

**AsahiKASEI**  
BIOPROCESS

**FLUID MANAGEMENT  
LOOK BOOK**

***Built For You™***



# AsahiKASEI

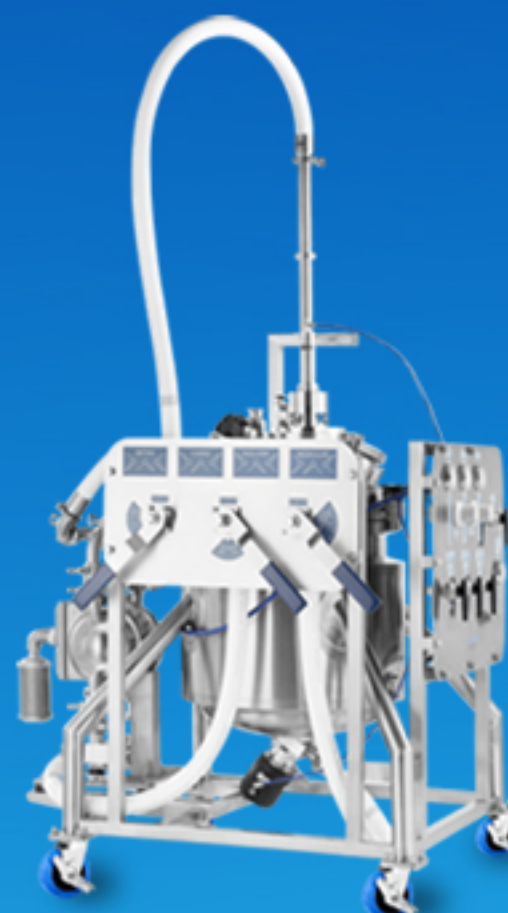
BIOPROCESS



DAC ERGO  
FOR LC COLUMNS



COLUMNS



SLURRY PREP  
SYSTEMS



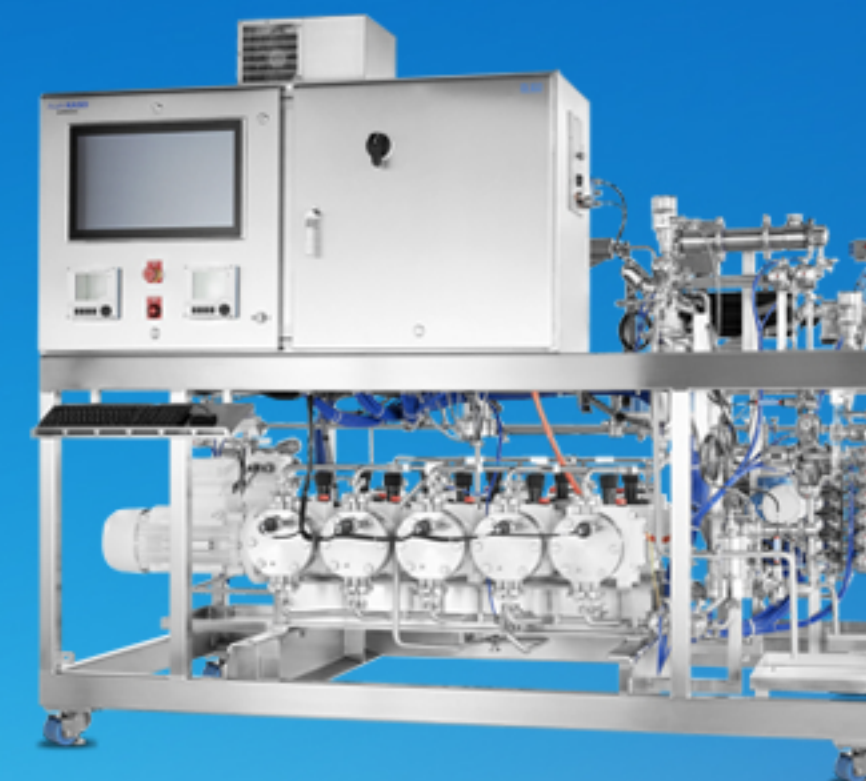
LIQUID  
CHROMATOGRAPHY  
SYSTEMS



SYNTHESIS  
COLUMNS



SCS ERGO SOLUTIONS



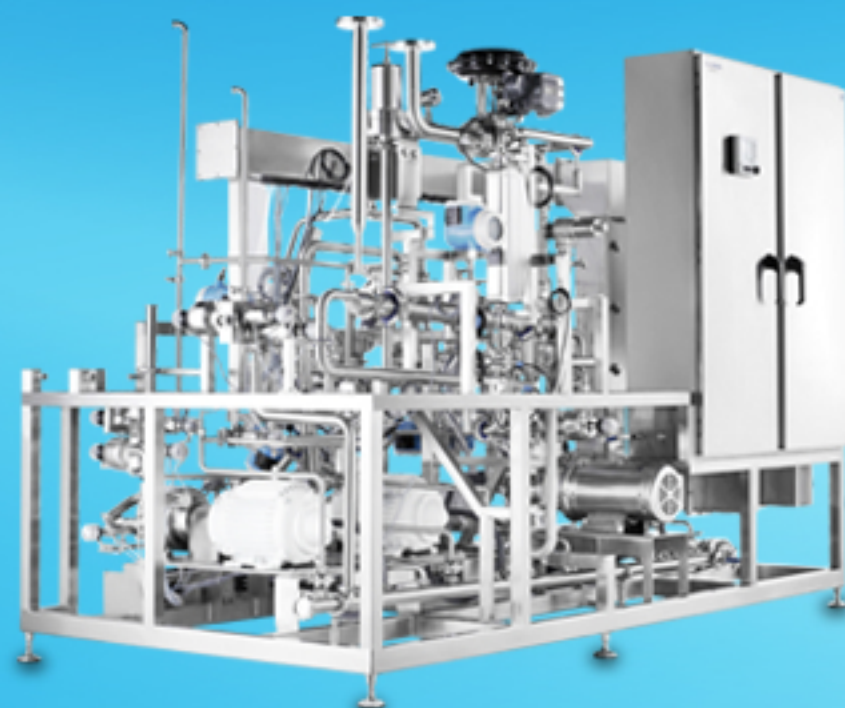
OLIGOSYNTHESIZER



CLEAVAGE AND  
DEPROTECTION  
SYSTEMS



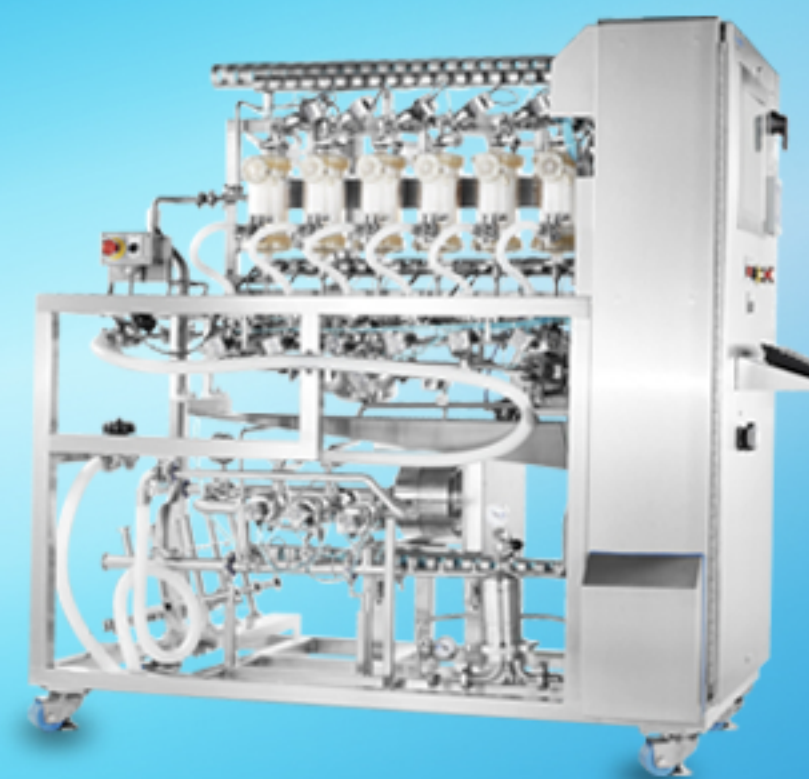
MOTIV™ INLINE BUFFER  
FORMULATION SYSTEMS



MOTIVplus™  
CUSTOM INLINE BUFFER  
FORMULATION SYSTEMS



BIOPROCESS  
CHROMATOGRAPHY SYSTEMS



VIRUS FILTRATION  
SYSTEMS



PLANOVA™ SINGLE-USE  
VIRUS FILTRATION  
CONTROLLER



ASAHI GOLD PARTICLE  
TEST SYSTEM II



# DAC ERGO Option

Safe and Efficient  
Maintenance of Large-Scale  
DAC Columns (≥60 cm i.d.)

## FEATURES:

- » Three modes: process, travel, service
- » Quick-release bottom plate assembly
- » Transition from process mode to service mode in approximately 2 minutes
- » Safely remove the bottom plate in under 15 minutes

