Product overview

Jacketed laboratory fermenters | English catalogue and detailed product information



Stainless Steel series

Series / model	Vessel material	Total volume	Working range*
SJ-FS-DJ-5L	316L Stainless Steel	5 L	1.5-3.5 L
SJ-FS-DJ-10L	316L Stainless Steel	10 L	3-7 L
SJ-FS-DJ-15L	316L Stainless Steel	15 L	4.5-10.5 L

Core functions: jacket temperature control, variable-speed stirring, pH/DO monitoring, four dosing pumps, foam-triggered antifoam addition and 10-inch touchscreen operation. See functions and benefits on page 2.

Made to order in Zhejiang, China | MOQ: 1 system. Request a quotation matched to your organism, utilities, control functions and documentation needs. Final supply scope follows the agreed bill of materials.

*Model capacity means total vessel volume. Working ranges are planning recommendations and depend on organism, foam, gas flow and mixing. All images are concept illustrations; final configuration is agreed before manufacture.

Document guide: Functions & benefits p. 2 | Series overview p. 3 | Model profiles, details & views pp. 4-12 | Controls, FAQ and quotation checklist pp. 13-15.

Functions & customer benefits

What the system does, why it helps and which functions need an upgrade.

Function / feature	What it does	Benefit to your workflow
10-inch touchscreen + PLC	Centralizes process values, settings and operating commands.	Check the process from one interface and organize routine operation.
Water-jacket temperature control	Circulates a heating/cooling medium around the culture vessel.	Adjust culture temperature without a cooling coil occupying culture space.
Variable-speed agitation	Adjusts stirring within the selected drive and impeller range.	Tune mixing to culture volume, viscosity and oxygen-transfer needs.
pH monitoring and dosing	Measures pH and uses acid/base pump channels under agreed control logic.	Correct pH changes with less repeated manual addition.
Dissolved oxygen monitoring	Measures oxygen availability; agitation response is configured to the process.	Identify oxygen limitation and guide the control strategy.
Four peristaltic pumps	Provides acid, base, nutrient feed and antifoam channels.	Keeps addition duties separate and supports planned feeding.
Foam contact detection	Detects foam at a chosen height and triggers limited antifoam pulses.	Respond to foam without relying only on visual checks.
Air / oxygen gas channels	Indicates flow through manually adjusted rotameters.	Set the gas supply for each trial; automatic flow requires an MFC upgrade.
Exhaust condenser	Condenses part of the moisture in outgoing gas.	Helps reduce evaporation and moisture carry-over; sterile filtration is separate.
Rear-access sheet-metal cabinet	Places cabinet fasteners at the rear with clean front and side panels.	Provides an uncluttered operator-facing surface and an organized service layout.

Optional automation: multi-stage recipes, automatic gas-flow/oxygen cascade (MFCs), data export, access roles and SCADA are specified in the quotation. Recipe stages may include temperature, pH, DO, agitation limits, feeding and transition conditions.

Material advantage: 316L stainless steel offers a metal product-contact vessel; its surface finish, cleaning arrangement and SIP package are defined for the application.

Base functions above describe the proposed configuration. Final control functions and acceptance criteria follow the agreed technical specification; optional functions are not included automatically.

Stainless Steel fermenters

5 L / 10 L / 15 L | SJ-FS-DJ series



A stainless product-contact vessel

316L stainless steel product-contact construction with a separate thermal jacket supports a metal-vessel process route. Surface finish, drain arrangement, seals and pressure design are specified for the project.

Choose the sterilization route

A manual SIP engineering package is proposed; automated SIP is optional. Steam supply, pressure design, valves, protection devices, condensate drainage and the sterilization cycle require an agreed design. A steam generator is not included unless quoted.

Common operator platform

10-inch MCGS touchscreen, Xinje PLC base selection and optional Siemens SMART G2. Four peristaltic pumps serve acid, base, nutrient feed and antifoam. Air and oxygen rotameters are manual in the base configuration.

FG = glass fermenter | FS = stainless steel fermenter | DJ = double-wall jacket | L = total nominal vessel capacity.

SJ-FS-DJ-5L

5 L stainless steel jacketed fermenter | Product profile



CONFIGURATION

Made to order

Zhejiang, China
MOQ 1 system
Configuration on request

TOTAL VOLUME

5 L

WORKING RANGE

1.5-3.5 L*

OPERATOR INTERFACE

10-inch MCGS

Representative series illustration; not a scale drawing of this capacity.

