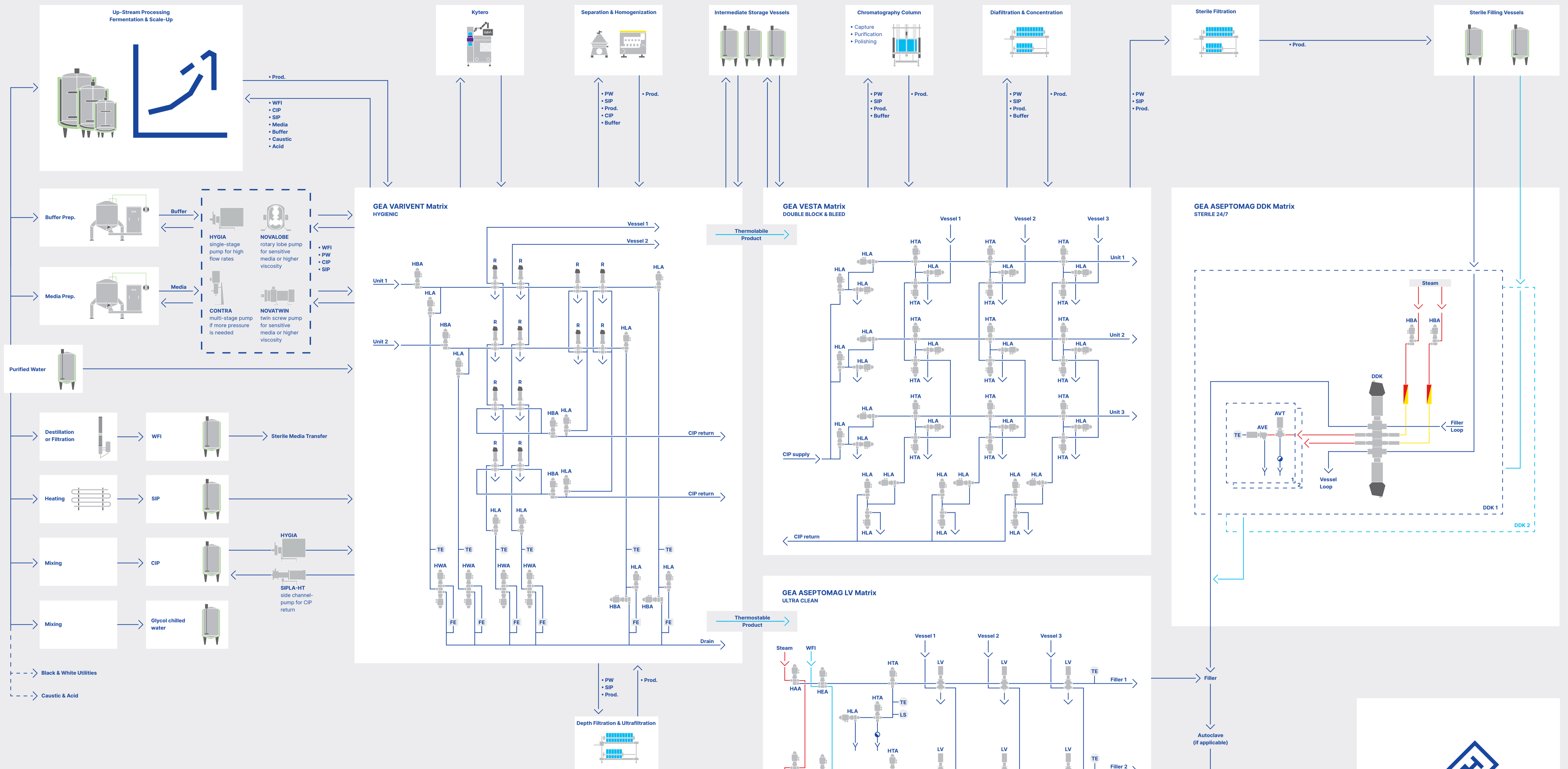


Pharma Process Landscape



Selection scheme for pumps conveying product
HYGIA: single-stage centrifugal pump for large flow rates
CONTRA: multi-stage centrifugal pump if more pressure is needed
NOVALOBE: rotary lobe pump for highly viscous media
NOVATWIN: twin screw pump which enables gentle product handling with almost no pulsation as well as CIP medium with a single pump