Hydraulic  
Controller

Telescoping  
Legs

Designed  
for Flash,  
MPLC and HPLC  
Columns up  
to 35 barg

Bottom  
Plate Cart

Hydraulic  
Legs

Mitigate safety concerns while enhancing productivity

AsahiKASEI  
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# COLUMNS



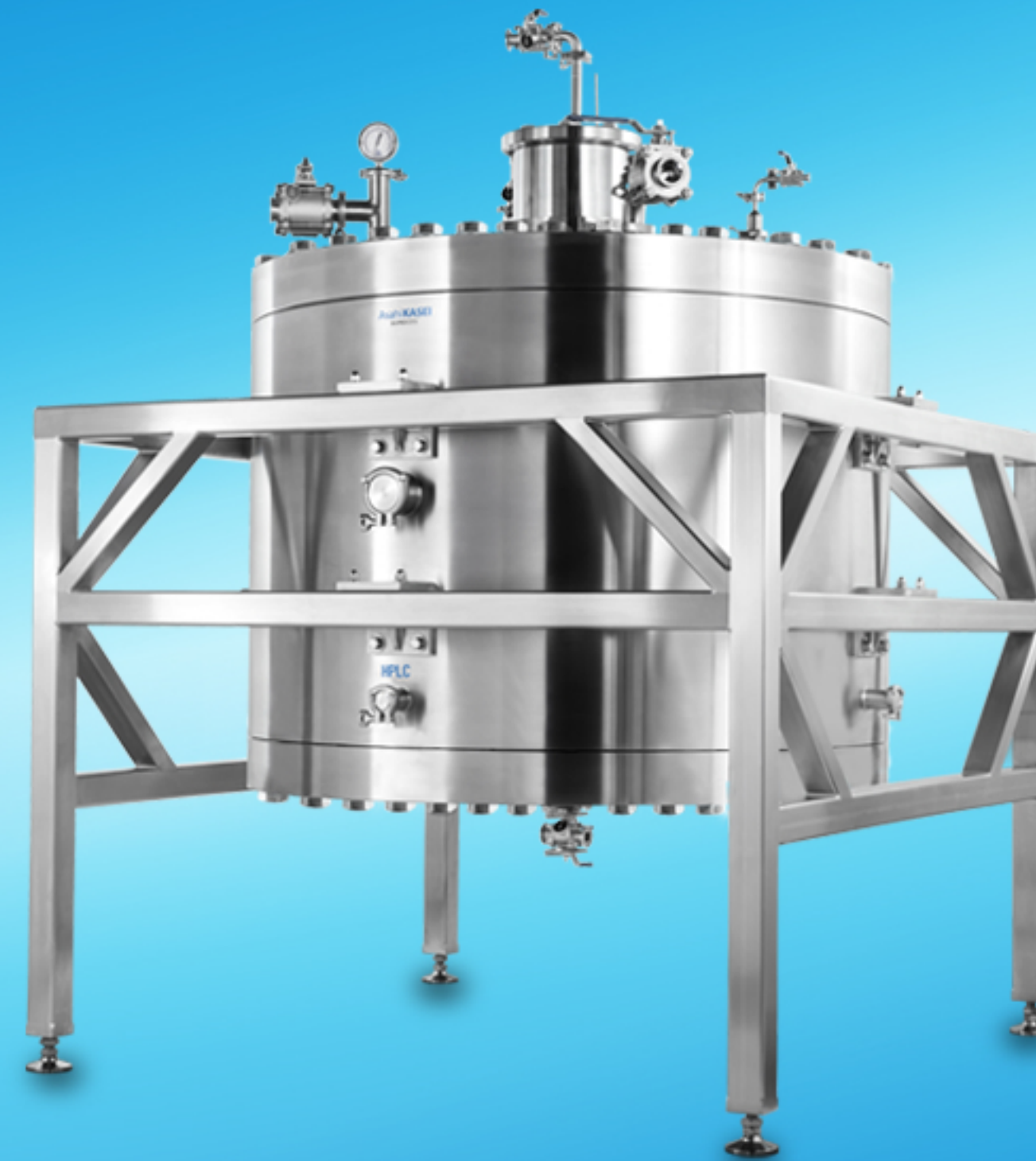
## FLASH 10 barg

For cleanup of small molecules using irregular or large particle silica gels, 10 bar column designs for flash chromatography can be engineered with higher bed heights than traditional HPLC columns.



## MPLC 35 barg

Many oligonucleotide or small protein purifications generate back pressure less than 20 bar. When a 20 bar column will be sufficient, MPLC columns provide the benefits associated with DAC combined with a lower pressure rating and lower up-front cost.



## HPLC 100 barg

Since high pressure columns are commonly utilized during peptide purifications, 70 and 100 bar ratings are designed to be compatible with 10 to 15  $\mu\text{m}$  spherical silica gels.



