

Industry Decanter Centrifuge



Part 2: Decanter Centrifuge

2.1 GN Industry Decanter Centrifuge

GN design and manufacture different size of decanter centrifuge for industry separation. Solid bowl decanter centrifuges have been operating according to the same basic principle since the 19th Century. GN centrifuge production line is from 9inch (220mm) bowl to 30inch (760mm) bowl, with bowl length and diameter ration up to 4.2, and the adjustable G force is up to 3000G to meet different industry separation applications

GN design specific centrifuges according to specific separation tasks and the use of resilient, high-quality materials have improved the performance of the centrifuges.

Moreover, GN owns a branch for design PLC and electrical control system; this gives GN advantages in electrical components for measuring and control technology. The performance and availability of the decanter centrifuge or three-phase centrifuges are significantly improved by the control system.



Main Function of GN Industry Centrifuges

- Dewatering sludge / mud and suspensions
- Thickening sludge or mud
- Clarifying different type liquids
- Separating 3-phase mixtures, i.e. two immiscible fluid phases and a solid phase
- Classifying solids in a wet suspension by grain size
- Separation of solids according to various densities

GN Centrifuge Main Application Industry

- Oil Gas Drilling Mud Solids Control
- Drilling Waste Management
- Oil Sludge Treatment
- HDD trenchless mud cleaning
- Bored Pile and TBM mud dewatering
- Waste water treatment
- Chemical and Pharmaceutical separation
- Mining industry separation
- Food and Beverage industry separation

2.2 GN Centrifuge Features



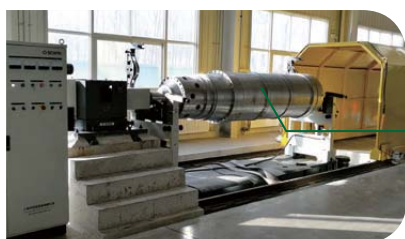
The bowl of GN centrifuge is made from Duplex Stainless Steel SS2205 or SS2304 by centrifugal casting which is better than SS304 or SS316.

The solids discharge port is made from Tungsten carbide inserts, the anti-abrasion will extend the life.



Flexible pond depth adjustment for different material separation.

The air-operated spring for assisting open of the cover with safety locking system.



3 Stage balancing process to maximize the balance of the centrifuge include 1800RPM low speed balancing and real operation high speed balancing as well as the assembly balancing.



The Screw is protected by interchangeable Tungsten Carbide Tiles for longer life and easy maintenance

The mud distribution port is made from Tungsten carbide inserts, the anti-abrasion will extend the life for heavy mud.



The screw is made from stainless steel with heat treatment, and the opening impeller will improve the centrifuge capacity. Single Lead or double lead screw is optional



Two motors in one side to give more space for the operator to do maintenance.

The bearings are premium SKF bearings for reliable and longer operation. The automatically lubrication system is available for option.

2.3 GN Centrifuge VFD Control Panel

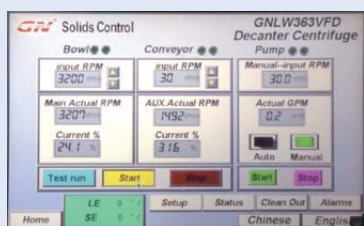
For the oil gas industry and mining industry, most of the time, the client need to use Explosion proof VFD control panel for hazardous area. GN Developed the pressurized explosion proof VFD control panel to meet the IEC Ex, ATEX, and CNEX zone 1 and zone 2 applications.



- 3 VFD for bowl speed, differential speed, and pump capacity.
- The VFD brand is ABB or YASKAWA



- The positive pressurized VFD panel can be cooling by vertex tube or air conditioner to work for ambient Temp. up to +55 C degree.
- The VFD panel is optional for IEC Ex or ATEX or CNEX zone 1 or Zone 2 application.



- The HMI and PLC system for user-friendly operation and smart control and protection.
- It's optional for client to choose bearing temperature protection, vibration switch.

