



## Thermo Scientific Cryo and CryoPlus® Quick Reference Guide for Racks and Frames



# Your Total Cryogenic Solution

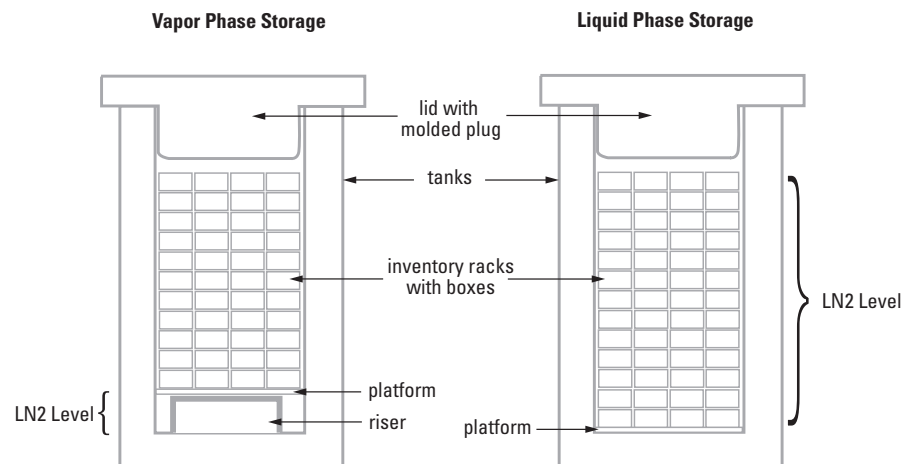
» *maximizing sample protection and maintaining sample integrity*

Your Thermo Scientific Forma® cryopreservation equipment is a significant investment in the long-term protection of your precious samples. It may not seem obvious at first, but your selection of racks, risers and accessories can maximize that investment through operational efficiencies and savings throughout the years.

This guide will help you select the appropriate rack or frames and canisters based upon your sample size requirements. It will also help you select the appropriate size Cryo or CryoPlus unit based upon your total capacity requirements.