## UHPLC 200 barg

When greater resolution is required, our ultra high performance liquid chromatography (UHPLC) columns tolerate pressures of up to 200 bar, enabling the use of silica gels as small as 5  $\mu\text{m}$ . UHPLC columns are especially attractive for challenging peptide purifications.

**With hundreds of chromatography columns and systems installed worldwide, Asahi Kasei Bioprocess is a trusted leader in small molecule purification.**



# Slurry Prep Systems

Simplify media preparation  
and packing for DAC LC Columns

Slurry, de-fine and charge your  
chromatography media in a closed  
mixing unit that easily integrates  
with your large diameter DAC LC Column.

## Prepare for Column Packing in 7 Easy Steps

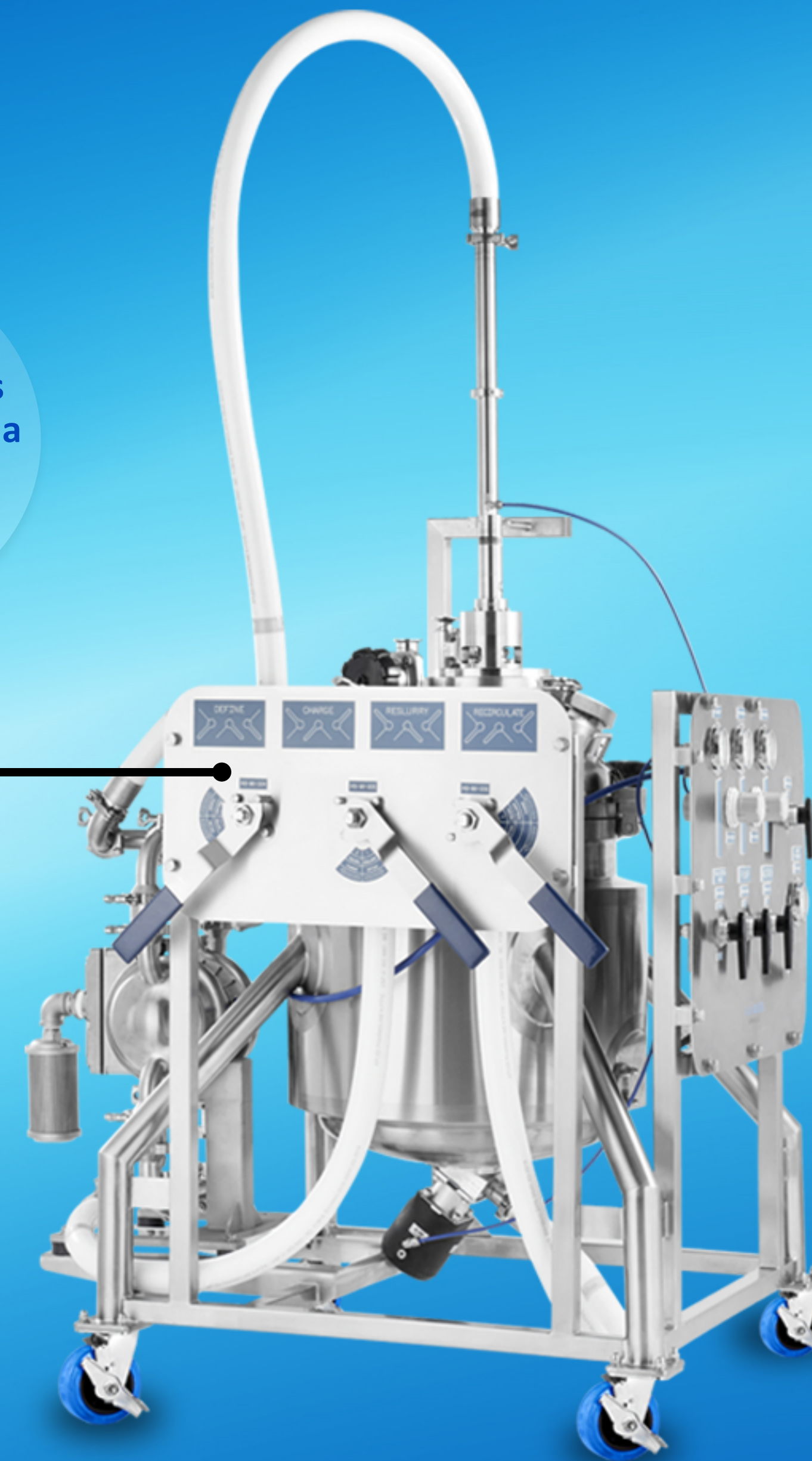
1. Fill SPS vessel with slurry buffer as recommended by the media manufacturer
2. Add media from your supplier's containers
3. Gently mix the media into a slurry with the agitator
4. Allow the media to briefly settle in the vessel for de-fining
5. Decant fines from the supernatant; repeat steps 4 and 5 as necessary
6. Add more slurry buffer and recirculate vessel to reslurry media
7. Connect to your empty column and charge the slurry using the slurry transfer pump



