\vdash$	$\dashv$	$\dashv$	$\dashv$	+	$^{+}$	+	Н	Н	$\neg$		$\dashv$									H	-		$\rightarrow$		
Solvents		$^{\dagger}$	$\vdash$	Н		H	$\dashv$	$\dashv$	$\dashv$	+	$\dagger$	+	П	Н			$\dashv$				Ħ	$\exists$		+-		F	H				
Seawater				П		$\Box$	$\exists$	$\dashv$	$\dashv$	$\top$	T	$\top$	П	П								$\exists$					П		$\rightarrow$		-
Oils		Τ	T	П			T	$\neg$	$\neg$	$\top$	Ť		П	П			$\top$					$\exists$		$\top$			П		$\rightarrow$		
Organic liquids																															
Pharmaceutical fluids		$\Gamma$							$\Box$	$\perp$	$\Gamma$													$\perp$							
Polymerising liquids						Ш							$\square$								Ш		_	•					$\overline{}$		$\perp$
Rainwater / stormwater			•	Ш		Ш					L		Ш								Ш		_	•					$\rightarrow$		
Cleaning agents		$\perp$	_	Ш		Ш	_	_	_	$\perp$	$\perp$	_	$\sqcup$	Щ	_		_					_		•		•			$\rightarrow$		
Raw sludge		$\perp$	$\vdash$	Ш		$\square$	4	4	_	$\perp$	$\perp$	+	Ш	Щ	_		_				$\square$	_	_	•	-	•	_		$\rightarrow$		$\dashv$
Lubricants		+	╄	$\vdash$		$\vdash \vdash$	-	$\dashv$	+	+	+	+	$\vdash$	Н	_		$\dashv$		-			4		-	-		-		$\rightarrow$		
Grey water		+	$\vdash$	$\vdash$		$\vdash \vdash$	4	-	+	+	+	-	$\vdash$	Н	-		+				$\vdash \vdash$	4	-	-	-				$\rightarrow$		+
Swimming pool water		+	$\vdash$	$\vdash$		$\vdash \vdash$	$\dashv$	$\dashv$	+	+	+	+	$\vdash$	Н	$\dashv$	-					$\vdash \vdash$	$\dashv$		+	-					$\rightarrow$	-
Brine Feed water		+	╁	$\vdash$		$\vdash$	$\dashv$	+	+	•	+		H	Н					-		$\vdash$	$\dashv$			-	H			$\dashv$		+
Dipping paints		+	$\vdash$	$\vdash$		$\vdash \vdash$	$\dashv$	$\dashv$	+	-	ľ	-	$\vdash$	$\vdash$	$-\parallel$	-	+				$\vdash$	$\dashv$				H	_		$\dashv$	$\dashv$	+
Driphing paints  Drinking water		+	$\vdash$	$\vdash$		$\vdash$	$\dashv$	$\dashv$	+	+	+	+	$\vdash$	Н	-		+				$\vdash$	$\dashv$				H					-
Thermal oil		+	$\vdash$	$\vdash$		H	$\dashv$	$\dashv$	+	+	+	+	Н	Н	-		+				$\vdash$	$\dashv$							-		
Hot water		+	$\vdash$	Н		H	$\dashv$	$\dashv$	$\dashv$	+	$^{\dagger}$		$\vdash$	H	$\dashv$		$\dashv$					$\dashv$				F					-
not water							- 1	- 1	- 1	- 1	- 1				1						$\vdash$	_		_	-				انت	1	. 1

	VOIN/ON 5 marcht circh	Calio-Therm NC		Calio-Therm	Calio-Therm S	Calio S	Calio	Calio Z	Calio Pro		Etaline	Etaline Z	Etaline-R	S	IINC	ILNR		Etanorm	Etabloc	Etachrom B	Etachrom L	Etailoilli V	Megahlor	Megapioc						
Aquaculture	pee	_	bee		_ 3					Sdu	_	$\perp$			4	_	Sdu	Ш	4	4	4		$\perp$	$\downarrow$	$\perp$	Ш	$\perp$	$\perp$	$\perp$	<u> </u>
Spray irrigation Mining	fixed speed	+	circulators, variable speed		_ 3	Circulators, variable speed		$\vdash$	-	sdwnd	l	+	H		-	-	sdwnd		-	-	-	+	+	+	+	Н	+	+	+	$\vdash$
General irrigation	ixec	+	able		- 4	aple		$\vdash$		In-line	$\vdash$	+					pelc					+	+	+	+	$\vdash$	+	+	+	$\vdash$
Chemical industry		+	vari		- 3	Vari		$\Box$		흐		1			_	_	Standardised / close-coupled		_	_		_	+	$^{+}$	+	Н	$\top$	$\top$	+	$\vdash$
Dock facilities	ılatc		ors,		3	ors,										•	Se-e													
Drainage	ir	$\perp$	ulat		- 1	mar —					L				4		c c	Ш			$\perp$	1		4	$\perp$	Ш	$\perp$		$\perp$	
Pressure boosting	Drinking water circulators,	+	اناء اناء		:	5	H	Ш	_	-	L	-	L		$\dashv$	+	ised	Н	$\dashv$	4	+	+	+	+	+	$\square$	$\dashv$	+	+	<u> </u>
Sludge thickening Disposal	Wa	+	Drinking water		-					-	$\vdash$	-			$\dashv$		lard	Н	+	$\dashv$	+	+	+	+	+	$\vdash$	+	-	+	$\vdash$
Dewatering	king	+	_ ×		-			$\vdash$			H	+					tand				- 1	1	+	+	+	Н	$\dashv$	+	+	$\vdash$
Descaling units	- Jri	$\top$	iğ					П			r		Г		_	_	Ň		7	Ħ	_	Ť	$\top$	Ť	$\top$	Н	$\top$	$\top$	$\top$	$\vdash$
District heating			<u>-</u>													•								İ	I					
Solids transport		_		Ш							L		L		_			Ш		4	_	4	_	$\downarrow$	$\perp$	Ш			$\perp$	L
Fire-fighting systems  Geothermal energy		+						$\square$	+		H	$\vdash$	$\vdash$		•				-	4	+	1		4	+	$\square$	$\perp$	+	+	<u> </u>
Drawdown of groundwater levels	╂	+	-	$\vdash$	-		┢	$\vdash$	_	-	H	+	H	H	$\dashv$	+			$\dashv$	$\dashv$	+	+	+	+	+	Н	+	+	+	$\vdash$
Maintenance of groundwater levels		+					$\vdash$	$\forall$	+		$\vdash$	+	$\vdash$					H	+	$\dashv$	+	+	+	+	+	Н	+	+	+	$\vdash$
Domestic water supply			ī					П							1		ı	П		$\dashv$	$\dashv$	1		1	$\top$	П	$\dashv$		$\top$	$\vdash$
Flood control / coast protection				П												$\perp$					$\Box$			I	I	Ш	$\Box$		I	
Homogenisation	-	1			4						L	-			$\dashv$	_		Н	_	4	$\perp$	_	$\perp$	$\downarrow$	$\perp$	Ш	$\perp$	_	$\perp$	<u> </u>
Industrial recirculation systems  Nuclear power stations	╢	-	4		-	-	•		-	-	-	-	•		-	-			-	-	-	+	+	+	+	Н	+	+	+	$\vdash$
Boiler feed applications			-	$\vdash$							H	+			$\dashv$	+		Н	+	$\dashv$	+	+	+	+	+	Н	+	+	+	$\vdash$
Boiler recirculation		T	_		=	E	Ē			_		1		H	1			Н	1	$\dashv$	+	$\dagger$	$^{+}$	$^{+}$	+	Н	$\top$	+	+	$\vdash$
Waste water treatment plants																								I						
Air-conditioning systems			L		•	•							•		$\rightarrow$	• •			_	_	•	_		_	$\perp$	Ш	$\perp$		$\perp$	
Condensate transport	-	+_		$\vdash$	_	L	L				L	-	L		_				_	-	-	_		_	+	Н	$\perp$	_	+	<u> </u>
Cooling circuits Paint shops	╂	-	4	$\vdash$	-	-				4	-		•		-		_		-	-	•	-		_	+	$\vdash$	+	+	+	$\vdash$
Food and beverage industry		+		H				$\Box$					•				_					-	+	+	+	Н	$\dashv$	+	+	$\vdash$
Seawater desalination / reverse osmosis																						Ţ		重	工					
Mixing		$\perp$									L							Ш			$\perp$	1	$\perp$	$\perp$	$\perp$	Ш	$\perp$		$\perp$	
Offshore platforms	-	+		$\vdash$	_	_					L				-	-		Н	4	4	+	+	+	+	+	Н	$\perp$	_	+	<u> </u>
Pulp and paper industry Petrochemical industry	╂	+	-	$\vdash$	-	_		$\vdash$	_	-	H	+-		$\vdash$	+	+	-	Н	$\dashv$	$\dashv$	+	+	+	+	+	$\vdash$	+	+	+	$\vdash$
Pharmaceutical industry		+	-	H	-		H	H			H	+	H	H	$\dashv$	+		Н	$\dashv$	$\dashv$	+	+	+	+	+	Н	+	+	+	$\vdash$
Pipelines and tank farms											r			Н	$\dashv$			П		$\exists$	$\top$	1		1	$\top$	П	$\top$		$\top$	$\vdash$
Refineries																								I						
Flue gas desulphurisation		_													_			Ш		4	4	_	$\perp$	$\downarrow$	$\perp$	Ш	_		$\perp$	L
Rainwater harvesting Cleaning of stormwater tanks / storage sewers		+			_			$\vdash$	_		H	+		$\vdash$	$\dashv$	-		H	-	4	+	4		+	+	$\vdash$	+	+	+	$\vdash$
Cleaning of stormwater tanks / storage sewers  Recirculation		+		$\vdash$				$\vdash$	+		-	+	H					Н	$\dashv$	$\dashv$	+	+,		+	+	$\vdash$	+	+	+	$\vdash$
Dredging		+						$\forall$	+			$\top$		H	_	+		Н	$\dashv$	$\dashv$	+	+		+	+	Н	+	+	+	$\vdash$
Shipbuilding															•	-								工						
Sludge disposal		1						$\Box$	$\perp$		L	1	L	Ш	_	_		Ш	_	_	1	1	1	1	$\perp$	Ш	1	$\perp$	$\perp$	<u> </u>
Show making systems		+				-	-	$\vdash$	_		L	+	H	H	+	+		Н	$\dashv$	4	+	+	+	+	+	$\vdash$	+	+	+	$\vdash$
Snow-making systems Heavy oil and coal upgrading		+					$\vdash$	$\vdash$	+		$\vdash$	+	$\vdash$	$\vdash$	+	+		H	$\dashv$	$\dashv$	+	+	+	+	+	$\vdash$	+	+	+	$\vdash$
Swimming pools		+		$\vdash$				$\forall$	+						•							+	+	+	+	$\forall$	+	+	+	$\vdash$
Solar thermal energy systems																							I	I					I	
Fountains		T		П				П	$\perp$		L	$\vdash$			•	•		Ц	$\Box$	J	Ţ	Ţ	Ţ	T	丰	П	T	$\perp$	$\perp$	$\perp$
Keeping in suspension		+					$\vdash$	$\vdash \vdash$	_		L	$\vdash$	$\vdash$	$\vdash$	$\dashv$	_		Н	$\dashv$	$\dashv$	+	+	+	+	+	$\vdash$	$\perp$	+	+	<u> </u>
Thermal oil circulation  Draining of pits, shafts, etc.		+			-[]			$\vdash$	+		$\vdash$	+	$\vdash$		•	_		$\vdash$	$\dashv$	$\dashv$	+	+	+	+	+	$\vdash$	+	+	+	$\vdash$
Process engineering		+		H			$\vdash$	$\forall$	+			+	$\vdash$		-	_		H	$\dashv$	$\dashv$	+	+	+	+	+	$\forall$	+	+	+	$\vdash$
Heat recovery systems													•		•						_	Ţ		1						
Hot-water heating systems		•				•	•					•	•		•	• •				•	•	_		_	$\perp$	П	$\Box$	T	$\perp$	$\Box$
Washing plants		+			-[		-	$\sqcup$	+		_	-	L		_	_ =	_		_	_	_			_	+	$\sqcup$	$\perp$	+	+	<u> </u>
Water treatment Water extraction		+			_			$\vdash$	+		-	+		$\rightarrow$	$\rightarrow$				_	$\rightarrow$		+		+	+	$\vdash$	+	+	+	<u></u>
Water supply							$\vdash$	$\forall$	$\dashv$						_	-		H			$\rightarrow$			+	+	$\forall$	+	+	+	$\vdash$
Sugar industry												Ť	Ė		_							Ţ		$^{\dagger}$						

