

Life Cycle Support

Lab-based R&D benchtop sensors, instruments, and analyzers

Mass flow & pressure controllers · Alicat

Syringe pumps, peristaltic pumps &
BioSilicone tubing · Longer Pump

Spectrometers, light sources, optical
fibers & fixturing · Ocean Insight

Process development & scale-up equipment & solutions for all setups

Single-use solutions with high
turndown and control ranges

Single-use valves & backpressure regulators · Alicat

BioSilicone low-shear tubing · Longer Pump

Spectral systems & probes · Ocean Insight

Multi-use components with time-tested customization

Sanitary valves & backpressure regulators · Alicat

Peristaltic pumps · Longer Pump

Fully cleanable rupture discs · OsecoElfab

Custom & turnkey solutions designed in partnership with your engineering team

Flow, pressure & gas mixing · Alicat

Peristaltic pump setups · Longer Pump

Raman & NIR spectroscopy for key
chemistries · Ocean Insight

Regulatory considerations for compliance with global agencies

ASME BPE-2016 compliant single- and multi-use
systems, standard or available where applicable

USP and TSE conformant materials and systems

Metrology & maintenance to meet the needs of your facility's SOPs

Portable flow meters for cleanroom calibrations · Alicat

ISO radiometrically-calibrated
spectrometers · Ocean Insight

Rouge monitors to minimize derouging &
passivation procedure spend · Cosasco

Lifetime support global service centers & sales/distribution networks for ongoing project support

Rapid response & support from
applications & sales engineers

Customized solutions from OEM & application teams

Alicat Scientific

Contact: 1 (888) 290-6060 · info@alicat.com

Learn more:

alicat.com/industries/bioprocessing-bioreactor

Products referenced: MC-Series · Bio-Series ·
Whisper meter · PCU

Certifications & Regulatory: ASME BPE materials ·
IP67 · IS · CE

Cosasco

Contact us: 1 (800) 635-6898 · sales@cosasco.com

Learn more: cosasco.com

Products referenced: Wireless Rouge Monitoring
System

Certifications & regulatory: ASME BPE materials ·
IP66 · C1D2

Crowcon

Contact us: 44 (0)1235 557700 · sales@crowcon.com

· 1 (859) 957-1039 · salesusa@crowcon.com

Learn more: crowcon.com

Products referenced: Xgard Bright · IRmax ·
Gasman · Gas-Pro

Diba Industries / Bio-Chem Fluidics

Contact us: 1 (973) 263-3001 · sales@biochemfluidics.com

· 1 (203) 744-0773 · info@dibaind.com

Learn more: biochemfluidics.com

· dibaind.com

Products referenced: Click-N-Seal · Omni-Lok
Omnifit Labware

Certifications and regulatory: ASME BPE materials

Longer Pump

Contact us: 86 (312) 3110087 · longer@longerpump.com

Learn more: longerpump.com

Products referenced: Peristaltic pump · BioSilicone
tubing · Lab syringe pump

Certifications & regulatory:

USP Class VI · 21 CFR Part 11 · 21 CFR 177.2600 ·
NSF 51 · CE (TUV)

Ocean Insight

Contact us: oceaninsight.com/contact-us ·

info@oceaninsight.com

Learn more:

oceaninsight.com/solutions/industries/pharma

Products referenced: LTMS · NIR · UV-VIS · Raman ·
Custom spectroscopy systems

Certifications & Regulatory: IP67

OsecoElfab

Contact us: 1 (918) 258-5626 · info@oseco.com

Learn more: osecoelfab.com/industries/biotech

Products referenced: Pure-Gard · Opti-Gard

Certifications & regulatory:

ASME BPE materials · BS4825-3 · BS6362 ·
DIN32676 · ISO1127 · ISO2037 · ISO2852 · SMS3008 ·
SMS3017

UV Group

Contact us: (980) 256-5700 · sales@aquionics.com

Learn more: weuvcare.com

Products referenced: PharmaLine

Certifications & regulatory: Pharmacopoeia for
Ultraviolet Disinfection



Process Automation Solutions that Scale

*for pharmaceutical manufacturing
from lab to commercialization*

QA

Lab R&D

Upstream Processing

Downstream Processing

Final Product

Microflow Delivery

Cell & nutrient injections using **syringe pumps** and **mass flow controllers** for steady, high-precision delivery.



