

**HITACHI**  
Inspire the Next



**CP-NX** SERIES  
Ultracentrifuge

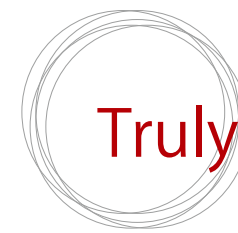
**himac**  
centrifuges

# Ultracentrifuge



## himac CP-NX SERIES

CP100NX / CP90NX / CP80NX



## Truly User-friendly Design

### LED Indicator – Operation status is at a glance !

LED Indicator of 47cm length is mounted in front of table. This indicates its operating status by selectable light in colors, luminous patterns, and levels of brightness. So operating status is at a glance with this LED Indicator. These are :

Status of operating:

Stop, acceleration, running at set speed, deceleration, vacuum holding, economy mode, acceleration in zonal mode, deceleration in zonal mode, or alert.

Color:

Blue, red, green, light blue, yellow, white or pink

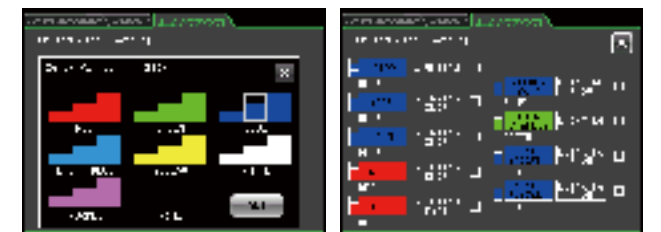
Brightness:

Three levels

Luminous pattern:

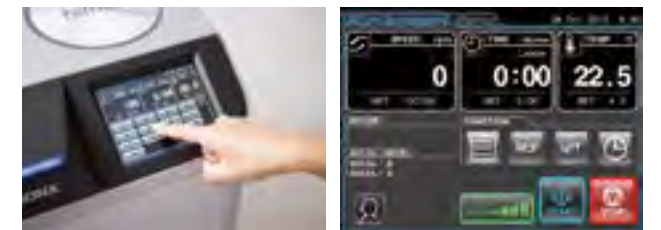
Solid lighting, slow and fast blinking, or fading

\* Actual color of LED Indicator may be different from the photos on this information, brochure and website due to printing conditions.



### Touch-sensitive LCD panel with intelligible screen design

The control panel, 6.5-inch size touch-sensitive color LCD panel, is located in a front part of the machine. You do not need to stretch your arm to operate the centrifuge. The intelligible screen designs, such as a wide indication of basic parameters, many icons for selecting function, folder colors with each symbol for program management, offer user-friendly operation, like operating a smart phone, to all users.



### Multilingual Display

You can select a language from 11 languages, English, German, French, Spanish, Italian, Portuguese, Nederlands, Russian, Chinese (simplified), Korean and Japanese.



### Low table height with smooth sliding door for easy loading / unloading the rotor

The table height of the CP-NX is 863mm. The low table height enables users to load / unload the rotor easier. The rotor is automatically locked by the centrifugal force once the rotation is started by the "self-locking rotor system". So it is not necessary to fix the rotor by screwing the rotor onto the drive shaft or push the button to lock/unlock the rotor any more. In addition, the improved door structure design based on the latest structure analysis technology makes the door thickness 5mm thinner than the one of our former model. The lighter door offers the same protection as the before and makes door-sliding movement (back and forth) smoother than before.







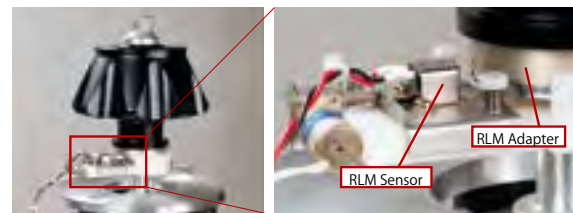
# Advanced Technologies, Features & Functions

## Automatic Rotor Life Management System

Automatic Rotor Life Management System, RLM automatically manages an operating record of a rotor to accumulate totals of run times and operating hours by each rotor.

RLM rotor has a magnetic memory on its rotor itself as RLM Adapter. This system is original only for Hitachi; the memory is read out and over-written by RLM sensor with a Hitachi ultracentrifuge.

Hitachi ultracentrifuge reads out a record of run times and operating hours of rotor from its memory during acceleration to accumulate the both times and hours by RLM adapter and sensor. While the rotor decelerates, the totals of the run times and hours are accumulated and updated by centrifuge, the latest accumulated record are overwritten into memory on RLM adapter of the rotor.