Applications																																		
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					Ē	Etabloc SYT	Etaline SYT		MegaCPK		0		Magnochem	Magnochem 685	Magnochem-Bloc	Etaseco / Etaseco-l	Etaseco RVP			. ~				æ	CINCP / CINCN	_	æ	RWCP / RWCN			aju	Hya-Rain Eco		
		HPK-L	¥		ou g	aple	ij		ega	CPKN	CPKNO		agn	agu	agu	ase(	ase		RPH	분유	RPH-V	z	CHTR	CHTRa	9	NVC	Estigia	Š	WKTR	ı	a-R	ra-R		
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Aquaculture	bs			Sd				bs				bs						bs												ns				
Spray irrigation	틸			sdwnd				sdwnd				sdwnd						E					Ш			$\perp$				systems			Ш	
Mining	Hot water pumps			oilp					Ш	_		ss p						Process pumps		_			Ш			4	_		$\square$			Ш	Ш	_
General irrigation	vat	$\perp$						mic	Ш			Seal-less						9			$\perp$		$\square$			4	_		$\square$	harvesting			Ш	
Chemical industry	- j	$\perp$	_	thermal	L		_	che				Seg					-					-			•		_			rve	Ш	Ш	Ш	_
Dock facilities	┦┸┞	_	+					Standardised chemical	Н	_	$\blacksquare$	-					_	-	_	+	+	-	Ш			+	$\dashv$	_	$\vdash$		Ш	Ш	$\vdash$	_
Drainage	┨	+	-	water	L			rdi	$\vdash \vdash$	_	-	-	_			$\square$	_	-		_	+	-	$\vdash$			4	-		<u> </u>	Rainwater	Ш	$\square$	$\vdash$	_
Pressure boosting	┨	+	+	×	H	Н	-	nda	H	$\dashv$	-	-	_	_	H	$\vdash$	_	-	-	-	+	⊢			-	+	$\dashv$	$\dashv$	$\vdash$	N.	H	$\vdash$	$\vdash$	_
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Solids transport																			poo						Pum	土	I				
Fire-fighting systems	•				•	Ţ	1				Ц			$\rightarrow$		L	•		he f	L				$\Box$			1	$\bot$	$\perp$		Ц
Geothermal energy  Drawdown of groundwater levels			_								$\vdash$	_	$\dashv$	+	-	_	+	+	-fe	_				-	-	+	+	+	+	-	Н
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Flood control / coast protection (stormwater)																			enic							$\perp$	I				
Homogenisation		$\perp$	_	4	4	_	_						4	$\perp$	4	L	4	$\perp$	-ygic					4		$\perp$	$\perp$	_	$\bot$		Ш
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Boiler feed applications		$\vdash$		$\dashv$	$\dashv$		+	-			Н				-	H	+			H				$\dashv$	_	_			_		
Boiler recirculation		$\vdash$		$\dashv$	1		1				Н	_	7	_			$\top$	$\top$		Г				┪		_	Τ	╁	† <u> </u>	•	Ħ
Waste water treatment plants				$\Box$	$\Box$								$\Box$				$\perp$									$\perp$	I	I	$\perp$		П
Air-conditioning systems		$\vdash$	_	4	4	_	_		_				-	-		_	-	-	_	L				4		4	_	4	_		$\sqcup$
Condensate transport Cooling circuits		$\vdash$	_	$\dashv$	+	+	+	-	$\vdash$					_	7		-	+	-	H	$\vdash$	_	_	$\dashv$	-	-	+				
Paint shops		$\vdash$		$\dashv$	$\dashv$							$\rightarrow$	$\rightarrow$	-	-	ŀ	-	-		H				$\dashv$		+	+	+	+		H
Food and beverage industry																										土	I				
Seawater desalination / reverse osmosis		$\perp$	_		•	<u> </u>	4	•			Ш		•	_		_!	•			L						$\perp$	$\downarrow$	$\perp$	$\bot$		$\square$
Mixing		$\vdash$	_	$\dashv$	$\dashv$	+	+	-	_		$\vdash$	_	_	4	4	_	+	_	-	_	L			$\dashv$		+	+	+	+		$\vdash$
Offshore platforms Pulp and paper industry		$\vdash$	_	$\dashv$	+	+	+	-	$\vdash$		$\vdash$	_		$\dashv$		-	+	+		H				$\dashv$	-	+	+	+	+		$\vdash$
Petrochemical industry		$\vdash$	_	$\dashv$	$\dashv$		+					-	-	$\dashv$	-			•		H				$\dashv$		+	+	+	+		H
Pharmaceutical industry																										土	I				
Pipelines and tank farms					$\perp$								$\Box$	$\perp$			$\perp$			L						$\perp$	Ţ	$\perp$	$\perp$		П
Refineries Flue gas desulphurisation		$\vdash$	_	$\dashv$	+	+	+				$\sqcup$	-	$\dashv$	+	_		+	$\perp$		_		$\vdash$		4		+	+	+	+	_	$\vdash \vdash$
Rainwater harvesting		+		+	+	+	+				$\vdash$	$\dashv$	+	+			+	+		$\vdash$	-	$\vdash$	$\vdash$	-		+	+	+	+	-	H
Cleaning of stormwater tanks / storage sewers		$\top$	$\exists$	$\forall$	$\dagger$	+	+				H	$\dashv$	$\dashv$	+			+	+				Н	Н	$\dashv$		+	+	+	+		H
Recirculation													$\Box$				$\perp$	I								I	I	I	I		П
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Shipbuilding Sludge disposal		$\vdash$	_	$\dashv$	+	+	+		ŀ		$\vdash$	$\dashv$	$\dashv$	+	-	-	-			$\vdash$		$\vdash$	$\vdash$	-		+	+	+	+	_	H
Sludge disposal			$\dashv$	$\dashv$	+	+	+				$\forall$	$\dashv$	$\dashv$	+			+	+				$\vdash$		$\dashv$		+	+	+	+		H
Snow-making systems						- 1												I								•					
Heavy oil and coal upgrading		$\sqcup$	]		4		1				Ц		_[	4			1	1		L		$\square$				4	4	$\perp$	$\perp$		Щ
Swimming pools		$\vdash$	_	$\dashv$	+	+	+				$\vdash$	$\dashv$	$\dashv$	+	_		+	+		_		H	$\vdash$	-		+	+	+	+		$\vdash$
Solar thermal energy systems Fountains						+	+				$\vdash$	$\dashv$	$\dashv$	+			+	+		$\vdash$		$\vdash$		-		+	+	+	+		$\forall$
Keeping in suspension		_		_	_	_					H			_			_									$^{\dagger}$	$\top$	$\dagger$	$\perp$		Н
Thermal oil circulation				$\Box$	1	Ţ	T					$\Box$	$\Box$	I			1	T								Ţ	I	T	$\perp$		П
Draining of pits, shafts, etc.		$\vdash$	_	$\dashv$	+	+	+				$\sqcup$	4	4	_			+	+		L			Щ	4		+	+	+	+	_	$\vdash \vdash$
Process engineering Heat recovery systems		$\vdash$	_	$\dashv$	+	+	+				$\vdash$	$\dashv$	$\dashv$	-	4		+	+		-	$\vdash$	$\vdash$	$\vdash$	$\dashv$		+	+	+	+		$\vdash$
Hot-water heating systems				+	+	+	+				H	$\dashv$	+	$\rightarrow$	7		+	+		H		Н		$\dashv$		+	+	+	+		H
Washing plants												_	$\rightarrow$	_												$\perp$	I	$\perp$	I		$\Box$
Water treatment				-	•	_	_		-				•	$\rightarrow$		_			_	•	•			4		$\bot$	$\bot$	$\perp$	$\perp$		$\sqcup$
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Overview of Applications

																									2 Eco					
	SEZ / SEZT / PHZ / PNZ	8								ar							Q.						eme -S		PumpDrive 2/PumpDrive	еВ		er	-	KSB Leakage Sensor
	Z / SEZI	SNW / PNW	Beveron	SPY	9	RER	RUV	PSR	RHD	LUV Nuclear	RHM	RVM	RHR	RVR FVR		RPH-RO	Multitec-RO	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ונה ה' וונה	EDS	DU / EU		KSB SuPreme KSB UMA-S		umpDriv	PumpDrive R		PumpMeter	KSB Guard	SB Leak
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Aquaculture Spray irrigation	islands	$\vdash$		-	stations	+	+	+		+	_	+	+	-	- 100	<u> </u>		sdwnd	Fire-fighting systems	-		9		Variable speed systems	H		diagnosis			+
Mining		$\vdash$		-	stat	+	+	+	$\vdash$	$\dashv$	$\dashv$	+	+	+	_ 20			t pu	svst		Н			syst	-		iagn	-	1	+
General irrigation	power station conventional				power	$\top$	$\top$	$\top$	$\Box$		$\top$	$\top$	$\top$	$\top$	- do			displacement	- DO					pee						+
Chemical industry	entie								П		$\neg$				9/10/1			- Cen	■ td	0	П			s Spe			Monitoring and			
Dock facilities	■ Nuc				lear										2	2		isple	re-f					able			oring			
Drainage	Ŭ ■			Ш	nuclear	_	_	$\perp$			4	_	4			<u> </u>		e di	i I			-	•	Vari			nitc			
Pressure boosting	atic	$\vdash$		Щ,	흐	_	+	+		-	+	4	+	_	- 2			Positive (	-	_	H	_		-			δ		•	+
Sludge thickening	er st	$\vdash$		$\blacksquare$	Pumps for	+	+	+		$\dashv$	$\dashv$	+	+	+	leso			P0	-	-		-	-		Ŀ				_	+
Disposal	Mod ■				됩	+	+	+	$\vdash$	$\dashv$	+	+	+	+	- 2	5			-	-	H	-			H	Η		$\dashv$		+
Descaling units		Η.	-			+	+	+	$\vdash$	$\dashv$	$\dashv$	+	+	+	- F	3				-	Н	_		-	E	Ħ			=	+
District heating	ps f	$\top$		П		+	+	$\top$	$\Box$	$\dashv$	$\top$	$\dagger$	$\dagger$	+	Pumps for desalination by rayarea osmosis	5					П	-			Ē					+
Solids transport	Pumps for																													
Fire-fighting systems		$\Box$		П		$\perp \Gamma$	$\perp$		П	I	$\perp$		I								•		•			П		П	•	$\perp$
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Maintenance of groundwater levels  Domestic water supply	-	$\vdash$		-	-	+	+	+		$\dashv$	+	+	+	+	-	H		_	-	-		-						-	-	+
Flood control / coast protection (stormwater)				-	-	+	+	+	$\vdash$	$\dashv$	+	+	+	+	-	$\vdash$			-	_	Н	_		-	H	믐			-	+
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Boiler feed applications													Ì																	
Boiler recirculation																														
Waste water treatment plants		$\perp$				_		_		4	4	4	4	_								-			•					
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Paint shops		$\vdash$				+	+	+		+	$\dashv$	+	+	+	-	$\vdash$				-		-			Ħ			-	-	-
Food and beverage industry		$\vdash$				+	+	+	$\Box$	$\dashv$	$\dashv$	$\dagger$	$\top$								Н	_			E			$\vdash$		+
Seawater desalination / reverse osmosis						$\top$		$\top$	П	$\exists$	$\top$		$\top$	$\top$							П					П				$\neg \neg$
Mixing																														
Offshore platforms						$\perp$	$\perp$	$\perp$			_		4	$\perp$				•												$\perp$
Pulp and paper industry		$\vdash$			_	$\perp$	_	$\perp$		4	$\perp$	4	4	_		_		_					-		-					
Petrochemical industry			•	Ш	_	+	+	+		-	$\dashv$	+	+	_	4	L		_	-	_	L	_	_	-	L			-	•	+
Pharmaceutical industry Pipelines and tank farms		$\vdash$			-	+	+	+		$\dashv$	$\dashv$	+	+	+	-	-			-	-	H	-	-		H					+
Refineries		$\vdash$		-		+	+	+		$\dashv$	$\dashv$	+	+	+	+	H		-		$\vdash$		-						$\vdash$		+
Flue gas desulphurisation		$\vdash$				+	+	+			$\dashv$	+	$\top$								Н	-				П		$\dashv$		+
Rainwater harvesting		$\vdash$						$\top$		寸	$\top$	$\top$	$\top$																	$\top$
Cleaning of stormwater tanks / storage sewers																														
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Shipbuilding Sludge disposal		$\vdash$	$\vdash$	-		+	+	+	$\vdash$	$\dashv$	+	+	+	+				•		-	$\vdash$		+		-	Н		$\rightarrow$		+
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Snow-making systems		$\vdash$	H	H		+	+	+	$\vdash$	$\dashv$	+	+	+	+			H				Н				F				-	+
Heavy oil and coal upgrading		$\vdash$		П		+	$\top$	$\top$	$\sqcap$	$\dashv$	$\top$	+	+	$\dagger$							П		┪		Ē	Ħ		$\exists$		+
Swimming pools																														
Solar thermal energy systems																		•												
Fountains		$\vdash$				_	4	_		4	_	4	4	_								_								
Keeping in suspension		$\vdash$		Ш	_	+	+	+		$\dashv$	+	+	+	_	4	H			-	_		_	_	-	Ŀ			-	_	+
Thermal oil circulation Draining of pits, shafts, etc.		$\vdash$			H	+	+	+		$\dashv$	+	+	+	+	-	-			-	_		-								-
Process engineering		$\vdash$		H	-	+	+	+	H	$\dashv$	$\dashv$	+	+	+	-	-			-	-	Н	-		-	H	H		$\dashv$		+
Heat recovery systems		$\vdash$	Н			+	+	+	$\vdash$	$\dashv$	+	+	+	+							Н	_			F	Ħ				+
Hot-water heating systems						_		İ				_	_									-								
Washing plants																									ਾ					
Water treatment		$\Box$						<u> </u>	$\coprod$	Ţ	$\bot$	$\perp$	$\perp$							L	Ц	-	• •		▣			$\rightarrow$		$\bot$
Water extraction			-			$\perp$	4	+	$\sqcup$	4	$\downarrow$	4	$\perp$	_			$\vdash$				$\vdash$	-						$\rightarrow$	•	+
Water supply	-					+	+	+	$\vdash$	+	+	+	+	+		-	$\vdash$			$\vdash$	$\vdash$	-			H				$\rightarrow$	+
Sugar industry																														

# Drive, variable speed system and monitoring

#### KSB SuPremE



Number of pumps U [V]

PumpDrive / PumpDrive R only

≤ 1 Description

Power supply via IEC-compatible sensorless magnetless synchronous reluctance motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4 / IE5 (super/ultra premium efficiency) to IEC TS 60034-30-2:2016 for operation on a KSB PumpDrive 2, PumpDrive 2 Eco or PumpDrive R variable speed system. Suitable for connection to three-phase 380 - 480 V power supply (via PumpDrive). The motor mounting points comply with EN 50347 specifications to ensure compatibility with standardised IEC frame motor applications and full interchangeability with IE2 or IE3 standardised asynchronous motors. Envelope dimensions lie within the limits for IE2 / IE3 motors as recommended in DIN V 42673 (07-2011). The motor is controlled without rotor position sensors. The efficiency of the motor also exceeds 95 percent of nominal efficiency when the motor runs at 25 percent of its nominal power on a quadratic torque-speed curve. The motor is magnetless which means that socalled rare earths are not used in production. Drive production is thus sustainable and environmentally friendly.

#### Applications

For use with dry-installed variable speed pumps which can be driven by standardised footmounted and/or flange-mounted motors.

https://www.ksb.com/en-ab/lc/SD80

#### KSB UMA-S



Number of pumps U [V]

3~400 Permanent-magnet submersible synchronous motor, for operation on a KSB PumpDrive R variable speed system. NEMA connections and identical outside diameters ensure full interchangeability with comparable 6-inch or 8-inch asynchronous motors. The motor is controlled without rotor position sensors. The motor efficiency is 5 - 12 % above that of asynchronous motors. Given the design and functionality the use of permanent magnets is essential.

#### Applications

Exclusively for submersible borehole pumps in the range of 4 to 250 kW.

### PumpDrive 2 / PumpDrive 2 Eco

U [V]





Number of pumps P [kW]

3~380 - 480 Frequency inverter 1 per motor

Other mains voltages on request

≤6 Description

55 Modular self-cooling frequency inverter that enables continuously variable speed control of asynchronous and synchronous reluctance motors by means of analog standard signals, a field bus or the control panel. As PumpDrive is self-cooling, it can be mounted on a motor, on the wall or in a control cabinet. Up to six pumps can be controlled without needing an additional controller.

### **Applications**

Air-conditioning systems, heat generation, heat distribution, water supply systems, water extraction, water treatment, water distribution, water transport, refrigeration, cooling distribution, heat generation, heat distribution, fluid transport, cooling lubricant distribution, industrial water supply, tank drainage, waste water transport

https://www.ksb.com/en-gb/lc/P10A

### **PumpDrive R**



Number of pumps P [kW] U [V] Frequency inverter ≤ 6 Description

3~380 - 480

55 Modular self-cooling frequency inverter that enables continuously variable speed control of asynchronous and synchronous reluctance motors by means of analog standard signals, a field bus or the control panel. As PumpDrive R is self-cooling, it can be mounted on the wall or in a control cabinet. Up to six pumps can be controlled without needing an additional controller. PumpDrive R extends the power range of PumpDrive 2 up to a rated power of 250 kW (standard) / 1400 kW (on request).

#### Applications

Air-conditioning systems, heat generation, heat distribution, water supply systems, water extraction, water treatment, water distribution, water transport, refrigeration, cooling distribution, heat generation, heat distribution, fluid transport, cooling lubricant distribution, industrial water supply, tank drainage, waste water transport

https://www.ksb.com/en-gb/lc/K01A

### **PumpMeter**



Number of pumps U [V DC]

≤ 1 Description

Device for monitoring the operation of one pump. It is an intelligent pressure transmitter for pumps, with on-site display of measured values and operating data. It records the load profile of the pump in order to indicate any potential for optimising energy efficiency and availability. The device comprises two pressure sensors and a display unit. PumpMeter is supplied completely assembled and parameterised for the pump it is used with. It is ready for operation as soon as the M12 plug connector is plugged in.

