

STERILE MANUFACTURING EQUIPMENT CONFIGURATION: BIOREACTOR / REACTOR / TANK
 PHARMACEUTICAL / VETERINARY SECTOR

Work volume*	Between 10L and 4000L		
Cleaning	<input type="radio"/> CIP	<input type="radio"/> SIP	<input type="radio"/> CIP-SIP
Material	AISI316L		
Interior finishes	<input type="radio"/> ASME-BPE SF1 (Ra<0.5 µm, including weldings) <input type="radio"/> ASME-BPE SF4 (electropolished Ra <0.4 µm)		
Jacket fluid	<input type="radio"/> Heating	<input type="radio"/> Refrigeration	
Upper bottom	<input type="radio"/> Flat flange <input type="radio"/> Folding plane <input type="radio"/> Welded klopper <input type="radio"/> Klopper flange <input type="radio"/> Folding klopper		
Lower bottom	<input type="radio"/> Conical	<input type="radio"/> Klopper	
Design pressure*	Body: <input type="radio"/> -1/+3 barg <input type="radio"/> -1/+5 barg <input type="radio"/> -1/+10 barg		Jacket: <input type="radio"/> -1/+3 barg <input type="radio"/> -1/+6 barg <input type="radio"/> -1/+10 barg
Process Instrumentation*	<input type="radio"/> Pressure <input type="radio"/> Temperature <input type="radio"/> Dissolved pH	<input type="radio"/> Dissolved oxygen <input type="radio"/> Load cell <input type="radio"/> Radar level	<input type="radio"/> Guided microwave level <input type="radio"/> Conductivity <input type="radio"/> 0.22µm filter <input type="radio"/> 0.22 µm heated filter
Digital process instrumentation	<input type="radio"/> Minimum level		<input type="radio"/> Maximum level
Tank security elements	Body: <input type="radio"/> Security valve <input type="radio"/> Rupture disc <input type="radio"/> Pressure gauge		Jacket: <input type="radio"/> Security valve <input type="radio"/> Rupture disc <input type="radio"/> Pressure gauge
Tank valves	<input type="radio"/> Membrane valve	<input type="radio"/> Tank bottom valve	<input type="radio"/> Sampling valve

*Other options available on request

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<p>Agitator type*</p>	<ul style="list-style-type: none"> ○ Marine propeller ○ Cowless ○ Rushton ○ Magnetic ○ Turrax ○ Ultraturax ○ Homogenizer 	
<p>Agitator mechanical seal*</p>	<ul style="list-style-type: none"> ○ Single mechanical ○ Double mechanical ○ NA (Magnetic) 	
<p>Mobility</p>	<ul style="list-style-type: none"> ○ Fixed 	<ul style="list-style-type: none"> ○ Mobile
<p>Human intervention</p>	<ul style="list-style-type: none"> ○ Flat sight glass ○ OBLONG sight glass ○ Lamp ○ Loading connection ○ Manhole 	
<p>Tubing*</p>	<ul style="list-style-type: none"> ○ NA-Connect ○ Tri-Clamp ASME-BPE ○ Tri-Clamp ISO 1127 ○ IN-GOLD 	
<p>Gassed</p>	<ul style="list-style-type: none"> ○ Air Flow ○ O2 flow ○ N2 flow ○ CO2 flow ○ Direct gas inlet ○ Gas inlet via sparger 	
<p>Documentation</p>	<ul style="list-style-type: none"> ○ GMP 	<ul style="list-style-type: none"> ○ ATEX
<p>Automation</p>	<ul style="list-style-type: none"> ○ Keypad ○ HMI ○ SCADA ○ 21CFR ○ User configurable recipes ○ Remote access 	