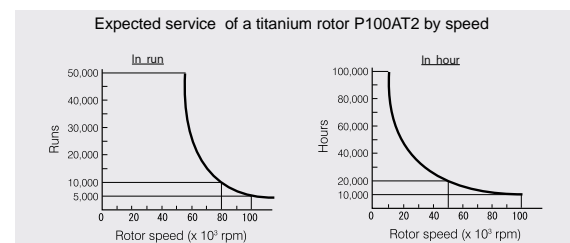


Though a RLM rotor installed on and run by Hitachi's another centrifuge with RLM system, an operating record of a RLM rotor is kept as the rotor's latest of the accumulated running run times and hours. Because the accumulated record is always updated and overwritten into memory of RLM rotor.

## Longer service of Rotor

Automatic Rotor Life Management System tracks a rotor running precisely in times and hours. It is more accurate than management manually by the rotor log book and its conventional calculation.

When a rotor runs lower speed than the maximum, and furthermore, its running time is less than an hour, this RLM system evaluates its accumulated record to be less than actual running in time and hour, corresponding its smaller load on the rotor. Consequently, the rotor's expected service is much longer in time and hour by this system, compared with management by log book.

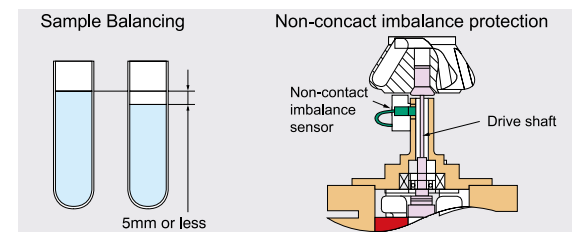


If a rotor speed is lowered from 100,000 rpm to 80,000 rpm by 20% less, its expected services are increased from 5,000 runs to 10,000 runs as a double.  
If a rotor speed is lowered from 100,000 rpm to 50,000 rpm as a half, its expected service hours are increased from 10,000 hours to 20,000 hours as a double.

## Balancing by non-contact imbalance sensor

Easy to balance all the sample by balancing them within 5 mm among the all tubes and bottles to be set in a rotor. Non-contact imbalance sensor always monitors of both the rotor and shaft vibrating. When the both vibrate unusually, the centrifuge automatically stops the rotor.

Remark: This feature does not applied with rotor P21A2.



## Economy mode\* for energy saving

Stand-by electricity consumption reduced to a half \*\*, compared with our former model, by deeming LCD backlight, stopping cool system and its fans when the control panel unstouched over the set period in 1 to 180 minutes.

\* This economy mode works while drive unit and vacuum pump are stopped.  
\*\* Under in-house test condition

## Operating History : 5,120 logs

5,120 run histories recorded automatically and reuseable in user program. A run history exportable through USB interface in CSV format.



## Programmed Operation : 1,000 programs

1,000 use-programable operations with file folders in 4 selective color.

## User Administration with User Lockout

50 users can be classified into 3 levels in access: Administrator, Supervisor, and User, secured by passwords to enter log-in system for each access level and its functions.

## Quiet and Fast

### Quiet operation

Operating noise level 51 dB(A) under running at maximum speed. As of Jan. 2014, under in-house test condition

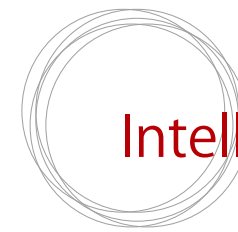
### Quick start-up

6 seconds and ready to operate system after power-on.

### Faster vacuum

Evacuation time 15 minutes to reach high vacuum. The CP-NX series has reduced 5 minutes to reach the high vacuum, compared with our former model.

As of Jan. 2014, by our investigation  
No condensation in a rotor chamber before starting vacuum



# Intelligible Screen Design

## RUN Screen



**Program Button**  
To set, select and manage programs for programmed operation



**Vacuum Button**  
To start and stop vacuum, also shows vacuum level



**RCF Button**  
To display and set RCF



**Start Button**  
To start operation



**ω²T Button**  
To set ω²T operation



**Stop Button**  
To stop operation



**RTC Button**  
To set timer (RTC : Real-Time Control) operation

## MENU Screen



**Run History**  
Automatically record operation log up to 5,120 runs for past runs.



**Customize**  
To enter Customizing Screen



**Rotor Catalog**  
To browse available rotors, their specifications and accessories



**Manager (Admin)**  
To enter Administration Screen



**Zonal Setting**  
To switch between normal and zonal operation



**Defrost Function**  
To defrost rotor chamber



**ID/Contact**  
To key-in instrument's ID and service contact information

## CUSTOM Screen



**Zoom**  
To enlarge Speed and Time indication on RUN screen during the running



**Schedule**  
To record usage schedule up to 40 schedules



**Stop Signal**  
To select sound of stop signal



**Date/Time**  
To set date and time



**Volume**  
To adjust sound volume of the stop signal



**LED Indicator**  
To set LED Indicator for each operating status (colors, luminous patterns, brightness)



**Backlight**  
To adjust backlight of LCD panel



**Economy Mode**  
To set economy mode for energy saving



**Language**  
To select display language from 11 languages (English, German, French, Spanish, Italian, Portuguese, Netherlands, Russian, Chinese, Korean and Japanese)