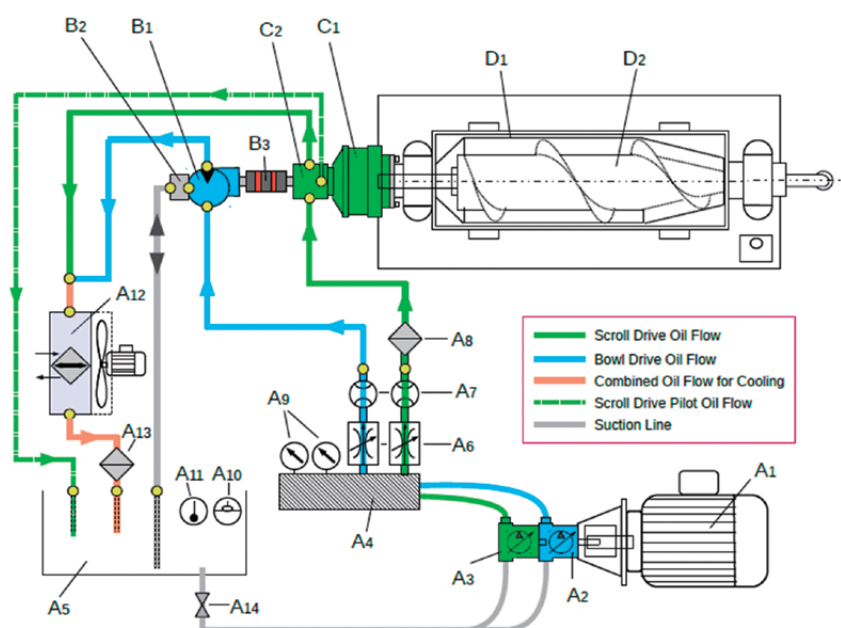
2.4 Fully Hydraulic Drive Centrifuge

GN Solids Control is a leading decanter centrifuge manufacturer. And Viscotherm and ROTODIFF® from Switzerland are leading brand for centrifuge hydraulic driving system. GN and Viscotherm has been jointly working together to develop the Full hydraulic drive centrifuge for international clients to meet the highest standard.

The advantage of the FHD centrifuge is for using in high temperature ambient for heavy mud with flexible bowl and differential speed. The compact one skid design makes it easier for rig up.



The full hydraulic system consists of A the Hydraulic Pump Unit, B the Bowl drive hydraulic motor, and C the Scroll drive (Rotodiff). The hydraulic pump unit A feeds hydraulic oil to the scroll drive C and the bowl drive B by means of two separate and individually independent operating circuits. An electric motor A1 drives the combined pumps A2 and A3. Each operating circuit is equipped with its own hydraulic pump and its own controls. The pump unit contains all setting devices and safety valves, as well as pressure gauges. With this system, the bowl's rotational speed as well as the scroll's differential speed may be manually adjusted independently from one another, continuously and infinitely variable during the centrifuge's operation.



A Hydraulic Pump Unit :

- A1 EEx Electric Motor
- A2 Variable Displacement Hydraulic Piston Pump, Bowl Drive
- A3 Variable Displacement Hydraulic Piston Pump, Scroll Drive
- A4 Controls A5 Oil Tank A7 Flow Meters
- A6 Variable Scroll Speed, Variable Bowl Speed
- A8 High Pressure Oil Filter
- A9 Pressure Gauges
- A10 Oil Level Gauge A11 Oil Temperature Gauge
- A12 Oil-Air Cooler A13 Return Line Oil Filter
- A14 Shut Off Valve

B Bowl Drive:

- B1 High Speed Hydraulic Piston Motor
- B2 Anti Cavitation Device
- B3 Semi-Flexible Coupling

C Scroll Drive:

- C1 Rotodiff Hydraulic Motor
- C2 Connection Block

D Centrifuge:

