



Start Separation at Ease

Large-scale continuous flow ultracentrifugation with Centrifuge CC40 Series



Centrifuge CC40NX

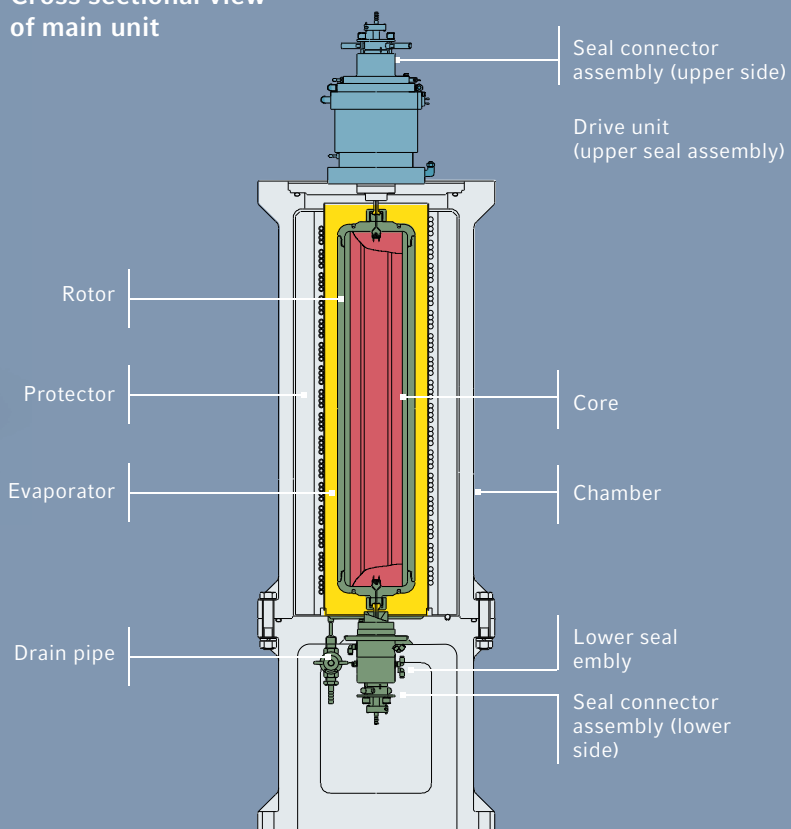
Centrifuge CC40 Series is designed to help scale-up your purification of viruses and other nanosized particles. The Centrifuge CC40 Series can be customized to your specific needs with specific cores, rotors and accessories like the sample feed system. Either density gradient centrifugation or precipitation. Choose Centrifuge CC40NX for large scale production. In addition we offer Centrifuge CC40SNX for pilot and smaller research and development settings.



Centrifuge CC40NX

Designed to purify large-volume samples such as viral particles or nanosized particles. It can process up to 8.0L capacity with batch centrifugation and 7.7L capacity with continuous flow centrifugation. Specifically designed titanium rotors allow speeds of up to 118,000 x g (at 40,000 rpm).

Cross sectional view of main unit



Reliable performance

The drive is designed to reach speeds of 118,000 x g (40,000 rpm) over extended periods of time supporting a wide variety of separation and density gradient centrifugation applications at production scale to support a wide variety of separation and density gradient centrifugation applications.

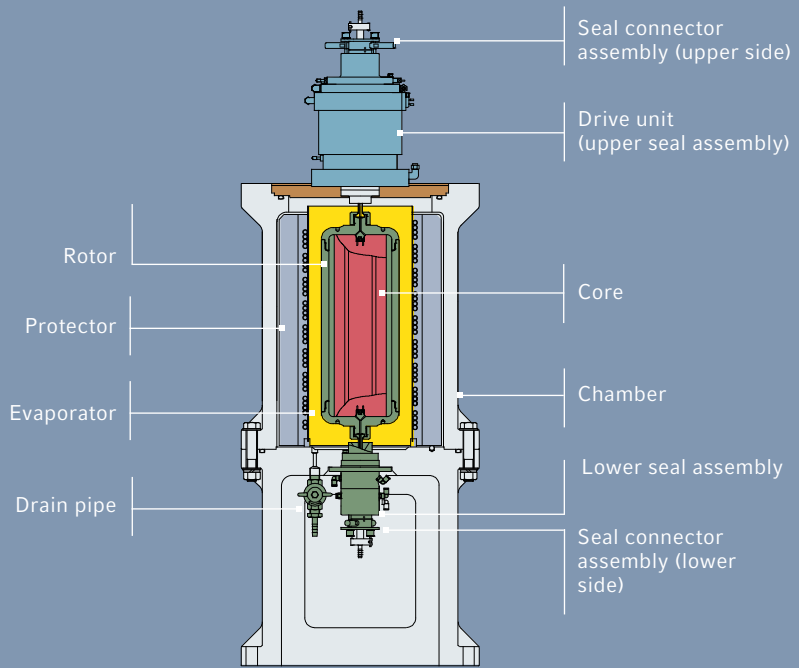
Optimized system design to save space and reduce noise

