GN®
SOLIDS CONTROL

SOLIDS CONTROL & WASTE MANAGEMENT

Hebei GN Solids Control Co.,Ltd

2025-1-6

Content

Part 1: Company Profile

1.1 Company Introduction

Hebei GN Solids Control Co., Ltd. has specialized in solids control and waste management equipment for more than 15 years. GN stands as one of the largest manufacturers of solids control equipment globally. We operate three factories spanning a total area of 110,000 square meters in China and maintain branch offices with service capabilities in both the United States and Australia. Designated as a National High-Tech Enterprise, GN boasts a robust management system. Since 2010, we have consecutively held the American API Quality Management System Certification for 14 years and maintained China Classification Society certifications for ISO9001, ISO14001, and ISO45001 over many years. Our solids control equipment bears certifications from EU CE, ATEX, and International IECEx. GN employs an ERP Cloud + CRM Cloud management system for seamless production and operation, ensuring digital control over the production process and quality traceability. Approximately 70% of our products are exported internationally, reaching over 70 countries worldwide.

1.2 GN Solids Control Strength

Rich Experience :

Since 2007, GN has accumulated over 16 years of expertise in researching, developing, and manufacturing solids control equipment. GN is recognized as both a National High-Tech Enterprise and a nationally renowned specialized, innovative Small Giant Enterprise.

Robust Manufacturing Capabilities :

Occupying a total area of 110,000 square meters, GN Solids Control boasts three primary manufacturing facilities equipped with cutting-edge machinery, including Automatic Welding Robot Workstations, Large Laser Cutting Machines, Advanced CNC Machining Centers, and Large Automatic Injection Molding Machines for shaker screens.

Well-established Management System :

GN has earned certifications for ISO 9001, ISO 14001, ISO 45001, as well as the American API Q1 Quality Management System. Additionally, GN's products have secured EU CE and ATEX certifications. GN utilizes an ERP Cloud+CRM Cloud management system.

Extensive Market Share :

Our products are exported to more than 70 countries and regions globally, gaining wide recognition from both domestic and international customers. Furthermore, we have established branches in Houston, USA, and Brisbane, Australia.

1.3 GN Tangshan Factory

1

Area of 80,000 ㎡
(860,000SF)

2

Office Size of 10,000 ㎡
(107,000SF)

3

Available for
equipment and
Package
Mud System

1.4 GN USA Facility

GN Solids America is a branch company of GN Solids Control China. GN Solids America is located in Houston, Texas. With our professional team and workshop and warehouse in Houston, TX, we can offer better service to the North and South American customers. In our Houston office, we have employees speaking Chinese, English and Spanish which help us to communicate with customers more smoothly.

1.5 GN Solids Australia

GN Solids Control Australia branch: GN Solids Australia is the first sub-company of a Chinese solid control equipment manufacturer registered within Australia domestically. The company is located in Brisbane, Australia. It has the functions of equipment and accessory storage, equipment maintenance and assembly, and office. GN Australia company provides equipment sales and leasing businesses.

1.6 GN Factory

1.6.1 Blanking Workshop

Large CNC Laser Pipe Cutting Machine

Large CNC Laser Plate Cutting Machine

1.6.2 Welding Workshop

Robot Welding Production Lines for Solids Control Equipment

1.6.3 CNC Machining Workshop

Centrifuge and Pumps Production by CNC lathe, CNC machining center and Balance Machine etc.

1.6.4 Coating Workshop

Include Sand and Ball Blasting Machine, Painting and Powder Coating Production Line (Control Ambient Air for High quality)

1.6.5Assembly Shop

Available for Individual Equipment or Package Mud System Assembly

1.6.6 GN Langfang Factory

Langfang No.1 Factory

Langfang No.2 Factory

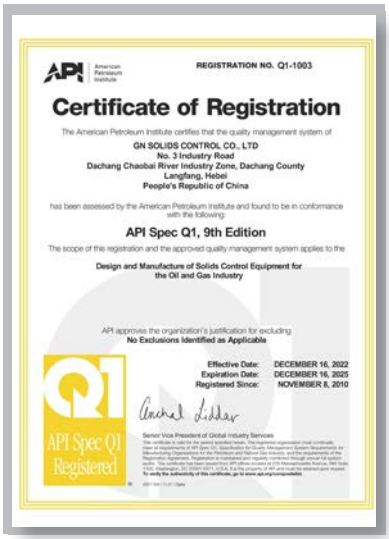
1.7 GN Certificates

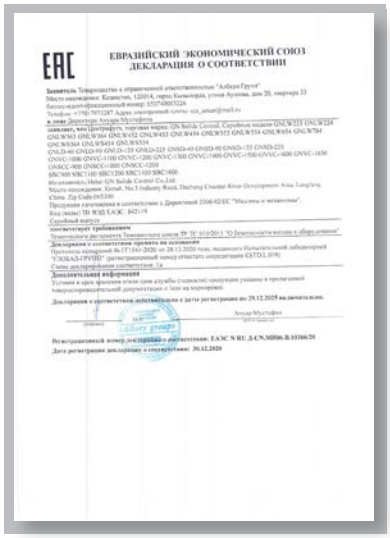
- ISO9001 Quality Management Certificate
- ISO14001 Environment Management Certificate
- ISO45001 HSE Certificate
- America API Q1 Certificate
- Russia EAC Certificate
- Europe CE Certificate
- China Explosion Proof Certificate
- International IECEX certificate
- Europe ATEX certificate
- National Small Giant Enterprise

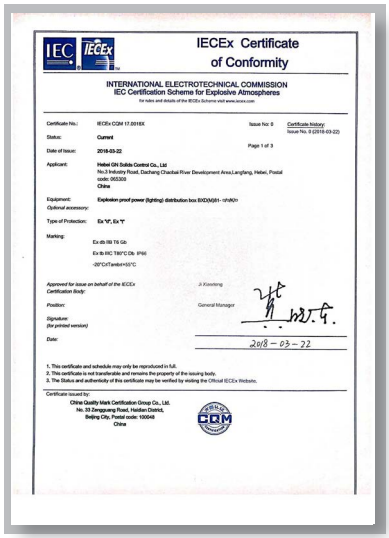

质量管理体系认证证书
QUALITY MANAGEMENT SYSTEM CERTIFICATE
HEBEI GN SOLIDS CONTROL CO., LTD.


环境管理体系认证证书
ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATE
HEBEI GN SOLIDS CONTROL CO., LTD.


职业健康安全管理体系认证证书
OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM CERTIFICATE
HEBEI GN SOLIDS CONTROL CO., LTD.







National Small Giant Enterprise

Part 2: Decanter Centrifuge

2.1 GN Industry Decanter Centrifuge

GN designs and manufactures different sizes of decanter centrifuges 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 ratio up to 4.2, and the adjustable G force is up to 3000G to meet different industries' 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 centrifuges or three-phase centrifuges are significantly improved by the control system.

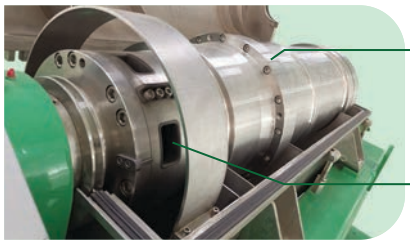
Main Function of GN Industry Centrifuges

- 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

2.1.1 GN Centrifuge Features

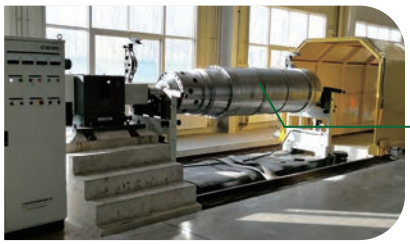


The bowl of GN centrifuge is made from Duplex Stainless Steel SS2205 or SS2304 by centrifugal casting which is better than SS304 or SS316.