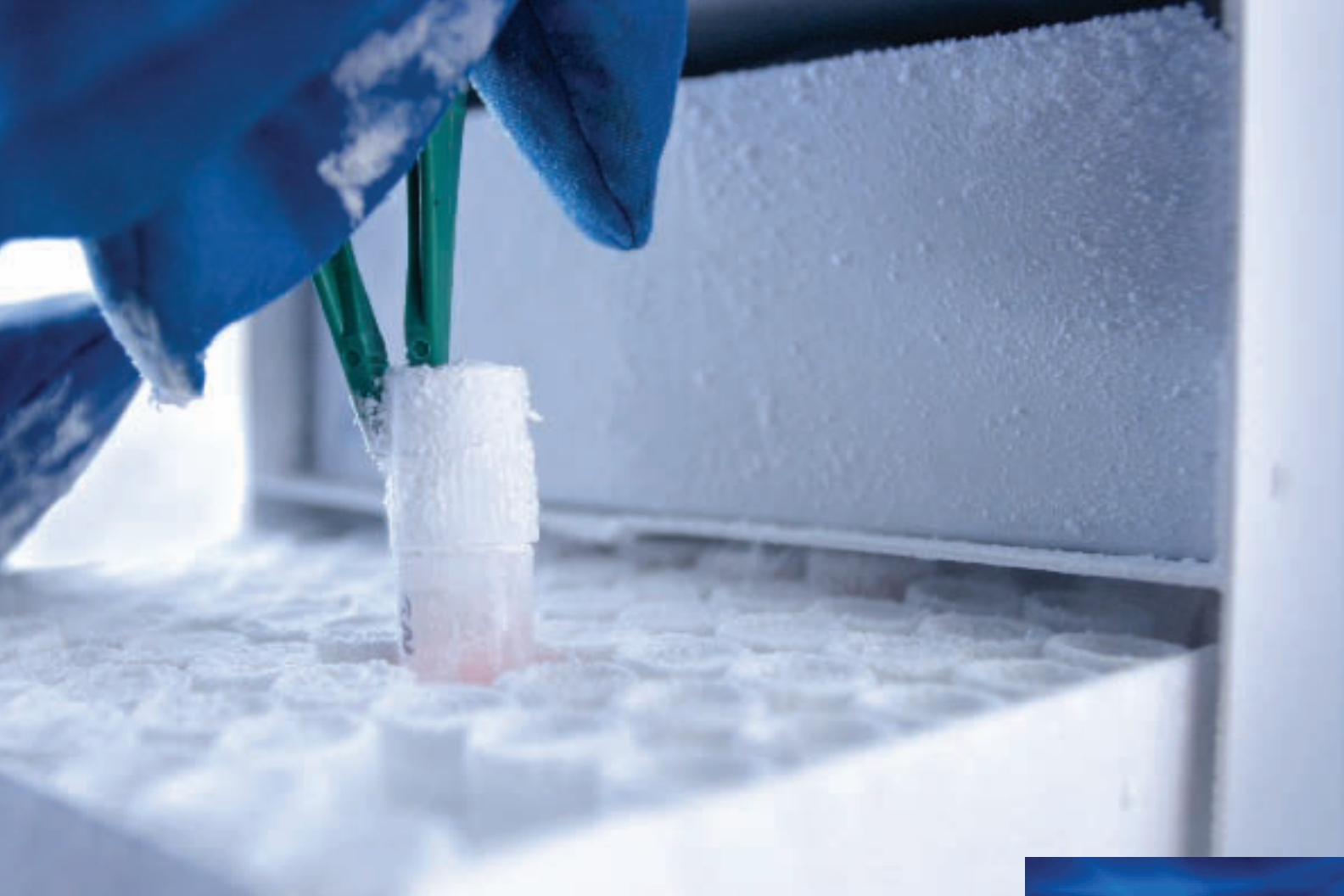
## VAPOR & LIQUID STORAGE

### COMPARISON OF VAPOR PHASE & LIQUID PHASE STORAGE



**Vapor Phase**, where vials are not submerged under liquid, is ideal when the remote possibility of cross contamination is a concern.

**Liquid Phase** storage provides more safety margin in terms of time and temperature. In liquid phase, the unit can be full of LN2 or partially full, providing longer holding times in the event of a LN2 leak.



*Thermo Scientific Cryo & CryoPlus  
Storage Systems for Long-Term Storage*

## Thermo Scientific CryoPlus 1 or Cryo 100

### Arrowhead Storage: 1 system = 6 racks

Rack Part No.	Type	Tube Size (ml)	Boxes/Rack	Box Height Inches (mm)	Cells/Divider	Riser Part No.	Riser Height Inches (mm)	Total No. Samples
4000108	Vapor	2.0	10	2 (51)	81	4000056	4 (102)	4860
4000100	Vapor	4.0	7	3 (76)	81	4000056	4 (102)	3402
4000097	Vapor	5.0	6	3.75 (95)	81	4000056	4 (102)	2916
4000044	Liquid	2.0	13	2 (51)	81	n/a	n/a	6318
4000104	Liquid	4.0	8	3 (76)	81	n/a	n/a	3888
4000043	Liquid	5.0	7	3.75 (95)	81	n/a	n/a	3402



### Square Storage: 1 system = 4 racks

Rack Part No.	Type	Tube Size (ml)	Boxes/Rack	Box Height Inches (mm)	Cells/Divider**	Riser Part No.	Riser Height Inches (mm)	Total No. Samples
4000001	Vapor	2.0	11	2 (51)	100	4000056	4 (102)	4356
4000003	Vapor	4.0	7	3 (76)	100	4000056	4 (102)	2772
4000005	Vapor	5.0	6	3.75 (95)	100	4000056	4 (102)	2376
4000006*	Liquid	2.0	13	2 (51)	100	n/a	n/a	5148
4000042	Liquid	2.0	12	2 (51)	100	n/a	n/a	4752
4000008	Liquid	4.0	8	3 (76)	100	n/a	n/a	3168
4000010	Liquid	5.0	7	3.75 (95)	100	n/a	n/a	2772



\* Will not accommodate polycarbonate boxes - please use part number 4000042.

\*\*One space per box is needed for the locking rod. 99 samples per box are usable space.