*Other options available on request

NON STERILE MANUFACTURING EQUIPMENT CONFIGURATION: REACTOR / TANK
PHARMACEUTICAL / VETERINARY / COSMETIC SECTOR

Work volume*	Between 50L and 40		
Cleaning	<input type="radio"/> CIP	<input type="radio"/> WIP	<input type="radio"/> Manual cleaning
Material	AISI316L		
Interior finishes	<input type="radio"/> ASME-BPE SF1 (Ra<0.5 µm, including weldings)		
Jacket fluid	<input type="radio"/> Heating	<input type="radio"/> Refrigeration	
Upper bottom	<input type="radio"/> Flat flange <input type="radio"/> Folding plane <input type="radio"/> Welded klopper <input type="radio"/> Klopper flange <input type="radio"/> Folding klopper		
Lower bottom	<input type="radio"/> Conical	<input type="radio"/> Klopper	
Design pressure*	Body: <input type="radio"/> Atmospheric <input type="radio"/> -1/+3 barg <input type="radio"/> -1/+5 barg <input type="radio"/> -1/+10 barg		Jacket: <input type="radio"/> -1/+3 barg <input type="radio"/> -1/+6 barg <input type="radio"/> -1/+10 barg
Process Instrumentation*	<input type="radio"/> Pressure <input type="radio"/> Temperature <input type="radio"/> Load cell <input type="radio"/> Radar level	<input type="radio"/> Guided microwave level <input type="radio"/> Conductivity <input type="radio"/> 0.22µm filter <input type="radio"/> 0.22 µm heated filter	
Digital process instrumentation	<input type="radio"/> Minimum level	<input type="radio"/> Maximum level	
Tank security elements	Body: <input type="radio"/> Security valve <input type="radio"/> Rupture disc <input type="radio"/> Pressure gauge		Jacket: <input type="radio"/> Security valve <input type="radio"/> Rupture disc <input type="radio"/> Pressure gauge
Tank valves	<input type="radio"/> Membrane valve	<input type="radio"/> Tank bottom valve	<input type="radio"/> Sampling valve

*Other options available on request

NON STERILE MANUFACTURING EQUIPMENT CONFIGURATION: REACTOR / TANK
PHARMACEUTICAL / VETERINARY / COSMETIC SECTOR

<p>Agitator type*</p>	<ul style="list-style-type: none"> ○ Marine propeller ○ Cowless ○ Rushton ○ Magnetic ○ Turrax ○ Ultraturax ○ Homogenizer 	
<p>Agitator mechanical seal*</p>	<ul style="list-style-type: none"> ○ Retainer ○ Single mechanical ○ Double mechanical ○ NA (Magnetic) 	
<p>Mobility</p>	<ul style="list-style-type: none"> ○ Fixed 	<ul style="list-style-type: none"> ○ Mobile
<p>Human intervention</p>	<ul style="list-style-type: none"> ○ Flat sight glass ○ Lamp ○ Loading connection ○ Manhole 	
<p>Tubing*</p>	<ul style="list-style-type: none"> ○ NA-Connect ○ Tri-Clamp ASME-BPE ○ Tri-Clamp ISO 1127 	
<p>Documentation</p>	<ul style="list-style-type: none"> ○ GMP 	<ul style="list-style-type: none"> ○ ATEX
<p>Automation</p>	<ul style="list-style-type: none"> ○ Keypad ○ HMI ○ SCADA ○ 21CFR ○ User configurable recipes ○ Remote access 	