#### **Applications**

Air-conditioning systems, cooling circuits, cooling lubricant distribution, heating systems, water treatment plants, water supply systems, water distribution systems, water transport systems, water extraction systems

https://www.ksb.com/en-gb/lc/P28A

### **KSB Guard**



Sensor units
U [V AC]

≤ 40 (per gateway)

Description

Smart solution for condition monitoring of pumps and other rotating machinery. Sensors on the machinery record measurement data, which is processed in the KSB Cloud. Information on the machinery status can be accessed via mobile phone or computer. Simple retrofitting of the sensor unit for measuring vibrations and temperature during operation of dry-installed pumps and other rotating machinery. Components of the KSB Guard system: sensors, transmission unit and KSB Guard Gateway. For dry-installed pumps the sensors in the sensor unit and the corresponding transmission and battery unit are comprised in the KSB Guard kit. Access via the KSB Guard web portal www.ksbguard.net (computer) or the KSB Guard app is required to retrieve operating data. Data from up to 40 pumps can be transmitted via one KSB Guard gateway.

#### Applications

Monitoring dry-installed pumps as well as submersible pumps and mixers, optimising and improving system availability

https://www.ksb.com/en-gb/lc/G01A

### **KSB Leakage Sensor**



Installation type

Stationary  $\geq -30 - \leq +350$ 

Stationary Description

The KSB Leakage Sensor is an intelligent monitoring system for measuring and displaying mechanical seal leakage on site. It comprises a leakage measuring instrument and a display unit.

#### Applications

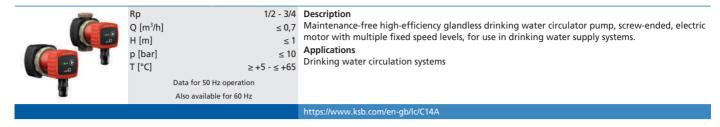
Industry (heat transfer fluid market)

KSB Leakage Sensor

https://www.ksb.com/en-gb/lc/L05A

# Drinking water circulators, fixed speed

### Calio-Therm S NC/NCV

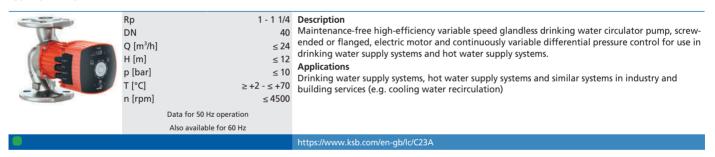


#### Calio-Therm NC

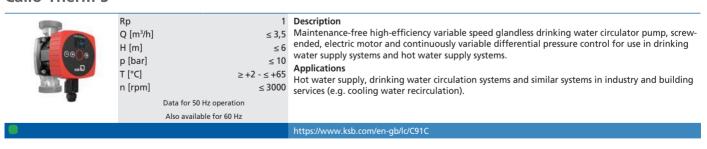
Rp Q [m³/h] H [m] p [bar] T [°C] n [rpm]	≤ 7 ≤ 10 ≥ +2 - ≤ +65	Annlications
		https://www.ksb.com/en-gb/lc/C20A

# Drinking water circulators, variable speed

#### Calio-Therm



#### Calio-Therm S



**Pumps** 29

# Circulators, variable speed

#### Calio S



Q [m<sup>3</sup>/h]H [m] p [bar] T [°C] n [rpm]

≤8 ≤ 10  $\geq +2 - \leq +95$ ≤ 3000

1/2 - 1 1/4 Description

≤ 3,5 Maintenance-free high-efficiency screw-ended glandless pump with high-efficiency electric motor and continuously variable differential pressure control.

Heating, ventilation, air-conditioning and heat recovery systems, cooling systems, industrial recirculation systems

Data for 50 Hz operation Also available for 60 Hz

https://www.ksb.com/en-gb/lc/C90C

#### Calio



DN Q [m³/h] H [m] p [bar] T [°C] n [rpm]

≤ 51 ≤ 16 ≥ -10 - ≤ +110 ≤ 4500

1 1/2 - 2 Description

32 - 100 Maintenance-free high-efficiency flanged or screw-ended glandless pump with high-efficiency electric motor and continuously variable differential pressure control.

≤ 18 Applications

Heating, ventilation, air-conditioning and heat recovery systems, cooling systems, industrial recirculation systems

Data for 50 Hz operation Also available for 60 Hz

https://www.ksb.com/en-gb/lc/C89B

#### Calio Z



Rp DN Q [m<sup>3</sup>/h]H [m] p [bar] T [°C]

32 - 65 ≤ 70 ≤ 18 ≤ 16 ≥ -10 - ≤ +110 ≤ 4500 n [rpm]

> Data for 50 Hz operation Also available for 60 Hz

1 1/4 Description

Maintenance-free high-efficiency flanged or screw-ended glandless pump in twin pump design with high-efficiency electric motor and continuously variable differential pressure control.

Heating, ventilation, air-conditioning and heat recovery systems, cooling systems, industrial recirculation systems

https://www.ksb.com/en-gb/lc/C09B

### Calio Pro



Rp DN Q [m³/h] H [m] p [bar]

≤ 24

Data for 50 Hz operation Also available for 60 Hz

1 - 1 1/4 Description

32 - 65 Maintenance-free high-efficiency flanged or screw-ended glandless pump with high-efficiency electric motor and continuously variable differential pressure control.

≤ 16

 $\geq$  -10 -  $\leq$  +110

≤ 12 Applications Heating, ventilation, air-conditioning and heat recovery systems, cooling systems, industrial recirculation systems

https://www.ksb.com/en-gb/lc/C89C

#### Calio Pro Z



Rp DN Q [m<sup>3</sup>/h]H [m] p [bar] T [°C]

≤ 22 ≤ 12 < 16  $\geq$  -10 -  $\leq$  +110 Data for 50 Hz operation

Also available for 60 Hz

1 1/4 Description

32 - 50 Maintenance-free high-efficiency flanged or screw-ended glandless pump in twin pump design with high-efficiency electric motor and continuously variable differential pressure control.

Heating, ventilation, air-conditioning and heat recovery systems, cooling systems, industrial recirculation systems

https://www.ksb.com/en-gb/lc/C09C

# In-line pumps

#### **Etaline**



DN Q [m<sup>3</sup>/h]H [m] p [bar] T [°C]

Also available for 60 Hz

> -30 - < +140 Data for 50 Hz operation

32 - 200 Description

≤ 700 Single-stage volute casing pump in in-line design, with magnetless KSB SuPremE motor of ≤ 96 efficiency class IE4/IE5 and PumpDrive variable speed system; pump shaft and motor shaft are rigidly connected. With KSB SuPremE, a magnetless synchronous reluctance motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/IE5 to IEC TS 60034-30-2:2016, for operation on a KSB PumpDrive 2 or KSB PumpDrive 2 Eco variable speed system without rotor position sensors. Motor mounting points in accordance with EN 50347, envelope dimensions in accordance with DIN V 42673 (07-2011). ATEXcompliant version available

#### **Applications**

Hot water heating, cooling circuits, air-conditioning, water supply systems, service water supply systems, industrial recirculation systems

#### **Etaline Z**



DN Q [m<sup>3</sup>/h]H [m] p [bar] T [°C]

 $\geq$  -30 -  $\leq$  +140 Data for 50 Hz operation Also available for 60 Hz

#### 32 - 200 Description

≤ 16

≤ 1095 Single-stage volute casing pump in in-line design as twin pump, with magnetless KSB SuPremE ≤ 38,5 motor of efficiency class IE4/IE5 and PumpDrive variable speed system; pump shaft and motor shaft are rigidly connected. An M12 module (accessory) enables redundant operation of Etaline Z without the need for a higher-level controller. With KSB SuPremE, a magnetless synchronous reluctance motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/IE5 to IEC TS 60034-30-2:2016, for operation on a KSB PumpDrive 2 or KSB PumpDrive 2 Eco variable speed system without rotor position sensors. Motor mounting points in accordance with EN 50347, envelope dimensions in accordance with DIN V 42673 (07-2011). ATEX-compliant version available.

#### Applications

Hot water heating, cooling circuits, air-conditioning, water supply systems, service water supply systems, industrial recirculation systems

https://www.ksb.com/en-gb/lc/E13B

### **Etaline-R**



DN Q [m<sup>3</sup>/h]H [m] p [bar] T [°C]

< 25 ≥ -30 - ≤ +140 Data for 50 Hz operation Also available for 60 Hz

150 - 350 Description

≤ 1900

Vertical close-coupled pump with volute casing in in-line design with magnet-less KSB SuPremE ≤ 93 motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/IE5 and PumpDrive variable speed system.

Hot water heating, cooling circuits, air-conditioning, water supply systems, service water supply systems, industrial recirculation systems

https://www.ksb.com/en-gb/lc/E22A

#### **ILN**



Q [m<sup>3</sup>/h]H [m] p [bar] T [°C]

≤ 112 ≤ 16  $\geq$  -20 -  $\leq$  +70 n [rpm] ≤ 3000

> Data for 50 Hz operation Also available for 60 Hz

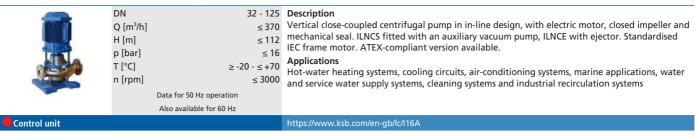
65 - 400 Description

≤ 3310 Vertical in-line centrifugal pump with closed impeller and mechanical seal. ILNS fitted with an auxiliary vacuum pump, ILNE with ejector. Back pull-out design allows the impeller to be dismantled without removing the piping and the motor. ATEX-compliant version available.

Hot-water heating systems, cooling circuits, air-conditioning systems, marine applications, water and service water supply systems, cleaning systems and industrial recirculation systems

Control unit https://www.ksb.com/en-gb/lc/I15A Pumps 31

### **ILNC**



### **ILNR**

DN Q [m³/h] H [m] p [bar] T [°C] n [rpm] Data for 50 H Also availabl	$\leq$ 1600 $\leq$ 93 $\leq$ 10 $\geq$ -15 - $\leq$ +70 $\leq$ 1450	Vertical volute casing pump in in-line design, single-stage, with closed single-entry impeller. Equipped with replaceable casing wear rings in pump casing and casing cover. ILNR with flexible

# Megaline

DN Q [m³/h] H [m] p [bar] T [°C]	≤ 600	Applications
		https://www.ksb.com/en-gb/lc/M51B

# Standardised / close-coupled pumps

#### **Etanorm**

DN Q [m³/h] H [m] p [bar] T [°C]	< 1930	wear rings, with motor-mounted variable speed system. With KSB SuPremE, a magnetless synchronous reluctance motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/IE5 to IEC TS 60034-30-2:2016, for operation on a KSB PumpDrive 2 or KSB PumpDrive 2 Eco variable speed system without rotor position sensors. Motor mounting points in accordance with EN 50347, envelope dimensions in accordance with DIN V 42673 (07-2011). ATEX-compliant version available.  Applications  Pumping clean or aggressive liquids not chemically or mechanically aggressive to the pump materials in water supply systems, cooling circuits, swimming pools, fire-fighting systems, irrigation systems, drainage systems, heating systems, air-conditioning systems, spray irrigation systems
		https://www.ksb.com/en-gb/lc/E04B

#### **Etabloc**



DN Q [m³/h] H [m] p [bar] T [°C]

≥ -30 - ≤ +140 Data for 50 Hz operation Also available for 60 Hz

25 - 150 Description

≤ 660 Single-stage close-coupled volute casing pump, with ratings to EN 733, with replaceable shaft ≤ 140 sleeve and casing wear rings, with motor-mounted variable speed system. With KSB SuPremE, a magnetless synchronous reluctance motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/IE5 to IEC TS 60034-30-2:2016, for operation on a KSB PumpDrive 2 or KSB PumpDrive 2 Eco variable speed system without rotor position sensors. Motor mounting points in accordance with EN 50347, envelope dimensions in accordance with DIN V 42673 (07-2011). ATEX-compliant version available.

#### **Applications**

Pumping clean or aggressive liquids not chemically or mechanically aggressive to the pump materials in water supply systems, cooling circuits, swimming pools, fire-fighting systems, irrigation systems, drainage systems, heating systems, air-conditioning systems, spray irrigation svstems

#### **Etachrom B**



DN Q [m³/h] H [m] p [bar] T [°C]

< 105

 $\geq$  -30 -  $\leq$  +110

Data for 50 Hz operation Also available for 60 Hz

#### 25 - 80 Description

 $\leq$  260 Horizontal single-stage close-coupled circular casing pump, with ratings and main dimensions to EN 733, with replaceable casing wear rings and motor-mounted variable speed system. With KSB SuPremE, a magnetless synchronous reluctance motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/IE5 to IEC TS 60034-30-2:2016, for operation on a KSB PumpDrive 2 or KSB PumpDrive 2 Eco variable speed system without rotor position sensors. Motor mounting points in accordance with EN 50347, envelope dimensions in accordance with DIN V 42673 (07-2011). ATEX-compliant version available.

#### Applications

Cleaning systems (bottle rinsing, crate washing, etc.), water treatment plants, water supply systems, fire-fighting systems, spray irrigation systems, general irrigation systems, drainage systems, hot-water heating systems, air-conditioning systems, industrial washing plants, general industry, disposal of paint sludge, surface treatment

https://www.ksb.com/en-ab/lc/E02/

#### Etachrom L



DN Q [m<sup>3</sup>/h]H [m] p [bar] T [°C]

< 12

Also available for 60 Hz

≥ -30 - ≤ +110 Data for 50 Hz operation

≤ 260 Horizontal single-stage circular casing pump, with ratings and main dimensions to EN 733, with ≤ 105 replaceable casing wear rings and motor-mounted variable speed system. With KSB SuPremE, a magnetless synchronous reluctance motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/IE5 to IEC TS 60034-30-2:2016, for operation on a KSB PumpDrive 2 or KSB PumpDrive 2 Eco variable speed system without rotor position sensors. Motor mounting points in accordance with EN 50347, envelope dimensions in accordance with DIN V 42673 (07-2011). ATEX-compliant version available.

#### **Applications**

Cleaning systems (bottle rinsing, crate washing, etc.), water treatment plants, water supply systems, fire-fighting systems, spray irrigation systems, general irrigation systems, drainage systems, hot-water heating systems, air-conditioning systems, industrial washing plants, general industry, disposal of paint sludge, surface treatment

https://www.ksb.com/en-gb/lc/E08A

### **Etanorm V**



DN Q [m<sup>3</sup>/h]H [m] p [bar] T [°C]

 $\geq -15 - \leq +95$ Data for 50 Hz operation Also available for 60 Hz

32 - 150 Description

 $\leq$  625 Single-stage volute casing pump for vertical installation in closed tanks under atmospheric ≤ 100 pressure, with ratings to EN 733.