The centrifuge is equipped with an induction motor with integrated cooling system. This reduces the operating sound below 68 dB and eliminates the need for additional componets like air compressors.

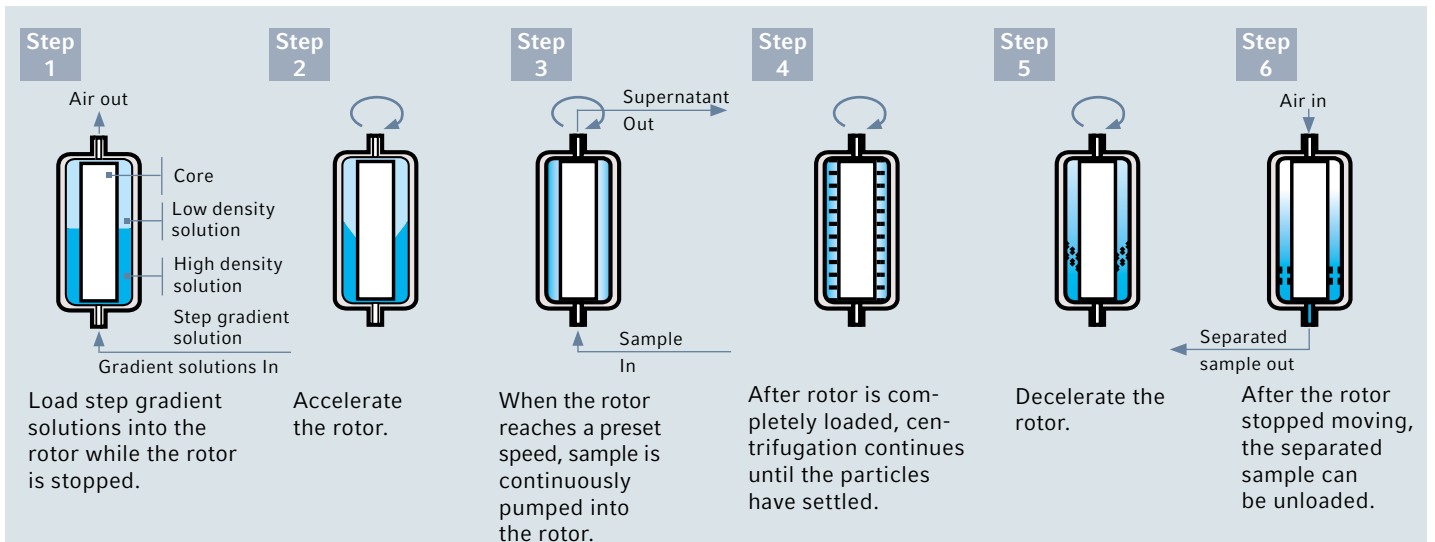
Centrifuge CC40SNX

Centrifuge CC40SNX is ideal for research, development, pilot production and small-volume purification of pharmaceuticals and nanosized materials. This model has a maximum rotor capacity of 1.6L. Specifically designed titanium rotors allow speeds of up to 118,000 x g (at 40,000 rpm).