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.

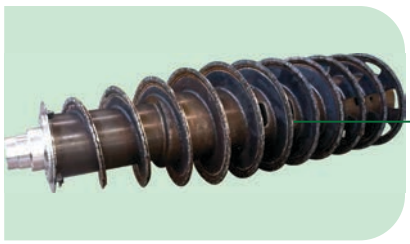
The air-operated spring for assisting open of the cover with safety locking system.



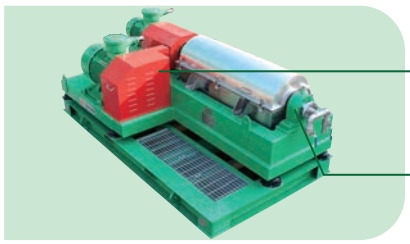
3 Stage balancing processes to maximize the balance of the centrifuge include 1800RPM low speed balancing and real operation high speed balancing as well as the assembly balancing.

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.

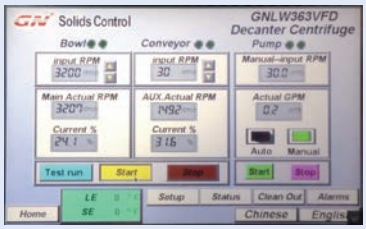


Two motors in one side to give more space for the operator to do maintenance.

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

2.2 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.

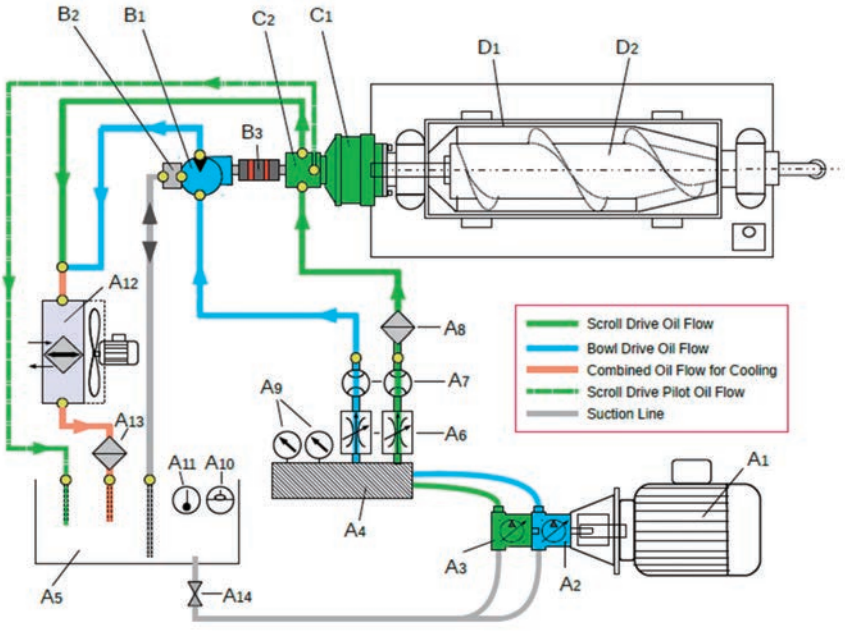
	• 3 VFD for bowl speed, differential speed, and pump capacity. • The VFD brand is ABB or YASKAWA
	• The positive pressurized VFD panel can be cooling by vertex tube or air conditioner to work for ambient Temp. up to +55 C degree. • The VFD panel is optional for IEC Ex or ATEX or CNEX zone 1 or Zone 2 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.

2.3 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 have 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 to 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 circuitsAn 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 maybe 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

2.4 9 inch (220mm) Decanter Centrifuge

The 9 Inch Decanter Centrifuge is a baby centrifuge which is the one of the world smallest industry decanters.The bowl of the centrifuge is 9 inch (220mm). As the compact design, it is popular for client to use 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	GNLW224FT-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	5099RPM
Typical Bowl Speed	3800RPM	0-4500RPM
Max G Force	2492G	3200G
Typical G Force	1777G	2492G
Main Motor	11KW(15HP)	11KW(15HP)
Pump Size	N/A	5.5KW(7.5HP)
Gearbox Torque (N · M)	500N · M	1400N · M

2.5 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	GNLW363D	GNLW363D-VFD	GNLW363D-FHD	GNLW364FT-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	3600RPM	3986RPM
Typical Bowl Speed	3200RPM	0~3200RPM	0~3200RPM	0~3200RPM
Max G Force	3063G	3063G	3063G	3200G
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 Torque	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.			

2.6 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	GNLW453D-VFD	GNLW454FT-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(40m3/h)	264GPM(60m3/h)	300GPM(68m3/h)
Max Bowl Speed	1800RPM	3200RPM	3452RPM
Typical Bowl Speed	1800RPM	0~2800RPM	0~3200RPM
Max G Force	815G	2578G	3000G
Typical G Force	815G	0~1973G	0~2578G
Cut Point	5~7μm	2~5μm	2~5μm
Differential Speed	32RPM	0~45RPM	0~45RPM
Gearbox Torque	3500 N·M	7500 N·M	7500 N·M
Gearbox Ratio	57:1	35:1	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.		

2.7 22inch(550mm) Decanter Centrifuge

GN 22inch (550mm) decanter centrifuge is widely used for different industries. 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	GNLW553D-VFD	GNLW554FT-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	3132RPM
Typical Bowl Speed	0-2500RPM	0~2800RPM
Max G Force	2719G	3000G
Typical G Force	0~1888G	0~2412G
Cut Point	2-5μm	2~5μm
Differential Speed	0~45RPM	0~45RPM
Gearbox Torque	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.	

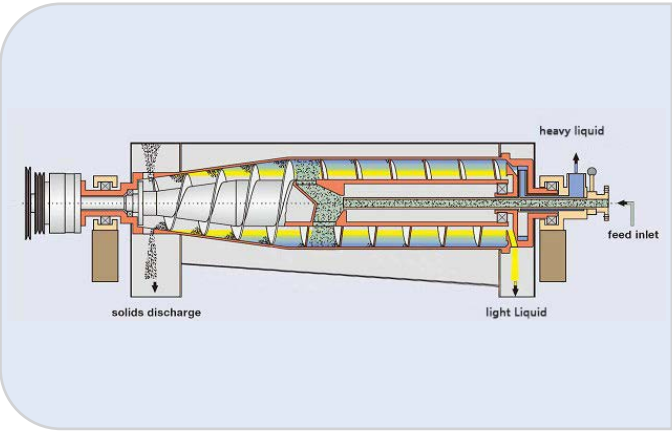
2.8 30inch(760mm) Decanter Centrifuge

The GN 30 inch (760mm) bowl diameter decanter centrifuge is a big bowl centrifuge. With the bowl length and diameter ratio at 4.4:1, GN 30inch centrifuge can handle big volume fluids with one single unit. GN 30 inch decanter centrifuge is designed 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 guarantee the GN 30 inch decanter centrifuge last longer.