# ≤ 16 Applications

Phosphating solutions, lubricating oil supply and sealing oil supply for turbines, generators, large compressors, large gear units

https://www.ksb.com/en-gb/lc/EB5B

**Pumps** 33

### Meganorm



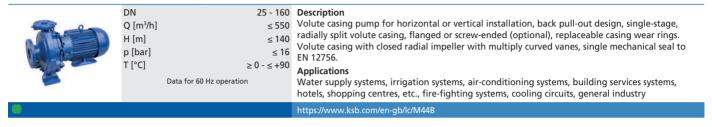
 $\leq$  1160 Horizontal radially split volute casing pump in back pull-out design, with radial impeller, singleentry, single-stage, to DIN EN ISO 2858/ISO 5199. Available with cylindrical or conical shaft seal

Applications

Water supply systems, drainage systems, irrigation systems, sugar industry, alcohol industry, airconditioning systems, building services systems, fire-fighting systems

https://www.ksb.com/en-gb/lc/M52B

### Megabloc



# Hot water pumps

#### **HPK-L**

	DN Q [m³/h] H [m] p [bar] T [°C]	≤ 1160 ≤ 162 ≤ 40	Applications
KSB Leakage Sensor			https://www.ksb.com/en-gb/lc/H07B

#### **HPK**

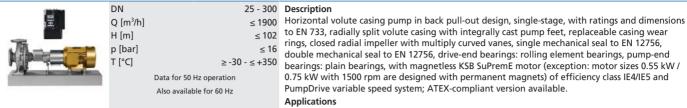
	≤ 4150 ≤ 185 ≤ 40	Pumping hot water and thermal oil in piping systems or tank systems, particularly in medium- sized and large hot-water heating systems, forced circulation boilers, district heating systems
		https://www.ksb.com/en-gb/lc/H02A

### **HPH**

DN Q [m³/h] H [m] p [bar] T [°C]	≤ 2350 ≤ 225 ≤ 110	Description Horizontal radially split volute casing pump in back pull-out design, with centreline pump feet, with radial impeller, single-entry, single-stage. Optional TRD type testing by TÜV. ATEX-compliant version available.  Applications Pumping hot water in high-pressure hot water generation plants, as boiler feed or recirculation pump.
		https://www.ksb.com/en-gb/lc/H01A

# Hot water / thermal oil pumps

#### **Etanorm SYT / RSY**

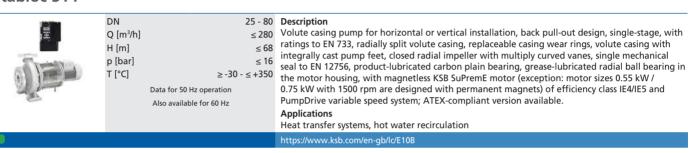


Heat transfer systems, hot water recirculation

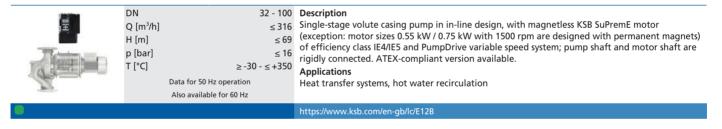
nttps://www.ksb.com/en-gb/lc/E44B https://www.ksb.com/en-gb/lc/E23A

#### Ftabloc SYT

KSB Leakage Sensor

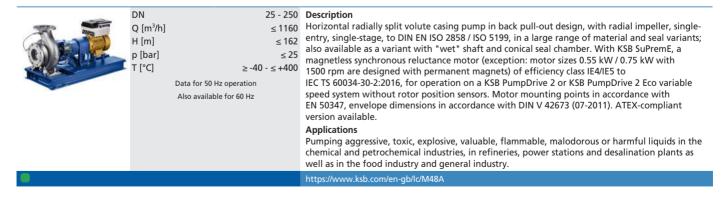


#### **Etaline SYT**



# Standardised chemical pumps

### **MegaCPK**



**Pumps** 

### **CPKN**



DN Q [m³/h] H [m] p [bar] ≤ 25 T [°C]  $\geq$  -40 -  $\leq$  +400 Data for 50 Hz operation Also available for 60 Hz

≤ 4150 Horizontal radially split volute casing pump in back pull-out design, with radial impeller, singleentry, single-stage, to ISO 2858 / ISO 5199. Also available as a variant with "wet" shaft, conical seal chamber and/or semi-open impeller. ATEX-compliant version available.

35

#### Applications

Pumping aggressive, toxic, explosive, valuable, flammable, malodorous or harmful liquids in the chemical and petrochemical industries, in refineries, power stations and desalination plants as well as in the food industry and general industry.

https://www.ksb.com/en-gb/lc/C03A

### **CPKNO**



DN 25 - 160 / 200 - 315 Description Q [m³/h] H [m] ≤ 25 p [bar] T [°C] ≥ -40 - ≤ +400 Data for 50 Hz operation

Also available for 60 Hz

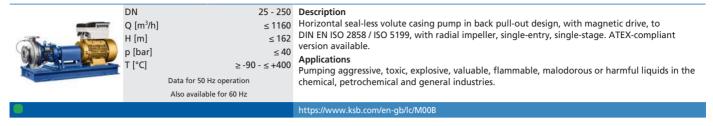
 $\leq$  900 Horizontal volute casing pump in back pull-out design, with semi-open impeller, single-stage, to ≤ 150 ISO 2858 / ISO 5199. ATEX-compliant version available.

#### Applications

Pumping aggressive organic and inorganic fluids, fluids that tend to polymerise, and slightly gasladen fluids.

# **Seal-less pumps**

# Magnochem



# Magnochem 685

DN Q [m³/h] H [m] p [bar] T [°C]	≤ 1160	Annlications

### Magnochem-Bloc

DN Q [m³/h] H [m] p [bar] T [°C]	≤ 625 ≤ 162	Description Horizontal or vertical seal-less volute casing pump in close-coupled design, with magnetic drive, to DIN EN ISO 2858 / ISO 5199, with radial impeller, single-entry, single-stage. ATEX-compliant version available.  Applications Pumping aggressive, toxic, explosive, valuable, flammable, malodorous or harmful liquids in the chemical, petrochemical and general industries.
		https://www.ksb.com/en-gb/lc/M08B

### **Etaseco / Etaseco-l**

	DN	32 - 100	Description
0	Q [m³/h]	≤ 250	Horizontal or vertical seal-less volute casing pump in back pull-out design with fully enclosed
To the same of the	H [m]	≤ 100	canned motor, low noise emission, with radial impeller, single-stage, single-entry, casing
	p [bar]	≤ 16	connecting dimensions to EN 733, or in in-line design.
The same of the sa	T [°C]	≥ -40 - ≤ +140	Applications  Pumping aggressive, flammable, toxic, volatile or valuable liquids in the chemical and
		Data for 50 Hz operation	petrochemical industries, in environmental engineering and industrial applications.
		Also available for 60 Hz	
			https://www.ksb.com/en-gb/lc/E07A

### **Etaseco RVP**

0	DN Q [m³/h] H [m] p [bar] T [°C]	≤ 44	Description Horizontal or vertical seal-less volute casing pump in back pull-out design with fully enclosed canned motor, low noise emission, with radial impeller, single-stage, single-entry, casing connecting dimensions to EN 733, or in in-line design.  Applications Pumping toxic, volatile or valuable liquids in environmental engineering and industrial applications and as coolant pump in cooling systems. Transport vehicles, environmental engineering and industry; applications where low noise emission, smooth running or long service intervals are required.
			https://www.ksb.com/en-gb/lc/ED5A

### **Process pumps**

### **RPH**



	25 - 400
m³/h]	≤ 4150
m]	≤ 270
bar]	≤ 110
°C]	≥ -70 - ≤ +450

Data for 50 Hz operation

Also available for 60 Hz

### 0 Description

Horizontal radially split volute casing pump in back pull-out design, to API 610, ISO 13709 (heavy duty), type OH2, with radial impeller, single-entry, single-stage, centreline pump feet; with inducer if required. ATEX-compliant version available.

37

### **Applications**

Refineries, petrochemical and chemical industries, power stations, offshore and onshore processes

https://www.ksb.com/en-gb/lc/R05B

### **RPH-LF**



N	50
(m³/h)	≤ 40
l [m]	≤ 339
[°C]	≥ -30 - ≤ +200
	Data for 50 Hz operation

Also available for 60 Hz

Description

Horizontal single-entry single-stage radially split overhung centreline-mounted process pump with circular casing to API 610 (ISO 13709), type OH2. Special design for low flow rates. ATEXcompliant version available.

### **Applications**

Refineries, petrochemical and chemical industries; applications with low flow rates.

https://www.ksb.com/en-gb/lc/R29A

### RPHb / RPHd / RPHbd



DN		80 - 400
Q [m³/h]		≤ 5100
H [m]		≤ 550
p [bar]		≤ 100
T [°C]		≥ -80 - ≤ +450
	Data for 50 H	Iz operation

Also available for 60 Hz

### 80 - 400 Description

Heavy-duty horizontal radially split between-bearings volute casing pump to API 610, ISO 13709 (heavy duty), type BB2, with radial impellers, single- or double-entry, single- or two-stage design with centreline pump feet. ATEX-compliant version available.

### **Applications**

Refineries, petrochemical and chemical industries, offshore and onshore processes.

https://www.ksb.com/en-gb/lc/R23B

### **RPH-V**



DN2 / DN3	
Q [m³/h]	
H [m]	
p [bar]	
T [°C]	

25 - 80 / 40 - 150 Description

 $\geq$  -30 -  $\leq$  +230

≤ 150 Vertical single-stage sump pump to API 610 and ISO 13709 (heavy duty), type VS4, with integral ≤ 165 thrust bearing assembly and separate discharge line. ATEX-compliant version available.

### ≤ 35 Applications

Refineries, petrochemical and chemical industries, offshore and onshore processes.

https://www.ksb.com/en-ab/lc/R55A

### **CTN**



DN	25 - 250 / 250 - 400
Q [m³/h]	≤ 950
H [m]	≤ 115
p [bar]	≤ 10
T [°C]	≥ 0 - ≤ +300
	Data for 50 Hz operation

Also available for 60 Hz

Data for 50 Hz operation Also available for 60 Hz

Radially split vertical shaft submersible pump with double volute casing for wet and dry installation, with radial impeller, single-entry, single-stage or two-stage; heatable model available. ATEX-compliant version available.

### **Applications**

Pumping chemically aggressive liquids, also slightly contaminated or with a low solids content, in the chemical and petrochemical industries.

https://www.ksb.com/en-gb/lc/C02A

### **CHTR**



### **CHTRa**

	DN	80 - 300	Description
	Q [m <sup>3</sup> /h]		Horizontal axially split single-entry multistage between-bearings volute casing pump with single
N. SLAMANIS	H [m]	≤ 1550	casing and back-to-back impeller arrangement to API 610 (ISO 13709), type BB3. First stage optionally available in double-entry design for low NPSH requirements. ATEX-compliant version
Training .	p [bar]	≤ 155	optionally available in double-entry design for low NPSH requirements. ATEX-compliant version available.
(0)	T [°C]	≥ -40 - ≤ +205	Applications
	n [rpm]	≤ 6000	Refineries, petrochemical industry, pipelines for crude oil and refinery products, water injection,
		5 . ( 50.11	feed water transport in power stations and industrial plants, mining, seawater desalination,
		Data for 50 Hz operation	
		Also available for 60 Hz	reverse osmosis.
			https://www.ksb.com/en-gb/lc/C18A

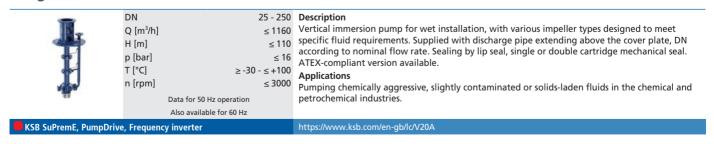
### **CINCP / CINCN**

	≤ 780 ≤ 105 ≤ 10	Description Vertical immersion pump in cantilever design for wet or dry installation. Semi-open impeller, pump shaft without guide bearings, supported by ball bearings in the upper section of the pump set. Supplied with discharge pipe extending above the baseplate (CINCP) or without discharge pipe (CINCN). ATEX-compliant version available.  Applications Chemical and petrochemical industries, raw materials extraction and waste water management.
		https://www.ksb.com/en-gb/lc/C39A https://www.ksb.com/en-gb/lc/C40A

### **INVCP**

#	≤ 1600 ≤ 116 ≤ 10	Vertical immersion pump for wet or dry installation, available with closed or semi-open impeller. Supplied with discharge pipe extending above the baseplate (INVCP) or without discharge pipe (INVCN). ATEX-compliant version available.
		https://www.ksb.com/en-gb/lc/I22A

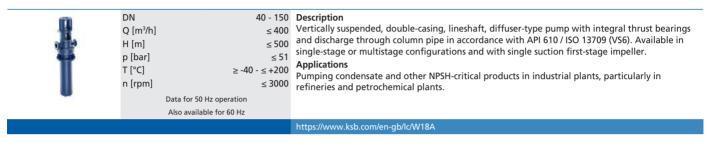
### **Estigia**



### **RWCP / RWCN**

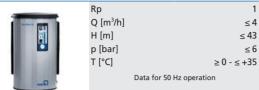
DN Q [m³/h] H [m] p [bar] T [°C] n [rpm]	≤ 700 < 100	lubricated bearings. ATEV compliant version available
		https://www.ksb.com/en-gb/lc/R66A https://www.ksb.com/en-gb/lc/R65A

### **WKTR**



## Rainwater harvesting systems

### Hya-Rain / Hya-Rain N



1 Description ≤ 4 Ready-to-connect package rainwater harvesting system in protective housing with automatic  $\leq$  43 mains water back-up function if the rainwater storage tank is empty, with integrated dry running protection and demand-driven automatic pump control. Hya-Rain N version with analog level measurement in rainwater storage tank and integrated functional check run.

Rainwater harvesting and service water harvesting, general irrigation and spray irrigation

https://www.ksb.com/en-gb/lc/H12A

### **Hya-Rain Eco**



Q [m<sup>3</sup>/h]H [m] p [bar] ≤6 T [°C]  $\geq 0 - \leq +35$ Data for 50 Hz operation

1 Description ≤ 4 Basic ready-to-connect package rainwater harvesting system with automatic mains water back-up ≤ 43 function if the rainwater storage tank is empty, with integrated dry running protection and demand-driven automatic pump control.

Applications

Rainwater harvesting and service water harvesting, general irrigation and spray irrigation

https://www.ksb.com/en-gb/lc/H12A

# Domestic water supply / swimming pool pumps

### Multi Eco



Q [m<sup>3</sup>/h]H [m] p [bar] T [°C] n [rpm]

1 - 1 1/4 Description

Data for 50 Hz operation

≥ +4 - ≤ +50 ≤ 2800

 $\leq$  8 Multistage self-priming centrifugal pump in close-coupled design. ≤ 54 Applications

 $\leq$  10 Single- or two-family houses, agricultural facilities, spray irrigation systems, general irrigation systems and washing plants, water supply and rainwater harvesting.

Controlmatic, Cervomatic

https://www.ksb.com/en-gb/lc/M17A

### Multi Eco-Pro



Q [m<sup>3</sup>/h]H [m] p [bar] T [°C] n [rpm]

≤ 54 ≤ 10 > +4 - < +50 ≤ 2800

Data for 50 Hz operation

1 - 1 1/4 Description

≤8 Multistage self-priming centrifugal pump in close-coupled design, with power cable, plug and Controlmatic E automatic control unit starting and stopping the pump in line with consumer demand and protecting it against dry running. Automated with automatic control unit.

