

Specifications

CS-FNX series

Model	CS150FNX	CS120FNX
Maximum speed (rpm)	150,000	120,000
Maximum RCF (xg)	1,050,000 (S140AT rotor)	771,000 (S140AT rotor)
Speed control accuracy (rpm)	+/-50 (5,000 to max. speed)	
Max. capacity (nominal)	30ml x 6 tubes (S50A rotor)	
Max. capacity (nominal) (Swinging bucket rotor)	7ml x 4 tubes (S50ST rotor)	
Timer	1 min. to 99 hrs. and 59 min. with HOLD and RTC (real-time control) function	
Vacuum system	Oil rotary vacuum pump and oil diffusion pump	
Rotor temp. control range (°C)	0 to +40 (1 degree increment)	
Rotor Cooling method	Thermo-module cooling system (HFC free)	
Screen display	Colour LCD (touch-sensitive)	
Rotor setting method	Self-locking rotor system (no special tool required)	
Noise level	45 dB(A) measured 1 meter from front	
Max. heat radiation into room (kW)	0.7 or less	
Drive unit warranty	5 years	
Dimensions (mm)	440 (W) x 520 (D) x 910 (H), height to table 790	
Floor area (m²)	0.53 (750 x 700 mm)	
Weight (kg)	105	
Power requirements	AC 110 or 120V ±10%, 15A (50/60Hz), single phase AC 208, 220, 230, 240 V +/- 10%, 8A (50/60Hz), single phase	
Standard	IEC61010-1 and IEC61010-2-020, EN61326, CE/cCSAus qualified*	

* cCSAus certificated for USA/Canada model only

CS150NX

Model	CS150NX
Maximum speed (rpm)	150,000
Maximum RCF (xg)	1,050,000 (S140AT rotor)
Speed control accuracy (rpm)	+/-50 (5,000 to max. speed)
Max. capacity (nominal)	30ml x 6 tubes (S50A rotor)
Max. capacity (nominal) (Swinging bucket rotor)	7ml x 4 tubes (S50ST rotor)
Timer	1 min. to 99 hrs. and 59 min. with HOLD and RTC (real-time control) function
Vacuum system	Oil rotary vacuum pump and oil diffusion pump
Rotor temp. control range (°C)	0 to +40 (1 degree increment)
Rotor Cooling method	Thermo-module cooling system (HFC free)
Screen display	Colour LCD (touch-sensitive)
Rotor setting method	Self-locking rotor system (no special tool required)
Noise level	45 dB(A) measured 1 meter from front
Max. heat radiation into room (kW)	0.7 or less
Drive unit warranty	5 years
Dimensions (mm)	590 (W) x 582 (D) x 408 (H)
Floor area (m²)	0.50 (850 x 590 mm)
Weight (kg)	97
Power requirements	AC 110 or 120V ±10%, 15A (50/60Hz), single phase AC 208, 220, 230, 240 V +/- 10%, 8A (50/60Hz), single phase

IEC61010-1 and IEC61010-2-020, EN61326, CE/cCSAus qualified*

* cCSAus certificated for USA/Canada model only



CAUTION:
For safety and proper use of your machine, carefully read and follow the instruction manual.

All specifications are subject to change without advance notice.
For further information, please contact us.

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himac
EPPENDORF GROUP

CS150NX

Micro Ultracentrifuges



eppendorf
welcomes Himac as a
new member of the
Eppendorf Group

CS-FNX SERIES



“Floor-standing model” or “Tabletop model” ?