- D1 Centrifuge Bowl
- D2 Centrifuge Scroll

2.5 9 inch (220mm) Decanter Centrifuge

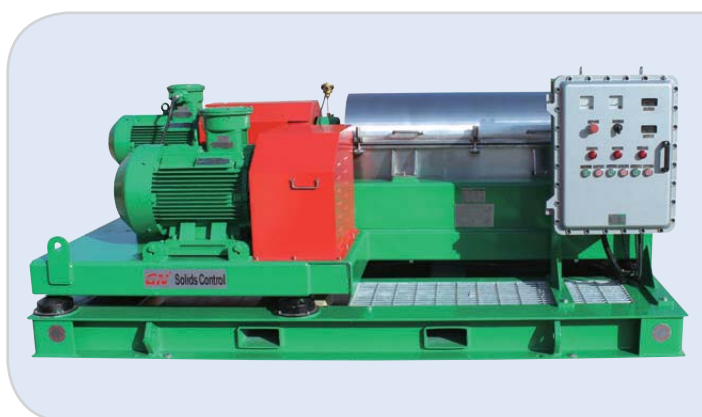
The 9 Inch Decanter Centrifuge is a baby centrifuge which is the one of the world smallest industry decanter. The bowl of the centrifuge is 9 inch (220mm). As the compact design, it is popular for client to use it in small capacity or limited space application for solids and liquid separation. It is also considered to be the best choice for experiment testing with decanter centrifuge. GN 9 inch decanter centrifuge is optional in three types includes: fixed gear box drive, fully hydraulic drive, and variable frequency drive.



Model	GNLW223D	GNLW224EP-VFD
Max Capacity	130 l/min	130 l/min
Effective Capacity	100 l/min	100 l/min
Bowl Diameter	9inch(220mm)	9inch(220mm)
Bowl Length	26.4inch(670mm)	36.4inch(924mm)
Max Bowl Speed	4500RPM	5000RPM
Typical Bowl Speed	3800RPM	0-4500RPM
Max G Force	2492G	3077G
Typical G Force	1777G	2492G
Main Motor	15HP(11KW)	15HP(11KW)
Back Motor	N/A	7.5HP(5.5KW)
Gearbox Ratio	35:1	95:1
Gearbox Torch(N·M)	500N·M	1400N·M

2.6 14inch (360mm) Decanter Centrifuge

GN 14inch (360mm)decanter centrifuge is the most popular centrifuge for oil gas industry, it is popular for drilling mud treatment, and also it can be used for industry waste water treatment, oil sludge treatment, mining water treatment, chemical industry separation. GN 14 inch decanter centrifuge is optional in three types includes: fixed gear box drive, fully hydraulic drive, and variable frequency drive.

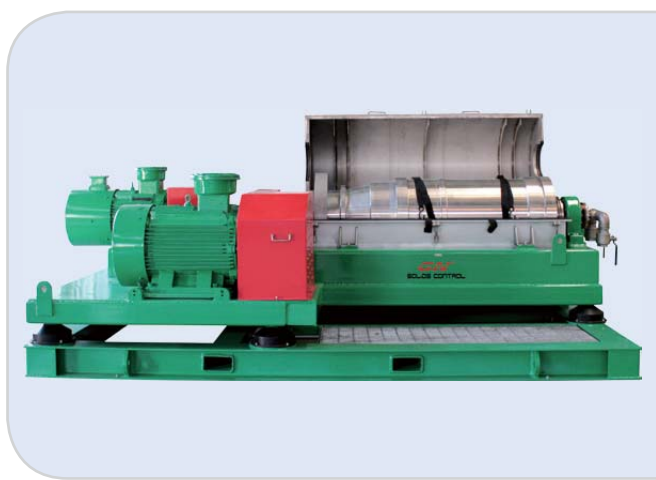


Model	GNLW363C	GNLW363C-VFD	GNLW363D-FHD	GNLW364EP-VFD
Dive Mode	Fixed Speed	VFD	FHD	VFD
Bowl Diameter	14inch(360mm)	14inch(360mm)	14inch(360mm)	14inch(360mm)
Bowl Length	50inch(1271mm)	50inch(1271mm)	50inch(1271mm)	59.5inch(1512mm)
Designed Capacity	200GPM(45m ³ /h)	200GPM(45m ³ /h)	200GPM(45m ³ /h)	242GPM(55m ³ /h)
Typical Capacity	132GPM(30m ³ /h)	132GPM(30m ³ /h)	132GPM(30m ³ /h)	154GPM(35m ³ /h)
Max Bowl Speed	3900RPM	3900RPM	3900RPM	3900RPM
Typical Bowl Speed	3200RPM	0~3200RPM	0~3200RPM	0~3200RPM
Max G Force	3063G	3063G	3063G	3063G
Typical G Force	2062G	0~2062G	0~2062G	0~2062G
Cut Point	2~5μm	2~5μm	2~5μm	2~5μm
Differential Speed	38RPM	0~45RPM	0~65RPM	0~65RPM
Gearbox Torch	3500 N·M	3500 N·M	3717 N·M	3500 N·M
Gearbox Ratio	57:1	57:1	Hydraulic Gearbox	57:1
Main Motor	37KW(50HP)	37KW(50HP)	45KW(60HP)	37KW(50HP)
Back Drive Motor	11KW(15HP)	11KW(15HP)	N/A	11KW(15HP)
Recommend Pump Motor	7.5KW(11HP)	7.5KW(11HP)	7.5KW(11HP)	7.5KW(11HP)
Remarks	Above Max capacity is for water, the treating capacity would be various as per different material conditions and customer required treating results.			

