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TECHNICAL OFFICE
Pol. Ind. Coll de la Manya
C/ Copèrnic, 11
08403 GRANOLLERS
+34 93 849 52 18

STERILE MANUFACTURING EQUIPMENT CONFIGURATION: BIOREACTOR / REACTOR / TANK

PHARMACEUTICAL / VETERINARY SECTOR

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

*Other options available on request

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PHARMACEUTICAL / VETERINARY SECTOR

Agitator type*	○ Marine propeller ○ Cowless ○ Rushton ○ Magnetic ○ Turrax ○ Ultraturax ○ Homogenizer	
Agitator mechanical seal*	○ Single mechanical ○ Double mechanical ○ NA (Magnetic)	
Mobility	○ Fixed	○ Mobile
Human intervention	○ Flat sight glass ○ OBLONG sight glass ○ Lamp ○ Loading connection ○ Manhole	
Tubing*	○ NA-Connect ○ Tri-Clamp ASME-BPE ○ Tri-Clamp ISO 1127 ○ IN-GOLD	
Gassed	○ Air Flow ○ O2 flow ○ N2 flow ○ CO2 flow ○ Direct gas inlet ○ Gas inlet via sparger	
Documentation	○ GMP	○ ATEX
Automation	○ Keypad ○ HMI ○ SCADA ○ 21CFR ○ User configurable recipes ○ Remote access	

*Other options available on request

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NON STERILE MANUFACTURING EQUIPMENT CONFIGURATION: REACTOR / TANK

PHARMACEUTICAL / VETERINARY / COSMETIC SECTOR

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

*Other options available on request

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NON STERILE MANUFACTURING EQUIPMENT CONFIGURATION: REACTOR / TANK

PHARMACEUTICAL / VETERINARY / COSMETIC SECTOR

Agitator type*	○ Marine propeller ○ Cowless ○ Rushton ○ Magnetic ○ Turrax ○ Ultraturax ○ Homogenizer	
Agitator mechanical seal*	○ Retainer ○ Single mechanical ○ Double mechanical ○ NA (Magnetic)	
Mobility	○ Fixed	○ Mobile
Human intervention	○ Flat sight glass ○ Lamp ○ Loading connection ○ Manhole	
Tubing*	○ NA-Connect ○ Tri-Clamp ASME-BPE ○ Tri-Clamp ISO 1127	
Documentation	○ GMP	○ ATEX
Automation	○ 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	○ CIP	○ WIP	○ Manual cleaning
Material	○ AISI304L	○ AISI316L	
Interior finishes	○ Ra < 0.8 µm Polished welds ○ Ra < 0.8 µm Brushed welds		
Jacket fluid	○ Heating	○ Refrigeration	
Upper bottom	○ Flat flange ○ Folding plane ○ Welded klopper ○ Klopper flange ○ Folding klopper		
Lower bottom	○ Conical	○ Klopper	
Design pressure*	**Body:** ○ Atmospheric ○ -1/+3 barg ○ -1/+5 barg ○ -1/+10 barg	**Jacket:** ○ -1/+3 barg ○ -1/+6 barg ○ -1/+10 barg	
Process Instrumentation*	○ Pressure ○ Temperature ○ Load cell ○ Radar level	○ Guided microwave level ○ Conductivity	
Digital process instrumentation	○ Minimum level	○ Maximum level	
Tank security elements	**Body:** ○ Security valve ○ Rupture disc ○ Pressure gauge	**Jacket:** ○ Security valve ○ Rupture disc ○ Pressure gauge	
Tank valves	○ Butterfly Valve DIN-11850	○ Clamp butterfly valve	

*Other options available on request

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MANUFACTURING EQUIPMENT CONFIGURATION: REACTOR / TANK

FOOD SECTOR

Agitator type*	○ Marine propeller ○ Cowless ○ Rushton ○ Magnetic ○ Turrax ○ Ultraturax ○ Homogenizer	
Agitator mechanical seal*	○ Retainer ○ Single mechanical ○ Double mechanical ○ NA (Magnetic)	
Mobility	○ Fixed	○ Mobile
Human intervention	○ Flat sight glass ○ Lamp ○ Loading connection ○ Manhole	
Tubing*	○ Tri-Clamp ASME-BPE ○ Tri-Clamp ISO 1127 ○ DIN-11850 / DIN-11851	
Documentation	○ GMP	○ ATEX
Automation	○ Keypad ○ HMI ○ SCADA ○ User configurable recipes ○ Remote access	

*Other options available on request