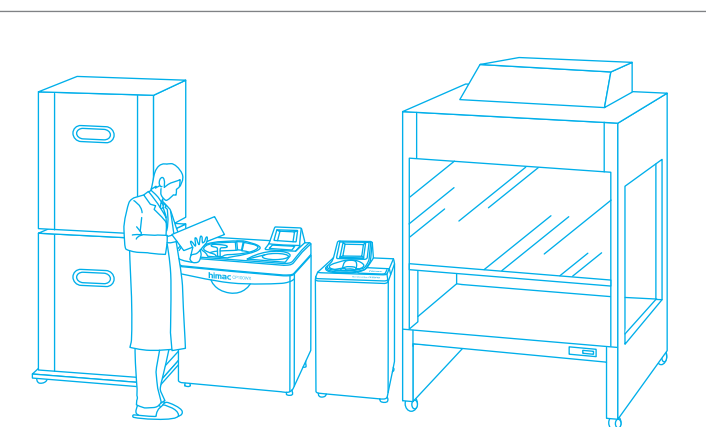
Micro Ultracentrifuges

Floor-standing

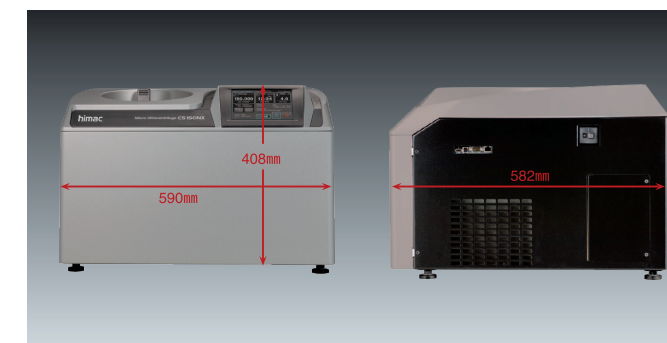
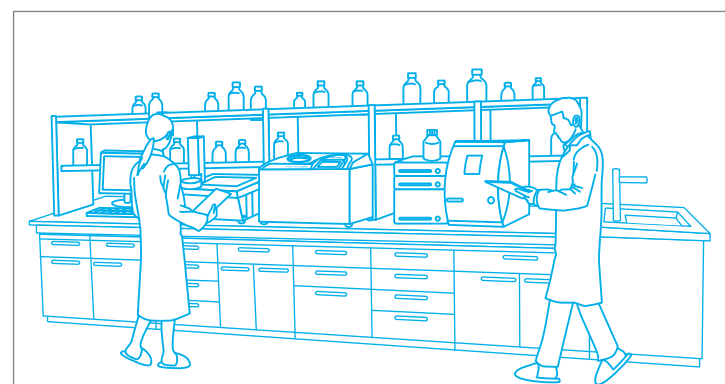
CS150FNX
CS120FNX

himac ultracentrifuges with one of top performance in speed and RCF.
Solutions applied in life science to separate and purify protein, lipoprotein, cell organelle, nucleic acid, DNA, and RNA. And also carbon nano tubes and other nano-size particles in material science.
For pretreatment of proteomic analysis.

- Maximum speed 150,000 rpm for CS150FNX and CS150NX with optional rotor S150AT
- Maximum RCF 1,050,000 xg for CS150FNX and CS150NX with optional rotor S140AT
- Quiet low noise 45 dB(A)
- Powerful imbalance protection
- Quick startup
- Program and step-mode operation
- Administration system with user lockout
- Self-locking rotor system
- Data communication
- Optional rotor with large capacity
- Optional software



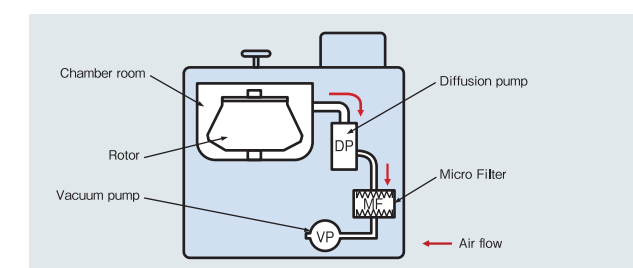
- Space-saving floor-standing model



- Compact width 590mm, depth 582mm and height 408mm
- Other features same as for model CS150FNX

Biosafety Option

In order to prevent from exhausting bio-hazardous sample to a room, a micro filter can be assembled in a vacuum line at option.