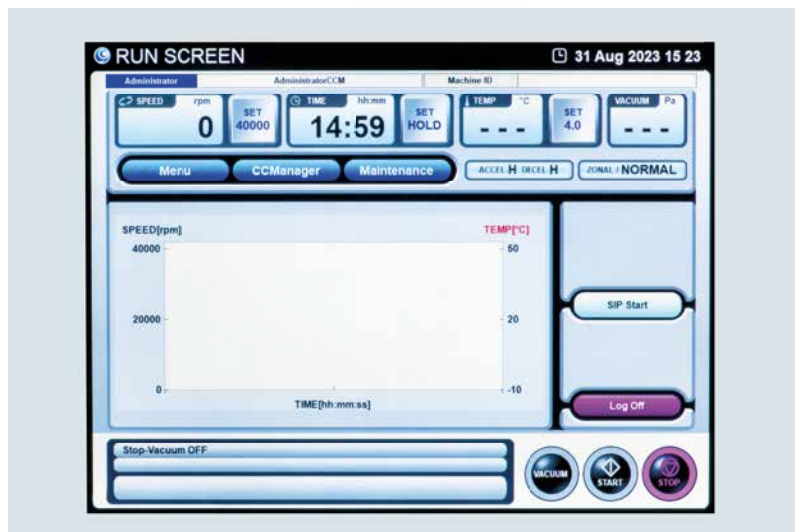
Cross sectional view of main unit



Example of Gradient Separation



Control Panel



Touch-sensitive LCD panel (Centrifuge CC40NX/ Centrifuge CC40SNX)

Windows® based PC controller offers simplified operation to users with touch-sensitive LCD panel. The graphic user interface offers high contrast against back screen enables users to identify operating status at a glance and operate the system easily. The control software supports so that operating data is handled at a high level ensuring data integrity and correctness.

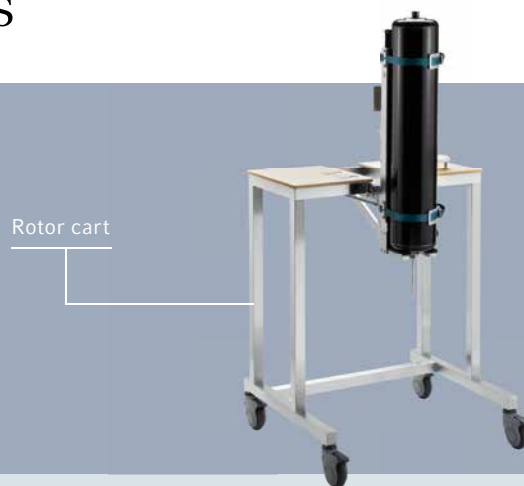
In addition log data can be output in CSV format via USB port for your data management and analysis by commercially available data base or spreadsheet software. In addition, connectivity can be established via Ethernet.

Technical specifications of Centrifuge CC40 Series

Model	Centrifuge CC40NX	Centrifuge CC40SNX
Zonal operation		Yes
Administration Function		Yes
	1. CC Manager Allows Real-time operation log recording (supporting customers with GMP requirements)	
	2. Life-time management of critical components The software automatically monitors the time critical components that need to be changed regularly. Once the end of the recommended lifetime is reached the software will give a warning so the components can be exchanged and the system remains operating in perfect condition.	
USB port		Yes
SIP mode ¹⁾		Yes
Max. speed		40,000 rpm
Max. RCF		118,000 x g (with C40CT series rotor)
Speed control accuracy		+/- 100 rpm
Temp. control accuracy		+/- 2 °C
Speed setting range		from 1,000 to 40,000 rpm
Temp. setting range		from 0 to 40 °C
Timer setting range		from 1 min. to 99 hours 59 min. (with HOLD function)
Vacuum system		Oil rotary vacuum pump
Drive system		Induction motor (direct drive)
Display/ control panel		Color touch-sensitive LCD panel
Dimension : (W) x (D) x (H)	1,750x 1,150x2,950 mm Height to top of the controller: 1,500 mm	1,750x 1,150x2,160 mm Height to top of the controller: 1,500 mm
Weight	900 kg	770 kg
Power requirements	AC 200, 208, 220, 230, 240 V +/- 10%, Single phase, 30A, 50/60Hz	

¹⁾ Steam generator, steam regulator and/or other utilities for SIP are not included and need to be prepared separately.

