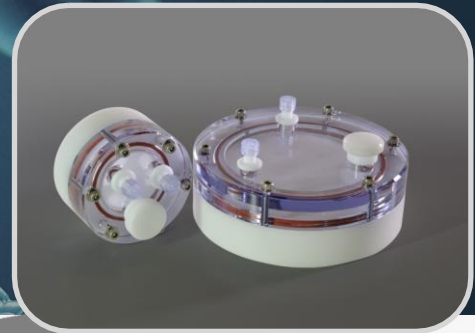




3D Culture Systems for a 3D World

## RCCS-1



### Single Station Rotator Base

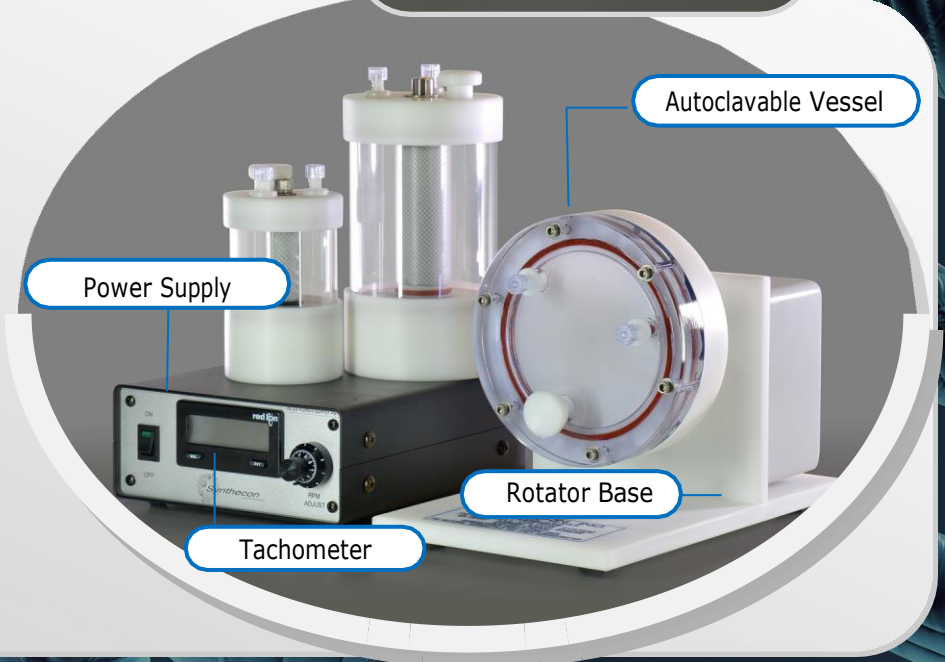
#### Power Supply

(with Tachometer and Ribbon Cable)

#### Operation Manual

#### One Autoclavable Culture Vessel

- Low cost, easy to use system which makes the technology available to most laboratories.
- One autoclavable STLV or HARV type culture vessels of your choice . This system is compatible with both autoclavable and disposable vessels.



## FAQ

**Q:** How are the cells oxygenated?

**A:** In a gas regulated incubator, gas diffuses through the silicone membrane of the bioreactor.

**Q:** Do the cells stay in one place in the bioreactor?

**A:** No, they continuously fall through the media during vessel rotation. The continuous motion of the cells in media facilitates their exposure to nutrients.

**Q:** Is the RCCS a roller bottle system?

**A:** No. Roller bottles grow cells on the wall of the bottle in 2D. The RCCS grows cells in suspension, either as 3D spheroids or on scaffolds/beads.

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Operates in standard incubators. Samples may be easily drawn at any time.

Ideal for growing and maintaining normal tissues, cancer tumors spheroids and bacteria/virally infected tissue models.

Synthecon can design and build systems to user's specifications.