Features & Functions

One of the world's top performance: Speed 150,000 rpm and RCF 1,050,000 xg by CS150FNX and CS150NX*

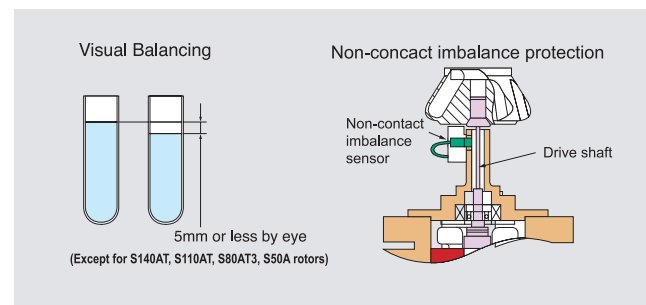
himac state-of-art technologies has realized the greatest performance above and quiet operating sound low noise 45dB(A) in compact body*. Now you can separate and purify protein, lipoprotein, cell organelle, DNA and RNA, also carbon nano tubes and other nano-sized particles, more efficiently than ever.

The Most Reliable Drive Unit

CS150FNX and CS150NX take only 90 seconds to reach the world's fastest speed 150,000rpm by himac original vacuumed drive unit. Because of its high reliability, we offer 5 years warranty to the drive unit.

Powerful Imbalance Protection

Samples need to be balanced within 5mm by visual check only. Non-contact imbalance sensor always monitors vibration of the rotor and drive shaft. In case of unusual vibration, the sensor activates and stops operation immediately.



Quick Startup

It takes just 8 seconds (minimum) to be ready for operation since power switch is turned on. Initial screen is displayed on the LCD panel during booting up the system. Reaching time to high-vacuum status is reduced to half by optimized control of the oil diffusion pump. (comparing with our previous model.)



Environment-friendly Design

CS-FNX series and CS150NX are designed according to our "Design for Environment assessment system" and designated as Eco-Products. 60% stand-by electricity and maximum 10% operating power consumption are reduced, compared with our former models. Also over 80% materials of the product are reusable or recyclable.

*Compared with our competitor's ultracentrifuges in life science as of 2017 end.

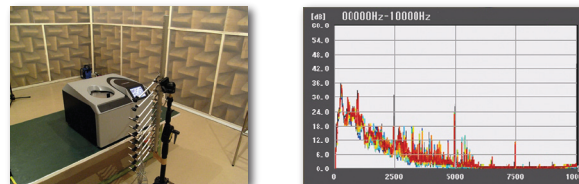
Easy Operation with Touch-Sensitive LCD

Color touch-sensitive LCD and GUI (graphic user interface) with high contrast against back screen in black color enable users easily to operate the system or select various menus and functions by touching the icon on the display. Of course, operation status is identified at a glance by intelligible screen design.



Quiet Low Noise 45 dB(A)

Quiet operating sound is realized by new rigid drive system and sound absorbing structure designed with CAE analysis. It does not disturb you in laboratory or office.



Easy Timer Setting and Actual Run Timer

himac original RTC (real-time control) function makes timer setting easy. What you need to do is simply set start time or finish time with running time. It is easier than conventional delay time setting timer. himac original Actual Run Timer starts when the set speed is attained and excludes acceleration time from the set time. It helps to precisely control the net run-time and obtain high-reproducibility separation. Of course, conventional run timer is selectable.

Administration system with Use Lockout

You can register users to the system with different access levels and password. The system can be protected by password to enter the system. This function is very useful when you need to control users who can access the system.

Data Communication

USB port is equipped as standard specification. (CS150FNX and CS150NX only) The system records up to 100 operating histories in its memory (PAT.). So operating data can be output in CSV format through the USB port.