Model	GNLW764A-VFD
Bowl Diameter	760mm
Bowl Length	3328mm
Designed Capacity	528GPM/120m^3/h (Mud with 20% Solids Content)
Max Bowl Speed	2612RPM
Typical Bowl Speed	0-2200RPM
Max G Force	2900G
Typical G Force	0~2060G
Cut Point	2-5μm
Differential Speed	5~28RPM
Gearbox Torque	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.

2.9 3 Phase Decanter Centrifuge

The three-phase decanter centrifuge operation is based on the principle of sedimentation, that is, solid particles with specific liquid weight precipitate in a predetermined time. This principle can also be applied to two immiscible liquids with different specific gravities. When the material enters the high-speed rotating bowl, the material rotates synchronously with the bowl. Because of the different specific gravity, the centrifugal force is different. The solid particles with the larger specific gravity are subjected to the greatest centrifugal force, followed by the heavy phase liquid (such as water) and the light phase liquid (such as oil). So the centrifugal force is becoming less from outside to inside according to the magnitude of centrifugal force. A concentric solid layer and two liquid layers are formed. Solids are pushed out by the screw conveyor, and liquids are removed from their respective nozzles. Therefore, the application of three-phase decanter centrifuge can not only separate the solid in the material, but also separate the two-phase liquid with different specific gravity in the material, that is, Solid-liquid-liquid separation can be achieved.



3 Phase Decanter Centrifuge

Model	GNLWS-364	GNLWS-454	GNLWS-554
Type	Solids Liquid Liquid Separation		
Bowl Dia	360mm	450mm	550mm
Bowl Length	1567mm	1947mm	2347mm
Capacity	5 m^3/h	10 m^3/h	15m^3/h
Max Speed	3986 RPM	3452 RPM	3123 RPM
Max G Force	3200 G	3000 G	3000 G
Diff. Speed	0~30 RPM	0~30 RPM	0~30 RPM
Main Drive	30 KW/22KW	45KW/37 KW	75KW/55KW
Back Drive	7.5KW	15 KW/11KW	18.5KW/22KW
Lubrication	Grease type	Grease Type	Oil Lubrication
Oil Pump Size	N/A	N/A	0.37 KW
Feed Material	Solids Less 10% and Particle Size less than 2mm		

Part 3: Shale Shaker Screen

3.1 GN Shaker Screen Factory

GN Solids Control is an international brand for solids control equipment and shaker screens with location in China, USA, Australia and Russia. GN Solids has advanced screen production and processing equipment, including welding robot, CNC punch machine, automatic injection molding machine, CNC heat-press, automatic glue machine, etc. GN Solids Control manufactures top quality replacement shaker screens according to API RP 13C standard for GN shakers and all other major brand shakers for the drilling industry.

GN Solids China

GN Solids America

GN Shaker Screen Factory

Frame Fabrication Machine

Shaker Screen Manufacture Machine

Screen Packed for Delivery

3.2 API RP13C Shaker Screen

GN Shaker Screen has been tested by third party lab according to API RP 13C standard(ISO13501). GN production quality management system has passed the API Q1 and ISO 9001. GN is one of the few companies provide high quality international standard shaker screens in the market.

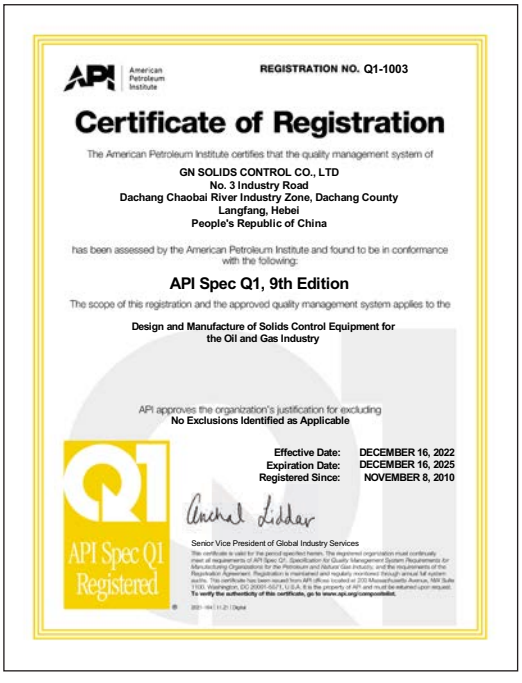
3.2.1 API RP 13 Third Party Test Data

TABLE 1
API RP 13C SHAKER SCREEN TEST RESULTS

Label	LIMS	API Screen Designation	D100 (microns)	Screen Conductance (Kd/mm)	Estimated Non-Blanked Area (m^2)
GLA020	237505	20	809.12	10.88	0.56
GLA035	240158	35	538.61	9.69	NT
GLA040	239462	40	438.52	8.64	NT
GLA050	237507	50	284.57	5.17	NT
GRA060	237508	60	268.12	4.10	NT
GRA070	240155	70	202.63	3.33	NT
GRA080	241746	80	193.15	2.76	NT
GRA100	237511	100	164.81	2.66	0.51
GRA120	241747	120	134.35	1.89	NT
GRA140	237513	140	101.20	1.89	NT
GRA170	237514	170	82.80	1.34	NT
GRA200	237515	200	73.49	1.32	NT
GRA230	240156	230	68.89	0.71	NT
GRA270	240157	270	57.70	0.67	NT

You may contact GN sales person to get detail test report.

3.2.2 API Q1 and ISO9001 Certificate.


API American Petroleum Institute

REGISTRATION NO. Q1-1003

Certificate of Registration

The American Petroleum Institute certifies that the quality management system of

GN SOLIDS CONTROL CO., LTD
No. 3 Industry Road
Dachang Chaobai River Industry Zone, Dachang County
Langfang, Hebei
People's Republic of China

has been assessed by the American Petroleum Institute and found to be in conformance with the following:

API Spec Q1, 9th Edition

The scope of this registration and the approved quality management system applies to the

Design and Manufacture of Solids Control Equipment for the Oil and Gas Industry

API approves the organization's justification for excluding
No Exclusions Identified as Applicable

Effective Date: DECEMBER 16, 2022
Expiration Date: DECEMBER 16, 2025
Registered Since: NOVEMBER 8, 2010

Q1 API Spec Q1 Registered

Senior Vice President of Global Industry Services


QMS REGISTERED

Certificate of Registration

APIQR® REGISTRATION NUMBER
1208

This certifies that the quality management system of

GN SOLIDS CONTROL CO., LTD
No. 3 Industry Road
Dachang Chaobai River Industry Zone, Dachang County
Langfang, Hebei
People's Republic of China

has been assessed by the American Petroleum Institute Quality Registrar (APIQR®) and found it to be in conformance with the following standard:

ISO 9001:2015

The scope of this registration and the approved quality management system applies to the

Design and Manufacture of Solids Control Equipment for the Oil and Gas Industry

APIQR® approves the organization's justification for excluding:

No Exclusions Identified as Applicable

Effective Date: DECEMBER 16, 2022
Expiration Date: DECEMBER 16, 2025
Registered Since: DECEMBER 16, 2016