## ADMIN Screen



**User Management**  
To register, manage and delete users



**Actual Run Timer**  
To set actual run timer (excluding acceleration time from run time)



**User Lockout**  
To limit access of users



**Vacuum Level**  
To set vacuum level of acceleration from vacuum stand-by to set speed



**Rotor Management**  
To manage total number of run and run time of registered rotors



**Zonal Speed**  
To set zonal speed between 2,000 to 3,000rpm with 100rpm increments



**Run Time Indication**  
To change run time indication between Elapsed Time or Remaining Time



**LAN Communications**  
To connect or disconnect LAN communications



# Data Communication and Log Management Software

USB (device) x 1, USB (host) x 1 and LAN x 1 are equipped as an interface for the data communication. Operating histories, up to 5,120 logs, can be exported in CSV format through USB (host) port.



## himac LogManager ver. 4.0 for windows® (network edition) – optional log management software

himac LogManager ver.4.0 for Windows® (network edition) is a useful and a convenient software to manage real-time operating log of himac CP-NX series, CP-WX series, CS150NX, CS150FNX and CR22N. Maximum 16 units of the above-mentioned centrifuges can be registered to the software and monitored by the software at the same time. The software is installed into the PC and data communication between the centrifuges and the PC is done via LAN or Ethernet. You can easily establish the network configuration and relocation with commercially available LAN devices. (optional LAN board is required for himac CP-WX series, CS150NX, CS150FNX and CR22N.) It means you can manage the operation log at the different location from the installation site of the centrifuges.



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

- Digital Signature
- Audit Trail
- Encrypted Data Files

Required Operating System :  
Windows® 7 Professional and Windows® 8 Professional

Windows®, Windows® 7 and Windows® 8 are registered trademarks of Microsoft Corporation in the United States and other countries.  
Ethernet is a registered trademark of Xerox Corporation in the United States and other countries.



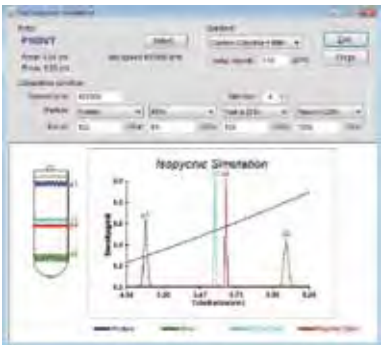
# Simulation Software “himac ASSIST” – centrifugation simulation software

himac ASSIST is simulation and calculation software of centrifugal condition and can be installed in your Window®-based PC. CD-ROM of the himac ASSIST is included in the standard accessories. You can simulate whether the centrifugal condition is appropriate before the centrifugation, also can simulate optimal centrifugal condition of a sample, based on your CP-NX series ultracentrifuge and rotor.

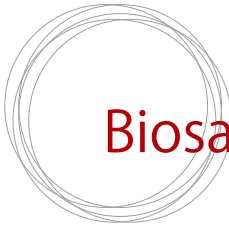
himac ASSIST has following functions;

- Calculations of K-factor and pelleting time
- Calculation of the allowable rpm with high-density liquid
- Rate zonal centrifugation simulation
- Isopycnic centrifugation simulation
- Solvent concentration conversion
- Mutual conversion of molecular parameters
- Rotor database

Example : Simulation of isopycnic separation

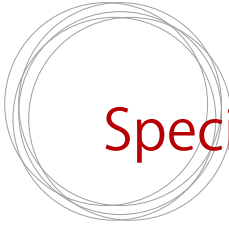
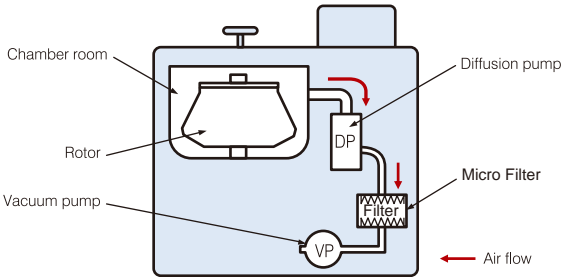


Plasmid DNA separation  
with P100VT vertical rotor  
CsCl+EtBr : initial density = 1.55g/ml  
Speed : 100,000rpm



# Biosafety Option

The biosafety is always priority in laboratories. In order to prevent from exhausting bio-hazardous sample into a room, a Micro filter can be assembled in a vacuum line at option. For details, please contact your nearest sales representative of Hitachi Koki Co., Ltd.