Accommodates  
nearly any media  
preparation  
requirement

Liquid Flow

Air



Slurry Prep Systems can be built in a range of sizes  
for compatibility with most any large DAC LC column.



# LIQUID CHROMATOGRAPHY SYSTEMS

FLASH | MPLC | HPLC | UHPLC

END PRODUCT	CHROMATOGRAPHY MODE	RECOMMENDED LC SYSTEM
Oligonucleotides	Ion exchange   Reverse-phase	MPLC   HPLC
Peptides	Reverse-phase	HPLC   UHPLC
Microbial-derived proteins	Ion exchange   Reverse-phase	MPLC   HPLC
Enantiomers	Normal-phase	HPLC
Small molecules	Normal-phase	HPLC
Small molecules (rapid cleanup)	Normal-phase	Flash

FEATURES:

- » Broad gradient operating ranges
- » Low pulse flow to the column
- » Dual channel variable wavelength UV detectors
- » Pressure and flow measurement
- » Fractionation by volume, CV, UV or percentage of peak height
- » Live and historical signal trending
- » Extension of the gradient during a run
- » Blend percentage hold
- » Built-in software phase for system clean-in-place (CIP)
- » Alarms and audit trails



Streamline your purification process.  
We offer a family of systems for your unique application.



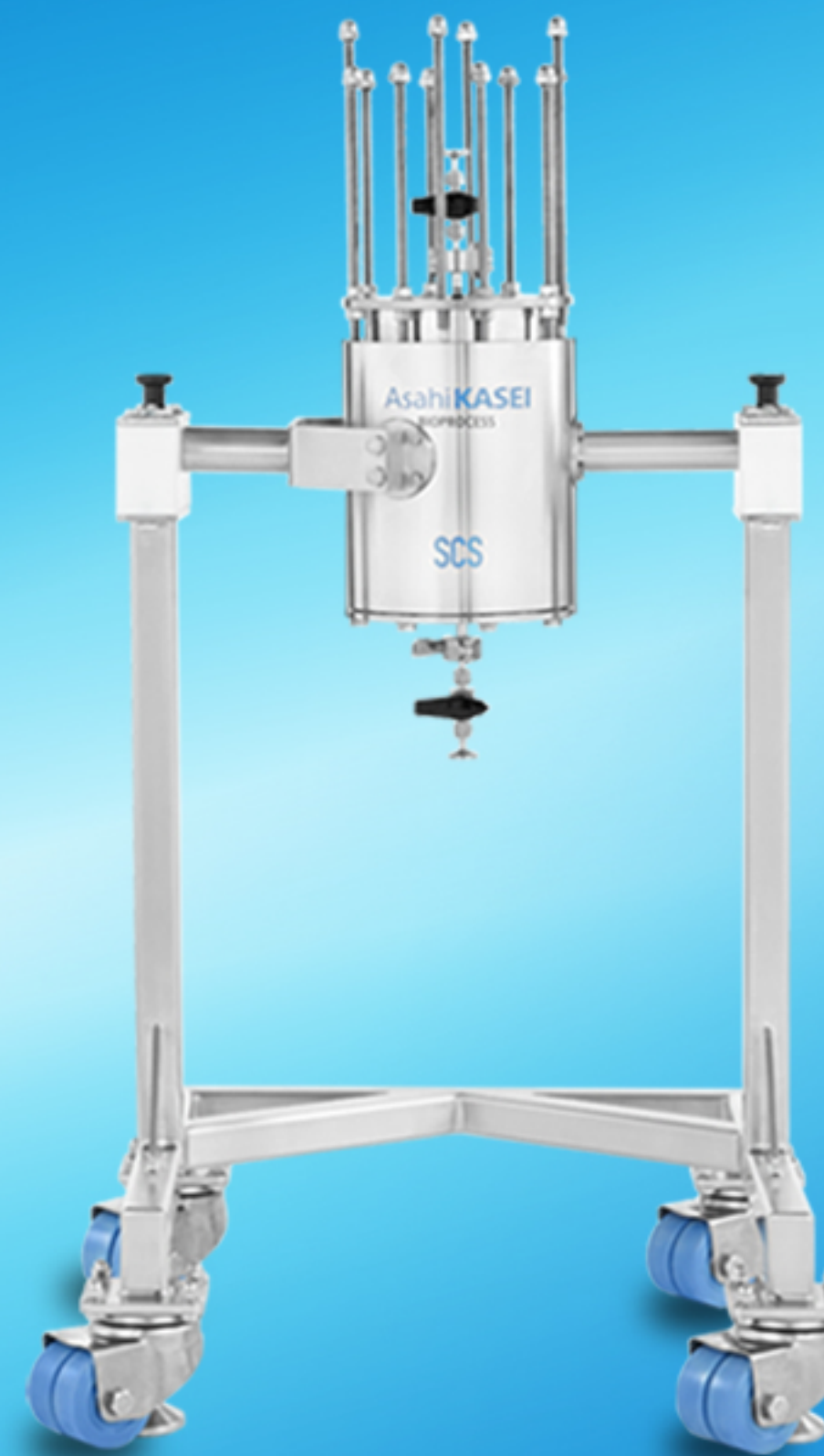
# SYNTHESIS COLUMNS Available from 10 to 100 cm i.d.