Application focus

Small-volume microbial screening, media development and training. Suitable configuration is selected from the organism, oxygen-transfer requirement, viscosity, feeding strategy and containment needs.

Why select this size

A practical starting point for media screening, small experimental batches and operator training. Plan the minimum liquid level around impeller and probe immersion.

Functions on this model: jacket temperature control, variable-speed mixing, pH/DO monitoring, acid/base/feed/antifoam pumps and foam-contact response. Multi-stage recipes and automatic gas control are configurable options.

Related models: SJ-FS-DJ-10L, SJ-FS-DJ-15L. See the series comparison and individual specification pages in this document.

SJ-FS-DJ-5L | Details

Base selection and proposed operating ranges; project acceptance criteria govern final supply.

Parameter	Configuration
Total / working volume	5 L / 1.5-3.5 L (planning)
Vessel	316L product-contact vessel with separate stainless-steel thermal jacket
Control cabinet	Sheet-metal enclosure; rear fasteners; clean front and side panels
HMI / PLC	10-inch MCGS / Xinje base; Siemens SMART G2 optional
Agitation	50-1000 rpm proposed, impeller and torque dependent
Culture temperature	Cooling-water temperature +5 C to 60 C; proposed, heat-load dependent
pH / dissolved oxygen	pH 2-12 / DO 0-200% air saturation; proposed measurement ranges
Liquid additions	4 pumps: acid, base, nutrient feed, antifoam
Gas delivery	Air / oxygen manual rotameters; MFC upgrade optional
Foam control	Conductive point probe + isolated detector; limited antifoam pulses
Thermal system	Water-jacket circulation, heater and cooling-water control; chiller optional
Sterilization	Manual SIP engineering package; pressure design and steam utility to be agreed
Culture pressure	Operating/design limits on approved vessel drawing; no generic rating
Delivery / warranty	Planning lead time: 60 days after approval; proposed 12-month manufacturing-defect warranty

Configuration boundary: External chiller, air compressor, oxygen source, autoclave/steam generator, SCADA computer, qualification execution and freight are excluded unless itemized. Final machine dimensions and crated weight are issued after layout and packing approval.

SJ-FS-DJ-5L | Product views

Explore the operator side, side perspectives and rear service arrangement.



Operator-facing layout

10-inch touchscreen, four dosing-pump channels, manual air / oxygen rotameters and emergency stop are grouped on the front. The cabinet front and sides use clean sheet-metal panels with rear-access fasteners.

Plan service access

Allow access behind the cabinet for maintenance and utility connections. Confirm final port locations, hose routing, cable exits, lifting clearance and overall dimensions on the approved general arrangement.

Image status: AI-generated concept views for product communication. Representative series configuration, not a capacity-specific scale drawing. Rear connectors and internal construction are illustrative. These images do not establish dimensions, pressure ratings or validated performance.

SJ-FS-DJ-10L

10 L stainless steel jacketed fermenter | Product profile



Representative series illustration; not a scale drawing of this capacity.

CONFIGURATION

Made to order

Zhejiang, China
MOQ 1 system
Configuration on request

TOTAL VOLUME

10 L

WORKING RANGE

3-7 L*

OPERATOR INTERFACE

10-inch MCGS

Application focus

Microbial process development, batch and fed-batch laboratory trials. Suitable configuration is selected from the organism, oxygen-transfer requirement, viscosity, feeding strategy and containment needs.

Why select this size

A development-scale option for batch and fed-batch trials. Compare the usable culture volume with your sampling plan, feeding volume and available sterilization utilities.

Functions on this model: jacket temperature control, variable-speed mixing, pH/DO monitoring, acid/base/feed/antifoam pumps and foam-contact response. Multi-stage recipes and automatic gas control are configurable options.

Related models: SJ-FS-DJ-5L, SJ-FS-DJ-15L. See the series comparison and individual specification pages in this document.

SJ-FS-DJ-10L | Details

Base selection and proposed operating ranges; project acceptance criteria govern final supply.