# Specifications

Model	CP100NX	CP90NX	CP80NX
Maximum Speed	100,000 rpm	90,000 rpm	80,000 rpm
Maximum RCF	803,000 xg	700,000 xg	615,000 xg
by optional rotor	P100AT2	P90AT	P80AT
Speed Control Accuracy	+/- 2rpm (1,000rpm – max. speed)		
ACCEL/DECEL Mode	ACCEL : 10 / DECEL : 11 (10 and coasting)		
Set Speed Range	1,000rpm to max. speed with 100rpm increments		
Timer	1 min to 999 hours 59 min (with 1 min increments) with HOLD function		
Set Temperature Range	0°C to 40°C with 1°C increments (Accuracy : +/- 0.5°C)		
Vacuum System	Oil rotary vacuum pump and oil diffusion pump		
Noise Level	51dB(A) (running at max. speed, under in-house test condition)		
Heat Radiation Into a Room	1kW or below		
Cooling System	Thermo-module cooling system (CFC/HCFC/HFC-free)		
Control Panel	Touch-sensitive color LCD panel (6.5 inch)		
Data Communication	USB : Host x 1, Device x 1 / LAN x 1		
Rotor Life Management	Automatic Rotor Life Management for rotors with RLM adapter Registered by serial number to the system for rotors with optical overspeed disk		
Dimensions	Width 790 x depth 690 x height 880 mm (depth 890 mm including door cover) From floor, height 925 mm to top of door handle, and 863 mm to table		
Floor area	0.81 m² (900 x 900 mm)		
Weight	390 kg		
Power	Single phase, AC200V, 208V and 220V +/-10%, max. 20A (normally 8A) Single phase, AC230V and 240V +/-10%, max. 16A (normally 7A)		
Installation Environment	Ambient temperature for operation : 2°C to 40°C Ambient temperature for performance guarantee : 10°C to 30°C		
Standard	CE marking complied * cCSAus certificated for USA/Canada model only *		
Warranty of Drive Unit	10 years after the shipment		
Part No. (Asia/Middle East)	901067C1	901068C1	901069C1
Part No. (EU market)	901067C2	901068C2	901069C2
Part No. (US/Canada)	901067C3	901068C3	901069C3

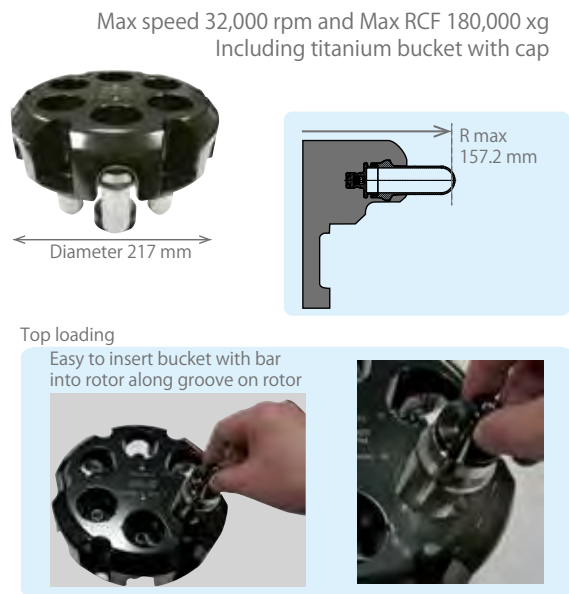
Remarks :  
1) \* For detail of standard, contact sales representative for Hitachi Koki.  
2) CP-NX series is not registered as medical device in Japan.  
3) Due to safety reasons, installation environments, operation environments and conditions may be restricted.