**Increase  
Throughput**  
Pair with Cleavage  
and Deprotection  
Systems



## ASAHI ACS COLUMNS™

Ideal for rigid supports that don't swell, this flow-through column offers "hoist-free" operation for easy frit removal and simplified column packing and unpacking via axial compression of an integrated piston. Active flow distribution technology provides optimum dispersion of amidites and reagents across your solid support.



## ASAHI SCS COLUMNS™

Our industry-leading Asahi SCS Column™ is the ideal choice for fixed bed height applications using swellable supports. CAD-modeled "active" flow distribution generates uniform dispersal of amidites and reagents across the entire column surface, even for columns packed with short bed heights, resulting in maximum coupling efficiency. The Asahi SCS Column also offers versatility to perform manual bed height adjustments between 2 and 15 cm while leaving a user-defined gap between the support surface and the top plate frit to accommodate support swelling and prevent pressure spikes during the synthesis process.



**The ideal columns for your mid- or large-scale oligonucleotide production needs.**



# SCS ERGO Option

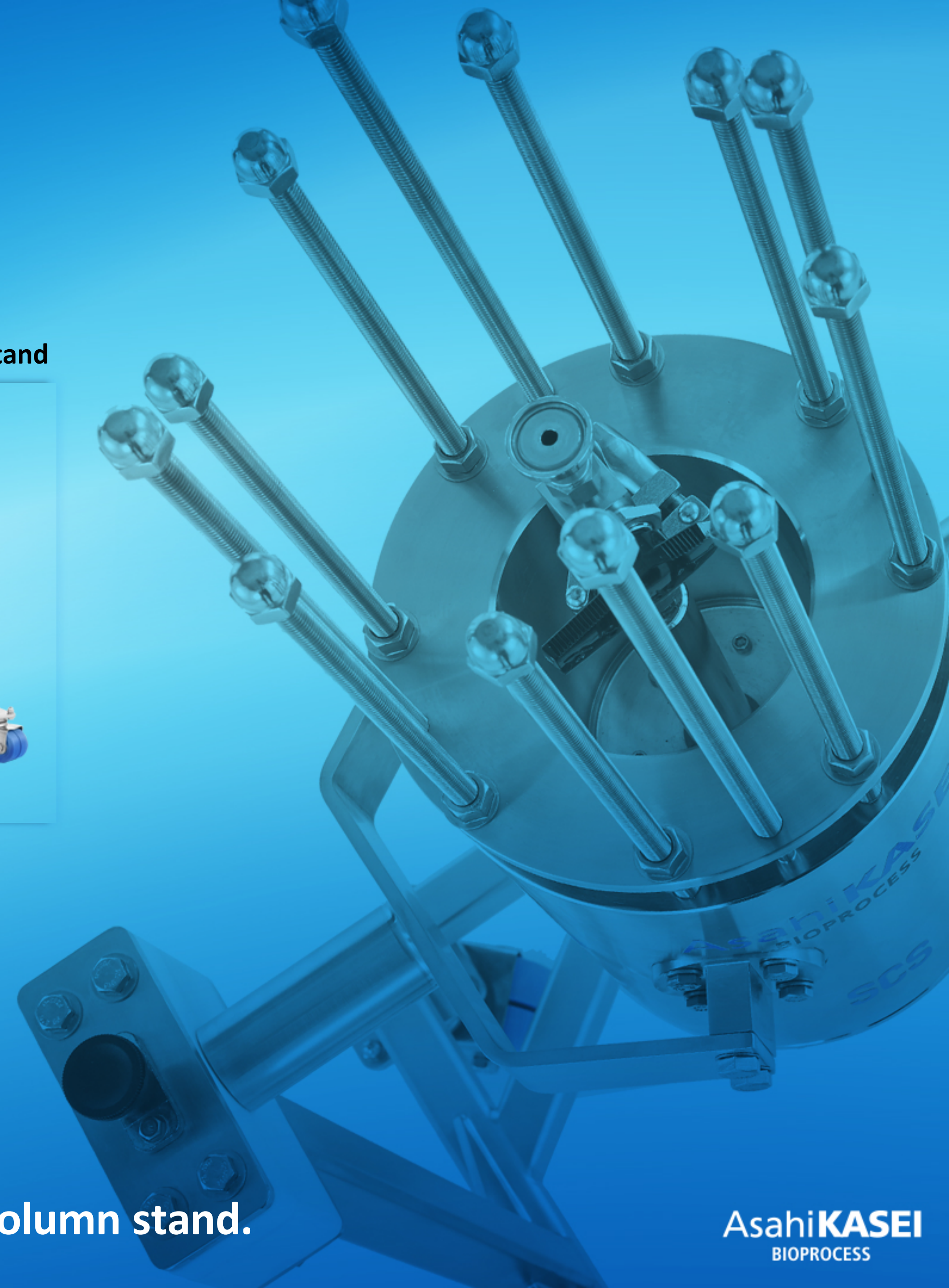
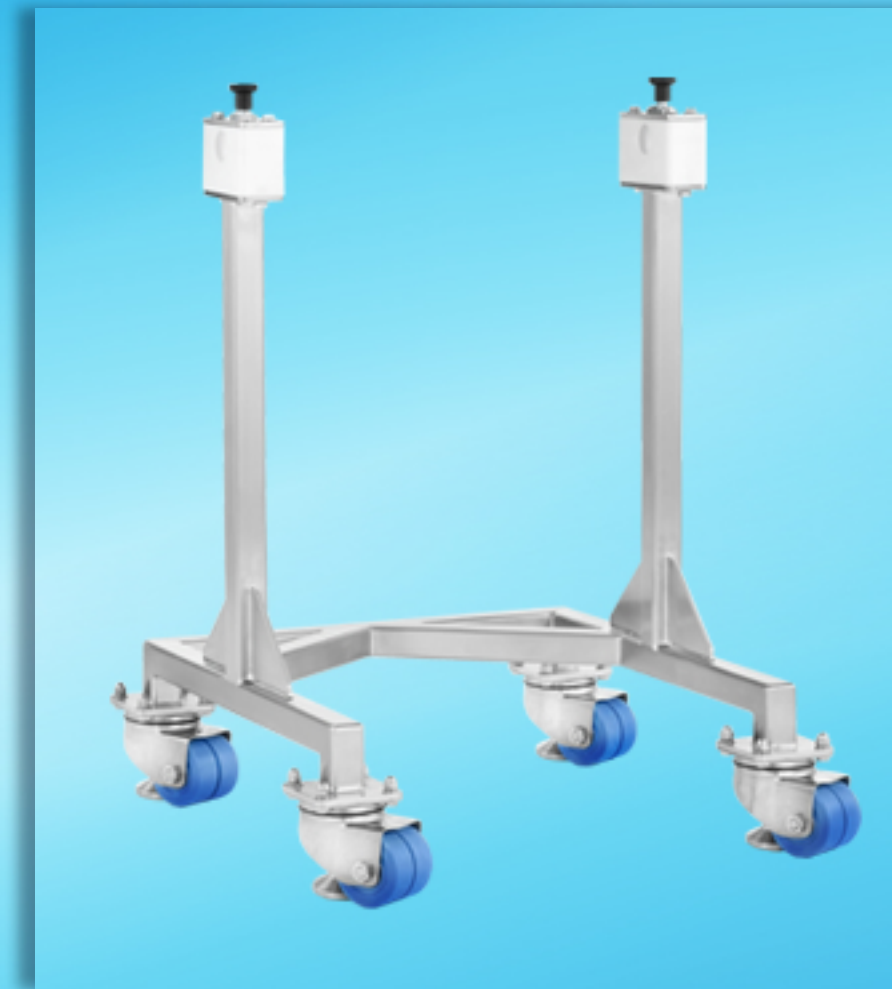
## Rotating Stand for Mid-Scale SCS Columns