# RCCS-1

## TECHNICAL SPECIFICATIONS-DIMENSIONS RCCS-1

COMPONENT	HEIGHT	WIDTH	DEPTH
<b>Base</b>	6.0" (15.2 cm)	6.0" (15.2 cm)	10.0" (25.4 cm)
<b>Power Supply</b>	3.0" (7.6 cm)	6.5" (16.5 cm)	7.5" (19.1 cm)
COMPONENT	WEIGHT	ROTATIONAL SPEED	AIR PUMP FLOW RATE
<b>Base</b>	5.0 lbs (2.36 Kg)	7-47 RPM	—
<b>Power Supply</b>	4.0 lbs (1.87 Kg)	—	—
<b>Air Pump</b>	—	—	6 SCFH (2.8L/min)

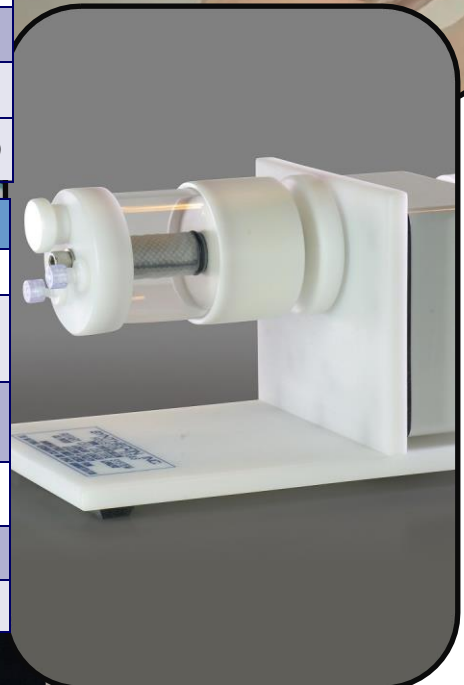
## RCCS-1 POWER AND ENVIRONMENTAL SPECIFICATIONS

POWER	VOLTAGE	FREQUENCY
<b>Power Supply Input</b>	USA 110-120 VAC @ .5Amps EU 220-240 VAC @ .5Amps	50-60 Hz
<b>Power Supply Output</b>	7 VAC @ .9 Amps 7.5 VDC @ .8Amps	50-60 Hz
ENVIRONMENT	TEMPERATURE	HUMIDITY
<b>Base</b>	50-105 °F (10-40 °C)	0-100% RH
<b>Power Supply</b>	50-80 °F ( 10-27 °C)	0-75% RH

## RCCS-1 COMPATIBLE CULTURE VESSELS

CULTURE VESSEL MODEL	SIZE	COMPATIBILITY
<b>Disposable HARV *</b>	10 mL	Yes
<b>Disposable HARV *</b>	50mL	Yes
<b>Autoclavable HARV</b>	1 mL	Yes
<b>Autoclavable HARV</b>	2 mL	Yes
<b>Autoclavable HARV</b>	4 mL	Yes
<b>Autoclavable HARV</b>	10 mL	Yes
<b>Autoclavable HARV</b>	50 mL	Yes
<b>Autoclavable STLV</b>	55 mL	Yes
<b>Autoclavable STLV</b>	110 mL	Yes
<b>Autoclavable STLV</b>	250 mL	Yes
<b>Autoclavable STLV</b>	500 mL	Yes

\* Disposable vessels are available in the High Aspect Ratio Vessels (HARVs). Each vessel is individually packaged and gamma sterilized. Vessels are supplied four to a pack. One Autoclavable HARV or STLV is provided with the RCCS-1 System. All other compatible vessel types are ordered separately. Visit [www.synthecon.com](http://www.synthecon.com) for more details.



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3D Culture Systems for a 3D World