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MANUFACTURING EQUIPMENT CONFIGURATION: REACTOR / TANK

FOOD SECTOR

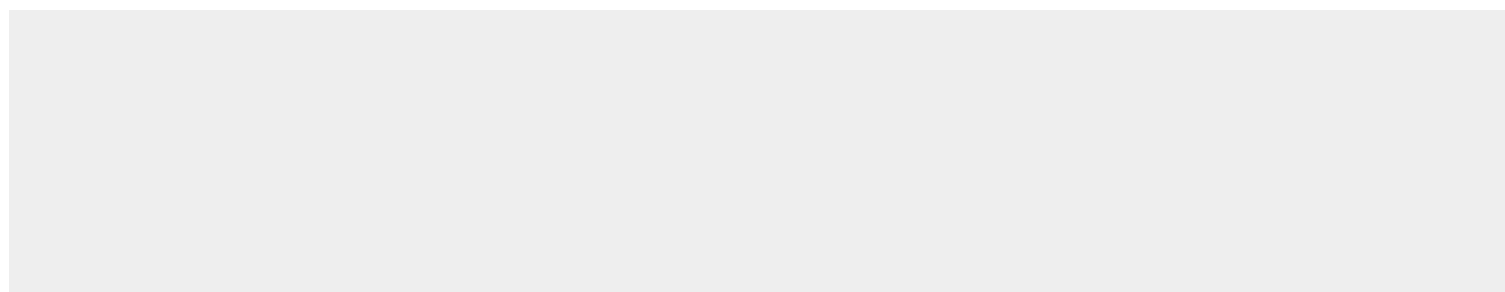
Work volume*	Between 50L and 4000L		
Cleaning	<input type="radio"/> CIP	<input type="radio"/> WIP	<input type="radio"/> Manual cleaning
Material	<input type="radio"/> AISI304L	<input type="radio"/> AISI316L	
Interior finishes	<input type="radio"/> Ra < 0.8 µm Polished welds <input type="radio"/> Ra < 0.8 µm Brushed welds		
Jacket fluid	<input type="radio"/> Heating	<input type="radio"/> Refrigeration	
Upper bottom	<input type="radio"/> Flat flange <input type="radio"/> Folding plane <input type="radio"/> Welded klopper <input type="radio"/> Klopper flange <input type="radio"/> Folding klopper		
Lower bottom	<input type="radio"/> Conical	<input type="radio"/> Klopper	
Design pressure*	Body: <input type="radio"/> Atmospheric <input type="radio"/> -1/+3 barg <input type="radio"/> -1/+5 barg <input type="radio"/> -1/+10 barg		Jacket: <input type="radio"/> -1/+3 barg <input type="radio"/> -1/+6 barg <input type="radio"/> -1/+10 barg
Process Instrumentation*	<input type="radio"/> Pressure <input type="radio"/> Temperature <input type="radio"/> Load cell <input type="radio"/> Radar level	<input type="radio"/> Guided microwave level <input type="radio"/> Conductivity	
Digital process instrumentation	<input type="radio"/> Minimum level	<input type="radio"/> Maximum level	
Tank security elements	Body: <input type="radio"/> Security valve <input type="radio"/> Rupture disc <input type="radio"/> Pressure gauge		Jacket: <input type="radio"/> Security valve <input type="radio"/> Rupture disc <input type="radio"/> Pressure gauge
Tank valves	<input type="radio"/> Butterfly Valve DIN-11850	<input type="radio"/> Clamp butterfly valve	

*Other options available on request

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FOOD SECTOR

<p>Agitator type*</p>	<ul style="list-style-type: none"> <input type="radio"/> Marine propeller <input type="radio"/> Cowless <input type="radio"/> Rushton <input type="radio"/> Magnetic <input type="radio"/> Turrax <input type="radio"/> Ultraturax <input type="radio"/> Homogenizer 	
<p>Agitator mechanical seal*</p>	<ul style="list-style-type: none"> <input type="radio"/> Retainer <input type="radio"/> Single mechanical <input type="radio"/> Double mechanical <input type="radio"/> NA (Magnetic) 	
<p>Mobility</p>	<ul style="list-style-type: none"> <input type="radio"/> Fixed 	<ul style="list-style-type: none"> <input type="radio"/> Mobile
<p>Human intervention</p>	<ul style="list-style-type: none"> <input type="radio"/> Flat sight glass <input type="radio"/> Lamp <input type="radio"/> Loading connection <input type="radio"/> Manhole 	
<p>Tubing*</p>	<ul style="list-style-type: none"> <input type="radio"/> Tri-Clamp ASME-BPE <input type="radio"/> Tri-Clamp ISO 1127 <input type="radio"/> DIN-11850 / DIN-11851 	
<p>Documentation</p>	<ul style="list-style-type: none"> <input type="radio"/> GMP 	<ul style="list-style-type: none"> <input type="radio"/> ATEX
<p>Automation</p>	<ul style="list-style-type: none"> <input type="radio"/> Keypad <input type="radio"/> HMI <input type="radio"/> SCADA <input type="radio"/> User configurable recipes <input type="radio"/> Remote access 	



*Other options available on request