### Vertical Storage: 1 system = 11 racks

Rack Part No.	Type	Boxes/Rack	Box Height Inches (mm)	Cells/Divider	Riser Part No.	Riser Height Inches (mm)	Total No. Samples
4000011	Vapor	4	2 (51)	100	4000056	4 (102)	4400
4000012	Liquid	5	2 (51)	100	n/a	n/a	5500



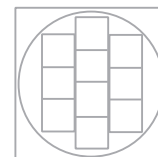
# RACK & RISERS

## Thermo Scientific CryoPlus 2 or Cryo 200

**Arrowhead Storage:** Not applicable to this product.

**Square Storage: 1 system = 10 racks**

Rack Part No.	Type	Tube Size (ml)	Boxes/ Rack	Box Height Inches (mm)	Cells/ Divider**	Riser Part No.	Riser Height Inches (mm)	Total No. Samples
4000001	Vapor	2.0	11	2 (51)	100	4000060	3.5 (89)	10890
4000003	Vapor	4.0	7	3 (76)	100	4000061	5 (127)	6930
4000005	Vapor	5.0	6	3.75 (95)	100	4000062	4 (102)	5940
4000006*	Liquid	2.0	13	2 (51)	100	n/a	n/a	12870
4000042	Liquid	2.0	12	2 (51)	100	n/a	n/a	11880
4000008	Liquid	4.0	8	3 (76)	100	n/a	n/a	7920
4000010	Liquid	5.0	7	3.75 (95)	100	n/a	n/a	6930

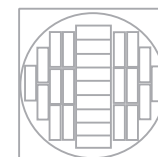


\* Will not accommodate polycarbonate boxes - please use part number 4000042.

\*\*One space per box is needed for the locking rod. 99 samples per box are usable space.

**Vertical Storage: 1 system = 26 racks**

Rack Part No.	Type	Boxes/ Rack	Box Height Inches (mm)	Cells/ Divider	Riser Part No.	Riser Height Inches (mm)	Total No. Samples
4000011	Vapor	4	2 (51)	100	4000061	5 (127)	10400
4000012	Liquid	5	2 (51)	100	n/a	n/a	13000



## Thermo Scientific CryoPlus 3 or Cryo 300

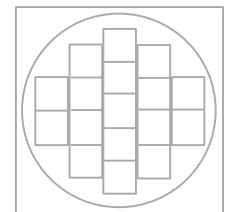
**Arrowhead Storage:** Not applicable to this product.

**Square Storage: 1 system = 17 racks**

Rack Part No.	Type	Tube Size (ml)	Boxes/Rack	Box Height Inches (mm)	Cells/Divider**	Riser Part No.	Riser Height Inches (mm)	Total No. Samples
4000001	Vapor	2.0	11	2 (51)	100	4000063	3.5 (89)	18513
4000003	Vapor	4.0	7	3 (76)	100	4000064	5 (127)	11781
4000005	Vapor	5.0	6	3.75 (95)	100	4000065	4 (102)	10098
4000006*	Liquid	2.0	13	2 (51)	100	n/a	n/a	21879
4000042	Liquid	2.0	12	2 (51)	100	n/a	n/a	20196
4000008	Liquid	4.0	8	3 (76)	100	n/a	n/a	13464
4000010	Liquid	5.0	7	3.75 (95)	100	n/a	n/a	11781

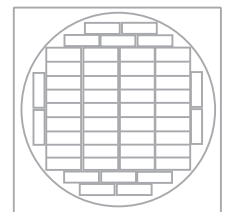
\* Will not accommodate polycarbonate boxes - please use part number 4000042.

\*\*One space per box is needed for the locking rod. 99 samples per box are usable space.



**Vertical Storage: 1 system = 48 racks**

Rack Part No.	Type	Boxes/Rack	Box Height Inches (mm)	Cells/Divider	Riser Part No.	Riser Height Inches (mm)	Total No. Samples
4000011	Vapor	4	2 (51)	100	4000064	5 (127)	19200
4000012	Liquid	5	2 (51)	100	n/a	n/a	24000



## Thermo Scientific CryoPlus 4 or Cryo 400

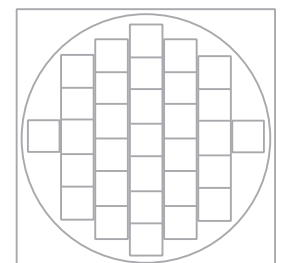
**Arrowhead Storage:** Not applicable to this product.