Optional LAN board is also available. (CS150FNX and CS150NX only) You can link CS150FNX and/or CS150NX to your PC through LAN by Ethernet. Optional software "himac LogManager (network edition)" can be installed in your PC and operating history and data of CS150FNX and/or CS150NX can be easily managed by your PC.

Ethernet is a registered trademark of Xerox Corporation in the United States and other countries.

himac LogManager for Windows® (Network Edition)

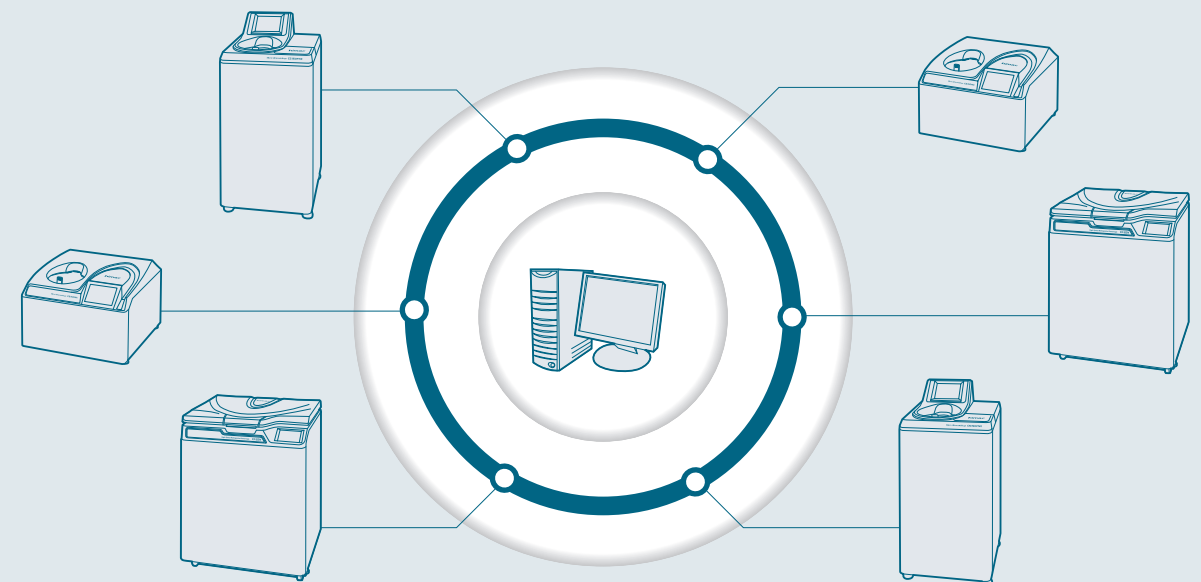
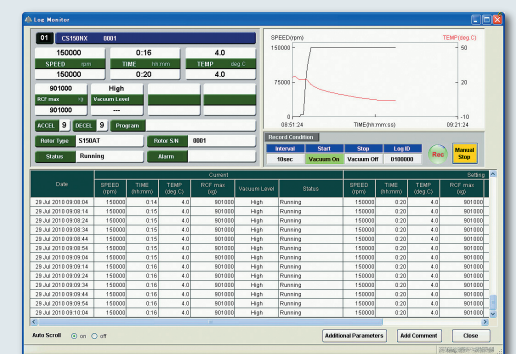
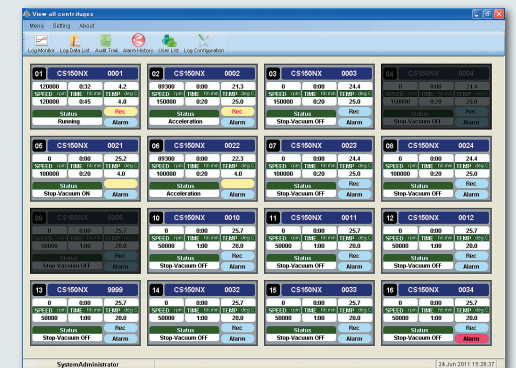
- optional log management software

himac LogManager for Windows® (Network Edition) is useful and convenient log management software of operating histories of CS150FNX and CS150NX. Maximum 16 units can be registered to the software. As data communication between the centrifuge and PC is done via Local Area Network. You can establish the network configuration and relocation easily with commercially available LAN devices. Optional LAN board is required to CS150FNX and CS150NX. It means you can manage the operating log at the different location from the installation site of the centrifuges.