Senior Vice President of Global Industry Services

QUALITY REGISTRAR

3.3 ASTM Mesh and API Cut Point

ASTM Mesh and Cut Point	
D100 Cut Point	ASTM Single Mesh
2000 microns	ASTM 10 Mesh
1000 microns	ASTM 18 Mesh
850 microns	ASTM 20 Mesh
710 microns	ASTM 25 Mesh
600 microns	ASTM 30 Mesh
500 microns	ASTM 35 Mesh
425 microns	ASTM 40 Mesh
355 microns	ASTM 45 Mesh
300 microns	ASTM 50 Mesh
250 microns	ASTM 60 Mesh
212 microns	ASTM 70 Mesh
180 microns	ASTM 80 Mesh
150 microns	ASTM 100 Mesh
125 microns	ASTM 120 Mesh
106 microns	ASTM 140 Mesh
90 microns	ASTM 170 Mesh
75 microns	ASTM 200 Mesh
63 microns	ASTM 230 Mesh
53 microns	ASTM 270 Mesh
45 microns	ASTM 325 Mesh
38 microns	ASTM 400 Mesh

API No. and Cut Point Table	
D100 Cut Point	API No.
> 1850.0 TO 2180.0	API 10
> 780.0 TO 925.0	API 20
> 462.5 TO 550.0	API 35
> 390.0 TO 462.5	API 40
> 275.0 TO 327.5	API 50
> 231.0 TO 275.0	API 60
> 196.0 TO 231.0	API 70
> 165.0 TO 196.0	API 80
> 137.5 TO 165.0	API 100
> 116.5 TO 137.5	API 120
> 98.0 TO 116.5	API 140
> 82.5 TO 98.0	API 170
> 69.0 TO 82.5	API 200
> 58.0 TO 69.0	API 230
> 49.0 TO 58.0	API 270
> 41.5 TO 49.0	API 325
>35.0 TO 41.5	API 400

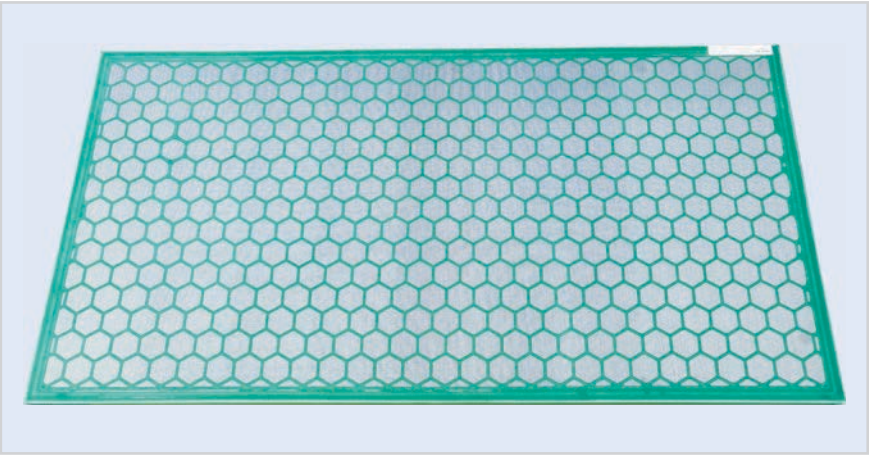
NOTE

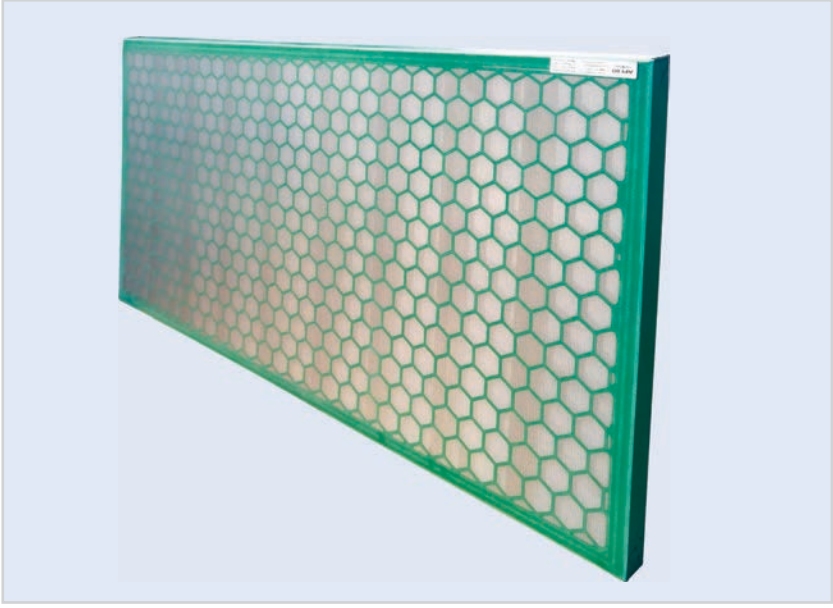
1) ASTM is short for The American Society for Testing and Materials, ASTM E11:01 mesh equals to ISO 3310-1:2000 mesh. This method determines the cut point of single layer ASTM screen mesh size. For shaker screenmesh, normally means the surface screen mesh size. Whilst the shaker screen is usually a composition of 2 or 3 layers, the cut point of the first layer mesh is not equal to the final shaker screen cut point.

2) API is short for American Petroleum Institute, “API Number” is determined by API RP13C or ISO13501, the cut point is related to the combined 3-layer wire mesh test result. So before order, GN will need API number, or the cut point, to define a more proper shaker screen configuration.

3.4 Frame Shaker Screen

The frame shale shaker screen is a pre-tensioned screen, which is fixed on the drilling fluid shale shaker by a wedge-like compression device. According to the type of frame material, it can be divided into metal frame screen and composite frame screen. The metal frame screen is welded by metal materials, and the epoxy resin powder and the screen mesh are bonded to the frame through the plastic invasion process and the heat-pressing process. The composite frame screen is composed of metal skeleton and plastic through injection molding process, and then the screen mesh is bonded to the frame through heat-pressing process.