Incoming Material Inspection

Quality control via **NIR spectroscopy** for non-invasive optical monitoring.



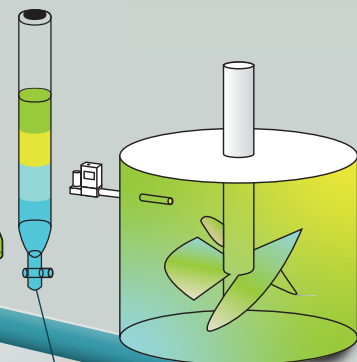
Trace Materials Monitoring

Absorbance monitors placed directly inline of wastewater outflows do not interrupt processing.



Fluid Transfer

Peristaltic pumps and **Biosilicone tubing** introduce culture media, anti-foaming agents, and other mixtures into the bioreactor.



Chromatography

Chemically inert **lab chromatography columns** compatible with a wide range of systems and process conditions.



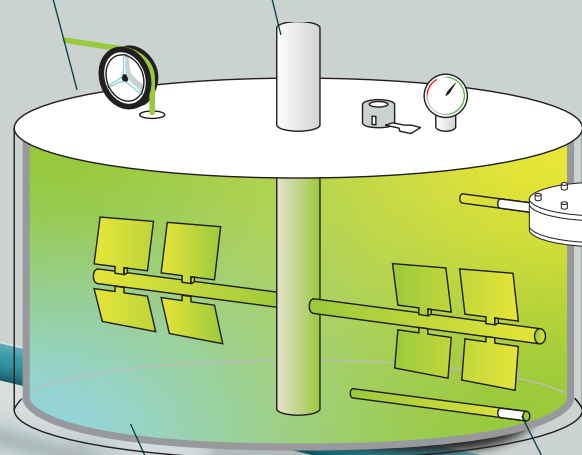
Culture Preparation

Sterile, closed systems created with **bottle and waste caps** removable without disconnecting flow lines.



Overpressure Protection

Single-piece & gasket-free **rupture discs** protect bioreactors and allow discs to go through SIP for reuse.



Bioreactor Control & Monitoring

Critical process parameter control in seed & production bioreactors using **gas mass flow controllers** which are multivariate and highly scalable & repeatable.

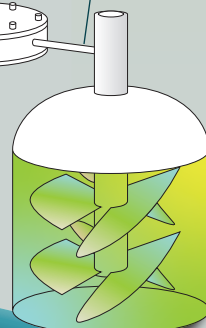
Optical environmental sensing of DO pH, turbidity & nutrient level via **spectroscopic monitoring**.

Local & addressable **gas detectors** for oxygen monitoring.



Single Use Component Testing

Fast, highly sensitive **leak checking** at point of use to confirm no damage during handling or installation.



Chromatography Control

Precise buffer flows using **sanitary valves** reduce waste and reach target blends faster by blending eluents based on real-time feedback.

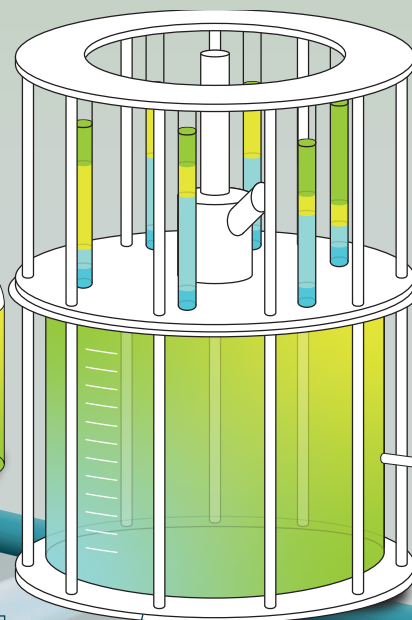
Backpressure regulators protect the chromatography column by preventing degassing and controlling pressure, creating a smooth transition from column inline to column bypass.