	Centrifugal pumps			Positive displacement pumps		Displacement/Flow rate	Max. differential pressure [bar]	Max. liquid temperature [°C]	Rotor design	Surface roughness R_a [μ m]	Max. particle size [mm] (non-abrasive)	Max. viscosity [mPas]	System pressure [bar]
	Single-stage	Multi-stage	Self-priming	Rotary lobe	Twin-screw								
2-pole 50 Hz	GEA Hylge HYGIA	GEA Hylge CONTRA	GEA Hylge SIPLA-HT	GEA Hylge NOVALOBE	GEA Hylge NOVATWIN	up to 2.1 l/rev	up to 310 m ³ /h	–	uni-wing, bi-wing, multilobe	4 screw pitches per size	–	–	–
4-pole 50 Hz	–	–	–	–	–	up to 16	up to 25	–	–	–	–	–	–
2-pole 60 Hz	–	–	–	–	–	up to 95	up to 180	–	–	–	–	–	–
4-pole 60 Hz	–	–	–	–	–	140 (SIP)	140 (SIP)	–	–	–	–	–	–
	Max. flow rate [m ³ /h]	180	100	–	–	–	–	–	–	–	–	–	–
	Max. pump head [m]	77	200	–	–	–	–	–	–	–	–	–	–
	Motor rating [kW]	up to 45.0	up to 45.0	–	–	–	–	–	–	–	–	–	–
	Max. flow rate [m ³ /h]	110	–	–	–	–	–	–	–	–	–	–	–
	Max. pump head [m]	20	–	–	–	–	–	–	–	–	–	–	–
	Motor rating [kW]	up to 7.5	–	–	–	–	–	–	–	–	–	–	–
	Max. flow rate [m ³ /h]	145	100	–	–	–	–	–	–	–	–	–	–
	Max. pump head [m]	110	230	–	–	–	–	–	–	–	–	–	–
	Motor rating [kW]	up to 45.0	up to 45.0	–	–	–	–	–	–	–	–	–	–
	Max. flow rate [m ³ /h]	110	–	–	–	–	–	–	–	–	–	–	–
	Max. pump head [m]	28	–	–	–	–	–	–	–	–	–	–	–
	Motor rating [kW]	up to 7.5	–	–	–	–	–	–	–	–	–	–	–
	Surface roughness R_a [μ m]	$\leq 0.4 / \leq 0.8 / \leq 3.2$	$\leq 0.4 / \leq 0.8 / \leq 3.2$	$\leq 0.4 / \leq 0.8$	$\leq 0.4 / \leq 0.8$	–	–	–	–	–	–	–	–
	Surface roughness R_a [μ m]	450-500, temporarily 1,000	450-500	800-1,000	1,000,000	1,000,000	–	–	–	–	–	–	–
	System pressure [bar]	15 / 25 / 64	25	10	16	30	–	–	–	–	–	–	–

All pumps available as ATEX version for the use in potentially explosive areas due to pressure-resistant encapsulated motors. All pumps can be equipped with frequency converters for a precise and energy-saving adaptation to varying power requirement (e.g. weekend operation) and most gentle product handling (as the higher energy input may have a negative effect on product quality).

Legend: CIP = Cleaning In Place, SIP = Sterilizing In Place, PW = Purified Water, WFI = Water For Injection, LP = Low Point, TE = Temperature Element, FE = Flow Element, EOL = End Of Line Cluster, LS = Level Sensor