This software is real-time log management software, recording period is selectable from 10 seconds to 5 minutes interval. Of course, the software supports USA FDA 21 CFR Part 11, following functions are available;

- Digital Signature
- Audit Trail
- Encrypted Data Files
- Optional for CS150FNX and CS150NX, and not for CS120NX.
- Required Operating System : Windows 8® and Windows 10®

himac LogManager Ver.5.0 can connect to multiple models, CP-NX, CP-WX, CS150FNX, CS150NX, CR30NX, CR22N, and CR7N via LAN. Maximum 16 units in total can be connected.



Windows® is a registered trademark of Microsoft Corporation in the United States and other countries.

Rotors

Self-Locking Rotor System

himac original “self-locking rotor system” is simple system to set the rotor onto the drive shaft. You just simply place the rotor on the drive shaft and that’s all. The rotor is locked by centrifugal force automatically. You do not need either to fix the rotor by screw or push the button to lock or unlock the rotor like other models available in the markets.



Larger Capacity Rotors

S50A



Maximum nominal capacity is 30ml x 6 tubes, it is one of the largest capacity rotor for micro ultracentrifuge. Also it is easy to open and close the cover by T-shape handle. Newly introduced 30ml tubes series and himac original S-cap can be used for S50A.

Max. speed (rpm)	50,000
Max. RCF (xg)	210,000
K-factor	61
Capacity by standard tube (ml x tubes)*1	25.0 x 6
Max. capacity by optional tube (ml x tubes)	30.0 x 6
Part No.	9124391K

Note : *1. Nominal capacity by standard tube included with the rotor

S50ST



Large nominal capacity 7 ml x 4 tubes for ultracentrifuge by 7ml tubes.

Top loading System

Easy to secure a swing bucket to set onto rotor by top loading to avoid its wrong setting.

Max. speed (rpm)	50,000
Max. RCF (xg)	253,000
K-factor	77
Capacity by standard tube (ml x tubes)*1	7.0 x 4
Max. capacity by optional tube (ml x tubes)	7.0 x 4
Part No.	9124401K

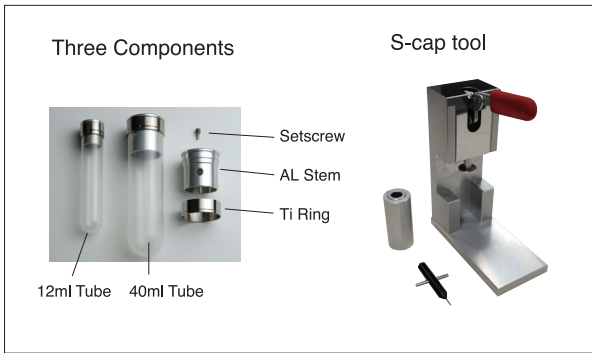
S-cap Series

himac original S-cap series offer simple and easy operation of the tube cap. This unique system requires just three components and three steps to assemble the cap to the tube.

- No consumables, such as O-ring
- Easy cleaning

Three assmebling steps

1. Fill sample into the tube up to 80% volume and insert AL Stem into the tube by the tool.
2. Assemble Ti Ring on the tube and tighten AL Stem and Ti Ring by the tool.
3. Fill up the sample into the tube by an injector and close stem by Setscrew.



Exclusive 1.5ml microtube (conical bottom) x 12pcs
201,000 x g has been realized !



S55A2

Protein and nucleic acid etc. are quickly separated and the pretreatment of proteomic analysis is accelerated.