Configuration and Accessories



- > **Control unit** (with integrated controller, refrigeration unit and vacuum pump etc.)
- > **Main unit** (with vacuum chamber, motor and lift)
- > **Rotor cart** for installing and replacing the rotor
- > **Template** to anchor the main unit

- > **Rotor and core**
- > **Sample feed system**
- > **Sample Tank**
- > **Maintenance tool kit**
- > **Automatic Fraction Dispenser**

Sample feed system (option)

Sample tank (option)

Main unit

Various options

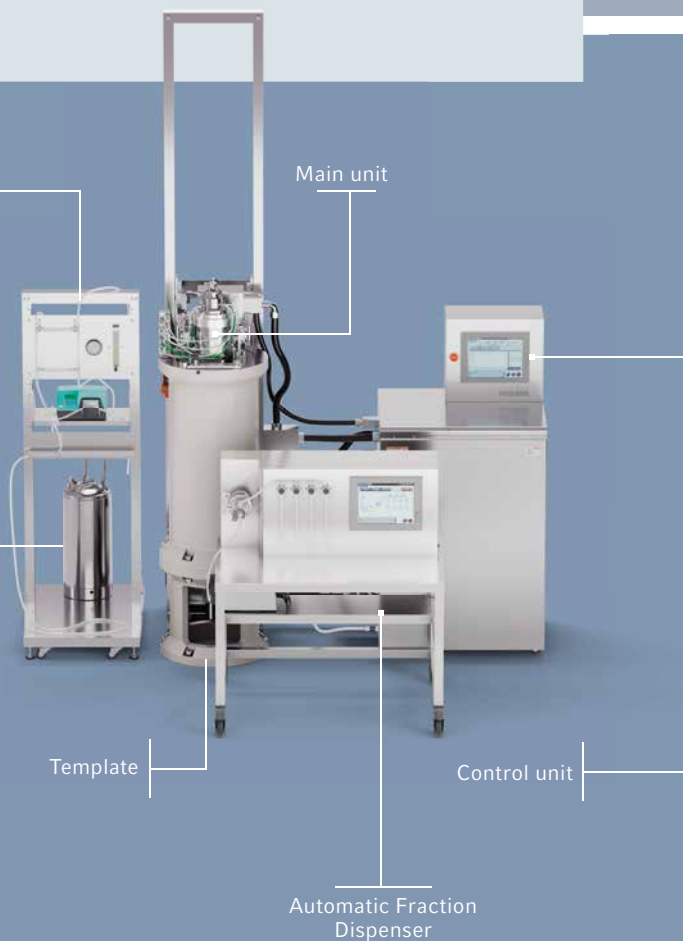
Let our experts configure, determine the perfect settings, install, and qualify your system to your specific needs. Centrifuge CC40 Series offers a series of options to meet all of your requirements:

> Hardware options

Stainless steel chamber, Remote, Vacuum Filter etc.

> Extensive Service Offering

Benefit from extensive services including factory acceptance tests, installation, site acceptance tests, IQ/OQ, application support and user trainings

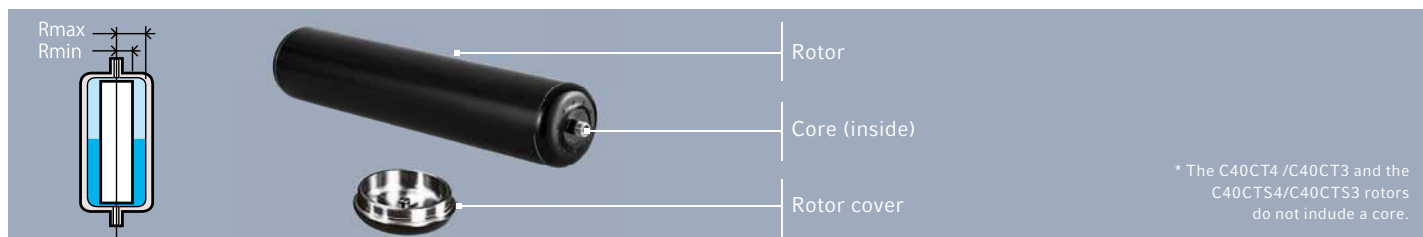


Wide Selection of Rotors and Cores

Rotors

Two types of rotors are available for the Centrifuge CC40 Series: flow type and the other is a high-flow type. Both types of rotors are made of titanium alloy offering strong corrosion resistance and high heat resistance.

Matching to the rotors especially designed cores are available in different material ranging from 0.2 to 200 L capacity.