# New Rotor

## Swinging Bucket Rotor model P32ST



### Specifications

Model	P32ST
Max. Speed (rpm)	32,000
Max. RCF (xg)	180,000
K-factor (at max. speed)	198
Max. Nominal Capacity	40 mL x 6 tubes
Max. Actual Capacity	38.7mL x 6 tubes
R max	157.2 mm
Rotor Weight including Bucket	7.1 kg
Part No.	9023180M
Applicable Ultracentrifuges	CP-NX / CP-WX / CP-MX series *

Remarks :  
\* To use P32ST with CP-WX or CP-MX series, ROM in CP-WX or CP-MX series should be replaced based on its MFG number. Please inform model name and MFG No. of the ultracentrifuge to Hitachi Koki to check if the ROM should be replaced or not before placing rotor P32ST. If necessary, please order a ROM with P32ST.  
\* 40 PA Tube included with Rotor P32ST as a standard accessory.

### Optional Tubes for Rotor P32ST

Part No.	Description	Actual Capacity	Material
329607A	40PA Tube	35.6 mL	Polypropylene
3257545A	40PC Tube	38.7 mL	Polycarbonate
S303279A	40PET Tube	38.6 mL	Polyethylene Terephthalate
S412571A	40SS Tube (B)	38.4 mL	Stainless Steel

Remarks :  
For 40SS Tube (B), Max speed 20,300 rpm and Max RCF 72,400 xg.  
40PA Tube included with rotor P32ST as a standard accessory.

## Fixed Angle Rotor model P21A2



A new fixed angle rotor model P21A2 is a successor of P19A. This P21A2 offers faster max. speed. (max. speed : 21,000rpm / max. RCF : 71,000 xg) and lighter weight (11.4kg) than P19A (18.7kg) with offering the same nominal capacity of P19A.  
The nominal capacity of P21A2 rotor is 230mL x 6 bottles\* for larger volume centrifugation. Due to greater RCF of P21A2, P21A2 can reduce centrifugation time over 25% comparing the one of P19A. (\* Actual volume is 210mL x 6 bottles)

### Specifications

Model	P21A2
Max. Speed (rpm)	21,000
Max. RCF (xg)	71,000
K-factor (at max. speed)	486
Max. Nominal Capacity	230ml x 6 bottles
Max. Actual Capacity	210ml x 6 bottles
Tube Cavity Angle	26°
Rotor Weight	11.4 kg
Part No.	9023171M
Applicable Ultracentrifuges	CP-NX / CP-WX / CP-MX series *

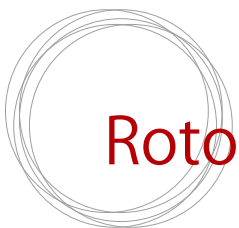
Remarks :  
\* To use P21A2 with CP-WX or CP-MX series, ROM in CP-WX or CP-MX series should be replaced based on its MFG number. Please inform model name and MFG No. of the ultracentrifuge to Hitachi Koki to check if the ROM should be replaced or not before placing rotor P21A2. If necessary, please order the ROM (P/N : 98002999 ) with P21A2.

Note : Visual balancing with 5mm sample surface difference between the tubes is not applicable to the P21A2 rotor. Max. allowable imbalance tolerance is 7g between the tubes, so it is equivalent to 2mm sample surface difference between the tubes. Due to characteristics of the sample, all the level differences of sample surfaces among the all tubes should be within 2 mm. Intentional operation with high-imbalance may cause damages to the ultracentrifuge and/or the rotor.

### Applicable Bottle and Cap for Rotor P21A2

Part No.	Description	Remarks
336621A	230PA Bottle Assy (10pcs/set)	
S413248B	AL Cap (2) Assy (2pcs/set)	Exclusive for P21A2
S401809A	O-ring (10pcs/set)	As a spare of AL Cap (2) Assy

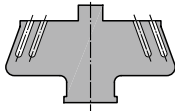
Remarks :  
6 sets of 230PA Bottle, AL Cap (2) and O-ring are included in standard accessories of P21A2 rotor.