1.5ml microtube (applicable to high x g)



You can use this exclusive microtube up to 201,000 x g without any adaptor in S55A2 rotor.
(P/N S308420B)
(300pcs/box)

For further details, please refer to himac application No. 127 available on our web site.
(<http://www.himac-science.com>)

Rotor Type	Model	Part No.	Max. speed (rpm)	Max. RCF (×g)	K-factor	Capacity by standard tube (ml x tubes)*1	Max Capacity by optional tube (ml x tubes)
Fixed angle	S150AT	9124211K	150,000	901,000	6	1.0 × 8	*2 2.0 × 8
	S140AT	9124351K	140,000	1,050,000	5	1.0 × 10	*2 2.0 × 10
	S120AT2 ●	9124181K	120,000	650,000	8	1.0 × 10	*2 2.0 × 10
	S120AT3 ●	9124191K	120,000	650,000	8	0.5 × 14	0.5 × 14
	S110AT	9124411K	110,000	691,000	15	4.0 × 8	*2 5.0 × 8
	S100AT3	9124231K	100,000	436,000	7	0.23 × 20	0.23 × 20
	S100AT4	9124241K	100,000	541,000	16	3.0 × 6	*2 4.0 × 6
	S80AT2 ●	9124251K	80,000	358,000	14	0.5 × 20	0.5 × 30
				304,000	17	0.5 × 10	
	S80AT3	9124331K	80,000	415,000	23	6.0 × 8	*2 8.0 × 8
	S70AT ●	9124261K	70,000	307,000	31	0.5 × 20	0.5 × 20
	S58A	9124381K	58,000	289,000	50	10.0 × 8	*2 13.5 × 8
Neo angle	S55A2	9124371K	55,000	201,000	40	1.5 × 12	*4 1.5 × 12
	S50A	9124391K	50,000	210,000	61	25.0 × 6	*1 30.0 × 6
	S140NT ▲	9124223K	140,000	752,000	6	2.0 × 8	*3 2.0 × 8
	S120NT ●	9124303K	120,000	586,000	9	2.0 × 8	*3 2.0 × 8
	S100NT ●	9124313K	100,000	479,000	12	4.0 × 8	*3 4.0 × 8
	S55S ●	9124281K	55,000	259,000	44	2.2 × 4	2.2 × 4
	S52ST	9124341K	52,000	276,000	79	5.0 × 4	5.0 × 4
	S50ST	9124401K	50,000	253,000	77	7.0 × 4	*1 7.0 × 4
	S120VT ●	9124291K	120,000	501,000	8	2.0 × 8	*3 2.0 × 8
Swinging bucket	S55S	9124281K	55,000	259,000	44	2.2 × 4	2.2 × 4
Vertical	S120VT ●	9124291K	120,000	501,000	8	2.0 × 8	*3 2.0 × 8

Notes

1. Nominal capacity by standard tube included with the rotor. 2. Capacity indicated is when using a seal tube. Please place a separate order for STF2 tube sealer, tube rack and space cap. 3. Space cap is standard accessory.
4. Third-party’s 1.5ml microtubes cannot be used. 5. ● indicates a made-to-order rotor. 6. ▲ indicates sales discontinued.