Specification of rotor and core Centrifuge CC40NX

Rotor model*	C40CT4 *1		C40CT3					
	Core (H) (high-flow type)	Ti Core (H) (high-flow type)	Core (D)	Ti Core (D)	Core (E) *2	Core (F)	Core (G)	
External appearance of cores								
Max. speed (rpm)	40,000				36,000	40,000		
Max. revolving radius: Rmax (mm)			66					
Max. RCF (xg)	118,000				96,000	118,000		
Rotor weight (kg)			31					
Rotor material	Titanium alloy							
Radius of center body: Rmin (mm)	54.5				21.0	54.5	26.6	
RCF (xg) at Rmin	97,500				30,400	97,500	47,600	
Core length (mm)			761					
Core material	Noryl® resin	Titanium alloy	Noryl® resin	Titanium alloy	Noryl® resin			
Capacity (L)	3.2				8.0	3.2 (preclarifier: 0.3)		7.7
Applications	Density gradient centrifugation of virus, liposome and other nanosized particles etc. (for high viscous sample)		Density gradient centrifugation of virus, liposome and other nanosized particles etc.		Batch centrifugation of HBsAG or nanosized particles etc.	Density gradient centrifugation of virus, liposome etc. The preclarifier core permits separation of cells and aggregation substance		Rough separation of large-volume samples for pelleting

Note: *1 The C40CT4 rotor assembly, using Core (H) or Ti Core (H), is designed to reduce a pressure in sample feed line at continuous centrifugation by about 30% compared to Rotor C40CT3 with using Core(D) or Ti Core(D). It is suitable for purification of large-volume or viscous samples.

*2 The Core(E) can be used for batch centrifugation, but not for continuous flow centrifugation.

*3 The shape and size are the same as Core(H).

*4 The shape and size are the same as Core(D).

Titanium cores available for optimized operation

For more convenient assembly of rotors and cores and reduced acceleration and deceleration times we offer especially designed and light-weight titanium cores, which are lighter than comparable Noryl® resin cores of the same size and shape. This allows reaching higher speeds at 118,000 x *g* (at 40,000 rpm) versus. Also, the lighter weight facilitates the handling of the core. They are also heat- and chemical resistant making the device compatible with SIP and CIP treatments. Titanium variants are available for Core (D), Core (H), Core (A) and Core (AH).


Resin cores

Noryl® resin shows a high material-strength and high chemical resistance, making it particularly suitable to work with saline solutions with a pH in the range of 4 to 10, but should not be used with hydrocarbon fluids. To facilitate scale-up and process development special cores are available for smaller volumes for Centrifuge CC40SNX.

O-ring

O-rings contacting to the sample solution are made of material compatible with USP Class IV demonstrating high safety with regard to pharmaceutical supply products.

Specification of rotor and core Centrifuge CC40SNX

Rotor model*	C40CTS4 ^{*5}		C40CTS3		
Type of core	Core (AH) (high-flow type)	Ti Core (AH) (high-flow type)	Core (A)	Ti Core (A)	Core (B)
External appearance of cores					
Max. speed (rpm)			40,000		
Max. revolving radius: Rmax (mm)			66		
Max. RCF (xg)			118,000		
Rotor weight (kg)			15		
Rotor material			Titanium alloy		
Radius of center body: Rmin (mm)			54.5		
RCF (xg) at Rmin			97,500		
Core length (mm)			382		
Core material	Noryl® resin	Titanium alloy	Noryl® resin	Titanium alloy	Noryl® resin
Capacity (L)	1.6				1.6 (preclarifier: 0.151)
Applications	Density gradient centrifugation of virus, liposome and other nanosized particles etc. (for high viscous sample)		Density gradient centrifugation of virus, liposome and other nanosized particles etc.		Virus, liposome etc. The preclarifier core permits separation of cells and aggregation substance

*5 The Rotor C40CTS4 with Core (AH) or Ti Core (AH), is designed to reduce a pressure in sample feed line at continuous centrifugation by about 30% lower than Rotor C40CTS3 assembly using Core (A) or Ti Core (A). It is suitable for purification of large-volume or viscous samples.

Your local distributor: www.eppendorf.com/contact
Eppendorf SE · Barkhausenweg 1 · 22339 Hamburg · Germany
eppendorf@eppendorf.com · www.eppendorf.com

www.eppendorf.link/centrifuges