2.7 18inch (450mm) Decanter Centrifuge

GN 18inch(450mm) decanter centrifuge is optional with 3 different bowl length. GNLW452 is an economic centrifuge, popular for drilling mud treatment. To meet different applications, the GNLW453 and GNLW454 is designed with longer bowl.

GN 18 inch decanter centrifuge is optional in three types includes: fixed gear box drive, fully hydraulic drive, and variable frequency drive.



Model	GNLW452D	GNLW453C-VFD	GNLW454EP-VFD
Bowl Diameter	18inch(450mm)	18inch(450mm)	18inch(450mm)
Bowl Length	43.5inch(1105mm)	61inch(1540mm)	74.5inch(1890mm)
Designed Capacity	250GPM(57M ³ /h)	352GPM(80m ³ /h)	400GPM(90m ³ /h)
Typical Capacity	176GPM(40m ³ /h)	264GPM(60m ³ /h)	300GPM(68m ³ /h)
Max Bowl Speed	1800RPM	3200RPM	3500RPM
Typical Bowl Speed	1800RPM	0~2800RPM	0~3200RPM
Max G Force	815G	2578G	3084G
Typical G Force	815G	0~1973G	0~2578G
Cut Point	5-7μm	2~5μm	2~5μm
Differential Speed	32RPM	0~45RPM	0~45RPM
Gearbox Torch	3500 N·M	7500 N·M	7500 N·M
Gearbox Ratio	57:1	57:1	57:1
Main Motor	45KW(60HP)	55KW(75HP)	55KW(75HP)
Back Drive Motor	N/A	22KW(30HP)	22KW(30HP)
Recommend Pump Motor	11KW(15HP)	15KW(20HP)	15KW(30HP)
Remarks	Above Max capacity is for water, the treating capacity would be various as per different material conditions and customer required treating results.		

2.8 22inch(550mm) Decanter Centrifuge

GN 22inch(550mm) decanter centrifuge is widely used for different industry .It is the medium size centrifuge which has the normal capacity requirement for most of the applications. It is popular for drilling mud treatment, and also it can be used for industry waste water treatment, oil sludge treatment, mining water treatment, chemical industry and food industry separation.



Model	GNLW553C-VFD	GNLW554EP-VFD
Bowl Diameter	22inch(550mm)	22inch(550mm)
Bowl Length	71inch(1800mm)	91inch(2310mm)
Designed Capacity	500GPM(114m ³ /h)	600GPM(136m ³ /h)
Typical Capacity	400GPM(90m ³ /h)	480GPM(108m ³ /h)
Max Bowl Speed	3000RPM	3150RPM
Typical Bowl Speed	0-2500RPM	0~2800RPM
Max G Force	2719G	3051G
Typical G Force	0~1888G	0~2412G
Cut Point	2-5μm	2~5μm
Differential Speed	0~45RPM	0~45RPM
Gearbox Torch	12000 N·M	12000 N·M
Gearbox Ratio	35:1	35:1
Main Motor	90KW(120HP)	90KW(120HP)
Back Drive Motor	37KW(50HP)	45KW(60HP)
Remarks	Above Max capacity is for water, the treating capacity would be various as per different material conditions and customer required treating results.	