Tubes for Rotor

Rotor	Tube ● indicates standard tube for rotor		Tube Nominal capacity (ml)	Tube specifications			Tube supply unit (pcs/box)	Optional accessories needed when using these tubes (order separately)		
	Part No.	Name		Size (mm)	Material	Max. speed (rpm)		STF3 Tube rack	Adapter	Cap
S150AT	S300535A	1PC tube ●	1.0	φ 11 x 34	PC	150,000	100			
	S300539A	1.5PA seal tube*	1.5	φ 11 x 25	PA	150,000	50	Tube rack (G2)		Space cap (A4) x 8
	S300540A	2PA seal tube*	2.0	φ 11 x 32	PA	150,000	50	Tube rack (G)***		Space cap (A4) x 8
	S309652A	1PA Tube	1.0	φ 11 x 34	PA	86,000	100			
S140AT	S300535A	1PC tube ●	1.0	φ 11 x 34	PC	140,000	100			
	S300539A	1.5PA seal tube*	1.5	φ 11 x 24	PA	140,000	50	Tube rack (G2)		Space cap (A4) x 10
	S300540A	2PA seal tube*	2.0	φ 11 x 31	PA	140,000	50	Tube rack (G)***		Space cap (A4) x 10
	S309652A	1PA Tube	1.0	φ 11 x 34	PA	86,000	100			
S120AT2	S300535A	1PC tube ●	1.0	φ 11 x 34	PC	120,000	100			
	S300539A	1.5PA seal tube*	1.5	φ 11 x 24	PA	120,000	50	Tube rack (G2)		Space cap (A4) x 10
	S300540A	2PA seal tube*	2.0	φ 11 x 31	PA	120,000	50	Tube rack (G)***		Space cap (A4) x 10
	S309652A	1PA Tube	1.0	φ 11 x 34	PA	86,000	100			
S120AT3	S300533A	0.5 PC tube ●	0.5	φ 8 x 34	PC	120,000	100			
	S300534A	0.5 PA tube	0.5	φ 8 x 34	PA	80,000	100			
S110AT	S404332A	4PC tube ●	4.0	φ 13 x 6	PC	110,000	50			
	S303351A	4PA thick-walled tube			PA	80,000	50			
	345319A	5PA seal tube	5.0	φ 13 x 53	PA	110,000	50	Tube rack (B)***		B4 space cap x 8
S100AT3	S308892A	1.5ml micro tube**	1.5	φ 10.9 x 40	PP	48,000	300		1.5A5 adapter x 4	
	339133A	0.23 PC tube ●	0.23	φ 7 x 21	PC	100,000	100			
	339675A	0.23 PA tube	0.23	φ 7 x 21	PA	80,000	100			
S100AT4	S308892A	1.5 micro tube**	1.5	φ 11 x 40	PP	50,000	300		1.5A3 adapter x 6	
	S301599A	3PC tube ●	3.0	φ 13 x 51	PC	100,000	50			
	S303694A	4PA seal tube*	4.0	φ 13 x 38	PA	100,000	50	Tube rack (B3)***		B4 space cap x 6
	S303350A	3PA thick-walled tube	3.0	φ 13 x 51	PA	85,000	50			
S80AT2	S300533A	0.5 PC tube ●	0.5	φ 8 x 34	PC	80,000	100			
	S300534A	0.5 PA tube	0.5	φ 8 x 34	PA	80,000	100			
S80AT3	S308892A	1.5 micro tube**	1.5	φ 11 x 40	PP	45,000	300		1.5A8 adapter x 8	
	S408829A	6PC thick-walled tube ●	6.0	φ 16 x 59	PC	80,000	50			
	S408833A	6PA thick-walled tube	6.0	φ 16 x 59	PA	60,000	50			
	S408831A	8PA seal tube*	8.0	φ 16 x 53	PA	80,000	50	Tube rack (C2)		Space cap (C5) x 8
	S70AT	S302371A 0.5 PC tube (B) ●	0.5	φ 7 x 56	PC	70,000	100			
S58A	345320A	12PA seal tube*	12.0	φ 16 x 78	PA	58,000	50	Tube rack(C)***		C2 space cap x 8
	329606A	12PA tube		φ 16 x 76	PA		50			C-TI cap ass'y x 8
	325470A	12PE tube		φ 16 x 75	PE		50			C-TI cap ass'y x 8