Low-Shear Product Transfer

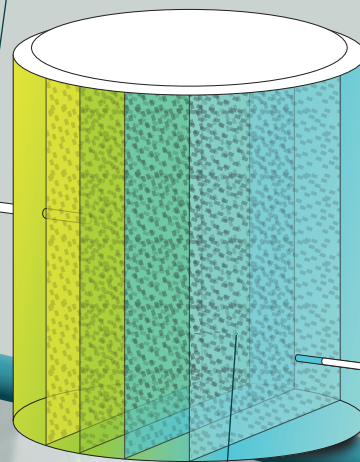
Non-contacting **peristaltic pumps** and cleanable **Biosilicone tubing** eliminate cross contamination risks or product damage.

Sanitary valves & pumps dampen pulses and prevent bubbles for stable flows in streamlined wetted path.



Water Quality

Pathogen inactivation using **UV lamp technology** with variable electronic ballasting ensures water purity, as UV doses are achieved even given changing process variables.



Process Line Minimization

High-turndown **sanitary valves** rapidly ramp flow rates for low-flow dosing and high-flow CIP, with constant WFI pressure given varying downstream demand.



Filtration

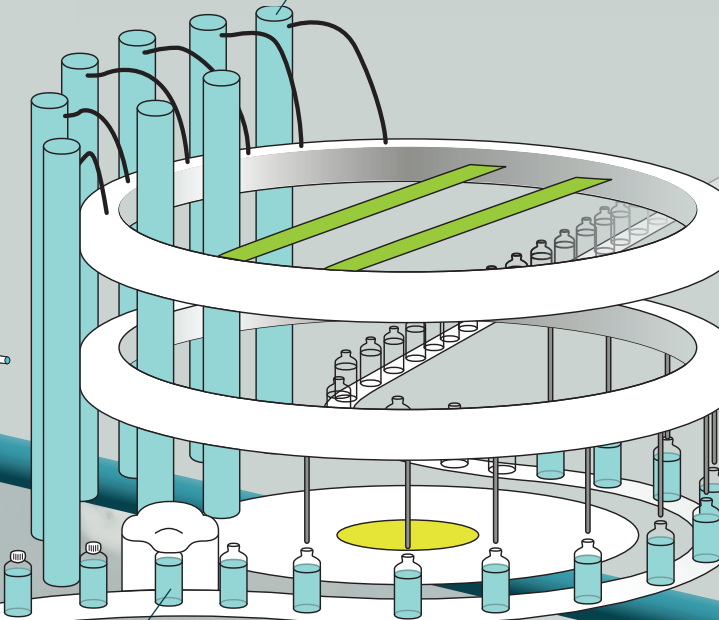
Fluids driven across filtration membrane using **pressure controllers** with rapid response times to maintain constant transmembrane pressure even as filter fouls.



Gas Detection

Personnel & equipment protected from gas leakages in boiler rooms and storage areas for flammable fluids using long-life **flammable gas detection MPS sensors** with maintenance-free detection.

Oxygen detectors ensure safe monitoring of cryogenic rooms and equipment with inert gas blanketing, and support integration with external automated systems.



Fill and Finish

Final QC with **Raman spectroscopy** for product verification.

Peristaltic pumps and **BioSilicone tubing** robust, low-shear precision dispensing in filling machinery.



Rouge Monitoring

Quantitative analysis of high-purity water systems using **battery-powered portable rouge monitors** avoids unnecessary cleaning cycles and downtime due to de-rouging and passivation procedures.