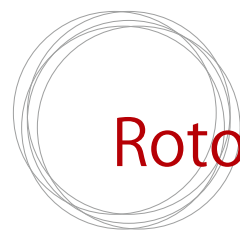


# Rotor List

Type	Model	Part No. (w/RLM Adapter)	Max. Speed (rpm)	Max. RCF (xg)	Nominal Capacity (ml x tubes)	K-factor	Main Purpose
Fixed Angle Rotor	P100AT2*	9023113M	100,000	803,000	6.5 x 8	18	Separation of microscopic particles and lipoprotein
	P90AT*†	9023053M	90,000	700,000	12 x 8	25	Separation of cell organelles, Plasmid DNA and RNA Rapid separation of intermediate volume sample
	P80AT*	9023093M	80,000	615,000	12 x 8	27	
	P70AT2*	9022753M	70,000	452,000	12 x 12	36	Rapid separation of intermediate-to-large volume sample
	P70AT*	9022623M	70,000	505,000	40 x 8	44	
	P65A*†	9022313M	65,000	370,000	12 x 10	48	Separation of cell organelles, Plasmid DNA and RNA
	P50AT4 †	9024111M	50,000	316,000*1	6.5 x 44	32*1	Separation of lipoprotein
	P50AT2*	9022633M	50,000	303,000	40 x 12	70	Rapid separation of intermediate-to-large volume sample
	P50A3	9023140M	50,000	252,000	1.5 x 24	33	Rapid pelleting micro volume samples
	P45AT*	9022643M	45,000	235,000	94 x 6	130	Rapid separation of large volume samples
	P42AT †	9022651M	42,000	223,000	0.23 x 72	12	Rapid separation of lipoprotein for examination
	P32AT*†	9023150M	32,000	111,000	12 x 32	186	Simultaneous processing of many specimens
	P27A †	9023121M	27,000	106,000	160 x 6	352	Separation of large volume samples
	P21A2	9023171M	21,000	71,000	230 x 6	486	
Neo Angle Rotor	P90NT*†	9023073M	90,000	646,000	5 x 8	10	Rapid separation of Plasmid DNA and RNA
	P65NT*†	9024153M	65,000	402,000	12 x 10	23	
	P65NT2*†	9023103M	65,000	431,000	5 x 18	15	Processing of many tubes of Plasmid DNA
Vertical Rotor	P100VT*	9023063M	100,000	700,000	5 x 8	6	Rapid separation of Plasmid DNA
	P65VT2*†	9023023M	65,000	416,000	5 x 16	10	Separation of plasmid DNA etc. by the sedimentation equilibrium centrifugation
	P65VT3*†	9023033M	65,000	402,000	12 x 10	13	
	P50VT2*†	9023083M	50,000	243,000	40 x 8	36	Density gradient centrifugation of large volume samples
Swinging Bucket Rotor	P65ST †	9022391M	65,000	419,000	5 x 3	48	Density gradient centrifugation of Protein, DNA and RNA etc.
	P56ST †	9022551M	56,000	409,000	4 x 6	54	Density gradient centrifugation of micro volume samples
	P55ST2 †	9022771M	55,000	366,000	5 x 6	50	
	P40ST	9022371M	40,000	284,000	13 x 6	139	Density gradient centrifugation of intermediate volume samples
	P32ST	9023180M	32,000	180,000	40 x 6	198	
	P28S *2	9022881M	28,000	141,000	40 x 6	252	
Zonal Rotor	P32ZT †	9023160M	32,000	102,000	1,690ml	363	Large-scale purification of protein and virus particles by density gradient centrifugation
Continuous Flow Rotor	P32CT †	9022660M *3	32,000	102,000	430ml	42	Continuous concentration of large virus particles

Remarks  
1) \* Tubes, caps and adapters are excluded in the standard accessories. Please order them separately.  
2) † The rotor is made-to-order item.  
3) \*1 : Rotor P50AT4 has cavities located in outer and inner. See its cross-area. K factors are 32 for outer and 38 for inner.  
4) \*2 : Optional bucket (P/N 347607A : 16Ti Bucket Assy) is available for nominal capacity 16ml x 6 tubes.  
5) Carbon fiber rotors cannot be used with CP-NX series.  
6) \*3 : To use P32CT with CP-NX or other former models, optional accessory assy is mandatory required (sold separately).  
Part number of the optional accessory assy for CP-NX series is S205643A, part number of the optional accessory assy for CP-WX and CP-MX series is S205643C.  
7) Rotors with model names including the letter T are made of titanium alloy. The other rotors with names excluding the letter T are made of aluminum alloy.  
All buckets for swinging bucket rotors are made of titanium alloy.  
8) To use zonal rotor model P32ZT, seal attachment assy model RPZ-S (P/N 90130600) is required. (order separately)  
9) When using a seal tube in the above rotors, tube sealer and respective tube rack are required. (order separately)  
10) Capacity in the above table shows nominal capacity of tubes. Actual capacity in actual usage may be smaller than the nominal capacity depending on rotor structure, tube shape etc.





# Rotor Accessories



## Tube Sealer model STF3

The STF3 is heat-welding tube sealer to use the seal tubes with fixed angle rotors, vertical rotors and neo angle rotors.