# RCCS-4H



4 Station Rotator Base

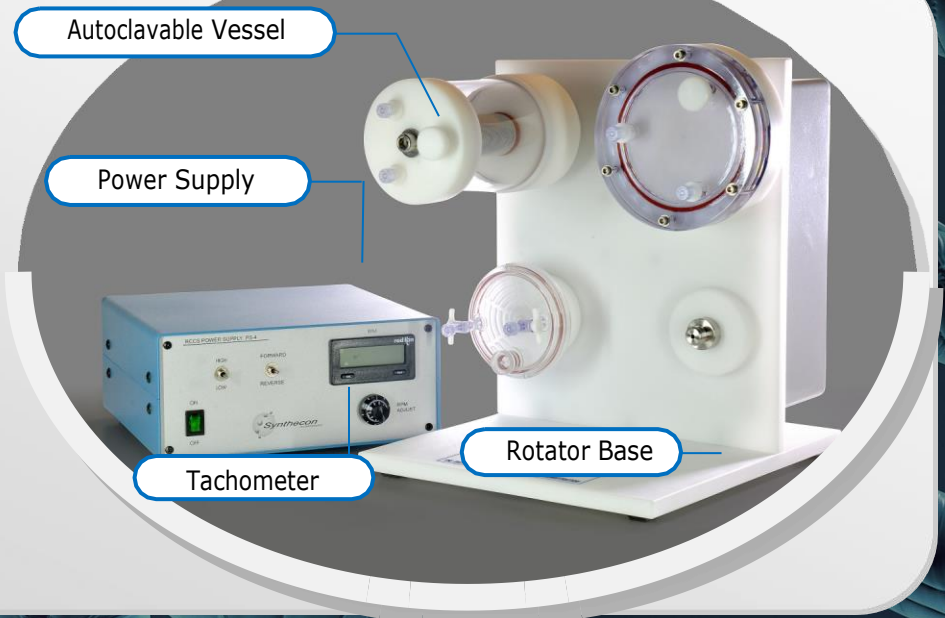
Power Supply

(with Tachometer and Ribbon Cable)

Operation Manual

4 Autoclavable Culture Vessels

- Low cost, easy to use system which makes the technology available to most laboratories.
- Four autoclavable STLV or HARV type culture vessels of your choice . This system is compatible with both autoclavable and disposable vessels.



## FAQ

**Q:** How are the cells oxygenated?

**A:** In a gas regulated incubator, gas diffuses through the silicone membrane of the bioreactor.

**Q:** Do the cells stay in one place in the bioreactor?

**A:** No, they continuously fall through the media during vessel rotation. The continuous motion of the cells in media facilitates their exposure to nutrients.

**Q:** Is the RCCS a roller bottle system?

**A:** No. Roller bottles grow cells on the wall of the bottle in 2D. The RCCS grows cells in suspension, either as 3D spheroids or on scaffolds/ beads.

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# RCCS-4H

## TECHNICAL SPECIFICATIONS-DIMENSIONS RCCS-4H

COMPONENT	HEIGHT	WIDTH	DEPTH
<b>Base</b>	13.0" (33.0 cm)	12.0" (30.5 cm)	12.0" (30.5 cm)
<b>Power Supply</b>	4.5" (11.4 cm)	9.375" (23.8 cm)	9.5" (24.1 cm)
COMPONENT	WEIGHT	ROTATIONAL SPEED	AIR PUMP FLOW RATE
<b>Base</b>	14.5 lbs (6.84 Kg)	4-47 RPM	—
<b>Power Supply</b>	9.5 lbs (4.48 Kg)	—	—
<b>Air Pump</b>	—	—	18 SCFH (8.5 L/min)

## RCCS-4H POWER AND ENVIRONMENTAL SPECIFICATIONS

POWER	VOLTAGE	FREQUENCY
<b>Power Supply Input</b>	USA 110-120 VAC @ .5Amps EU 220-240 VAC @ .5Amps	50-60 Hz
<b>Power Supply Output</b>	12 VAC @ .9 Amps 30 VDC @ .25Amps	50-60 Hz
ENVIRONMENT	TEMPERATURE	HUMIDITY
<b>Base</b>	50-105 °F (10-40 °C)	0-100% RH
<b>Power Supply</b>	50-80 °F ( 10-27 °C)	0-75% RH

## RCCS-4H COMPATIBLE CULTURE VESSELS

CULTURE VESSEL MODEL	SIZE	COMPATIBILITY
<b>Disposable HARV *</b>	10 mL	Yes
<b>Disposable HARV *</b>	50mL	Yes
<b>Autoclavable HARV</b>	1 mL	Yes
<b>Autoclavable HARV</b>	2 mL	Yes
<b>Autoclavable HARV</b>	4 mL	Yes
<b>Autoclavable HARV</b>	10 mL	Yes
<b>Autoclavable HARV</b>	50 mL	Yes
<b>Autoclavable STLV</b>	55 mL	Yes
<b>Autoclavable STLV</b>	110 mL	Yes
<b>Autoclavable STLV</b>	250 mL	Yes
<b>Autoclavable STLV</b>	500 mL	Yes

\* Disposable vessels are available in the High Aspect Ratio Vessels (HARVs). Each vessel is individually packaged and gamma sterilized. Vessels are supplied four to a pack. Four Autoclavable HARVs or STLVs are provided with the RCCS-4H System. All other compatible vessel types are ordered separately. Visit [www.synthecon.com](http://www.synthecon.com) for more details.