Single- or two-family houses, agricultural facilities, spray irrigation systems, general irrigation systems and washing plants, water supply and rainwater harvesting.

https://www.ksb.com/en-gb/lc/M18A

### Multi Eco-Top



Q [m<sup>3</sup>/h]H [m] p [bar] ≤ 10 T [°C]  $\geq +4 - \leq +50$ n [rpm]

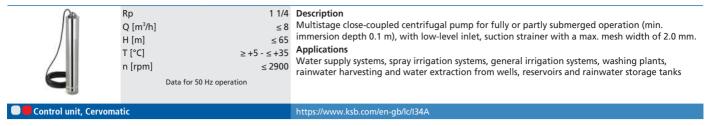
Data for 50 Hz operation

 $\leq$  8 Multistage self-priming centrifugal pump in close-coupled design incl. accumulator with eplaceable membrane in drinking water quality, total volume 20 or 50 litres, pressure switch for automatic pump operation and 1.5-metre power cable with plug.

Single- or two-family houses, agricultural facilities, spray irrigation systems, general irrigation systems and washing plants, water supply and rainwater harvesting.

https://www.ksb.com/en-gb/lc/M19A

### Ixo N



### **Ixo-Pro**

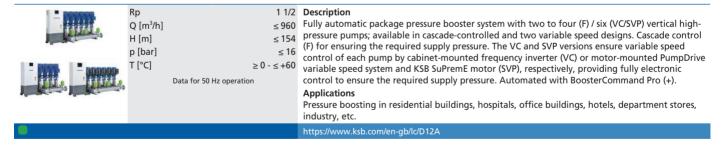


### Filtra N

Rp Q [m³/h] H [m] p [bar] T [°C] n [rpm]	≤ 36	Description Single-stage self-priming centrifugal pump in close-coupled design. Applications Pumping clean or slightly contaminated water, swimming pool water with a max. chlorine content of 0.3 %; ozonised swimming pool water with a max. salt content of 7 ‰.
		https://www.ksb.com/en-gb/lc/F00A

# **Pressure booster systems**

### KSB Delta Macro



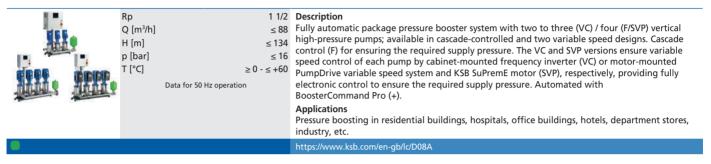
### **KSB Delta Solo/Basic Compact**



### **KSB Delta Basic**



### **KSB Delta Primo**



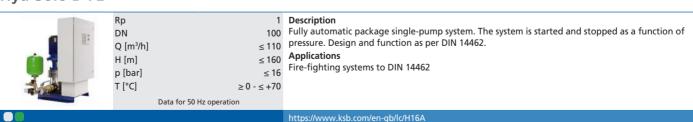
### **KSB Delta Solo**

Rp 1 1/4 Q [m³/h] ≤ 76 H [m] ≤ 145 p [bar] ≤ 16 T [°C] ≥ 0 - ≤ +60 Data for 50 Hz operation	Fully automatic single-pump system available in two variable speed versions. The MVP and SVP variable speed versions ensure variable speed control of each pump by motor-mounted frequency inverter for asynchronous motors (MVP) or by PumpDrive variable speed system and KSB SuPremE motor (SVP), respectively, providing fully electronic control to ensure the required supply
	https://www.ksb.com/en-gb/lc/D11A

### Hya-Solo D

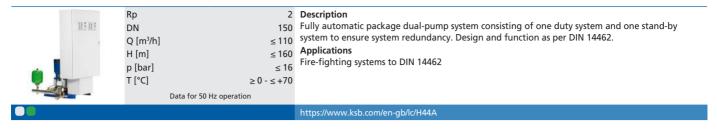
Rp DN Q [m³/h] H [m] p [bar] T [°C]	100 ≤ 110 < 160	Description Fully automatic package single-pump system with 8-litre membrane-type accumulator. The system is started and stopped as a function of pressure.  Applications Water supply systems for residential and office buildings, irrigation and spray irrigation, rainwater harvesting and service water supply systems in trade and industry.
		https://www.ksb.com/en-gb/lc/H17A

### Hya-Solo D FL



43

### Hya-Duo D FL



### **Hya-Solo D FL Compact**

DN Q [m³/h] H [m] p [bar] T [°C]	Dosign and function as nor DIN 14462
	https://www.ksb.com/en-gb/lc/H45A

### **Hya-Duo D FL Compact**

DN Q [m³/h] H [m] p [bar] T [°C]	≤ 48 ≤ 160 ≤ 16	Description Fully automatic ready-to-connect break tank package booster set for fire fighting, comprising one duty system and one stand-by system to ensure system redundancy. The system is started and stopped as a function of pressure. Design and function as per DIN 14462.  Applications Fire-fighting systems to DIN 14462
		https://www.ksb.com/en-gb/lc/H46A

### Hya-Duo D FL-R



### **Surpress Feu SFE**



### **Safety Boost**



# Drainage pumps / waste water pumps

### **AmaDrainer 3**

351 303 532 354	Rp Q [m³/h] H [m] T [°C]	< 13.5	The maximum immersion depth is 2 metres.  Applications  Automatic drainage of pits, shafts, yards and basements prone to flooding, lowering of surface water levels, drainage, drainage of underground passages, water extraction from rivers and reservoirs.
Control unit, LevelContr	ol		https://www.ksb.com/en-gb/lc/A07B

### AmaDrainer 4 / 5

	Rp Q [m³/h] H [m] T [°C]		Applications
Control unit, LevelControl			https://www.ksb.com/en-gb/lc/A76A

### AmaDrainer 80/100



### Ama-Porter F / S



### **Rotex**



Rp 1 1/4 - 2
Q [m³/h]  $\le$  24
H [m]  $\le$  14
T [°C]  $\ge$  0 - ≤ +90
n [rpm]  $\le$  2900
Installation depth  $\le$  1,7
[m]

Data for 50 Hz operation

1 1/4 - 2 Description

24
 14
 18
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 10
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45

Applications

Automatic drainage of buildings, pits and tanks, lowering of surface water levels and drainage.

https://www.ksb.com/en-gb/lc/R04A

### MK / MKY



 Rp
 2

 DN
 50

 Q [m³/h]
 ≤ 36

 H [m]
 ≤ 19

 T [°C]
 ≥ -10 - ≤ +200

 n [rpm]
 ≤ 3500

 Installation depth [m]
 ≤ 2,8

Data for 50 Hz operation Also available for 60 Hz Description

Vertical submersible pump with three-channel impeller, volute casing designed as inlet strainer.

≤ 36 Applications

Pumping condensate and heat transfer fluids below boiling point, condensate return systems, primary and secondary heating circuits, for direct installation in heating tanks or heat exchangers in the secondary circuits of heat transfer systems (MKY).

Control unit, LevelControl

https://www.ksb.com/en-gb/lc/M02A

# Lifting units / package pump stations

### **Amaclean**



Ø [mm] DN Installation depth 1000 - 1800 **Description** 50 - 100 Self-cleaning

Self-cleaning tank insert for grouted installation in new concrete structures or in concrete structures in need of refurbishment. Designed to prevent soiling of the structure and clogging of the pumps by heavily waste or fibre loaded waste water. Suitable for pump stations emitting unpleasant odours and/or gases.

Applications

Waste water disposal, rainwater disposal

https://www.ksb.com/en-gb/lc/A15A

### **AmaDrainer-Box Mini**



DN Q [m³/h] H [m] T [°C]

Data for 50 Hz operation

40 Description

 $\leq$  10 Reliable and compact waste water lifting unit in a modern design with activated carbon filter meeting hygiene requirements and with shower connection as standard; complies with

≤ 6,5 EN 12050-2 ≤ +50

Applications

Automatic disposal of waste water from washbasins, showers, washing machines and dishwashers. Use mini-Compacta sewage lifting unit for handling sewage from urinals and toilets.

https://www.ksb.com/en-gb/lc/A23A

### **AmaDrainer-Box**



DN Q [m³/h] H [m] T [°C]

Data for 50 Hz operation

Also available for 60 Hz

40 - 50 Description

Stable above-floor plastic collecting tank or impact-resistant underfloor plastic collecting tank, with floor drain and odour trap, both with AmaDrainer submersible motor pump starting and

stopping automatically and swing check valve

Applications

Automatic disposal of waste water from washbasins, showers, washing machines, garage driveways, basements and rooms prone to flooding

https://www.ksb.com/en-gb/lc/A23A

### **Evamatic-Box N**







Data for 50 Hz operation

50 - 65 Description

≤ 40 Floodable lifting unit for domestic waste water, equipped with either one or two pumps of type

≤ 21 Ama-Porter F (free-flow impeller) or Ama-Porter S (cutter)

**Applications** ≤ +40

Disposal of domestic and municipal waste water occurring below the flood level

https://www.ksb.com/en-gb/lc/EB7A

### mini-Compacta



DN Q [m<sup>3</sup>/h]H [m] T [°C]

Data for 50 Hz operation

Also available for 60 Hz

32 - 100 Description

 $\leq$  36 Floodable single-pump sewage lifting unit or dual-pump sewage lifting unit for automatic ≤ 25 disposal of domestic waste water and faeces in building sections below the flood level.

**Applications** 

Basement flats, bars, basement party rooms, basement saunas, cinemas, theatres, department stores, hospitals, hotels, restaurants, schools.

https://www.ksb.com/en-gb/lc/M09B

### **Compacta**



DN Q [m³/h] H [m] T [°C]

Data for 50 Hz operation

80 - 100 Description

 $_{\leq 145}$  Floodable single-pump sewage lifting unit or dual-pump sewage lifting unit for automatic disposal of waste water and faeces in buildings and building sections below the flood level. ≤ 24.5

≤ +40

Basement flats, bars, basement party rooms and saunas, cinemas and theatres, department stores and hospitals, hotels, restaurants, schools, other public buildings, industrial facilities, underground train stations or for joint sewage disposal from rows of houses.

https://www.ksb.com/en-gb/lc/C00B

### **CK 800 Pump Station**



DN Q [m<sup>3</sup>/h]H [m] T [°C]

Data for 50 Hz operation

32 - 50 Description

 $\leq$  22 Single-pump station / dual-pump station as ready-to-connect package system, with PE-LLD

≤ 49

(polyethylene) collecting tank for buried installation. Equipped with either one or two submersible waste water pumps of type Amarex N S (explosion-proof or non-explosion-proof) or

Ama-Porter (non-explosion-proof). Tank design to DIN 1986-100 and EN 752/EN 476.

Drainage of buildings and premises, waste water disposal, premises renovation, joint sewage disposal for multiple residential units, pumped drainage

https://www.ksb.com/en-gb/lc/C05A

### **CK 1000 Pump Station**



DN Q [m<sup>3</sup>/h]H [m] T [°C]

Data for 50 Hz operation

50 - 65 Description

Single-pump station / dual-pump station as ready-to-connect package system, with PE-LLD ≤ 40,3 (polyethylene) collecting tank for buried installation. Equipped with either one or two ≤ 37,2

submersible waste water pumps of type Amarex (explosion-proof or non-explosion-proof) or Ama-Porter (non-explosion-proof). Tank design to DIN 1986-100 and EN 752/EN 476.

Drainage of buildings and premises, waste water disposal, premises renovation, joint sewage disposal for multiple residential units, pumped drainage

https://www.ksb.com/en-gb/lc/C05A

### **Ama-Porter CK Pump Station**



DN Q [m³/h] H [m] T [°C] Data for 50 Hz operation

50 - 65 Description

 $\stackrel{\cdot}{\leq}$  40 Single-pump station / dual-pump station as ready-to-connect package system, with PE-LLD (polyethylene) collecting tank for buried installation. Equipped with either one or two submersible waste water pumps of type Ama-Porter (non-explosion-proof). Tank design to DIN 1986-100 and EN 752/EN 476.

**Applications** 

Drainage of buildings and premises, waste water disposal, premises renovation, joint sewage disposal for multiple residential units, pumped drainage

https://www.ksb.com/en-gb/lc/C05A

### **SRL**



DN Q [m³/h] H [m] T [°C] Data for 50 Hz operation

65 - 150 Description

≤ 500 Package pump station with tank made of glass fibre reinforced polyester, equipped with two dryinstalled Sewabloc pumps with a rating of 2.2 to 30 kW, integrated valves and a control unit with ≤ 55 frequency inverters. Pump operation is adjusted in line with flow rate demand, thus minimising energy costs. This maintenance-friendly pump station prevents intermediate storage of waste water and the related odour nuisance.

Applications

Joint disposal of domestic, municipal and industrial waste water to the sewer system / waste water treatment plant

https://www.ksb.com/en-gb/lc/\$93A

### **SRA**



DN Q [m³/h] H [m]

T [°C]

Data for 50 Hz operation Also available for 60 Hz

50 - 100 Description

≤ 200

Dual-pump station as ready-to-connect package system, with fibreglass collecting tank for buried installation

≤ 75 Applications ≤ +40

Site remediation, disposal of domestic, municipal and industrial waste water, joint sewage disposal for multiple residential units

Amacontrol, LevelControl

https://www.ksb.com/en-gb/lc/S90A

# **Submersible motor pumps**

### **Amarex**



DN Q [m<sup>3</sup>/h]H [m] T [°C]

Data for 50 Hz operation

Also available for 60 Hz

50 - 150 Description

≤ 320 Vertical single-stage submersible motor pump for wet installation, with free-flow impeller (F-≤ 42 max) or open dual-vane impeller (D-max), stationary or transportable version. Single-stage, single-entry close-coupled pump sets which are not self-priming. ATEX-compliant version

available.

Waste water transport, waste water management, drainage systems, waste water treatment plants, stormwater transport, recirculation, sludge treatment

Control unit, LevelControl

https://www.ksb.com/en-gb/lc/A31B

### **Amarex N**



DN Q [m<sup>3</sup>/h] H [m] T [°C]

Data for 50 Hz operation Also available for 60 Hz

32 - 100 Description

≤ 190 Vertical single-stage submersible motor pump for wet installation, with cutter (S), stationary or ≤ 49 transportable version. Amarex N pumps are floodable, single-stage, single-entry close-coupled pump sets which are not self-priming. ATEX-compliant version available.

**Applications** 

Pumping waste water, especially untreated waste water containing long fibres and solid substances, liquids containing gas or air, and raw, activated and digested sludge; dewatering and water extraction, drainage of rooms and areas at risk of flooding.

Control unit, LevelControl

### **Amarex KRT**



PumpDrive, Amacontrol, LevelContro

Q [m<sup>3</sup>/h]H [m] T [°C]

n [rpm]

Data for 50 Hz operation Also available for 60 Hz

40 - 700 Description

≤ +60

≤ 10080 Horizontal or vertical single-stage submersible motor pump in close-coupled design, with various ≤ 120 next-generation impeller types, for wet or dry installation, stationary or transportable version, with energy-saving motor and models for use in potentially explosive atmospheres.

**Applications** 

Pumping all types of waste water in water and waste water management, seawater desalination and industry, especially untreated waste water containing long fibres and solid substances, liquids containing gas or air, and raw, activated and digested sludge.

# Submersible pumps in discharge tubes

### Amacan K



DN Q [m<sup>3</sup>/h]H [m] T [°C] n [rpm]

 $\geq 0 - \leq +40$  Applications

Data for 50 Hz operation

Also available for 60 Hz

700 - 1400 Description

≤ 5400 Wet-installed submersible motor pump for installation in discharge tubes, with channel impeller,  $\leq$  30 single-stage, single-entry. ATEX-compliant version available.