Parameter	Configuration
Total / working volume	10 L / 3-7 L (planning)
Vessel	316L product-contact vessel with separate stainless-steel thermal jacket
Control cabinet	Sheet-metal enclosure; rear fasteners; clean front and side panels
HMI / PLC	10-inch MCGS / Xinje base; Siemens SMART G2 optional
Agitation	50-1000 rpm proposed, impeller and torque dependent
Culture temperature	Cooling-water temperature +5 C to 60 C; proposed, heat-load dependent
pH / dissolved oxygen	pH 2-12 / DO 0-200% air saturation; proposed measurement ranges
Liquid additions	4 pumps: acid, base, nutrient feed, antifoam
Gas delivery	Air / oxygen manual rotameters; MFC upgrade optional
Foam control	Conductive point probe + isolated detector; limited antifoam pulses
Thermal system	Water-jacket circulation, heater and cooling-water control; chiller optional
Sterilization	Manual SIP engineering package; pressure design and steam utility to be agreed
Culture pressure	Operating/design limits on approved vessel drawing; no generic rating
Delivery / warranty	Planning lead time: 60 days after approval; proposed 12-month manufacturing-defect warranty

Configuration boundary: External chiller, air compressor, oxygen source, autoclave/steam generator, SCADA computer, qualification execution and freight are excluded unless itemized. Final machine dimensions and crated weight are issued after layout and packing approval.

SJ-FS-DJ-10L | Product views

Explore the operator side, side perspectives and rear service arrangement.



Operator-facing layout

10-inch touchscreen, four dosing-pump channels, manual air / oxygen rotameters and emergency stop are grouped on the front. The cabinet front and sides use clean sheet-metal panels with rear-access fasteners.

Plan service access

Allow access behind the cabinet for maintenance and utility connections. Confirm final port locations, hose routing, cable exits, lifting clearance and overall dimensions on the approved general arrangement.

Image status: AI-generated concept views for product communication. Representative series configuration, not a capacity-specific scale drawing. Rear connectors and internal construction are illustrative. These images do not establish dimensions, pressure ratings or validated performance.

SJ-FS-DJ-15L

15 L stainless steel jacketed fermenter | Product profile



CONFIGURATION

Made to order

Zhejiang, China
MOQ 1 system
Configuration on request

TOTAL VOLUME

15 L

WORKING RANGE

4.5-10.5 L*

OPERATOR INTERFACE

10-inch MCGS

Representative series illustration; not a scale drawing of this capacity.

Application focus

Intermediate process development and scale-transition studies. Suitable configuration is selected from the organism, oxygen-transfer requirement, viscosity, feeding strategy and containment needs.

Why select this size

More working volume for process development and seed-culture studies. Check vessel handling, heat removal, gas demand and service access before freezing the layout.

Functions on this model: jacket temperature control, variable-speed mixing, pH/DO monitoring, acid/base/feed/antifoam pumps and foam-contact response. Multi-stage recipes and automatic gas control are configurable options.

Related models: SJ-FS-DJ-5L, SJ-FS-DJ-10L. See the series comparison and individual specification pages in this document.

SJ-FS-DJ-15L | Details

Base selection and proposed operating ranges; project acceptance criteria govern final supply.

Parameter	Configuration
Total / working volume	15 L / 4.5-10.5 L (planning)
Vessel	316L product-contact vessel with separate stainless-steel thermal jacket
Control cabinet	Sheet-metal enclosure; rear fasteners; clean front and side panels
HMI / PLC	10-inch MCGS / Xinje base; Siemens SMART G2 optional
Agitation	50-800 rpm proposed, impeller and torque dependent
Culture temperature	Cooling-water temperature +5 C to 60 C; proposed, heat-load dependent
pH / dissolved oxygen	pH 2-12 / DO 0-200% air saturation; proposed measurement ranges
Liquid additions	4 pumps: acid, base, nutrient feed, antifoam
Gas delivery	Air / oxygen manual rotameters; MFC upgrade optional
Foam control	Conductive point probe + isolated detector; limited antifoam pulses
Thermal system	Water-jacket circulation, heater and cooling-water control; chiller optional
Sterilization	Manual SIP engineering package; pressure design and steam utility to be agreed
Culture pressure	Operating/design limits on approved vessel drawing; no generic rating
Delivery / warranty	Planning lead time: 60 days after approval; proposed 12-month manufacturing-defect warranty

Configuration boundary: External chiller, air compressor, oxygen source, autoclave/steam generator, SCADA computer, qualification execution and freight are excluded unless itemized. Final machine dimensions and crated weight are issued after layout and packing approval.

SJ-FS-DJ-15L | Product views

Explore the operator side, side perspectives and rear service arrangement.



Operator-facing layout

10-inch touchscreen, four dosing-pump channels, manual air / oxygen rotameters and emergency stop are grouped on the front. The cabinet front and sides use clean sheet-metal panels with rear-access fasteners.