### FEATURES:

- » Allows the column to be rotated 180°
- » Provides stable, ergonomic handling
- » Makes both end plates of the column easily accessible



— SCS ERGO Stand



Save packing and unpacking time with the SCS ERGO portable column stand.



# ASAHI OLIGOSYNTHESIZER™ Pairs with SCS and ACS Columns

Scalable oligosynthesis

Pumps with hygienic design and reliable metering

Engineered systems with patented valve design

Advanced process controls

## AUTOMATION FEATURES:

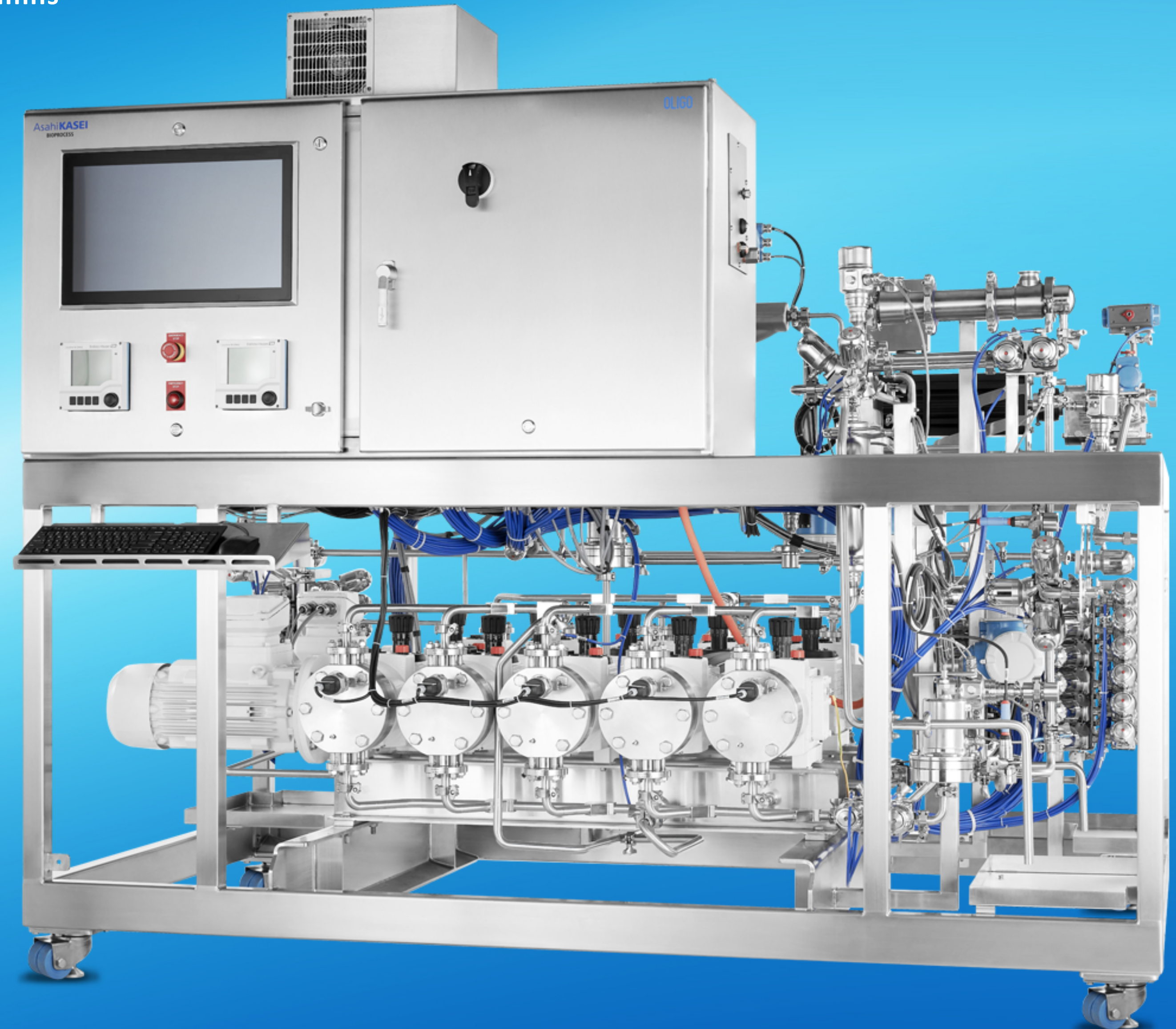
- » Browser-based Method Editor
- » Manual or automated control
- » Flexible programming of blocks
- » Step regulation by time, volume or column volume
- » Sophisticated end condition monitoring
- » 21 CFR Part 11 capability with electronic signature and audit trail
- » Data export
- » OPC compatibility
- » Customizable batch reports
- » Optional GAMP-5 lifecycle documentation