Handling pre-cleaned chemically neutral waste water, industrial effluent and sewage, fluids not containing any stringy substances, pre-treated by screens or overflow sills; as waste water, combined sewage and activated sludge pumps in waste water treatment plants, irrigation and drainage pumping stations

https://www.ksb.com/en-gb/lc/A05A

### Amacan P



DN Q [m<sup>3</sup>/h]H [m] T [°C] n [rpm]

≥ 0 - ≤ +40 Data for 50 Hz operation

500 - 1500 Description

≤ 25200 Wet-installed submersible motor pump for installation in discharge tubes, with axial propeller in ≤ 12 ECB design, single-stage, single-entry. ATEX-compliant version available.

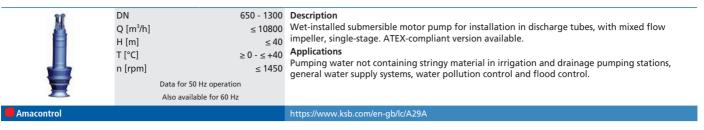
### Applications

Irrigation and drainage pumping stations, for stormwater transport in stormwater pumping stations, raw and clean water transport in water and waste water treatment plants, cooling water transport in power stations and industrial plants, industrial water supply, water pollution control and flood control, aquaculture

https://www.ksb.com/en-gb/lc/A28A

49

### **Amacan S**



# Mixers / agitators / tank cleaning units

### **Amamix**



Propeller Ø [mm] T [°C] Installation depth

Data for 50 Hz operation

Also available for 60 Hz

200 - 600 Description

≥0-≤+40 Horizontal submersible mixer with self-cleaning ECB propeller, close-coupled design, direct drive. ≤ 30 ATEX-compliant version available.

Handling municipal and industrial waste water and sludges as well as applications in environmental engineering.

Amacontrol

### **Amaprop**



Propeller Ø [mm] T [°C] Installation depth

Also available for 60 Hz

1000 - 2500 Description

≥ 0 - ≤ +40 Horizontal submersible mixer with self-cleaning ECB propeller, close-coupled design, with coaxial ≤ 12 spur gear drive. ATEX-compliant version available.

Applications

In environmental engineering, particularly in municipal and industrial waste water and sludge treatment, for circulating, keeping in suspension and inducing flow in nitrification tanks and denitrification tanks, activated sludge tanks, biological phosphate elimination tanks, flocculation tanks and sludge storage tanks

### **Amaline**

Amacontrol

Amacontrol



Q [m<sup>3</sup>/h]H [m] T [°C]

Data for 50 Hz operation Also available for 60 Hz

200 - 800 Description

≤ 2,5

≥ 0 - ≤ +40

 $\leq$  6600 Wet-installed horizontal propeller pump with submersible motor, equipped with direct drive or spur gear, ECB propeller with rigid, fibre-repellent blades, bolt-free connection to the discharge pipe. Explosion-proof version available.

Applications

Recirculating activated sludge in waste water treatment systems.

# Pumps for solids-laden fluids

### Sewatec



PumpDrive, Amacontrol, LevelControl

DN Q [m³/h] H [m] p [bar] T [°C] n [rpm]

50 - 700 Description ≤ 115

≤ 10

≤+70

≤ 2900

≤ 10000 Volute casing pump for horizontal or vertical installation, with various next-generation impeller

types, discharge flange to DIN and ANSI standards. Explosion-proof version available. Waste water transport, waste water disposal, waste water management, transport of contaminated surface water, sludge treatment

Data for 50 Hz operation

Also available for 60 Hz

https://www.ksb.com/en-gb/lc/S02B

### **Sewatec SPN**



DN Q [m³/h] H [m] p [bar] T [°C]

Data for 50 Hz operation Also available for 60 Hz

≤ 1200 Description

Vertical volute casing pump with multi-channel impellers (K), discharge flange to DIN and ANSI < 32400 ≤ 115 standards.

Applications < 16

≤+70

Waste water transport, waste water disposal, waste water management, transport of contaminated surface water

### **Sewabloc**



PumpDrive, LevelControl

DN Q [m³/h] H [m] p [bar] T [°C]

n [rpm]

Data for 50 Hz operation Also available for 60 Hz

Close-coupled volute casing pump for horizontal or vertical installation, with various next-< 1000 generation impeller types, discharge flange to DIN and ANSI standards. Explosion-proof version ≤ 90

≤ 10 **Applications** 

≤ +70 Waste water transport, waste water disposal, waste water management, transport of < 2900 contaminated surface water, sludge treatment

### **KWP**



DN Q [m³/h] H [m] p [bar] T [°C] n [rpm]

40 - 900 ≤ 100 ≤ 10

Also available for 60 Hz

 $\geq$  -40 -  $\leq$  +140  $\leq 2900$ Data for 50 Hz operation

Description

≤ 15000 Horizontal radially split volute casing pump in back pull-out design, single-stage, single-entry, available with various impeller types: closed multi-channel impeller, open multi-vane impeller and free-flow impeller. ATEX-compliant version available.

Paper industry, cellulose industry, sugar industry, food industry, power plants, chemical industry, petrochemical industry, flue gas desulphurisation, coal upgrading plants, industrial engineering, waste water transport, seawater desalination / reverse osmosis

https://www.ksb.com/en-gb/lc/K07A

### **KWP-Bloc**

PumpDrive



DN Q [m<sup>3</sup>/h]H [m] p [bar] T [°C] n [rpm]

Data for 50 Hz operation Also available for 60 Hz

< 100 ≤ 10 ≥ -40 - ≤ +100

≤ 2900

40 - 100 Description

≤ 325 Horizontal or vertical radially split close-coupled volute casing pump, single-stage, single-entry, available with various impeller types: closed multi-channel impeller, open multi-vane impeller and free-flow impeller.

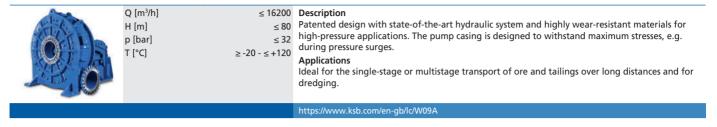
Paper industry, cellulose industry, sugar industry, food industry, chemical industry, petrochemical industry, flue gas desulphurisation, industrial engineering, waste water transport

PumpDrive

https://www.ksb.com/en-gb/lc/K09A

# **Slurry pumps**

### **WBC**



### **LSA**

	Q [m³/h]	≤ 13600	Description
a come	H [m]	≤ 90	Premium design white cast iron pump for long service life handling severe slurries. The
	p [bar]	≤ 16	maintenance-friendly single-wall construction and heavy section white cast iron wet end combined with the cartridge bearing assembly provide maximum reliability, a long service life and each of maintenance.
	T [°C]	≥ -20 - ≤ +120	combined with the cartridge bearing assembly provide maximum reliability, a long service life
			and ease of maintenance.
and the same of th			Applications
			Ore and tailings transport, cyclone feed, dredging (dry-installed or submerged operation) and
			industrial processes.
			https://www.ksb.com/en-gb/lc/L14A

### LCC-M

Q [m³/h] H [m] p [bar] T [°C]	≤ 90 ≤ 16	Reliable pump for high heads and moderately corrosive slurries. Used in mine dewatering, ash and tailings transport and dredging.
		https://www.ksb.com/en-gb/lc/L13A

### LCC-R

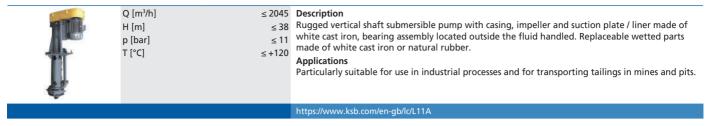
Q [m³/h] H [m] p [bar] T [°C]	≤ 42 < 16	Description Interchangeable rubber-lined or part-metal design allows adaptation of existing pumps to new applications by simply exchanging the pump wet end.  Applications The pumps are suitable for moderate heads, fine particles and highly corrosive slurries.
		https://www.ksb.com/en-gb/lc/L19A

### **TBC**

O O	Q [m³/h] H [m] p [bar] T [°C]	. 00	Description Horizontal high-pressure end-suction centrifugal pump offering maximum resistance to wear and ease of maintenance. The conventional single-wall design transfers stress loads from the wear parts to the casing covers in high-pressure applications. Pump components made of highly wear-resistant white cast iron.  Applications High-head high-flow hydrotransport of mined ore, tailings, dredged material, for pipeline booster stations and other severe duties.
			https://www.ksb.com/en-gb/lc/T08A

53

### **LCV**



### **FGD**

Greens	Q [m³/h]		Description
A CONTRACTOR OF THE PARTY OF TH	H [m]	≤ 30	High-flow / low-head white cast iron pump with single-wall casing and high-efficiency impeller.
-63	p [bar]	≤ 10	Single-piece suction cover with integrated mounting plate.
A CONTRACTOR	T [°C]	≥ -20 - ≤ +120	Applications
			Flue gas desulpurisation systems and process circuits
San Maria			
			https://www.ksb.com/en-gb/lc/F01A

### **MHD**

Q [m³/h] H [m] p [bar] T [°C]	≤ 115	Description Horizontal volute casing pump for high-volume hydrotransport of solids. For pumping slurries of large and very large particle sizes with a very good suction behaviour and high efficiency. Pump components made of white cast iron.  Applications Ideal for pipeline pressure booster stations and severe mining duties. Highly suitable for loading and unloading duties on (cutter) suction dredgers.
		https://www.ksb.com/en-gb/lc/M35A

### LHD

A SW	Q [m³/h] H [m] p [bar] T [°C]	< 105	Description Horizontal volute casing pump for high-volume hydrotransport of solids. For pumping slurries of large and very large particle sizes with a very good suction behaviour and high efficiency. Used in low-pressure applications. Pump components made of white cast iron.  Applications Ideal for handling sand and gravel, on dredgers for land reclamation and as booster pumps.
			https://www.ksb.com/en-gb/lc/L12A

### **MDX**

Q [m³/h] H [m] p [bar] T [°C]	≤ 51 ≤ 14	Description Pump designed with the latest technology from GIW. Superior wear properties and extremely long service life handling aggressive slurries.  Applications Designed for SAG and ball mill discharge duties, cyclone feed, screen feed and other ore mining and treatment processes.
		https://www.ksb.com/en-gb/lc/M42A

### ZW



### **HVF**

H [m] p [bar]	≤ 50 < 11	Description The pump provides continuous operation without shutdown or operator intervention. The new hydraulic design removes air from the impeller eye while the pump is running, and the pump can be retrofitted into any existing operation.  Applications For use in all froth pumping applications in the mineral processing and industrial minerals industries.
		https://www.ksb.com/en-gb/lc/HA4A

### **DWD**

Q [m³/h] H [m] p [bar] T [°C]	resistant casing, side liners and curved-vane impeller) are made of high-chrome white iron. While the internal wear parts handle abrasive slurries, the outer casing acts as the high pressure containment component for safety. Designed primarily for use in ocean going vessels, the DWD dredge pump is a robust design, built to withstand the world's most aggressive dredge applications.  Applications Inboard and underwater pumps for cutter suction dredges (CSD) and trailing suction hopper dredges (TSHD).
	https://www.ksb.com/en-gb/lc/D06A

### **TDW**

	Q [m³/h]	≤ 10500	Description
ALCO STORY OF THE	H [m]	≤ 105	High head, low suction head pump specifically engineered for operation in tailings pond
	p [bar]	< 21	dewatering applications. This pump offers a fully integrated expeller shaft seal for flush-free operation. The balanced, 4-vane, large free passage impeller helps to minimise vibration. A
The second secon	T [°C]	≥ -20 - ≤ +120	operation. The balanced, 4-vane, large free passage impeller helps to minimise vibration. A
	, [ ]	2-20-5+120	robust mechanic end ensures reliable operation in a wide range of operating conditions. The
The same			wet-end wear components including the high speed capable impeller are made of high chrome
			cast white iron for maximum wear life and long production cycles.
All and a second			Applications
			Developed to meet the unique requirements of tailings pond dewatering services where seal
			flush water is not available. Ideal for water reclamation service where solids are present and high
			head is required.
			https://www.ksb.com/en-gb/lc/T07A

# **Self-priming pumps**

DN

### **Etaprime L**



≤ 180
≤ 85
≤ 10
≥ -30 - ≤ +90
≤ 9

Data for 50 Hz operation Also available for 60 Hz

### 25 - 125 Description

Horizontal self-priming volute casing pump, single-stage, with open multi-vane impeller, from size 40-40-140 with bearing bracket, in back pull-out design, ATEX-compliant version available.

Pumping clean, contaminated or aggressive fluids not containing abrasive substances and solids. For use in spray irrigation systems, service water systems, drainage, dewatering systems, firefighting systems, drawdown of groundwater levels, domestic water supply, air-conditioning systems, cooling circuits, swimming pools, water supply systems.

https://www.ksb.com/en-gb/lc/E25B

### **Etaprime B**



DN	25 - 10
Q [m³/h]	≤ 13
H [m]	≤ 7
p [bar]	≤ 1
T [°C]	≥ -30 - ≤ +9
⊔ [m]	_

Data for 50 Hz operation

Also available for 60 Hz

00 Description 70

Horizontal self-priming volute casing pump, single-stage, with open multi-vane impeller, closecoupled; pump shaft and motor shaft rigidly connected; ATEX-compliant version available. **Applications** 

Pumping clean, contaminated or aggressive fluids not containing abrasive substances and solids. For use in spray irrigation systems, service water systems, drainage, dewatering systems, firefighting systems, drawdown of groundwater levels, domestic water supply, air-conditioning systems, cooling circuits, swimming pools, water supply systems.

https://www.ksb.com/en-gb/lc/EB1B

### EZ B/L



DN
Q [m³/h]
H [m]
p [bar]
T [°C]

≤ 160 ≤ 16 -5 - ≤ +80 n [rpm] ≤ 1500 Data for 50 Hz operation

Also available for 60 Hz

Data for 50 Hz operation

Also available for 60 Hz

### 25 - 50 Description

≤ 21 Self-priming multistage liquid ring pump in close-coupled (EZ B) or long-coupled (EZ L) design,

### **Applications**

Boiler feed, sanitary hot water, hydrophore systems for fresh or seawater and fresh water preheating

https://www.ksb.com/en-gb/lc/E34A https://www.ksb.com/en-gb/lc/E35A

### AU



DN		
Q [m <sup>3</sup> /h]		
H [m]		
p [bar]		
T [°C]		

# ≤ 52 ≤ 10

 $\geq -10 - \leq +80$ 

40 - 200 Description

≤ 600 Horizontal self-priming centrifugal pump, open or semi-open impeller, adjusted via wear plate, with mechanical seal, ATEX-compliant version available.

Pumping clean, contaminated and aggressive fluids also containing solids. In fresh water and seawater circuits, fire-fighting applications, as ballast and bilge pumps, and for drainage and waste water applications.

https://www.ksb.com/en-gb/lc/A93A

### **AU Monobloc**



DN				
Q [m³/h]				
H [m]				
p [bar]				
T [°C]				

Data for 50 Hz operation

Also available for 60 Hz

≤ 37 ≤ 10

≥ -10 - ≤ +80

### 40 - 50 Description

 $\leq$  53 Horizontal self-priming centrifugal pump in close-coupled design, open or semi-open impeller, adjusted via wear plate, with mechanical seal, driven by electric motors or internal combustion engines; ATEX-compliant version available.

