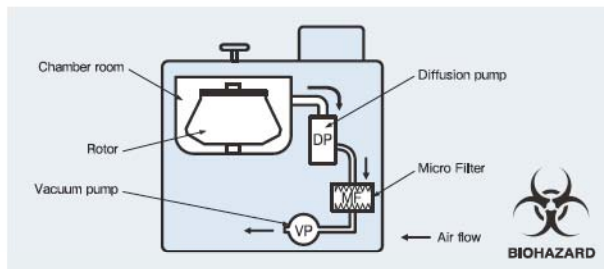


Biosafety Option

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



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)	
Operational noise (dB(A)*)	45 *Measured 1 meter from front	
Max. heat dissipation 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 208, 220, 230, 240 V +/- 10%, 8A (50/60Hz), single phase	
Standard	IEC61010-2-020, EN61326, CE marking qualified	

Please note that LCD panel may contain a few dead or stuck pixels.

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)
Operational noise (dB(A)*)	45 *Measured 1 meter from front
Max. heat dissipation 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 220, 230, 240 V +/- 10%, 8A (50/60Hz), single phase
Standard	IEC61010-2-020, EN61326, CE marking qualified

Please note that LCD panel may contain a few dead or stuck pixels.

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

All specifications are subject to change without advance notice.
For further information, please contact your nearest Hitachi Koki representative.



Hitachi Koki Co., Ltd. is certified International Standard ISO14001 (Environmental Management System) by International Organization for Standard



Scientific Instruments Division of Hitachi Koki Co., Ltd. is certified Quality Management and Quality Assurance Standard (ISO 9001) by International Organization for Standard



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CS150NX

himac

Micro Ultracentrifuges



CS-FNX SERIES

Hitachi Koki
HITACHI



himac **CS-FNX** SERIES

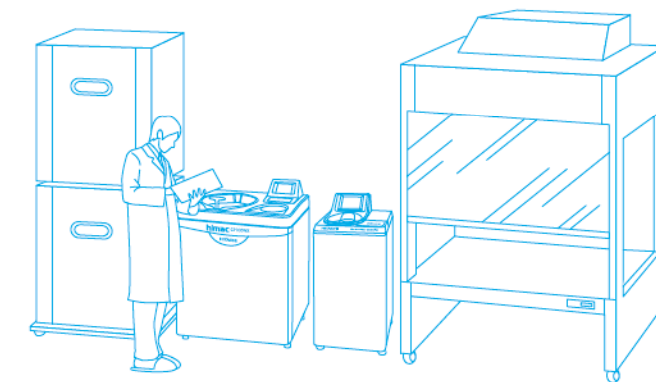
CS-FNX SERIES Micro Ultracentrifuge

This unique floor-standing model is suitable to be installed at central and/ or shared laboratory together with other expensive and large laboratory devices, so that many laboratories can share CS-FNX series.

CS-FNX offers following attractive features and useful functions;

- The Greatest Performance*
- The Quietest Operating Sound "45dBA"
- Powerful Imbalance Protection
- Stress-free Operation
- Program and Step-mode Operation
- User Lockout System
- Comprehensive Data Communication
- Self-locking Rotor System
- Larger Volume Rotors and more.

For details, please refer to following pages.



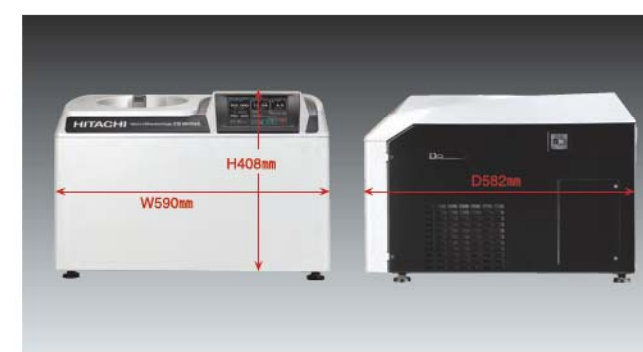
“Floor-standing model” or “Tabletop model” ?

Now you have a choice !!



himac **CS 150NX**

CS 150NX Tabletop Micro Ultracentrifuge



This tabletop micro ultracentrifuge is suitable to be installed at individual laboratories for frequent usage or routine work. The most compact body* (590(W) x 582 (D) x 408(D) mm) does not occupy a laboratory table.

CS150NX offers following attractive features and useful functions;

- The Greatest Performance*
- The Quietest Operating Sound "45dBA"
- Powerful Imbalance Protection
- Stress-free Operation
- Program and Step-mode Operation
- User Lockout System
- Comprehensive Data Communication
- Self-locking Rotor System
- Larger Volume Rotors and more.

For details, please refer to following pages.