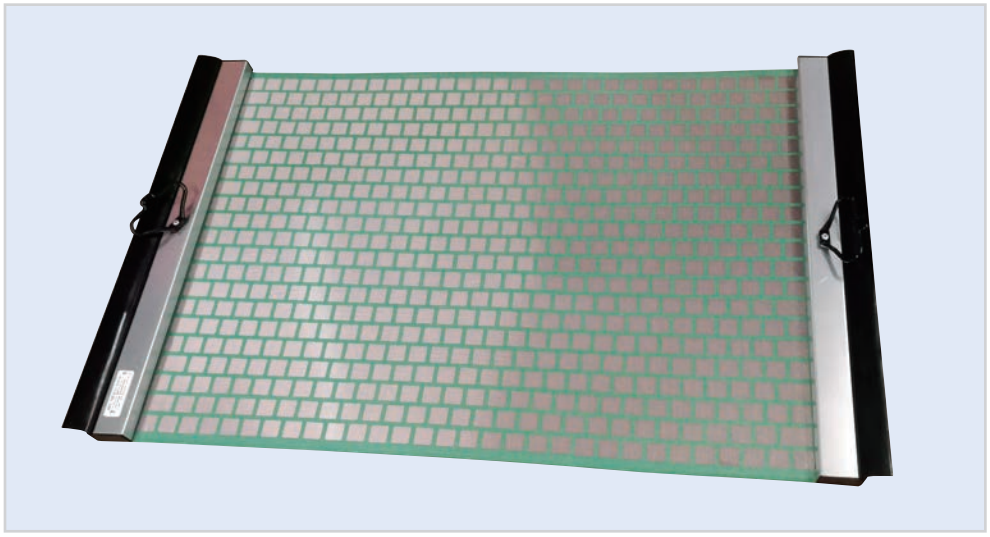


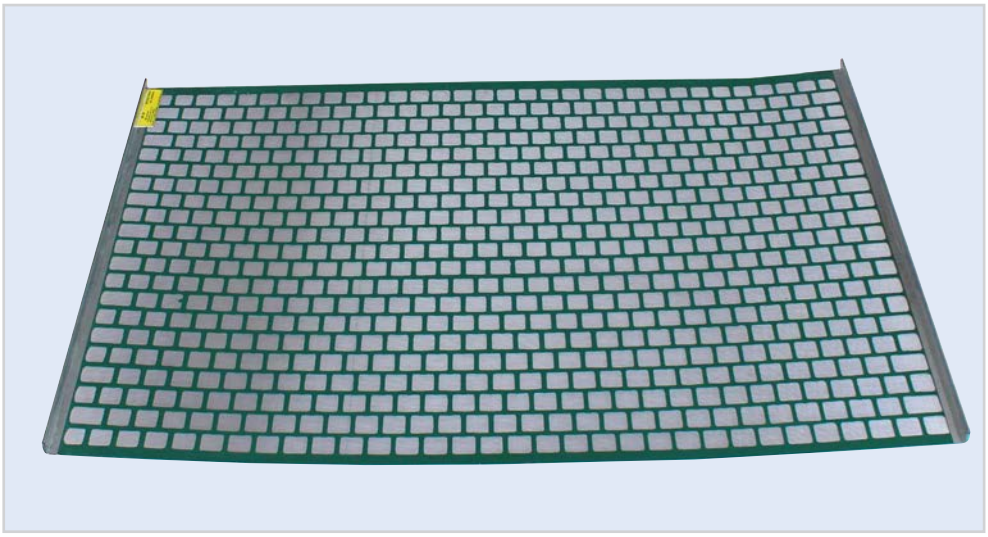
Frame shaker screen for shaker models:

- Fit for GN Shale Shaker: GNZS752, GNZS703, GNZS594, GNZS595, GNZS608 etc
- Fit for MI Swaco Shaker: Mongoose, MD-2/MD-3, BEM etc.
- Fit for NOV Brandt Shaker: Cobra, Venom, VSM-300, D380/D285P etc.
- Fit for other Shale Shaker: Fluids System 29x42, Elgin KPT and other brand shaker.

3.5 Flat Panel Hook Screen

When the flat hook shaker screen is installed on a shale shaker, the screen is hooked from the top of the screen or from the bottom of the screen by the tensioning mechanism. This type of shale shaker usually has a supporting beam to support the screen. The screen is tensioned by the joint action of the tensioning mechanism and the supporting beam. The flat hook shaker screen is usually made from a steel plate with punching holes. Then the plate is coated with plastic or epoxy resin powder, and finally the flat screen mesh is bonded to the plate by the heat-pressing process.



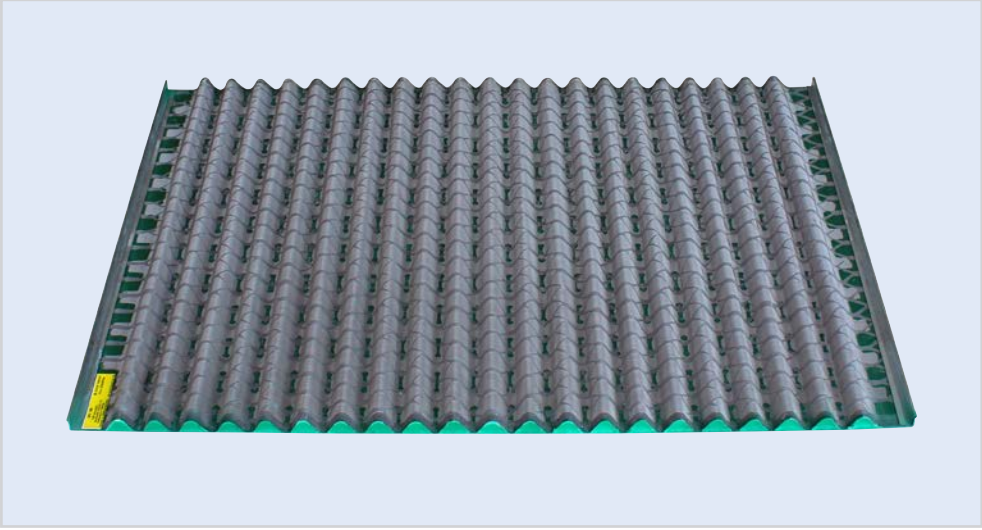


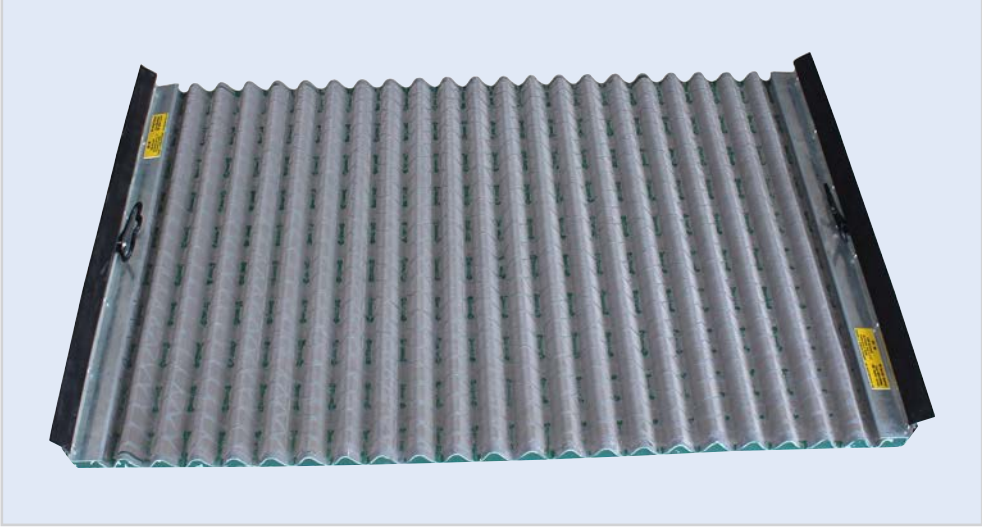
Flat Hook screen for shaker models:

- Fit for GN Shale Shaker: GNZS852, GNZS853 etc
- Fit for Derrick Shale Shaker: FLC2000, FLC500 (503/504) and others etc.
- Fit for MI Swaco Shaker: ALS
- Fit for other Shale Shaker: 700x1050mm or other customized dimension.

3.6 Corrugated Hook Screen

The installation of the wave hook shaker screen on the shale shaker is similar to the flat hook shaker screen. The wave screen is hooked from the top of the screen or from the bottom of the screen by the tensioning mechanism. The shale shaker is usually supported by the support beam. The screen is tensioned by the joint action of the tensioning mechanism and the support beam. The wave hook shaker screen is usually made from a steel plate with punching holes. Then the plate is coated with plastic or epoxy resin powder, and finally the wave screen mesh is bonded to the plate by the heat-pressing process.





Wave Shaker screen for shaker models:

- Fit for GN Shale Shaker: GNZS852, GNZS853 etc
- Fit for Derrick Shale Shaker: FLC2000, FLC500 (503/504) and others etc.
- Fit for other Shale Shaker: 700x1050mm or other customized dimension.

