

# UniFuge® Single-Use Centrifuges

Minimize complex and expensive cleaning, validation, and commissioning times.



## Leading the Way in Single-Use Centrifuges

CARR Biosystems' expertise in centrifugal separation spans over 25 years, and includes pioneering the use of single-use centrifuges. That's why top biopharmaceutical manufacturers worldwide rely on our high performance, low shear separation equipment.



### Performance

Our proven low-shear technology boasts a typical cell viability of 98% or higher and up to 98% yield.



### Scalability

Our equipment can be used from development to commercial licensure and across different reactor volumes.



### Ease of Use

Our machines are easy to install and simple to operate.



### Small Footprint

Our UniFuge centrifuges have a small footprint.

## The UniFuge Family of Centrifuges

**Efficient:** Can be incorporated into a fully automated workflow.

**Streamlined:** Fast set up and changeover after each run.

**Reliable:** Built in ISO 9001 (instrument) and ISO 13485 (single-use modules) US facilities following the highest standards of quality control, enabling predictable supply chains.

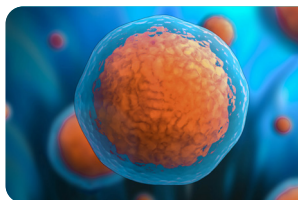
**Versatile:** Enable bioseparation across applications, from cell therapy to gene therapy, monoclonal antibodies, recombinant proteins, vaccines, and more.

**Stop-N-Go:** The UniFuge systems are designed to resume and recover from an interrupted process without product loss.

**Cell Washing:** The UniFuge systems can hold material in the bowl for washing and buffer exchanges.

## UniFuge Benefits

- 100% closed system
- Low shear
- Clear supernatant
- Reduce filtration needs by up to 85%
- Set-up and change over within 15 min
- Confidently scale up to the U2k® or scale down to the UFMMini®
- Variable speed up to 4,000 x g
- Reduce HCP and other contaminants
- cGMP-compliant 21 CFR Part 11 data trail
- Extractables data available



### Markets We Serve

Transforming bioseparation across applications.

- Cell therapies
- Gene therapies
- Vaccines
- Biologics
- Microbial fermentation
- Others

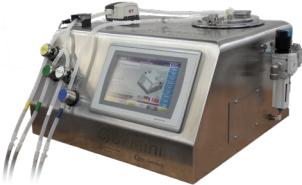


# Why Choose UniFuge

Best-in-class performance and capabilities make UniFuge a clear choice.

Differentiation/Technology	UniFuge	Other Single-Use Centrifuges	Stainless Steel Centrifuges	Depth Filtration
Sterile/Closed Systems	✓	✓	Some	No
No Need for SIP and CIP	✓	✓	No	✓
Low Shear Processes (Minimizes HCP)	✓	✓	Some	Some
Viable Cell Recovery Capabilities	✓	✓	Some	No
Ability to Do Cell Washing	✓	Some	Some	No
Small Footprint	✓	Some	No	No
Fast Set-Up and Changeover (15 Min)	✓	Some	No	No
Scale-up/Scale-down Options	✓	Limited	Some	✓
Stop-N-Go Capability	✓	No	Some	✓

## Uniquely Scalable

Scale from early stage development to commercial-scale manufacturing and licensure.

		
<b>UFMini® and UFMicro®</b>	<b>UniFuge Pilot®</b>	<b>U2k®</b>
<b>Volume</b> UFMini 300 mL UFMicro 75mL	<b>Volume</b> 1.8 L	<b>Volume</b> 9 L
<b>Flow Rate</b> 29–1,000 mL/min	<b>Flow Rate</b> 1–4 L/min	<b>Flow Rate</b> 5-20 L/min
<b>G-Force</b> Up to 4,000 x g	<b>G-Force</b> Up to 4,000 x g	<b>G-Force</b> Up to 4,000 x g
<b>Footprint (Approx.)</b> 69 cm wide x 56 cm deep x 38 cm high (27" x 22" x 15")	<b>Footprint (Approx.)</b> 61 cm wide x 99 cm deep x 117 cm high (24" x 39" x 46")	<b>Footprint (Approx.)</b> 80 cm x 206 cm x 200 cm high (31" x 81" x 78")
<b>Weight</b> ~40 kg (90 lbs)	<b>Weight</b> ~291kg (640 lbs)	<b>Weight</b> ~1,050 kg (2,300 lbs)