*Ask about our post column monitors*

*Standard Conductivity Monitor*

*Asahi UV Detector (190-740 nm)*

*Density Measurement Monitor*



**Ensure seamless scale-up and consistent full-length purity of your oligonucleotide.**



# CLEAVAGE AND DEPROTECTION SYSTEMS

Fully automated cleavage and deprotection steps

DNA and RNA flexibility

Configurable options for unique processing needs

## AUTOMATION FEATURES:

- » Universal Run Phase for washing, liberation and deprotection steps
- » Universal Wait Phase for reaction watching and hold steps
- » End conditions
- » Alarms and interlocks
- » 21 CFR Part 11 compliant control software
- » Audit trail and electronic signature
- » Customizable batch reports
- » Data export
- » OPC compatibility
- » Optional control of external vessel mixer and external temperature control units



Thoughtfully designed to enhance production safety and efficiency



# MOTIV™ AWARD-WINNING INLINE BUFFER FORMULATION SYSTEMS

## MOTIV 5

### Dilution / Conditioning / Blending

For your complex buffer makeup needs, our **5-pump IBF systems** offer maximum flexibility for multi-component buffers.

Leverage MOTIV 5 within an existing facility as a “buffer factory” to feed your existing bags or tanks.

**200 L/h**  
Process Development  
**1,200 L/h**  
Clinical Small Scale Manufacturing  
**2,000 L/h**  
Large Scale Manufacturing

Maximum flexibility for multi-component buffers

## MOTIV 3

### Dilution / Conditioning

Lean and effective, our patented **3-pump IBF systems** leverages process analytical technology (PAT) to generate precise and reproducible buffers for a consistent yield and recovery of your biologic product.

**60 - 1,000 L/h**  
Clinical Manufacturing  
**5,000 - 10,000 L/h**  
Large Scale Manufacturing  
**15,000 L/h**  
Extra Large Scale Manufacturing

Utilize in Batch or Continuous Processes.



Pro-Yield™ Recirculation  
Blender Technology

powered by **OCELOT™**  
SYSTEM CONTROL

**Move beyond downstream bottlenecks and achieve  
a consistent, precise yield every time.**

**AsahiKASEI**  
BIOPROCESS



# MOTIV<sup>plus</sup> CUSTOMIZED BUFFER FORMULATION SYSTEMS

Formulate multi-part solutions accurately and on demand with a custom-built Inline Buffer Formulation System.

We engineer custom equipment to meet your specific flowrate, buffer, mixing and diluting requirements.

## MEET SPECIFIC NEEDS FOR YOUR FACILITY:

- » Higher or wider flow rate ranges or greater dilutions like 50:1 or 100:1 under certain conditions
- » Redundant inline sensors
- » Different materials of construction for corrosion resistance
- » Additional pumps beyond standard designs
- » SIP-able designs
- » Additional inline monitors with control:  
Refractive index, Density, UV or VIS, and more

*Ask us about our customer-focused advancements in automation software.*



**Equipment customized to respect your individual needs.**



# BIOPROCESS CHROMATOGRAPHY SYSTEMS

Gradient capable

Inline buffer dilution capable

Combined capabilities in one system  
to increase productivity

## FEATURES FOR THE CHROMATOGRAPHER:

- » Broad gradient operating ranges
- » Extension of the gradient during a run
- » Blend percentage hold
- » Pre- and post-column conductivity and pH sensors
- » Pressure and flow measurement
- » Dual channel variable wavelength UV detectors
- » Live and historical signal trending
- » Low pulse flow to the column
- » Fractionation by volume, column volume (CV), UV, conductivity or percentage of peak height
- » Built-in software phase for system clean-in-place (CIP)



Designed to improve the efficiency of your unique process.