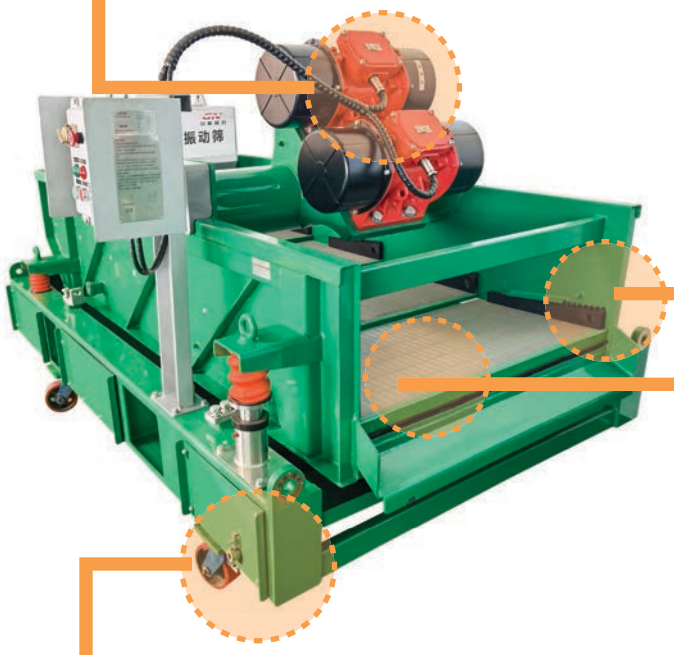
Part 4: Solids Control Equipment

4.1 Shale Shaker

4.1.1 GN Shale Shaker Features

Italy OLI or US Martin Brand Vibration Motors
GN Ex Control panel with SIEMENS or Schneider Component

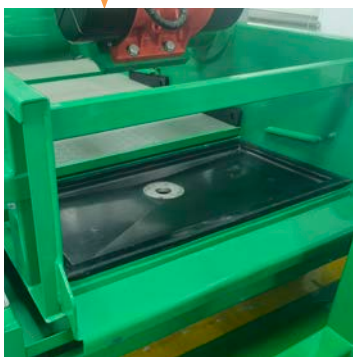
Pretentioned composite frame screen with Gear unit for fast screen change and longer screen llife



1) Heavy Duty design and heat treatment for the shaker basket to get the adjustable G force up to 8.0G.

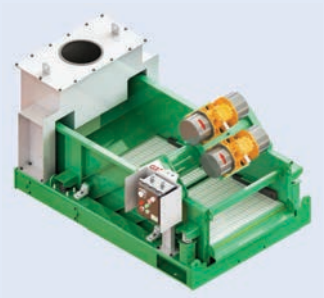
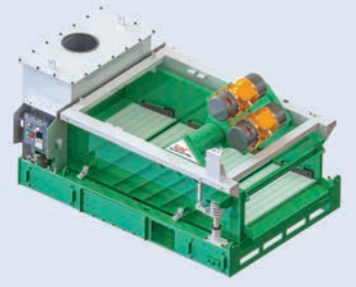
2) Patent shaker screen seal technology for avoiding fine solids bypass and to have easy maintenance.

Mechanical Deck angle adjustment while working system to work reliably for different drilling fluids



Available to change to vacuum shaker by GN ViST Technology.

4.1.2 GN Shale Shaker Specs

	GNZS752 series Mini shakers have been widely used in trench-less HDD, water well drilling, diamond core drilling etc., best option for compact system and low flow rate.
	GNZS594 series single deck shale shaker is popular in oil gas drilling, big trench-less HDD projects, or other industry separation demand.
	GNZS596 series double deck shaker is properly designed for piling, TBM, big oil gas rig, big trench-less project, or the industry separation for multi-phase separation.

Model	GNZS752K	GNZS594K	GNZS595K	GNZS596K
Vibration Model	Linear Motion	Linear Motion	Linear Motion	Linear Motion
Reference Capacity	45m³/h(200GPM)	140m³/h(616GPM)	175m³/h(770GPM)	140m³/h(616GPM)
Vibration Motor	2×1.0KW	2×1.94KW	2×1.94KW	2×2.2KW
Screen Qty	2pcs	4pcs	5pcs	6pcs
Screen area	1.35m²	2.73m²	3.41m²	Top Deck:1.36m² Bottom Deck:2.73m²
Adjust G Force	≤7.5G	≤7.5G	≤7.5G	≤7.5G
Vibration Amplitude	4.14~5.96mm	4.14~5.96mm	4.14~5.96mm	4.14~5.96mm
Deck Angle Range	+2°	-1°+5°(Adjustable)	-1°+5°(Adjustable)	-1°+5°(Adjustable)
Feeding Type	Weir Feeder	Weir Feeder	Weir Feeder	Weir Feeder
Weir Height	773mm	958mm	958mm	1038mm
Weight	1166Kg	2138Kg	2337Kg	2428Kg
L×W×H(mm)	2303×1610×1300	2970×1995×1619	3265×1995×1919	2970×1995×1669

4.1.3 ViST Vacuum Shaker Screen

Item	Specs Model No.: GNVIST-03B	
Supply Air Pressure	0.7~1.0Mpa (100-150PSI)	
Air capacity required	4.5 m³/min (160 CFM)	8 m³/min (280 CFM)
Operation Shaker	For 1~2 Shakers	3 Shakers
Applicable Mud	OBM,SBM,WBM	
Extra Fluids Recovery	2000-3000 L / Day (By 1 Shaker with ViST On)	
Recovery Efficiency	30%~50%	
Mud Temperature	-15 +85°C	
Suction Inlet	2 Inch (3 Sets)	
Discharge Outlet	2 Inch (1 Set)	
Air Supply Inlet	1 Inch	
Dimension (Weight)	1058x730x1068mm (350KG)	
Remarks	No Electricity, Air Operate, Adjustable Suction Time	
Weight(Kg)	929	
L×W×H(mm)	1816×1657×1083	

Features

- ViST is Vacuum Screen Technology that working with shale shaker to reduce drilling waste and recycle drilling fluids.
- ViST was pending patent design developed by GN Solids Control from June, 2017. And in May, 2018, GN tested ViST with drilling fluids, which proved to be very efficient for recycling drilling fluids.
- The ViST Pan is installed under the last screen or mounted externally. And a suction hose is connected to ViST vacuum unit. The compressed air from AC or the rig air supply is required to generate suction on the last screen panel, recover additional fluids from the cuttings. It can reduce the liquid on the cuttings by 30-50%.
- In a result, ViST maximizes the volume of recovered and reused fluids while provides dryer cuttings. Dryer cuttings mean less drilling waste and more recovery drilling fluids, so ViST can save money for operators on drilling fluids and waste management.