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## RCCS-4HD



### 4 Station Rotator Base

- Rotates 4 vessels at 2 independent speeds.

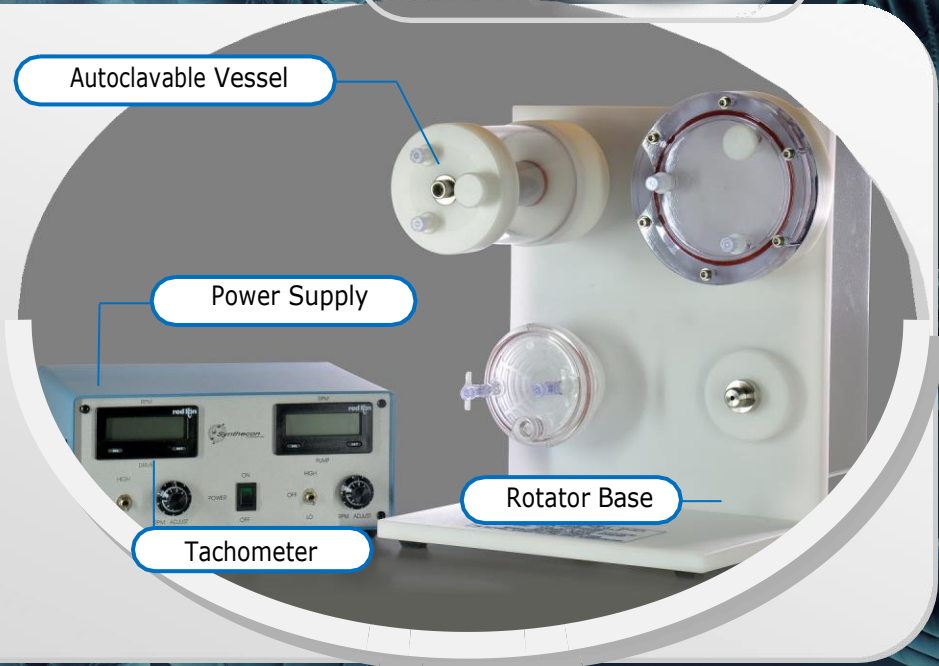
### Power Supply

(with Tachometer and Ribbon Cable)

### Operation Manual

### 4 Autoclavable Culture Vessels

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- Four autoclavable STLV or HARV type culture vessels of your choice . This system is compatible with both autoclavable and disposable vessels.



## FAQ

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# RCCS-4HD

## TECHNICAL SPECIFICATIONS-DIMENSIONS RCCS-4HD

COMPONENT	HEIGHT	WIDTH	DEPTH
<b>Base</b>	13.0" (33.0 cm)	12.0" (30.5 cm)	12.0" (30.5 cm)
<b>Power Supply</b>	4.5" (11.4 cm)	9.375" (23.8 cm)	9.5" (24.1 cm)
COMPONENT	WEIGHT	ROTATIONAL SPEED	AIR PUMP FLOW RATE
<b>Base</b>	14.5 lbs (6.84 Kg)	4-47 RPM	—
<b>Power Supply</b>	9.5 lbs (4.48 Kg)	—	—
<b>Air Pump</b>	—	—	18 SCFH (8.5 L/min)

## RCCS-4HD POWER AND ENVIRONMENTAL SPECIFICATIONS

POWER	VOLTAGE	FREQUENCY
<b>Power Supply Input</b>	USA 110-120 VAC @ .5Amps EU 220-240 VAC @ .5Amps	50-60 Hz
<b>Power Supply Output</b>	12 VAC @ .9 Amps 30 VDC @ .25Amps	50-60 Hz
ENVIRONMENT	TEMPERATURE	HUMIDITY
<b>Base</b>	50-105 °F (10-40 °C)	0-100% RH
<b>Power Supply</b>	50-80 °F ( 10-27 °C)	0-75% RH

