brs
BIOTECHNOLOGY
EQUIPMENT

HIGH SPEED TUBULAR CENTRIFUGE

BRS BIOTECH

High Speed Tubular Centrifuge

BRS high-speed tubular centrifuges are designed for applications where a continuous process of separation is required, be it liquids and solids separation, extraction, concentration and clarification of substances with high viscosity, separation of solids with small volume fractions, caustic substances and other fields of application.

Features

- Affordable and reliable.
- European-made components.
- GMP compliant design and documentation.
- Control box with Siemens transmitter.

Application

- Biopharmaceutics, for liquids clarification and bacteria extraction.
- Blood processing.
- Manufacturing of plant extracts, food and beverages industry.
- Chemical industry.
- Separation of liquids, liquid and solid fractions.

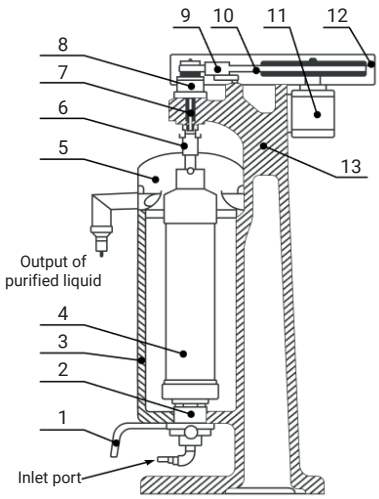
Operation principle

The inner construction of the centrifuge is depicted on Figure 1. By rotating the electric motor at high speed, the dynamic force is transmitted through thebelt (10) and the pressure rollers (9) to the head pulley and the main shaft (7). The main shaft makes the drum (4) to rotate around its axis, resulting in a powerful field of centrifugal force sinside the drum. The liquid feedstock is fed into the drum through a loading hole located at the bottom and is separated by powerful centrifugal forces.

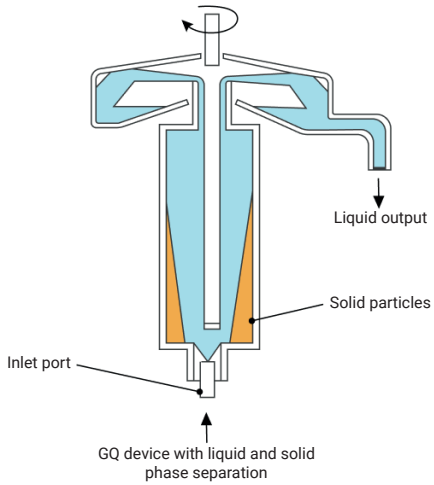
Separation of the liquid and solid fractions:
the liquid with a lighter weight moves along the center of the drum to its upper part, is ejected and collected in the collector; the solid fraction with a heavier weight settles on the inner walls of the drum and is discharged manually after the centrifuge stops.

Separation of liquid fractions:
a liquid with a higher density forms an outer ring, and a liquid with a lower density forms an inner ring. Liquids flow into the upper part of the rotor, the ring sizes are adjusted so that light and heavy liquid are ejected separately and each liquid is collected in a separate collector. A small amount of solid matter settles on the inner walls of the rotor and is discharged manually after the centrifuge stops.

1. Handle
2. Sliding bearing assembly
3. Door
4 Drum unit
5. Recovery liquid tray assembly
6. Guard sleeve
7. Main axis
8. Rotor drive assembly
9. Pressure roller
10. Leather belt
11. Drive unit
12. Shield
13. Machine frame



Structure diagram of the centrifuge



Scheme of the centrifuge

Technical specification

	GQ75	GQ105	GQ105LL	GQ125	GQ145
Rotor nominal capacity, (l)	2	6	6	8	11
Rotation speed (rpm)	20000	16000	16000	15000	14000
RCF (G-value)	16700	15050	15050	15720	15900
Through MAX. (l/h)	200	1200	1200	1500	2000
Dimensions, mm	700x450x1600	700x450x1600	700x450x1600	730x630x1600	760x640x1610
Operating temperature range, °C	-30...+50	-30...+50	-30...+50	-30...+50	-30...+50
Electricity requirements	3 phases, 380V, 50Hz, engine power 1,5 kW	3 phases, 380V, 50Hz, engine power 3 kW	3 phases, 380V, 50Hz, engine power 3 kW	3 phases, 380V, 50Hz, engine power 3 kW	3 phases, 380V, 50Hz, engine power 3 kW

*LL -liquid -liquid separation

Main features

Frame material:	Stainless steel
Material of rotor and all parts in contact with product:	316L stainless steel
Inlet and outlet ports:	Quick-release clamp connections made of sanitary grade 316L steel are integrated for the convenience
Temperature control sensor:	Sensor for liquid phase temperature measurement

Main components of the centrifuge:
Engine – SEW or Siemens
Bearings – SKF
Frequency converter – Siemens
Relays and other control cabinet components – Schneider Electric
Drive belts-Habasit

Configuration

No	Name
	Basic configuration:
1.	High Speed Tubular Centrifuge with a rotor, control cabinet "Basic" (speed adjustment, total operation time cumulation, liquid phase temperature measurement)
	Additional options:
1.	Additional rotor
2.	Coil pipe
3.	"Advance" control cabinet with touch screen and software: • speed adjustment and display, overspeed alarm • nose bearing and cavity temperature measurement and display, alarm in case of set temperature exceed • setting of running time, display of remaining running time • speed and temperature curves • export of operation data in Excel compatible format

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