* Versus other similar ultracentrifuge in this class, as of Jun. 2012

Features & Functions

The world's fastest speed : 150,000rpm & The world's greatest RCF : 1,050,000xg *

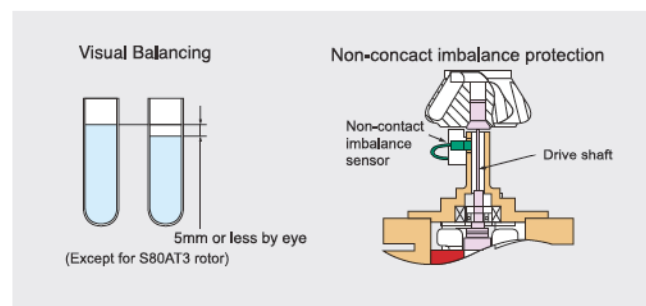
Hitachi state-of-art technologies has realized the abovementioned greatest performance and the quietest operating sound "45dBa" in the most compact body*. Now you can separate and purify protein, lipoprotein, cell organelle, DNA and RNA, also carbon nano tubes and other nano-sized particles, more efficiently than ever.

The Most Reliable Drive Unit

CS150FNX and CS150NX take only 90 seconds to reach the world's fastest speed 150,000rpm by Hitachi 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 abnormal vibration, the sensor activates and stops operation immediately.



Stress-free Operation

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 Hitachi Group's "Design for Environment assessment system" and designated as Eco-Products. 60% stand-by electricity and maximum 10% operating power consumption were reduced, compared with our former models. Also over 80% materials of the product are reusable or recyclable.

* Versus other similar ultracentrifuge in this class, as of Jun. 2012

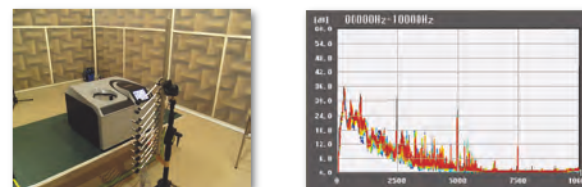
Easy Operation with Touch-Sensitive LCD

Color touch-sensitive LCD and GUI (graphic user interface) with high contrast against back screen in black color enable users to easily 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 Operating Sound "45dBa"

This unusually quiet operating sound was realized by newly developed rigid-control drive system and sound absorbing structure design. It does not disturb your research works in the laboratory, even though it is installed near the working space.



Easy Timer Setting and Actual Run Timer

Hitachi original RTC (real-time control) function makes timer setting easy (PAT.). 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. Hitachi original Actual Run Timer starts when the set speed is attained (PAT.) 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.

User Lockout System

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 Ethernet or internet. Optional software "Hitachi LogManager Ver. 3.0 (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.

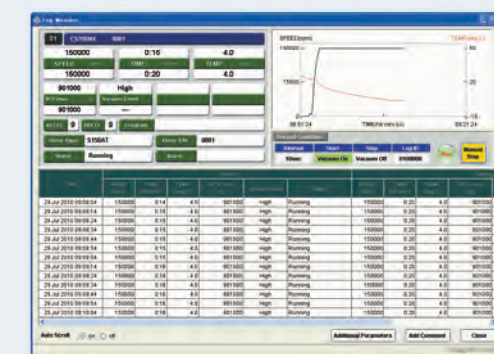
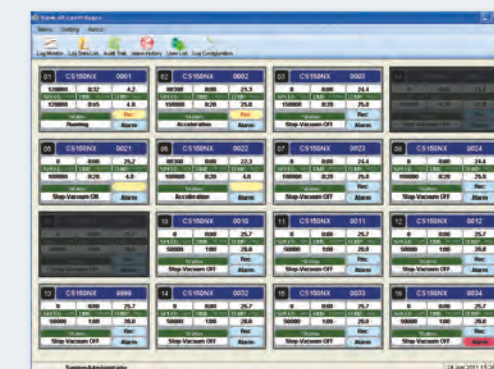
Hitachi LogManager Ver. 3.0 for Windows® (Network Edition)

- optional log management software

Hitachi LogManager Ver. 3.0 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 LAN or ethernet, so there is no distance limitation to establish a network. You can easily establish the network configuration and relocation 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 etc.



Hitachi ASSIST

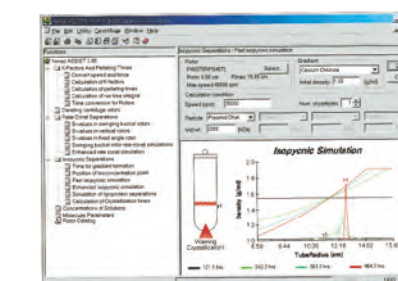
- optional centrifugation simulation software

Hitachi ASSIST is simulation and calculation software of centrifugal condition and can be installed in your Windows®-based PC. You can simulate whether the centrifugal condition is appropriate before the centrifugation, also can simulate optimal centrifugal condition of a sample, whose centrifugal condition is unknown, based on your ultracentrifuge and rotor.

Hitachi ASSIST has following functions;

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

Example : Isopycnic simulation



Plasmid DNA separation with P40ST swinging bucket rotor
CsCl $\rho=1.55\text{g/ml}$, 35,000rpm
(Note : crystallization warning mark(s) showing that parameters are unsuitable.)