	325751A	12PC tube		φ 16 x 76	PC		50			C-TI cap ass'y x 8
	326010A	12SS tube	10.0	φ 16 x 76	SS	30,000	2			C-TI cap ass'y x 8
				35,000						
	338455A	10PC thick-walled tube ●		φ 16 x 77	PC	58,000	10			
	338456A	10PA thick-walled tube		φ 16 x 76	PA	50,000	10			
	S303922A	10PC bottle (B) ass'y.		φ 16 x 82	PC	58,000	6			
	325952A	10PC bottle ass'y.		φ 16 x 82	PC	55,000	10			
	334105A	10PA bottle ass'y.	6.5	φ 16 x 82	PA	50,000	10			
	329445A	6.5PA tube		φ 13 x 64	PA	38,000	50		6.5A12 adapter	B-AL cap ass'y x 8
	326415A	6.5PC tube		φ 13 x 64	PC	38,000	50		6.5A12 adapter	B-AL cap ass'y x 8
	332245A	5PA tube		φ 13 x 52	PA	38,000	50		5A12 adapter	B-AL cap ass'y x 8
S55A2	S303141A	4.7PC thick-walled tube	4.7	φ 13 x 64	PC	38,000	50		6.5A12 adapter	
	329561A	4PA tube	4.0	φ 11 x 60	PA	38,000	50		4A12 adapter	A3-AL cap ass'y
	336708A	3PA tube	3.0	φ 11 x 47	PA	38,000	50		3A12 adapter	A3-AL cap ass'y
	S301599A	3PC tube		φ 13 x 51	PC	38,000	50		5A12 adapter	
	S304296A	0.9PC thick-walled tube	0.9	φ 8 x 50	PC	42,000	50		2A12 adapter	
	S308892A	1.5 micro tube ●	1.5	φ 11 x 40	PP	55,000	300			
S50A	S309154A	30PA tube ass'y	30.0	φ 26 x 72	PA	50,000	50			E3-AL cap ass'y x 6
	S311568A	30PA seal tube ass'y	30.0	φ 26 x 75	PA	50,000	50	Tube rack (E3)		S-40AL cap ass'y x 6
	S309140A	25PC thick-walled tube ass'y●	25.0	φ 26 x 76	PC	50,000	10			
	S309155A	25PA thick-walled tube ass'y			PA	30,000	10			
	S309156A	20PC bottle(C) ass'y	20.0	φ 26 x 80	PC	50,000	6			
	S140NT	S300540A 2PA seal tube* ●	2.0	φ 11 x 31	PA	140,000	50	Tube rack (G)***		Comes with rotor
S120NT	S300540A	2PA seal tube* ●	2.0	φ 11 x 31	PA	120,000	50	Tube rack (G)***		Comes with rotor
S100NT	S303694A	4PA seal tube* ●	4.0	φ 13 x 38	PA	100,000	50	Tube rack (B3)***		Comes with rotor
S120VT	S300540A	2PA seal tube* ●	2.0	φ 11 x 32	PA	120,000	50	Tube rack (G)***		Comes with rotor
S55S	S300535A	1PC tube	1.0	φ 11 x 34	PC	55,000	100			
	S300536A	2.2PA tube ●	2.2	φ 11 x 34	PA	55,000	50			
	S300538A	2.2PET tube	2.2	φ 11 x 34	PET	55,000	50			
S52ST	332245A	5PA tube ●	4.9	φ 13 x 52	PA	52,000	50			
	S303273A	5PET tube	5.3	φ 13 x 52	PET	52,000	50			
	S301599A	3PC tube	3.4	φ 13 x 51	PC	52,000	50			
	S304296A	0.9PC thick-walled tube	0.9	φ 8 x 50	PC	43,000	50		2S5 adapter x 4****	
S50ST	S309146A	7PA tube(B)	7.0	φ 16 x 52	PA	50,000	50			
	S309167A	7PC tube(B)			PC	50,000	50			
	S309168A	7PET tube			PET	50,000	50			

- Notes: 1. When using tubes marked with *, optional accessories are required (STF3 tube sealer, tube rack and space cap).
2. Tubes marked with ** are commercially available too. When using these items, 1.5A3, 1.5A