2.9 30inch(760mm) Decanter Centrifuge

The GN 30 inch (760mm) bowl diameter decanter centrifuge is a big bowl centrifuge. GN 30inch centrifuge is with bowl length and diameter ration of 4.4:1. This bowl size allows client to handle big volume fluids with one single unit. Because of GN unique design for the screw and bowl, the GN 30 inch decanter centrifuge is design for best performance in Tunnel Boring Project Mud Cleaning, Dredging Slurry Separation, and Municipal Sewage Sludge in Purification Plants, Industry Waste Water Treatment. The tungsten carbide protection in the slurry distribution port or solids discharge port as well as the screw conveyor inside the bowl makes the GN 30 inch decanter centrifuge lasts longer.



Model	GNLW764A-VFD
Bowl Diameter	760mm
Bowl Length	3328mm
Designed Capacity	528GPM/120m ³ /h (Mud with 20% Solids Content)
Max Bowl Speed	2650RPM
Typical Bowl Speed	0-2200RPM
Max G Force	3000G
Typical G Force	0~2060G
Cut Point	2-5μm
Differential Speed	5~28RPM
Gearbox Torch	25000 N·M
Gearbox Ratio	38:1
Main Motor	160KW(217HP)
Back Drive Motor	90KW(120HP)
Remarks	Above Max capacity is for reference only, the treating capacity would be various as per different material conditions and customer required treating results.

Part 1: Company Profile

1.1 Company Introduction

GN Solids Control focuses on solids control and waste management equipment manufacture. After research and development for over 10 years, GN Solids Control has become the leading brand for solids control. And GN is honored to be the National High Tech Company, which means we pay 15% income tax instead of 25%, this will give benefit to our customer for buying cost effective product from GN.



- GN is the first API Certified separation equipment manufacturer in China.
- GN Solids America is the first USA based solids control company from China.
- GN own two facilities of total area of 40,000 SM(430,000 SF) close to Beijing.
- GN products have been exported to over 70 countries, and GN have branch or distribution center in America, Russia, Australia, Latin America, Middle East.
- GN owns a specialized factory for making shale shaker screens.
- GN owns over 20 patents for separation equipment.
- GN products are CE certified for Europe market and CU-TR Certified for Russia.
- GN management system also comply with ISO9001, ISO14001, OHSAS18001 standard

Our Vision: Build a world-class Brand for the separation industry: GN Solids Control

1.2 GN No.1 Factory

GN No.1 factory is located in Chaobai River Development Area, which is close to Beijing. The function for No.1 factory include: Headquarter administration, steel construction, complete system assembly. GN have automatically ball blasting machine, dust free painting and heating room, powder coating production line, material cutting workshop, welding workshop, complete system assembly work shop, warehouse etc.



GN Headquarter Office



No.1 Warehouse



Ball Blasting Machine



Powder Coating Production Line



Material Cutting Workshop



Welding Workshop



System Assembly Workshop

1.3 GN No.2 Factory

GN No.2 Factory is about 3KM from the No.1 Factory and located in the same industry Zone. The No.2 factory is for high technology equipment manufacture. GN has the No.2 Office Building, CNC machinery workshop, balancing workshop, centrifuge assembly and testing workshop, shale shaker screens workshop, electrical control equipment workshop, warehouse etc.



No.2 Office Building



CNC Machinery Workshop



CNC Machinery Workshop



High Speed and Low Speed Balancing



Shaker Screen Workshop



Electrical Control Equipment



No.2 Warehouse

1.4 GN Solids America

GN Solids America is the first USA based solids control company from China. GN America company is located in the oil center city – Houston, Texas. GN have 30,000 SF facility in Houston for stock, equipment assembly, maintenance and office.



GN America Company



America Warehouse



Workshop Area

1.5 GN Certificates

70% of GN products is made for export to international market, GN make high quality products according to international standard. We have almost all certificates available for export to high end market. GN Explosion proof standard can be IEC Ex, Europe ATEX. And the lifting certification can meet DNV2.7-1 for offshore operation.



API Certificate:Q1-1003



ISO9001:2008 No.:1208



DNV CE for Europe



CU-TR For Russia



National High Tech Certificate



IEC Ex Certificate



HSE Certificate



ISO14001 Certificate



OHSAS18001 Certificate

Download Link: <http://www.gnsolidscontrol.com/company/certificates>

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