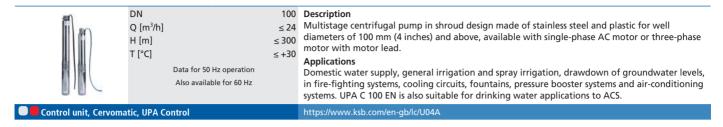
### **Applications**

Pumping clean, contaminated and aggressive fluids also containing solids. In fresh water and seawater circuits, fire-fighting applications, as ballast and bilge pumps, and for drainage and waste water applications.

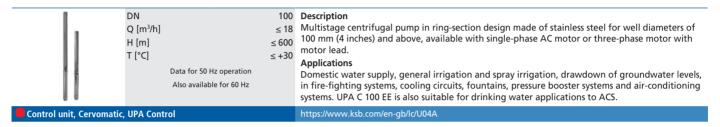
https://www.ksb.com/en-gb/lc/A94A

# Submersible borehole pumps

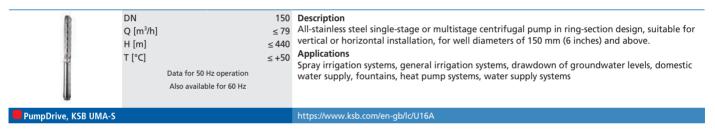
### **UPA C 100 EN**



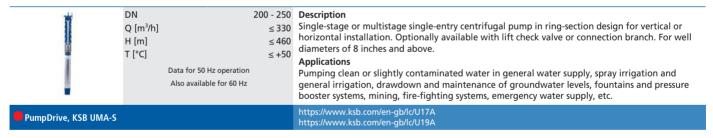
### **UPA C 100 EE**



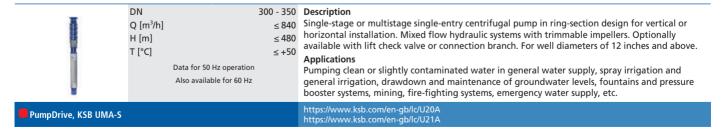
### **UPA C 150**



### **UPA 200, UPA 250**



### **UPA 300, UPA 350**



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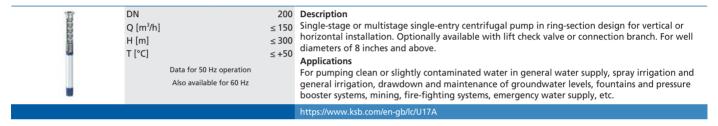
### **UPA 400 - UPA 1100**

H [m] ≤ 300 horiz Appli T [°C] ≤ +50 Pump	gle-stage or multistage single-entry centrifugal pump in ring-section design for vertical or izontal installation.
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### **UPA D**

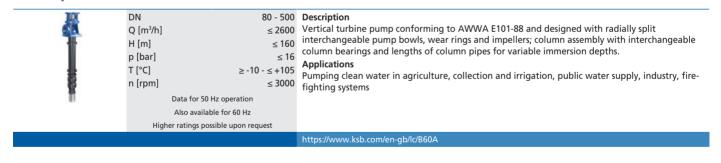
108	DN Q [m³/h] H [m] T [°C]  Data for 50 Hz operation Also available for 60 Hz	≤ 5000 < 1500	Description Multistage double-entry centrifugal pump in ring-section design for vertical or horizontal installation. Applications Pumping clean or slightly contaminated water, seawater, liquefied gases and oils in water supply, offshore and cavern applications and in groundwater management.
			https://www.ksb.com/en-gb/lc/U01A

### **UPA S 200**



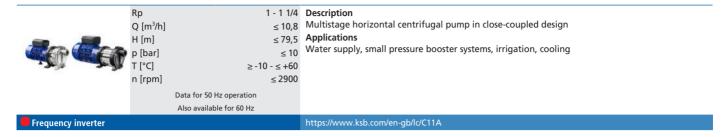
# **Vertical turbine pumps**

### **B Pump**



# **High-pressure pumps**

### Comeo



### Movitec H(S)I

		< 27	Description  Multistage horizontal high-pressure centrifugal pump with KSB SuPremE, a magnetless synchronous reluctance motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/IE5 to IEC TS 60034-30-2:2016, for operation on a KSB PumpDrive 2 or KSB PumpDrive 2 Eco variable speed system without rotor position sensors.  Applications  Spray irrigation, general irrigation, washing, water treatment, fire-fighting and pressure booster systems, hot water and cooling water recirculation, boiler feed systems, etc.
KSB SuPremE, PumpDrive, PumpMeter			https://www.ksb.com/en-gb/lc/M06A

### **Movitec**

	Rp DN Q [m³/h] H [m] p [bar] T [°C] n [rpm]	$25 - 125$ $\leq 160$ $\leq 401$ $\leq 40$ $\geq -20 - \leq +140$	Multistage vertical high-pressure centrifugal pump in ring-section design with suction and discharge nozzles of identical nominal diameters arranged opposite to each other (in-line design), close-coupled. With KSB SuPremE, a magnetless synchronous reluctance motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/IE5 to IEC TS 60034-30-2:2016, for operation on a KSB PumpDrive 2 or KSB
KSB SuPremE, PumpDrive, PumpMeter			https://www.ksb.com/en-gb/lc/M12A

### **Movitec VCI**

		≤ 22,5 < 249	
KSB SuPremE, PumpDriv	/e		https://www.ksb.com/en-gb/lc/M94A

### Multitec

	DN Q [m³/h] H [m] p [bar] T [°C] n [rpm]	≤ 1500 ≤ 1000 ≤ 100	Description  Multistage horizontal or vertical centrifugal pump in ring-section design, long-coupled or close-coupled, with axial or radial suction nozzle, cast radial impellers and motor-mounted variable speed system. ATEX-compliant version available.  Applications  Water supply, drinking water supply, industry, pressure boosting, irrigation, power stations, heating systems, filtering systems, fire-fighting systems, reverse osmosis systems, snow-making systems and washing plants, and geothermal systems (re-injection of geothermal water into the aquifer).
KSB SuPremE, PumpDrive, PumpMeter			https://www.ksb.com/en-gb/lc/M07A

# **Axially split pumps**

# Omega

	DN Q [m³/h] H [m] p [bar] T [°C] n [rpm]  Data for 50 H: Also available	$\leq 2880$ $\leq 210$ $\leq 25$ $\geq 0 - \leq +140$ $\leq 2900$ soperation	Description Single-stage axially split volute casing pump for horizontal or vertical installation, with double-entry radial impeller, mating flanges to DIN, EN or ASME.  Applications Pumping water with a low solids content, e.g. in waterworks, irrigation and drainage pumping stations, extraction duties in desalination systems, power stations, fire-fighting systems, shipbuilding, district heating or cooling.
PumpDrive, PumpMeter			https://www.ksb.com/en-gb/lc/O00A

# RDLO

	DN Q [m³/h] H [m] p [bar] T [°C] n [rpm]	$\leq 10000$ $\leq 290$ $\leq 30$ $\geq 0 - \leq +140$	Description Single-stage axially split volute casing pump for horizontal or vertical installation, with double-entry radial impeller, mating flanges to DIN, EN or ASME.  Applications Pumping water with a low solids content, e.g. in waterworks, irrigation and drainage pumping stations, extraction duties in desalination systems, power stations, fire-fighting systems, shipbuilding, district heating or cooling.
PumpMeter, Frequency inverter			https://www.ksb.com/en-gb/lc/R08A

# **RDLP**

	DN Q [m³/h] H [m] p [bar] T [°C] n [rpm]	≤ 18000 < 550	
Frequency inverter			https://www.ksb.com/en-gb/lc/R09A

# **Hygienic pumps**

# Vitachrom

	DN Q [m³/h] H [m] p [bar] T [°C]	$\geq$ -30 - $\leq$ +110 Data for 50 Hz operation	
KSB SuPremE, PumpDriv	e, PumpMe	Also available for 60 Hz	compliant version available.  Applications  Hygienic handling of fluids in the food, beverage and pharmaceutical industries as well as in the chemical industry.  https://www.ksb.com/en-gb/lc/V00A

### **Vitacast**



DN 32 - 200 Description Q [m³/h] H [m] ≤ 105 p [bar] ≤ 10 T [°C] ≥ -20 - ≤ +140

Data for 50 Hz operation

Also available for 60 Hz

Other ratings possible on request

≤ 540 Service-friendly volute casing pump with magnetless KSB SuPremE motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/ IE5 and PumpDrive variable speed system. All wetted components are made of 1.4404/1.4409 (AISI 316L/CF3M) stainless steel. Designed with very little dead volume; open impeller, electropolished surface, excellent efficiency. Hygienic design for the highest requirements on cleanability (CIP/SIP-compatible), certified by the TNO Nutrition and Food Research Institute to EHEDG standards. All materials comply with FDA standards and EN 1935/2004. ATEX-compliant version available.

### Applications

Hygienic handling of fluids in the food, beverage and pharmaceutical industries as well as in the chemical industry

KSB SuPremE, PumpDrive, PumpMeter

https://www.ksb.com/en-gb/lc/V01A

### Vitacast Bloc



DN Q [m<sup>3</sup>/h]≤ 340 H [m] ≤ 105 p [bar] T [°C] > -30 - < +140 Data for 50 Hz operation

Also available for 60 Hz

Other ratings possible on request

25 - 150 Description

Service-friendly volute casing pump with magnetless KSB SuPremE motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/ IE5 and PumpDrive variable speed system. All wetted components are made of 1.4404/1.4409 (AISI 316L/CF3M) stainless steel. Designed with very little dead volume; open impeller, electropolished surface, excellent efficiency. Hygienic design for the highest requirements on cleanability (CIP/SIP-compatible), certified by the TNO Nutrition and Food Research Institute to EHEDG standards. All materials comply with FDA standards and EN 1935/2004. Trolley available among other accessories. ATEX-compliant version available.

### Applications

Hygienic handling of fluids in the food, beverage and pharmaceutical industries as well as in the chemical industry.

KSB SuPremE, PumpDrive, PumpMeter

https://www.ksb.com/en-gb/lc/V05A

### Vitaprime



DN 40 - 80 Description Q [m³/h] H [m] p [bar] T [°C] Data for 50 Hz operation

Also available for 60 Hz

Other ratings possible on request

≤ 58 Service-friendly close-coupled side-channel pump (self-priming) with magnetless KSB SuPremE motor (exception: motor sizes 0.55 kW / 0.75 kW with 1500 rpm are designed with permanent magnets) of efficiency class IE4/IE5 and PumpDrive variable speed system. All wetted components are made of 1.4404/1.4409 (AISI 316L/CF3M) stainless steel. Hygienic design for the highest cleanability requirements (CIP/SIP-compatible). All materials comply with FDA standards and EN 1935/2004. Trolley available among other accessories. ATEX-compliant version available.

Hygienic handling of fluids in the food, beverage and pharmaceutical industries as well as in the chemical industry.

KSB SuPremE, PumpDrive

https://www.ksb.com/en-gb/lc/V07A

### Vitastage



Q [m<sup>3</sup>/h]H [m] p [bar] T [°C] > -20 - < +140 Data for 50 Hz operation

Also available for 60 Hz

Other ratings possible on request

≤ 12.5 Description

 $\leq$  150 Multistage centrifugal pump in close-coupled design for vertical or horizontal installation. All wetted components are made of 1.4401/1.4408 (AISI 316/CF8M) stainless steel. Versatile, robust and especially energy-efficient. CIP/SIP-compatible. All materials comply with FDA standards and EN 1935/2004. Trolley also available among other accessories.

### Applications

Processes with hygienic requirements in the food and beverage industries and in the chemical industry.

https://www.ksb.com/en-gb/lc/V08A

### Vitalobe



DN Q [m<sup>3</sup>/h]H [m] ≤ 200 p [bar] < 20 T [°C] ≥ -40 - ≤ +180 Viscosity [cP]

> Also available for 60 Hz Other ratings possible on request

≤ 200000 Data for 50 Hz operation

25 - 200 Description

≤ 342 Sturdy rotary lobe pump in hygienic design, bi-directional operation possible, horizontal or vertical orientation of connections. Hygienic design, excellent CIP/SIP compatibility due to its almost complete lack of dead volume or narrow clearances. All wetted components made of 1.4404/1.4409 (AISI 316L/CF3M) stainless steel; various rotor types, shaft seals and process connections available. Installed as a pump set with gear unit and standardised motor. Vitalobe is EHEDG-certified. The pump elastomers comply with the FDA standards and EN 1935/2004. Accessories include a trolley, a heatable casing or casing cover and a pressure relief arrangement. ATEX-compliant version available.

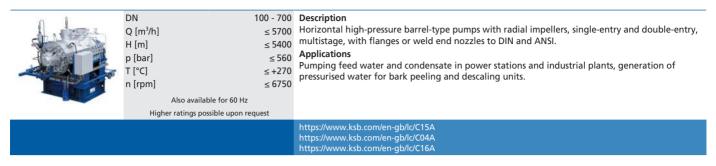
Hygienic and gentle handling of sensitive or high-viscosity fluids in the food, beverage and pharmaceutical industries, the chemical industry and general process engineering.

KSB SuPremE, PumpDrive

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# **Pumps for power station conventional islands**

### CHTA / CHTC / CHTD



### HGB / HGC / HGD

DN Q [m³/h] H [m] p [bar] T [°C] n [rpm] Also available for 60 Hz Higher ratings possible upon req	40 - 400 ≤ 2300 ≤ 5300 ≤ 560 ≤ +210 ≤ 7000	
		https://www.ksb.com/en-gb/lc/H63A https://www.ksb.com/en-gb/lc/H23A

### HGI

LED	DN	80 - 150	Description
	Q [m³/h]		Horizontal radially split ring-section pump with radial impellers, single-entry, multistage.
4	H [m]	≤ 2000	Applications
	p [bar]	≤ 200	Pumping feed water and condensate in power stations and industrial plants.
	T [°C]	≤ +180	
	n [rpm]	≤ 3600	
		Also available for 60 Hz	
			https://www.ksb.com/en-gb/lc/H08A

### **HGM**

DN Q [m³/h] H [m] p [bar] T [°C] n [rpm]  Also available for 60 Hz Higher ratings possible upon rec	≤ 350 ≤ 1400 ≤ 140 ≤ +160 ≤ 3600	Applications Pumping feed water in power stations, boiler feed systems and condensate transport in industrial plants.
		https://www.ksb.com/en-gb/lc/H00A

### **YNK**

DN Q [m³/h] H [m] p [bar] T [°C] n [rpm] Higher ratings possible	≤ 5200 ≤ 540 ≤ 100 ≤ +250 ≤ 3300	A P of
		https://www.ksb.com/en-gb/lc/Y01A

### **LUV / LUVA**



DN	100 - 550	Description
Q [m³/h]		Vertical spherical casing pump, radial impellers, single-entry, single- to three-stage. Suitable for
H [m]	≤ 300	very high inlet pressures and temperatures. Integrated wet winding motor to VDE. Product-
p [bar]	≤ 400	lubricated bearings, no need for oil supply systems. Design to TRD, ASME or IBR.
T [°C]	≤ +425	Applications  Hot water recirculation in forced-circulation, forced-flow and combined-circulation boilers for

≤ 3600

Data for 50 Hz operation Also available for 60 Hz

n [rpm]

Hot water recirculation in forced-circulation, forced-flow and combined-circulation boilers for very high pressures and in solar power towers.