**Square Storage: 1 system = 31 racks**

Rack Part No.	Type	Tube Size (ml)	Boxes/Rack	Box Height Inches (mm)	Cells/Divider**	Riser Part No.	Riser Height Inches (mm)	Total No. Samples
4000001	Vapor	2.0	11	2 (51)	100	4000066	3.5 (89)	33759
4000003	Vapor	4.0	7	3 (76)	100	4000067	5 (127)	21483
4000005	Vapor	5.0	6	3.75 (95)	100	4000068	4 (102)	18414
4000006*	Liquid	2.0	13	2 (51)	100	n/a	n/a	39897
4000042	Liquid	2.0	12	2 (51)	100	n/a	n/a	36828
4000008	Liquid	4.0	8	3 (76)	100	n/a	n/a	24552
4000010	Liquid	5.0	7	3.75 (95)	100	n/a	n/a	21483

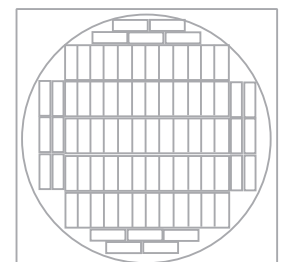
\* Will not accommodate polycarbonate boxes - please use part number 4000042.

\*\*One space per box is needed for the locking rod. 99 samples per box are usable space.



**Vertical Storage: 1 system = 77 racks**

Rack Part No.	Type	Boxes/Rack	Box Height Inches (mm)	Cells/Divider	Riser Part No.	Riser Height Inches (mm)	Total No. Samples
4000011	Vapor	4	2 (51)	100	4000067	5 (127)	30800
4000012	Liquid	5	2 (51)	100	n/a	n/a	38500