4.1.4 Electric Vacuum Shale Shaker

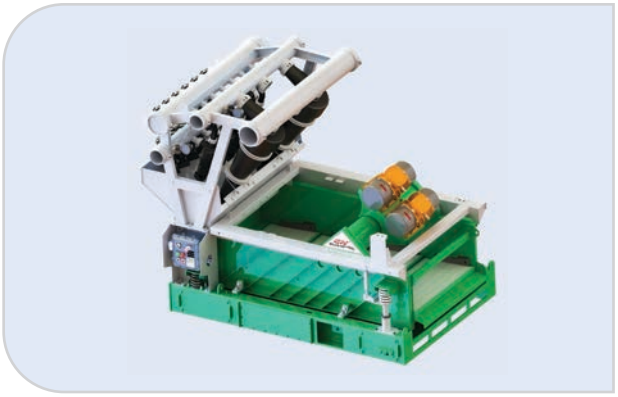
Model	GNViST-594K	GNViST-595K
Screen Qty.	4 pcs	5 pcs
Screen Area	2.72m²	3.4m²
Power	18.44KW	18.84KW
G Force	≤7.5G (Adjustable)	
Anti-Spraying	SS Anti-spraying unit (optional)	
Vibrate Motion	Linear / Dual Motion (optional)	
Negative Pressure	Pulse negative pressure/Continuous negative pressure (adjustable)	
Extra Drilling Mud Recovery	2000-3000L/Day (average value when the vacuum is open)	
Suitable Mud	OBM, WBM, SBM	
Ex Standard	ExdIIBt4	

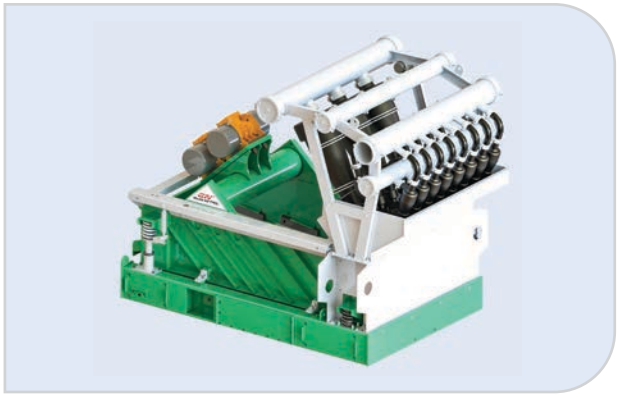
Features

- The negative pressure pump unit is combined with suction hopper to generate pulse negative pressure or continuous negative pressure at the bottom of the screen during the operation of the shale shaker, achieving a combined separation effect of vibration and negative pressure.
- The pulse frequency/time of negative pressure can be controlled by an independent control system within the negative pressure pump unit. The pulse negative pressure can be also switched to continuous negative pressure according to user needs.
- Control box of the vacuum shaker is similar with the traditional shale shaker's, can independently control the shaker and work independently with the negative pressure pump. In case of maintenance of the pressure pump, the negative pressure shale shaker can be used as a regular shaker.
- Modular design also facilitates the transformation of traditional shale shaker, removing negative pressure hopper and negative pressure pump unit, matching relevant pipelines, and installing them on traditional shaker to transform them into negative pressure vacuum shaker for use.
- Stainless steel splash prevention devices, as well as dual and triple vibrating screens, can be selected according to user needs.

4.2 Desander & Desilter

4.2.1 Mud Cleaner





Model		GNZJ594K-S1S8NK	GNZJ594K-S2S12NK	GNZJ594K-S3S16NK
Treating Capacity		120m³/h(528GPM)	240m³/h(1056GPM)	360m³/h(1584GPM)
Desanderr Cone		10inch x 1each	10inch x 2each	10inch x 3each
Desilter Cone		4inch x 8each	4inch x 12each	4inch x 16each
Feeding Size		6 inch	6 inch	6 inch
Output Size		8 inch	8 inch	8 inch
Working Pressure		0.25~0.4MPa	0.25~0.4MPa	0.25~0.4MPa
Bottom Shale Shaker Specs	Bottom shaker model	DLS594K	DLS594K	DLS594K
	Vibration Mode	Linear Motion	Linear Motion	Linear Motion
	Vibration Motor	2×1.94kW	2×1.94kW	2×1.94kW
	Screen area	2.73m²	2.73m²	2.73m²
	Deck Angle Range	-1°~+5°(Adjustable)	-1°~+5°(Adjustable)	-1°~+5°(Adjustable)
	Adjust G Force	≤7.5G	≤7.5G	≤7.5G
Weight (Kg)		2579	2649	2732
L×W×H(mm)		3117×1995×2325	3117×1995×2325	3117×1995×2325

Features

- The entire shaker deck undergoes heat treatment to relieve welding stress, enabling it to withstand high G force.
- The shaker screen is installed with a mechanical ratchet wrench gear for quick tightening, facilitating easy disassembly and ensuring long-lasting durability.
- The wedge blocks for tightening the screen mesh are made of nylon, providing high temperature resistance, corrosion resistance, and wear resistance.
- Vibration motor: Italian OLI brand.
- Polyurethane material is used for sealing between the shale shaker and screen, ensuring a long service life and easy replacement.
- The supporting rubber strips for the bottom frame of the vibration screen are made of stainless steel, offering strong corrosion resistance and a long service life.
- The electrical control box is made of aluminum alloy/stainless steel explosion-proof material, ensuring good sealing and strong corrosion resistance.
- The pre-tensioned shaker screen allows for convenient and quick disassembly and replacement.
- The mud outlet can be switched between bottom and side outlets, accommodating flexible installation on site.
- The angle of the shaker deck can be mechanically adjusted while working at both ends , adapting to different processing capacities.

4.2.2 Desander

Desander Cut Point: + 40 Microns	Description
	**Type:** Desander without downstream drying shale shaker **Model:** GNZJW-2SJ / GNZJW-3SJ **Application:** For oil gas drilling un-weighted drilling mud. **Features:**Small footprint, economic choice, no consumable screens. **Result:** Wet cuttings, not recommended for Weighted mud and drying solids.
	**Type:** Desander with GNZS752 Series Mini Shale Shaker Screen Area:1.4m^2 **Model:** GNZJ752K-M2SK **Application:** For oil gas drilling small drilling rig , CBM drilling, HDD, Water Well drilling. **Features:**Small footprint, economic choice, acceptable drying solids.

Model		GNZJ752K-M2SK	GNZJW-2SJ	GNZJW-3SJ
Treating Capacity		240m³/h(1056GPM)	240m³/h(1056GPM)	360m³/h(1584GPM)
Desanderr Cone		10"x 2 each	10"x 2 each	10"x 3 each
Feeding Size		6 inch	6 inch	6 inch
Output Size		8 inch	8 inch	8 inch
Working Pressure		0.25~0.4MPa	0.25~0.4MPa	0.25~0.4MPa
Bottom Shale Shaker Specs	Bottom shaker model	DLS752K	N/A	N/A
	Vibration Mode	Linear Motion		
	Vibration Motor	2×1.0KW		
	Screen area	1.35m²		
	Deck Angle Range	+2°		
	Adjust G Force	≤7.5G		
Weight (Kg)		1375	475	523
L×W×H(mm)		2124×1697×1888	2118×886×1901	2118×886×1901

4.2.3 Desilter

Desilter : Cut Point +20 Microns	Description
	**Type:** Desilter without downstream drying shale shaker **Model:** GNZJW-12NJ / GNZJW-16NJ **Application:** For oil gas drilling un-weighted drilling mud. **Features:**Small footprint, economic choice, no consumable screens. **Result:** Wet cuttings, not recommended for Weighted mud and drying solids.
	**Type:** Desilter with GNZS752 Series Mini Shale Shaker Screen Area:1.4m^2 **Model:** GNZJ752K-M12NK **Application:** For oil gas drilling small drilling rig , CBM drilling, HDD, Water Well drilling. **Features:**Small footprint, economic choice, acceptable drying solids.