### **WKTB**



DN	150 - 300	Description
Q [m <sup>3</sup> /h]	≤ 1500	Vertical can-type ring-section pump on base frame, multistage, first-stage impeller designed as a
H [m]	≤ 370	
p [bar]	≤ 40	
T [°C]	≤ +140	Pumping condensate in power stations and industrial plants.
n [rpm]	1500	
	Data for 50 Hz operation	
	Also available for 60 Hz	

https://www.ksb.com/en-gb/lc/W07A

### **SEZ**



Q [m³/h] H [m] T [°C] n [rpm] Data for 50 Hz operation Also available for 60 Hz

Higher ratings possible upon request

Data for 50 Hz operation Also available for 60 Hz Higher ratings possible upon request

Also available for 60 Hz

Higher ratings possible upon request

≤ 65000 Description

 $\leq$  33 Vertical tubular casing pump with open mixed flow impeller, pump intake with inlet nozzle or suction elbow, pull-out design available, discharge nozzle arranged above- or underfloor, flanges ≤ +40 to DIN or ANSI standards available. ≤ 990

**Applications** 

Pumping raw water, pure water, service water and cooling water in industry, water supply systems, power stations and seawater desalination plants.

### **SEZT**



Q [m³/h] H [m] T [°C] n [rpm]

≤ 20000 Description

 $\leq$  110 Vertical tubular casing pump with open or closed mixed flow impeller

≤ +45 Applications

≤ 990 Handling seawater in seawater desalination plants.

### **PHZ**



Q [m³/h] H [m] T [°C] n [rpm] Data for 50 Hz operation

< 65000 Description

≤ 25

≤ +80

≤ 990

Vertical tubular casing pump with mixed flow propeller, pump intake with inlet nozzle or suction elbow, pull-out design available, discharge nozzle arranged above- or underfloor, flanges to DIN or ANSI standards available.

### **Applications**

Raw water, pure water, service water and cooling water in industry, water supply systems, power stations and seawater desalination plants.

### **PNZ**



Q [m³/h] H [m] ≤ 15 T [°C] ≤+80 n [rpm] ≤ 990

Data for 50 Hz operation Also available for 60 Hz Higher ratings possible upon request

≤ 65000 Description

Vertical tubular casing pump with axial propeller, pump intake with inlet nozzle or suction elbow, pull-out design available, discharge nozzle arranged above- or underfloor, flanges to DIN

Applications

Raw water, pure water, service water and cooling water in industry, water supply systems, power stations and seawater desalination plants.

https://www.ksb.com/en-gb/lc/P06A

### **SNW**



DN 350 - 800 Description Q [m³/h] < 6500 H [m] ≤ 10 p [bar] T [°C] ≤+60 n [rpm] ≤ 1500

Data for 50 Hz operation

Vertical tubular casing pump with mixed flow impeller, single-stage, with maintenance-free Residur bearings, discharge nozzle arranged above- or underfloor.

**Applications** 

Irrigation and drainage, stormwater pumping stations, for raw water and pure water, water supply, cooling water.

Also available for 60 Hz Higher ratings possible upon request

https://www.ksb.com/en-gb/lc/S14A

### **PNW**



DN ≤ 9000 Q [m³/h] H [m] p [bar] T [°C] n [rpm]

> Data for 50 Hz operation Also available for 60 Hz Higher ratings possible upon request

≤ 10 ≤ 10 ≤+60 ≤ 1500

350 - 800 Description

Vertical tubular casing pump with axial propeller, single-stage, with maintenance-free Residur bearings, discharge nozzle arranged above or below floor level.

Irrigation and drainage, stormwater pumping stations, for raw water and pure water, water supply, cooling water.

https://www.ksb.com/en-gb/lc/P02A

### **Beveron**



Q [m<sup>3</sup>/s]H [m]

Data for 50 Hz operation Also available for 60 Hz Higher ratings possible upon request

≤ 30 Description

Concrete volute casing pump with mixed flow impeller, single-stage, with zero-maintenance Residur bearings lubricated by the fluid handled.

**Applications** 

Coast protection and flood control, irrigation and drainage, low-lift pumping stations, reservoir filling, cooling water, raw and pure water.

https://www.ksb.com/en-gb/lc/B33A

### **SPY**



Q [m³/h] H [m] p [bar] T [°C] n [rpm]

≤ 10

Data for 50 Hz operation

≤+105 ≤ 1480

350 - 1200 Description

≤ 21600 Long-coupled volute casing pump, single-stage, in back pull-out design.

≤ 50 Applications

Irrigation, drainage and water supply systems, for pumping condensate, cooling water, service water, etc.

Higher ratings possible upon request https://www.ksb.com/en-gb/lc/S15A

# **Pumps for nuclear power stations**

### **RER**



DN	≤ 800
Q [m³/h]	≤ 40000
H [m]	≤ 140
p [bar]	≤ 175
T [°C]	≤+350
n [rpm]	≤ 1800

Description

Vertical single-stage reactor coolant pump with forged circular casing plated on the inside, with diffuser, either with integrated pump thrust bearing or shaft supported by motor bearing.

Reactor coolant recirculation in nuclear power stations.

Available for 50 Hz and 60 Hz Higher ratings possible upon request

https://www.ksb.com/en-gb/lc/R10A

### **RSR**



DN	≤ 750
Q [m³/h]	≤ 24000
H [m]	≤ 215
p [bar]	≤ 175
T [°C]	≤+350

Description

Vertical single-stage reactor coolant pump with cast or forged casing, shaft supported by motor

**Applications** 

Reactor coolant recirculation in nuclear power stations.

n [rpm] Available for 50 Hz and 60 Hz Higher ratings possible upon request

https://www.ksb.com/en-gb/lc/R07A

### **RUV**



ON	≤ 650
Q [m³/h]	≤ 22000
H [m]	≤ 111
[bar]	≤ 155
Γ [°C]	≤ +350
n [rpm]	≤ 1800

Available for 50 Hz and 60 Hz Higher ratings possible upon request

Vertical single-stage reactor coolant pump. Seal-less design with integrated wet rotor motor and integrated flywheel. Product-lubricated bearings, no oil supply systems required.

**Applications** 

Reactor coolant recirculation in generation III+ nuclear power stations.

https://www.ksb.com/en-gb/lc/R42A

### **PSR**



DN		
Q [m³/h]		
H [m]		
p [bar]		
T [°C]		
n [rnm]		

≤ 600 Description

≤+300 ≤ 2000

≤ 9000 Vertical pump set integrated in the reactor containment floor, seal-less pump with leak-free, low-≤ 45 maintenance wet rotor motor.

Applications < 75

Reactor coolant recirculation in boiling water reactors.

Available for 50 Hz and 60 Hz Higher ratings possible upon request

### **RHD**



Q [m<sup>3</sup>/h]H [m] ≤ 150 p [bar] T [°C] ≤ +210 ≤ 6500 n [rpm]

Available for 50 Hz and 60 Hz

125 - 500 Description

 $\leq$  6500 Horizontal single-stage double-entry main feed water pump MFWP, cast or forged variant.

≤ 1000 Applications

Main feed water supply (MFWS) in steam generation systems of nuclear power stations.

Higher ratings possible upon request https://www.ksb.com/en-gb/lc/R25A

### **LUV Nuclear**



DN Q [m³/h] H [m] p [bar] T [°C] Data for 50 Hz operati	≤ 7000 $ ≤ 300 $ $ ≤ 320 $ $ ≤ +430$	inlet pressures and temperatures. Integrated wet winding motor to VDE. Product-lubricated bearings, no oil supply systems required. Design to ASME Section 3, KTA, etc.
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### **RHM**



	DN	≤ 150	Description
	Q [m³/h]	≤ 300	Horizontal multistage barrel pull-out pump.
	H [m]	≤ 2100	Applications
þ	p [bar]	≤ 220	Core flooding, emergency cooling and residual heat removal systems, chemical and volume
	T [°C]	≤+180	Core flooding, emergency cooling and residual heat removal systems, chemical and volume control systems, control rod drive systems, high-pressure and medium-pressure safety injection systems, emergency feed water systems, start-up and shutdown feed water systems, high-pressure
	n [rpm]	≤ 8000	charging.
	Available for EO Ha and 60 Ha		

### **RVM**



Q [ $m^3/h$ ] ≤ 50 H [ $m$ ] ≤ 2000	Description Vertical multistage barrel pull-out pump. Applications Core flooding, emergency cooling and residual heat removal systems, chemical and volume control systems, high-pressure and medium-pressure safety injection systems.
n [rpm] $\leq 6000$ Available for 50 Hz and 60 Hz	

### **RHR**



DN	≤ 500	Description
Q [m³/h]	≤ 6000	Horizontal circular casing pump with forged or cast pressure boundary and diffuser.
H [m]		Applications
p [bar]	≤ 63	Core flooding, emergency cooling and residual heat removal systems, ancillary systems, acid feed
T [°C]	≤ <b>+</b> 200	system and low-pressure injection system, component cooling water systems.
n [rpm]	< 3600	

### **RVR**



DN Q [m³/h] H [m] p [bar] T [°C] n [rpm]	≤ 6000	Vertical of Application Core floor system are
n [rpm]		

Higher ratings possible upon request

Higher ratings possible upon request

Available for 50 Hz and 60 Hz

tion circular casing pump with forged or cast pressure boundary and diffuser.

ooding, emergency cooling and residual heat removal systems, ancillary systems, acid feed and low-pressure injection system, component cooling water systems.

### **RVT**



DN	≤ 350	Description
		Vertical multistage barrel pull-out pump with double-entry suction impeller and forged
		distributor casing.
p [bar]	≤ 30	Applications
T [°C]	≤+160	Low-pressure injection systems, emergency feed water systems, emergency cooling and residual heat removal systems
n [rpm]	≤ 1485	neat removal systems

Available for 50 Hz and 60 Hz Higher ratings possible upon request

# Pumps for desalination by reverse osmosis

### **RPH-RO**



DN	100 - 350	Description
Q [m <sup>3</sup> /h]	≤ 2500	Horizontal radially split volute casing pump for dry installation, made of super-duplex stainless
H [m]	2110	steel.
p [bar]	≤ 80	Applications
T [°C]	≤ +40	Booster pump for RO seawater desalination systems.

Data for 50 Hz operation Also available for 60 Hz

### **Multitec-RO**



DN	50 - 150	Description
Q [m³/h]	≤ 850	
H [m]	≤ 1000	
p [bar]	≤ 100	super duplex stainless steel.
T [°C]	≥ -10 - ≤ +45	Applications High-pressure pump for RO seawater desalination systems and geothermal systems (re-injection
n [rpm]		of geothermal water into the aquifer).

n [rpm] Data for 50 Hz operation

KSB SuPremE, PumpDrive

# Positive displacement pumps

### RC / RCV



N	20 - 100	I
) [m³/h]	≤ 78	-
ł [m]	≤ 100	i
[bar]	≤ 10	4
[°C]	≥ +5 - ≤ +80	ı

Data for 50 Hz operation Also available for 60 Hz

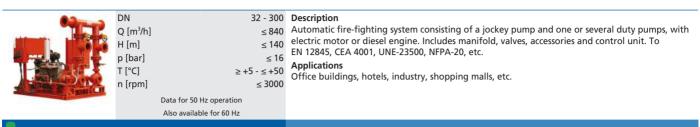
Helical gear pump, self-priming, with bypass valve, close-coupled design, for horizontal installation with baseplate or vertical installation. With mechanical seal.

Fuel feed, handling fuel, lubricating oil and viscous fluids, lubrication systems.

https://www.ksb.com/en-gb/lc/R41A

# Fire-fighting systems

### **EDS**



### DU / EU



H [m] $\leq 150$ p [bar] $\leq 25$ T [°C] $\geq +5 - \leq +50$	DIN	32 - 350
p [bar] $\leq 25$ T [°C] $\geq +5 - \leq +50$	Q [m <sup>3</sup> /h]	≤ 2500
T [°C] ≥ +5 - ≤ +50	H [m]	≤ 150
	p [bar]	≤ 25
n [rpm] ≤ 3000	T [°C]	≥ +5 - ≤ +50
	n [rpm]	≤ 3000

Data for 50 Hz operation Also available for 60 Hz Description

Automatic fire-fighting system consisting of pumps with electric motor or diesel engine and control unit. To EN 12845, CEA 4001, UNE-23500, NFPA-20, FM, etc.

Applications

Office buildings, hotels, industry, shopping malls, etc.

### **Control units**

### Controlmatic E



Number of pumps U [V]

≤ 1 Description

1~230 Automatic control unit for pressure-controlled starting, flow-controlled stopping and monitoring of a single pump

### **Applications**

In water supply systems in combination with Multi Eco, Ixo, etc.

https://www.ksb.com/en-gb/lc/C72A

### **Controlmatic E.2**



Number of pumps U [V]

≤ 1 Description

1~230 Automatic control unit for pressure-controlled starting, flow-controlled stopping and monitoring of a single pump

### Applications

In water supply systems in combination with Multi Eco, Ixo, etc.

https://www.ksb.com/en-gb/lc/C72A

### **Cervomatic EDP.2**



Number of pumps U [V]

≤ 1 Description

1~230 / 3~400 Automatic control unit for pressure-controlled starting and either pressure-controlled or flowcontrolled stopping and monitoring of a single pump.

In water supply systems with pumps of the Multi Eco, Ixo, etc. type series with single-phase or three-phase motors

### LevelControl Basic 2



Number of pumps

P [kW] U [V] 1~230 / 3~400

Available for higher ratings and other mains voltages on request.

≤2 Description

≤ 22 Level control unit for controlling and protecting either one or two pumps. DOL starting up to 4 kW, star-delta starting up to 22 kW. Higher ratings on request.

### Applications

Tank drainage using float switches, digital switches, 4...20 mA, pneumatic (without compressor) or bubbler system in building services and waste water applications. Tank filling using float switches, digital switches or 4...20 mA signals in building services and water supply applications.

### **UPA Control**



Number of pumps

P [kW]

U [V]

1~230 / 3~400

≤ 1 Description

3 The KSB switchgear is suitable for level control and protection of submersible borehole pumps, submersible motor pumps and dry-installed pumps with single-phase AC motors 1~ 230 V or three-phase motors 3~ 230 / 400 V / 50 Hz. The motor is started DOL. Enclosure: IP56, dimensions: . 205 × 255 × 170 mm (H × W × D).

### **Applications**

Irrigation and filling or draining tanks in water supply applications in combination with 4-inch and 6-inch pumps

https://www.ksb.com/en-gb/lc/U05A

### **Hyatronic N**



Number of pumps P [kW] 3~400 Applications U [V] Available for higher ratings and other mains voltages on request.

≤ 6 Description

22 Pump control system in control cabinet for cascade starting and stopping of up to six pumps.

For draining tanks and sumps in drainage and waste water disposal applications. For filling tanks in water supply applications. Level measurement using float switch or 4...20 mA sensor.

# **Monitoring and diagnosis**

### **Amacontrol**



Connections	Spring-loaded terminals
Mounting	35 mm standard rail
T [°C]	≥ -30 - ≤ +70
Dimensions	
$H \times W \times D [mm]$	127,2 × 45 × 113,6
U [V]	AC 115-230 ± 10%
U [V]	AC/DC 24 ± 10%

### Description

Protection module for water and waste water products as all-in-one device. Depending on the variant, it can be used for motor temperature measurement, bearing temperature measurement, leakage measurement, vibration measurement, voltage measurement and current measurement as well as for diagnosing a pump, pump system or submersible mixer to ensure trouble-free and reliable operation.

### Applications

In water and waste water systems in combination with Amacan, Amamix, Amaprop, Amaline, Amarex KRT or Sewatec

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