## RCCS-4HD COMPATIBLE CULTURE VESSELS

CULTURE VESSEL MODEL	SIZE	COMPATIBILITY
<b>Disposable HARV *</b>	10 mL	Yes
<b>Disposable HARV *</b>	50mL	Yes
<b>Autoclavable HARV</b>	1 mL	Yes
<b>Autoclavable HARV</b>	2 mL	Yes
<b>Autoclavable HARV</b>	4 mL	Yes
<b>Autoclavable HARV</b>	10 mL	Yes
<b>Autoclavable HARV</b>	50 mL	Yes
<b>Autoclavable STLV</b>	55 mL	Yes
<b>Autoclavable STLV</b>	110 mL	Yes
<b>Autoclavable STLV</b>	250 mL	Yes
<b>Autoclavable STLV</b>	500 mL	Yes

\* Disposable vessels are available in the High Aspect Ratio Vessels (HARVs). Each vessel is individually packaged and gamma sterilized. Vessels are supplied four to a pack. Four Autoclavable HARVs or STLVs are provided with the RCCS-4HD System. All other compatible vessel types are ordered separately. Visit [www.synthecon.com](http://www.synthecon.com) for more details.



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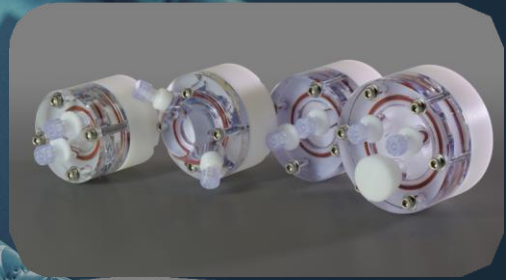


3D Culture Systems for a 3D World

Autoclavable

## HARV

High Aspect Ratio Vessel



### Cell Culture

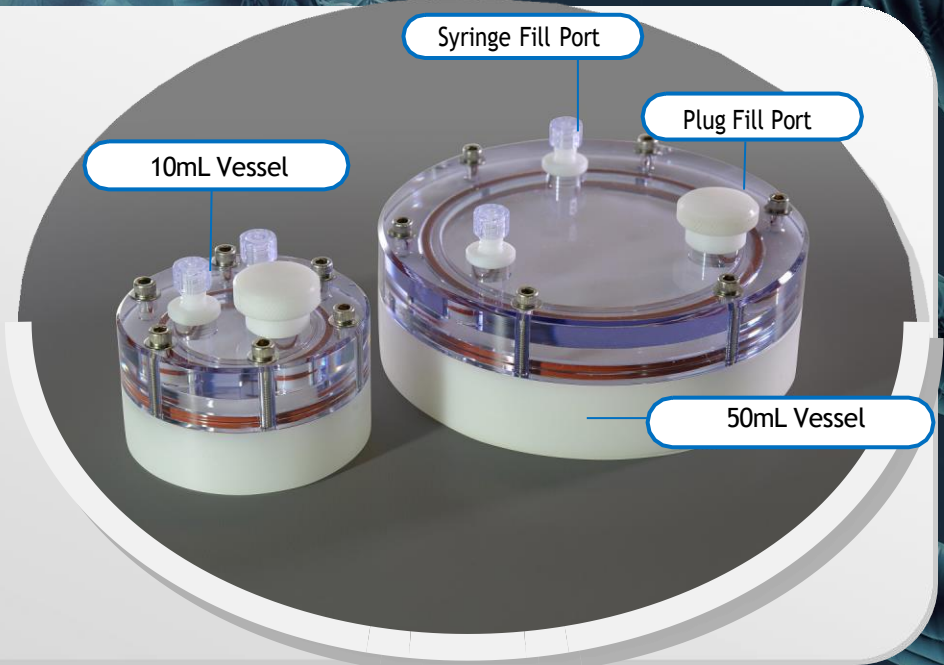
- Suspension and Anchorage dependent compatible

### Silicone Membrane

- Oxygenation through silicone rubber gas transfer membrane.

### Volume

- 1, 2, 4, 10 and 50mL volumes



## FAQ

**Q:** How are the cells oxygenated?

**A:** In a gas regulated incubator, gas diffuses through the silicone membrane of the bioreactor.

**Q:** Do the cells stay in one place in the bioreactor?

**A:** No, they continuously fall through the media during vessel rotation. The continuous motion of the cells in media facilitates their exposure to nutrients.

**Q:** Is the HARV a roller bottle system?

**A:** No. Roller bottles grow cells on the wall of the bottle in 2D. The HARV grows cells in suspension, either as 3D spheroids or on scaffolds/beads.