Plan service access

Allow access behind the cabinet for maintenance and utility connections. Confirm final port locations, hose routing, cable exits, lifting clearance and overall dimensions on the approved general arrangement.

Image status: AI-generated concept views for product communication. Representative series configuration, not a capacity-specific scale drawing. Rear connectors and internal construction are illustrative. These images do not establish dimensions, pressure ratings or validated performance.

Controls, recipes & options

Build the control package around your process and operating workflow.

Channel / function	Base proposal	Optional extension
Temperature	Culture feedback and jacket-loop control	External cooling unit sized to heat load
pH	Sterilizable probe; acid/base pump duties	Sensor / transmitter brand upgrades
Dissolved oxygen	DO monitoring; agreed agitation control	MFC gas cascade and oxygen blending
Foam	Probe contact at a chosen height	Additional detection strategy if required
Liquid dosing	Four calibrated pump channels	Additional feeds; balance-based dosing
Recipes / records	Functions agreed in software specification	Multi-stage recipes, exports and user roles

Define each stage

Set the stage name, duration, temperature, pH, DO, agitation limits, feed mode, dosing limits and transition condition. Agree ramps, manual release, HOLD/resume behavior, alarms and the response to invalid probe signals.

Match automation to real actuators

A manual rotameter cannot follow an electronic airflow setpoint. Automatic gas flow and oxygen-blending control require compatible valves, mass-flow controllers and the agreed PLC logic.

Application-specific options

Optical DO, imported probes, low-shear impellers, additional feeds, off-gas analysis and supervisory software can be quoted. Cell culture, perfusion, electronic signatures, audit trails and regulated documentation require a separate technical scope.

Factory acceptance testing checks the agreed functions and acceptance criteria. A proposed measurement range is not a guarantee of control accuracy or culture performance.

Questions buyers ask

Practical answers for selection, operation and supply scope.

Does 10 L mean 10 L of culture?

No. Capacity identifies total vessel volume. The planning working ranges are 1.5-3.5 L, 3-7 L and 4.5-10.5 L for the 5 L, 10 L and 15 L models.

How is heat removed?

Cooling water circulates through the jacket. An external chiller may be needed when available water is too warm or the culture heat load is high.

What does the exhaust condenser do?

It helps condense moisture in the exhaust and reduce evaporation and carry-over. It does not replace the sterile exhaust filter.

Does the foam probe measure foam percentage?

No. The conductive probe detects contact at a chosen height. The PLC can apply limited antifoam pulses; this is a point-detection system.

Are all stainless models automatically SIP-ready?

No. Sterilization depends on the agreed vessel, pressure design, seals, valves, steam conditions and drainage. Automated SIP is a separate option.

Can the glass vessel be steam-sterilized in place?

Do not assume this. The proposed glass route is off-line autoclaving of approved components within their permitted cycle and pressure/temperature limits.

Are chiller, compressor and sterilizer included?

Only if separately listed in the quotation. The base equipment and external utilities are itemized so the quotation matches your site.

Can you support pharmaceutical or biotech projects?

Send your URS, organism and documentation needs. Qualification support and data-integrity functions are agreed separately; no blanket GMP or electronic-record compliance is claimed.

From inquiry to delivery

A clear technical brief makes the quotation, factory checks and shipping plan more useful.

Tell us	Information to provide
Biology and process	Organism / cell type, application, containment and batch or fed-batch mode
Volume and media	Required working volume, viscosity, solids and expected foaming
Operating targets	Temperature, pH, DO, agitation, gas flow and oxygen demand
Feeding and sampling	Feed liquids, rates, number of additions and sampling method
Sterilization and site	Autoclave route or SIP; steam, water, power, drainage and available space
Automation and documents	PLC preference, recipe stages, records, access roles, URS and qualification scope
Destination and schedule	Delivery terms, destination postcode, required date and installation support

Configuration and delivery

Final quotation follows the selected configuration and acceptance scope. Planning lead time is approximately 60 calendar days after technical and commercial approval; confirm at order.

Warranty and packing

Proposed warranty: 12 months for manufacturing defects, subject to quotation terms. Consumables, misuse and accidental glass breakage are excluded. Confirm packing method, crate count, dimensions and gross weight before booking freight; these data are not released in this catalogue.

Before shipment

Agree the general arrangement, bill of materials, utility schedule, control functions and acceptance checklist. Confirm the packing method, installation information, manuals and any required supporting documents.

SJ SCIENTIFIC

Manufacturing origin: Zhejiang, China
Request a configuration-specific quotation and the approved equipment layout.