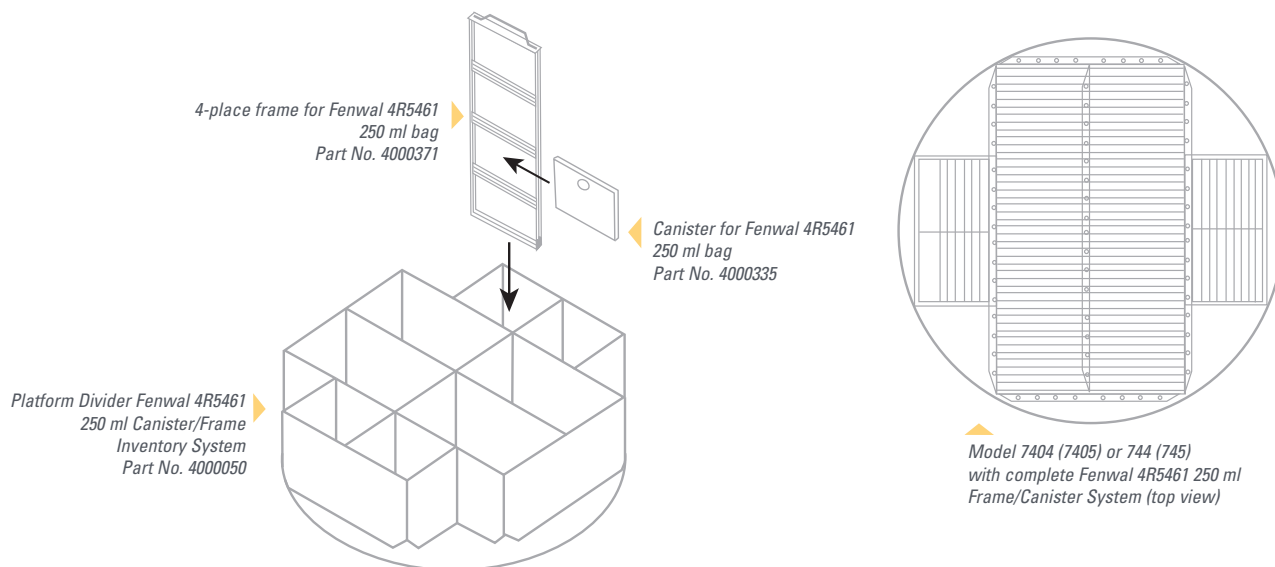


# CANISTERS & FRAMES

for all Thermo Scientific Cryo & CryoPlus units

Bag Type	Canisters			Bag Storage Capacity (Frames Required)				Frames		
	Canister Part No.	Type of Canister	Dimensions HxWxD Inches (mm)	CryoPlus 1 or Cryo 100 (Frames)	CryoPlus 2 or Cryo 200 (Frames)	CryoPlus 3 or Cryo 300 (Frames)	CryoPlus 4 or Cryo 400 (Frames)	Frame Part No.	Overall Height, Inches (mm)	# Places in Each Frame
Nexell R4R9951 or Fenwal 4R9951 (50ml bag)	4000610	Swing Arm	3.7 x 6.3 x 0.5 (94 x 160 x 13)	204 (34)	540 (90)	924 (154)	1536 (256)	4000660	23.5 (597)	6
Nexell R4R9951 or Fenwal 4R9951 (50ml bag)	4000610	Swing Arm	3.7 x 6.3 x 0.5 (94 x 160 x 13)	238 (34)	630 (90)	1078 (154)	1792 (256)	4000670	27.4 (696)	7
Nexell R4R9953 or Fenwal 4R5461 (250ml bag)	4000335	Sliding	5.5 x 7.6 x 0.4 (140 x 193 x 11)	112 (28)	256 (64)	448 (112)	696 (174)	4000371	23.7 (602)	4
Nexell R4R9955 or Fenwal 4R5462 (500ml bag)	4000336	Slide	5.6 x 9.8 x 0.4 (143 x 249 x 11)	88 (22)	200 (50)	328 (82)	608 (152)	4000372	23.7 (602)	4
Gambro DF-200 (500ml bag)	4000332	Slide	6.4 x 7.8 x 0.8 (163 x 199 x 21)	76 (19)	160 (40)	272 (68)	464 (116)	4000368	26.4 (671)	4
Gambro DF-200 (500ml bag)	4000356	Swing Arm	6.4 x 7.8 x 0.8 (163 x 199 x 21)	76 (19)	160 (40)	272 (68)	464 (116)	4000368	26.4 (671)	4
Gambro DF-700 (700ml bag)	4000333	Slide	6.5 x 12.1 x 0.8 (165 x 308 x 21)	40 (10)	104 (26)	176 (44)	n/a	4000396	26.4 (671)	4
Gambro DF-700 (700ml bag)	4000357	Swing Arm	6.5 x 12.1 x 0.8 (165 x 308 x 21)	40 (10)	104 (26)	176 (44)	n/a	4000369	26.4 (671)	4

\* Based on a frame with a 4.0" (102mm) riser



# DIVIDERS & RISERS

for all Thermo Scientific Cryo & CryoPlus units

Frame Part No.	Bag Type	Platform Dividers				Risers (height, inches)			
		CryoPlus 1/ Cryo 100	CryoPlus 2/ Cryo 200	CryoPlus 3/ Cryo 300	CryoPlus 4/ Cryo 400	CryoPlus 1/ Cryo 100	CryoPlus 2/ Cryo 200	CryoPlus 3/ Cryo 300	CryoPlus 4/ Cryo 400
4000660	Nexell R4R9951	4000616	4000624	4000631	4000639	4000056 (4)	4000062 (4)	4000065 (4)	4000068 (4)
4000371	Nexell R4R9953	n/a	4000075	4000050	4000053	n/a	4000060 (3.5)	4000063 (3.5)	4000066 (3.5)
4000372	Nexell R4R9955	n/a	4000076	4000051	4000054	n/a	4000060 (3.5)	4000063 (3.5)	4000066 (3.5)
4000368	Gambro DF-200	n/a	4000078	4000047	4000052	n/a	n/a	n/a	n/a
4000369	Gambro DF-700	n/a	4000079	4000048	n/a	n/a	n/a	n/a	n/a



Researchers worldwide protect more than two billion samples inside Thermo Scientific cold storage equipment. With +4°C refrigerators to -196°C cryogenic freezers and Nalgene® and Nunc™ consumables, you're free to concentrate on your work without worrying about your valuable samples.

- Our *Cryopreservation Guide* is a practical tool for scientists who are responsible for an organization's cryopreservation program. It provides you with an overview of the cryobiology of cell and tissue preservation and a comprehensive methodology for selecting and operating cryopreservation systems. The guide will help you select an appropriate storage system and accessories to meet your required protocol, facility restraints, and budget.