# PLANOVA™ VIRUS FILTRATION SYSTEMS

Scalability for any application

Flexibility for your process

Customized tubing assemblies for single-use systems

Accommodates single-use bags and pressure tanks

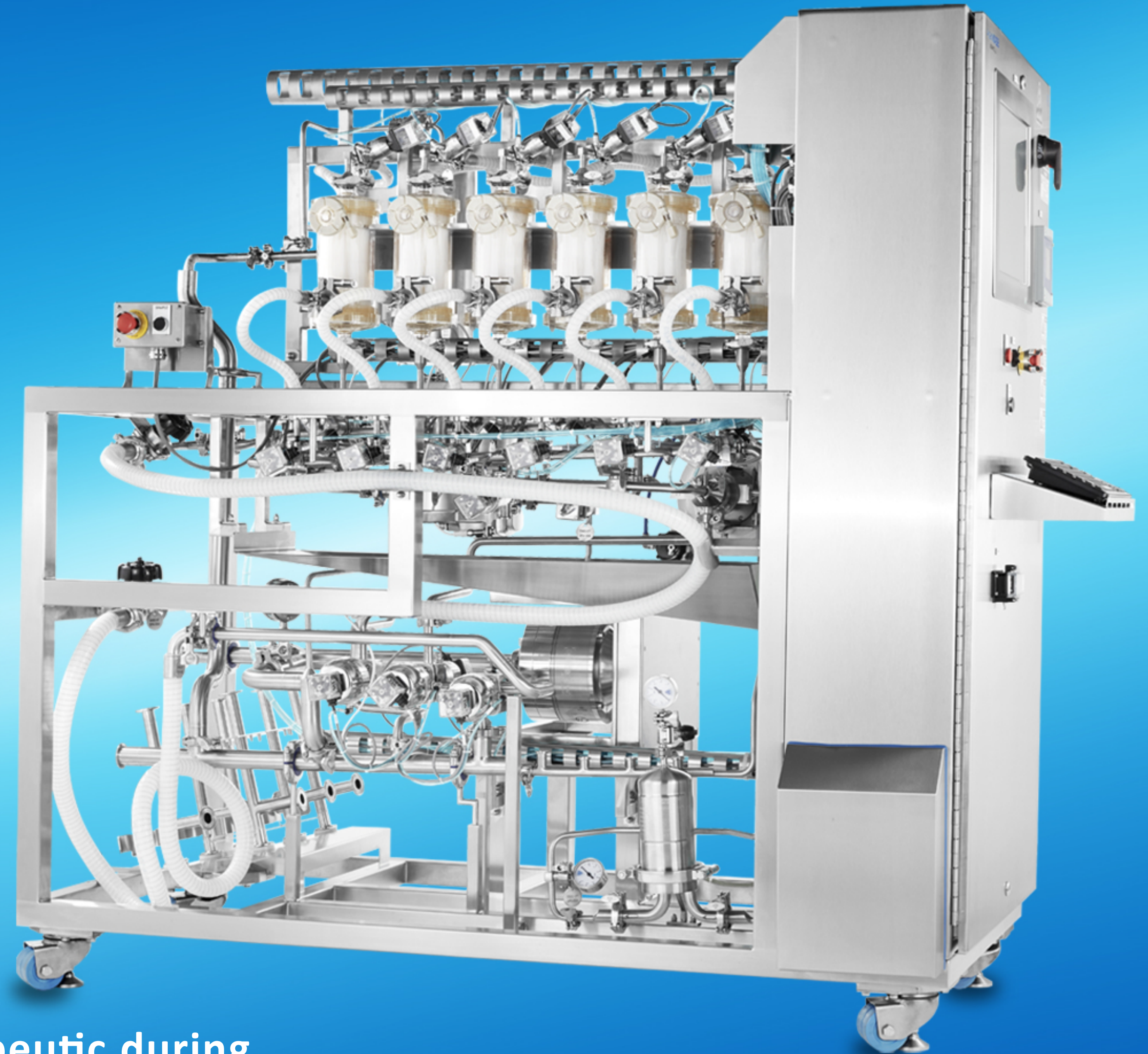
Automation platforms to match your site requirements

## PLANOVA VIRUS FILTRATION SYSTEM OPTIONS

- » Constant pressure or pump operation
- » Prefilter
- » Bubble traps
- » Positioning for visual leakage test (VLT)
- » Conductivity monitoring
- » Steam-in-place (SIP) configurations

**Request a  
Planova Virus  
Filtration System  
selection guide**

powered by **OCELOT™**  
SYSTEM CONTROL



**Maintain the integrity of your biotherapeutic during  
clinical- through commercial-scale virus filtration.**

**AsahiKASEI**  
BIOPROCESS



# PLANOVA™ SINGLE-USE VIRUS FILTRATION CONTROLLER

Flexibility comes standard

Repeatability assured

Visual Leakage Test (VLT)

## FEATURES:

- » Fully automated with 21 CFR Part 11 compliance
- » Comes OPC ready
- » Compact footprint: 26 in. x 48 in.
- » Supports your pre-filters
- » Handles both pre-use and post-use Visual Leak Test (VLT)
- » Universal tube set is compatible with 4.0 and 1.0 m<sup>2</sup> Planova 15N, 20N, 35N and BioEX filters

powered by **OCELOT™**  
SYSTEM CONTROL



**Bold functionality and compact design for greater manufacturing efficiency.**



PLANOVA™ BioEX

品番 Catalog No. EX4-0000

有効面積 Effective surface area 4.0 m<sup>2</sup>



# ASAHI GOLD PARTICLE TEST SYSTEM II



Streamline and  
automate the post-use  
gold particle test  
for Planova™ N series  
filters in under  
25 minutes

powered by **OCELOT™**  
SYSTEM CONTROL

## SINGLE-FILTER AGPTS-II

The Single-Filter AGPTS-II is a compact, validated instrument that can perform the gold particle test on one Planova™ 1.0 or 4.0 m<sup>2</sup> 15N, 20N or 35N filter at time. It's comprised of two units: a control unit and a feed unit.



## MULTI-FILTER AGPTS-II

Multi-Filter AGPTS-II can automatically test multiple Planova™ filters sequentially. They're available in 6-filter and 10-filter configurations, and are ideal for processes which utilize three or more Planova filters per batch, or in facilities that use more than 100 Planova™ filters per year.

**Fast and reliable post-use integrity testing for Planova™ 15N, 20N and 35N filters.**



# Asahi**KASEI**

## BIOPROCESS

*>> Request a Quote*