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# HARV

## TECHNICAL SPECIFICATIONS-DIMENSIONS HARV (Vessel Chamber- Inner Vessel)

VESSEL	DIAMETER	DEPTH
<b>1mL</b>	0.72" (18.3 mm)	0.15" (3.81 mm)
<b>2mL</b>	.88" (22.23 mm)	0.20" (5.16 mm)
<b>4mL</b>	1.12" (28.32 mm)	0.25" (6.35 mm)
<b>10mL</b>	1.7" (43.18 mm)	0.25" (6.35 mm)
<b>50mL</b>	3.9" (99.06 mm)	0.25" (6.35 mm)



**3D Culture Systems**  
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3D Culture Systems for a 3D World

Autoclavable

# STLV

Slow Turning Lateral Vessel

## Cell Culture

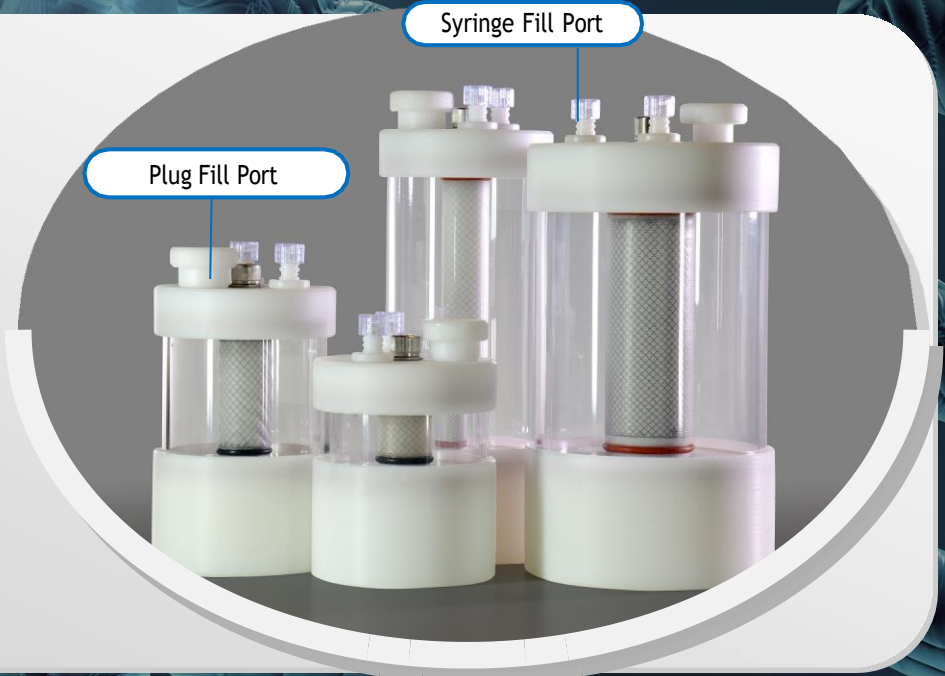
- Suspension and Anchorage dependent compatible.
- Ideal for cultures with microcarriers, scaffolds or explant tissue.

## Silicone Membrane

- Oxygenation through a central core silicone rubber gas transfer membrane.

## Volume

- 55, 110, 250, 450, 500mL and 1L



## FAQ

**Q:** How are the cells oxygenated?

**A:** In a gas regulated incubator, gas diffuses through the silicone membrane of the bioreactor.

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**A:** No, they continuously fall through the media during vessel rotation. The continuous motion of the cells in media facilitates their exposure to nutrients.

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# STLV

## TECHNICAL SPECIFICATIONS-DIMENSIONS STLV (Vessel Chamber- Inner Vessel)

VESSEL	DIAMETER	DEPTH
<b>55mL</b>	2.25" (57.15 mm)	1.00" (25.4 mm)
<b>110mL</b>	2.25" (57.15 mm)	2.02" (51.31 mm)
<b>250mL</b>	2.25" (57.15 mm)	4.45" (113.03 mm)
<b>450mL</b>	3.25" (82.55 mm)	3.8" (96.52mm)
<b>500mL</b>	3.75" (95.25 mm)	3.8" (96.52mm)
<b>1000 mL</b>	3.75" (95.25 mm)	7.8" (198.12mm)



**3D Culture Systems**  
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