### Features

- ◇ Easy & Simple Usage
  1. Set seal tubes in the appropriate tube rack then set the tube rack on the rack guide of the STF3.
  2. Adjust position of the tube rack in order the tube inlet comes under a heater of the STF3.
  3. Pull the handle down to contact the heater the tube inlet and hold the handle for 1 to 2 seconds. Then pull the handle down to the end and wait until the HEAT Lamp goes off. (It takes about 40 seconds.)
- ◇ CE Marking complied.
- ◇ HEAT Lamp indicates the status of the heater.
- ◇ Tube racks are compatible with our former model STF2.

### Specifications

Model	STF3
Seal Method	Direct welding by the molding heater
Standard	CE marking qualified (cCSAus : 100-120V model only) 1. EMC : EN61326-1 2. Product Safety : EN61010-1
Dimensions (mm)	132 (W) x 225 (D) x 260 (H) <when raising the handle : 320 (H)>
Weight (kg)	8.0
Power	110-120V version : 99 - 132 VAC, 2A, 50/60Hz 200-240V version : 180 - 264 VAC, 2A, 50/60Hz
Part Number	90132501 for 110-120V version 90132502 for 200-240V version

### Tube Rack (sold separately)

Part Number	Description	Tube Size
S201778G	Tube Rack (G2)	1.5PA seal tube
S201778F	Tube Rack (G)	2PA seal tube
S201778E	Tube Rack (B2)	3.5PA seal tube
S201778H	Tube Rack (B3)	4PA seal tube
S201778A	Tube Rack (B)	5PA seal tube
S201778J	Tube Rack (B4)	6.5PA seal tube
S201778L	Tube Rack (C2)	8PA seal tube
S201778B	Tube Rack (C)	12PA seal tube
S201778C	Tube Rack (E)	40PA seal tube
S201778M	Tube Rack (F2)	94PA seal tube
S201778K	Multi Rack*	

\* For 2, 4, 5, 6.5, 12 and 40PA seal tubes.  
\* Tubes sold separately as optional.

## S-Cap Series

himac original S-cap series offer simple and easy operation of the tube cap for open-top (thin-walled) tubes. The unique system requires just three components and three steps to assemble the cap to the tube.

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

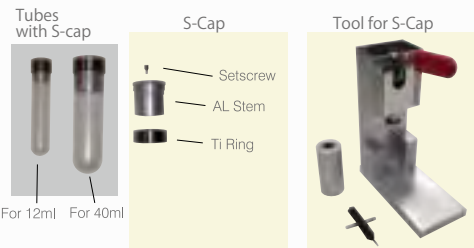
### Three assembling steps

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

Part Number	Descriptions	S-Cap	Tool for S-Cap	Applicable Tubes
S410542A	S-12AL Cap Assy	1 pair	No	12PA tube and 12PE tube
S410532A	S-40AL Cap Assy	1 pair	No	40PA tube and 40PE tube
S308625A	Tool for S-Cap	No	1 set	
S308626A	S-12AL Cap Tool Set	8 pairs	1 set	12PA tube and 12PE tube
S308626B	S-12AL Cap Tool Set	12 pairs	1 set	12PA tube and 12PE tube
S308627A	S-40AL Cap Tool Set	8 pairs	1 set	40PA tube and 40PE tube
S308627B	S-40AL Cap Tool Set	12 pairs	1 set	40PA tube and 40PE tube

\* S-cap consists of Setscrew, AL stem and Ti Ring as a pair.

\* Tube excluded and sold separately.



### Disassemble procedure after the centrifugation.

1. Remove Setscrew and withdraw 20% supernatant from the center hole of AL Stem by the injector.
2. Remove Ti Ring to downwards manually.
3. Connect tube setter into the center hole of AL Stem and remove the AL Stem by moving the tube setter left and right slowly and gradually pulling up AL Stem.



# Rotors for Density Gradient Centrifugation

The density gradient centrifugation is useful to separate multiple nano-sized particles simultaneously in the density gradient solution. We offer exclusive rotors, zonal rotor model P32ZT and continuous flow rotor model P32CT, for larger volume process.

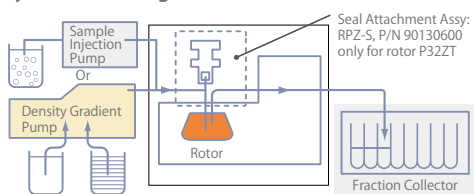
## Zonal centrifugation system : By rotor P32ZT



