**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

<table>
<thead>
<tr>
<th>Model</th>
<th>CS150NX</th>
<th>CS150HMX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum speed (rpm)</td>
<td>150,000</td>
<td>120,000</td>
</tr>
<tr>
<td>Maximum RCF (xg)</td>
<td>1,000,000 [814AAT rotor]</td>
<td>777,000 [814AAT rotor]</td>
</tr>
<tr>
<td>Speed control accuracy (rpm)</td>
<td>±50 (5,000 to max. speed)</td>
<td>±50 (5,300 to max. speed)</td>
</tr>
<tr>
<td>Max. capacity (nominal)</td>
<td>30mL x 6 tubes (SS6A rotor)</td>
<td>30mL x 6 tubes (SS6A rotor)</td>
</tr>
<tr>
<td>Max. capacity (nominal) (Swinging bucket rotor)</td>
<td>7mL x 4 tubes (SS6ST rotor)</td>
<td>7mL x 4 tubes (SS6ST rotor)</td>
</tr>
<tr>
<td>Timer</td>
<td>1 min. to 99 hrs. and 59 min., with HOLD and RTC (real-time control) function</td>
<td>1 min. to 99 hrs. and 59 min., with HOLD and RTC (real-time control) function</td>
</tr>
<tr>
<td>Vacuum system</td>
<td>Oil rotary vacuum pump and oil diffusion pump</td>
<td>Oil rotary vacuum pump and oil diffusion pump</td>
</tr>
<tr>
<td>Rotor temp. control range (°C)</td>
<td>0 to +60 (1 degree increment)</td>
<td>0 to +60 (1 degree increment)</td>
</tr>
<tr>
<td>Rotor cooling method</td>
<td>Thermomembrane cooling system (HFC) free</td>
<td>Thermomembrane cooling system (HFC) free</td>
</tr>
<tr>
<td>Screen display</td>
<td>Colour LCD (touch-sensitive)</td>
<td>Colour LCD (touch-sensitive)</td>
</tr>
<tr>
<td>Rotor setting method</td>
<td>Self-locking rotor system (no special tool required)</td>
<td>Self-locking rotor system (no special tool required)</td>
</tr>
<tr>
<td>Operational noise [dB(A)]</td>
<td>48 <em>Measured 1 meter from front</em></td>
<td>48 <em>Measured 1 meter from front</em></td>
</tr>
<tr>
<td>Max. heat dissipation into room (kW)</td>
<td>0.7 or less</td>
<td>0.7 or less</td>
</tr>
<tr>
<td>Drive unit warranty</td>
<td>5 years</td>
<td>5 years</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>450 (W) x 520 (D) x 910 (H), weight to table 790</td>
<td>450 (W) x 520 (D) x 910 (H), weight to table 790</td>
</tr>
<tr>
<td>Floor area (m²)</td>
<td>0.6 (790 x 790 mm)</td>
<td>0.6 (790 x 790 mm)</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>105</td>
<td>105</td>
</tr>
<tr>
<td>Power requirements</td>
<td>AC 200, 230, 240 V ±10%, 50/60 Hz, single phase</td>
<td>AC 200, 230, 240 V ±10%, 50/60 Hz, single phase</td>
</tr>
<tr>
<td>Standard</td>
<td>EC/EN61010-2-025, EN61010, CE marking qualified</td>
<td>EC/EN61010-2-025, EN61010, CE marking qualified</td>
</tr>
</tbody>
</table>

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

### CS150NX

<table>
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<tr>
<th>Model</th>
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<tr>
<td>Maximum speed (rpm)</td>
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</table>

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

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**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.

Manufacturer:
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Life-Science Instruments Division
Shinagawa Intertor Tower A
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Tokyo 106-0020 JAPAN
TEL: +81-3-3763-2465
FAX: +81-3-3763-0771
www.hitechi-koki.com/himac

HKK-3A 2012.08
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 "45dB(A)"
- 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 !

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* (690(W) x 587 (D) x 498(H) mm) does not occupy a laboratory table.

CS 150NX offers following attractive features and useful functions:
- The Greatest Performance™
- The Quietest Operating Sound "45dB(A)"
- 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: 150,000 rpm & The world’s greatest RCF: 1,050,000xg

The most reliable drive unit

himac 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 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 abnormal vibration, the sensor activates and stops operation immediately.

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 is 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.

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 to high-vacuum status is reduced to half by optimized control of the oil diffusion pump. (compared with our previous model)

Easy Timer Setting and Actual Run Timer

himac 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. himac 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, commercial run timer is selectable.

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.

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 “himac 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.

himac LogManager Ver. 3.0 for Windows®

(Network Edition)

- optional log management software

This software is real-time log management software. Recording period is selectable from 10 seconds to 6 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.

himac ASSIST

- optional centrifugation simulation software

hima 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.

hima 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 P400T averaging bucket rotor
CS21-1.5pg/ml 35,000rpm
(Note: crystallization warning mark(s) showing that parameters are unsuitable)

Tubes

**Rotors**

Self-Locking Rotor System

Himec original "self-locking rotor system" is the most 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 to fix the rotor by screw or push the button to lock or unlock the rotor like other models available in the markets.

**Larger Volume Rotors**

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-handle shape. Newly introduced 30mL tubes series and hemic s-cap can be used for S50A.

**S50A**

- Maximum capacity: 30mL x 6 tubes
- Standard tube capacity: 9mL x 6 tubes
- Top loading system
- Easy cleaning and no maintenance
- Assembled Ti Ring on the tube and tighten AL Stem and Ti Ring by the tool.
- 3 assemling steps: 1. Fill sample into the tube 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 Setecore.

**S50ST**

- Maximum capacity: 30mL x 8 tubes
- Top loading system
- Easy cleaning and no maintenance
- Assembled Ti Ring on the tube and tighten AL Stem and Ti Ring by the tool.
- 3 assemling steps: 1. Fill sample into the tube 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 Setecore.

**S-cap Series**

himec 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.

- Easy cleaning and no maintenance
- Three assemling steps: 1. Fill sample into the tube 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 Setecore.

**Excluisve 12mL-microtube (conical bottom) 1xpc 210,000 x g has been realized!**

**S55A2**

Proteins and nucleic acid etc. are quickly separated and the preconcentration of protein/micron precipitation is accelerated.

1.5mL-microtube (applicable to high x g)

You can use this exclusive microtube up to 310,000 x g without any additior in S55A2 rotor. (PN: 83044600 (300xrotor))

For further details, please refer to himec application Note No. 127 available on our web site.