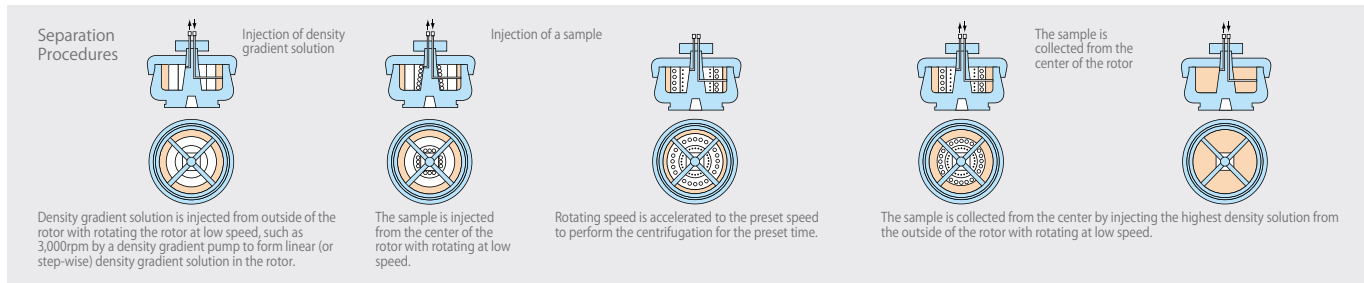
P32ZT  
P/N : 9023160M

In zonal centrifugation, a density gradient is developed within the zonal rotor running at low speed. Next, the samples to be separated are loaded through the center of the zonal rotor. Then increase the speed to the preset high speed to separate the sample into the respective band in the density gradient in the rotor. After separation, separated sample with the density gradient solution is collected through the center by injecting the highest density gradient solution from the outside wall of the zonal rotor while the rotor is running at low speed. Collected sample with the density gradient solution is separated into the fractions. Optical density of each fraction is checked by the spectrophotometer to find the fractions containing the separated samples.

### System flow diagram



- Rotor P32ZT: Excluding Seal Attachment Assy, RPZ-S, P/N 90130600 (sold separately).
- Density Gradient Pump required for density gradient centrifugation as optional.
- Sample Injection Pump, Density Gradient Pump and Fraction Collector not supplied from Hitachi Koki. For detail, contact representative for Hitachi Koki.



## Continuous flow centrifugation system : By rotor P32CT



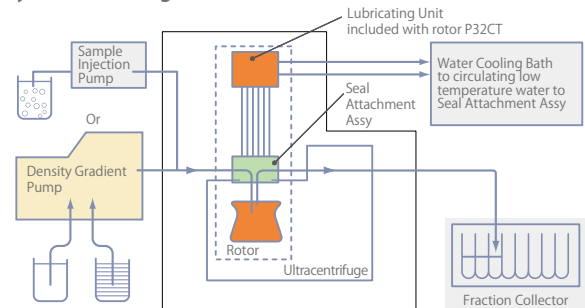
P32CT  
P/N : 9022660M

The continuous flow rotor model P32CT, designed for use with Hitachi ultracentrifuges, enables you to perform highly efficient continuous flow separation and purification of large volume samples under high centrifugal force using differential pelleting or the density gradient centrifugation technique.

### Optional 940mL Core Assy: P/N 34833A

For separating samples containing much sediment or performing separation after increasing the density gradient, the optional 940mL Core Assy increases the rotor capacity from 430mL to 940mL. The flow volume performance is about 35% less than that of standard core for 430mL capacity.

### System flow diagram

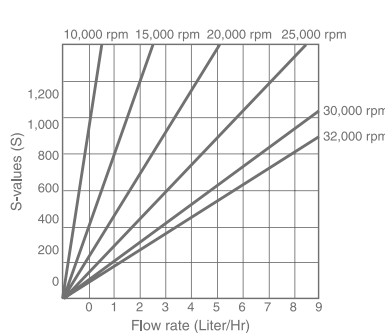


- Rotor: P32CT rotor body with 430mL Core, Lubricating Unit, Seal Assembly, Tools (Torque wrench, etc.), O-ring, Packing, Grease and Logbook (only P32CT with optical adapter). Seal Attachment Assy required : To use P32CT with CP-NX, the optional accessory kit is mandatory required (sold separately).
- Optional Accessory Kit exclusively for CP-NX series: P/N S205643A Including: Door Assy, Rear Panel and Unit Base.
- Excluding: Sample Injection Pump, Water Cooling Bath, Density Gradient Pump and Fraction Collector. These are not supplied from Hitachi Koki.

Components within dotted lines are included in the standard accessory of P32CT and Optional Accessory Kit (sold separately).

■ Density Gradient Pump: Required for density gradient centrifugation as optional. This pump not supplied from Hitachi Koki.

### Flow rate characteristics



For details of the above, contact our representative for Hitachi Koki. Optional Accessory Kit for CP-WX and CP-MX series, P/N S205643C.

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