Model		GNZJ752K-M12NK	GNZJW-12NJ	GNZJW-16NJ
Treating Capacity		240m³/h(1056GPM)	≤240m³/h(1056GPM)	≤360m³/h(1584GPM)
Desilter Cone		4 inch x 12 each	4 inch x 12 each	4 inch x 16 each
Feeding Size		6 inch	6 inch	6 inch
Output Size		8 inch	8 inch	8 inch
Working Pressure		0.25~0.4MPa	0.25~0.4Mpa	0.25~0.4Mpa
Bottom Shale Shaker Specs	Bottom shaker model	DLS752K	N/A	N/A
	Vibration Mode	Linear Motion		
	Vibration Motor	2×1.0KW		
	Screen area	1.35m²		
	Deck Angle Range	+2°		
	Adjust G Force	≤7.5G		
Weight		1358Kg	450Kg	469Kg
L×W×H(mm)		2124×1697×1803	2068×980×1520	2068×980×1520

4.3 Degasser

4.3.1 Vacuum Degasser

Model	GNZCQ270B	GNZCQ360B
Tank Diameter	920mm	
Capacity	≤270m³/h	≤360m³/h
Vacuum Degree	-0.02 ~ -0.04Mpa	
Handling Efficiency	≥95%	
Main Motor Power	22kW	37kW
Pump Motor Power	7.5kW	
Rotation Speed	700RPM	860RPM
Ex Standard	ExdIIBt4/IECEX/ATEX	
Suction Size	DN150	
Output Size	DN200	
Weight	1779mm	1815mm
Dimension: mm	2100x1605x1729mm	2100x1605x1729mm

Features

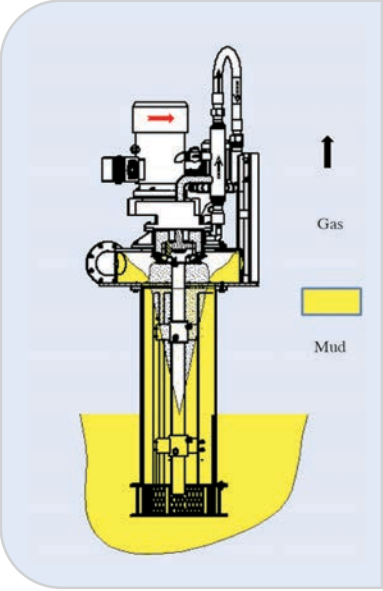
GNZCQ Series Vacuum Degassers are able to meet the needs of any applications, usually installed after the shakers. Each degasser effectively and efficiently removes gases from gas-cut mud, thus ensuring that the proper mud weight is pumped downhole. In doing so, the degassers are able to aid in the prevention of potential blowouts. Unlike the traditional vacuum degasser, GNZCQ vacuum degasser is a self-contained unit, GN Vacuum Degasser is monitored by level sensor to protect over suction of the fluids. The gas-cut mud is drawn into the degasser by a vacuum created by a regenerative vacuum without needing centrifugal pump . GN degasser can act as a big agitator for the drilling mud, which helps the treatment for desander and desilter.

4.3.2 Centrifugal Degasser

Model	GNLCQ300C
Liquid Inlet Size	20"
Liquid Outlet Size	8"
Gas Outlet Size	2"
Max Liquid Throughput	300m3/h
Max Gas Removed	30m3/h
Main Motor	22Kw
Fan Motor	2.2Kw
Weight	1093kg
Dimension	1148×1055×3430mm

Features

GNLCQ300C centrifugal degasser is a new type degasser, specialized in processing gas cut drilling fluid. Normally it is installed after shale shaker and widely used in various solids control system, and it is very important for recovering mud weight, stabilize mud viscosity performance, reduce drilling cost. Meantime it can be used as a big power blender. Its advantages are large capacity, high rate of degassing, less area required, low energy consumption, easy operation and maintenance.



Working Principle:

Via the rotating impeller, the degasser sucks the drilling fluid into the vessel. The fluids will stay at a level higher than the gas cut drilling fluid and then a cylindrical liquid layer with inverted cone shape space in the middle will be formed. Drilling fluid is discharged from discharge port along a tangent line. With the impeller rotating, bubble breaks, gas will be extracted from liquid, and finally accumulate in the cone shape space as the lower density. Pressurizing unit(similar to exhaust fan) will suck air through the narrow channel between the air distribution disk and air separation ring into the discharge cone, and then gas manifold, braided hose and pressurized device to pressuring unit, finally discharge the gas out through pressuring device with pressure.

4.3.3 Mud Gas Separator

Model	Tank Diameter	Capacity	Inlet	Outlet	Ventline	Weight	Dimension:
GNZYQ1000A	1000mm	200~280 m^3/h	4"	l0"	8"	2411kg	2265×2000×5681mm

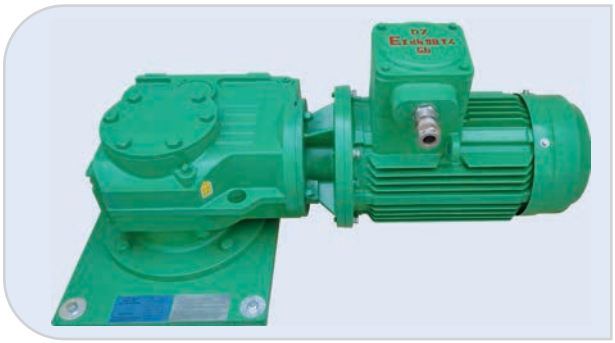
Features

GN Mud Gas Separator is designed for continued drilling in underbalanced conditions where dramatic pressure surges are normal. The GN Mud Gas Separator is manufacturing according to API and ISO Standard.

In dangerous “kick" conditions, the Mud Gas Separator allows operators to circulate the drilling fluid by removing large pockets of gas. The gas cut mud enters the flow line of the unit, where it hits a series of baffle plates. These baffle plates provide surface area for the dispersion of the gas cut mud. The mud is routed to solids control equipment for further processing while the separated gas travels to the flare line at the top of the unit to be vented at a safe distance from the rig and rig personnel.

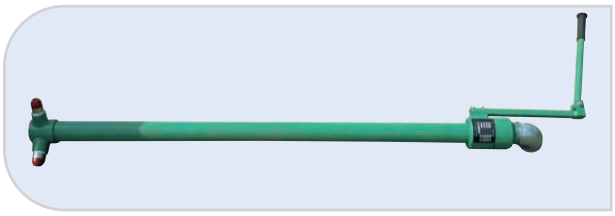
4.4 Mud Agitator, Mud Gun

Mud Agitator



Model	Motor	Speed	Impeller	Ratio	Weight	Dimension:mm
GNJBQ030G	3	60/72RPM (50Hz/60Hz)	700	25:1	160	794x440x472.5
GNJBQ055G	5.5		850		240	960x540x598
GNJBQ075G	7.5		950		260	1065×540×616
GNJBQ075GD			850+700		280	
GNJBQ110G	11		1050		360	1187x540x621
GNJBQ110GD			950+700		380	
GNJBQ150G	15		1100		387	1287×640×683
GNJBQ150GD			1050+850		415	
GNJBQ185G	18.5		1200		530	1307x640x698
GNJBQ185GD			1100+950		560	
GNJBQ220G	22		1200		602	1287x640x683
GNJBQ220GD			1100+950		630	
Remarks: Shaft and impeller will be provided by GN, but not including in the weight & dimension.						

Mud Gun



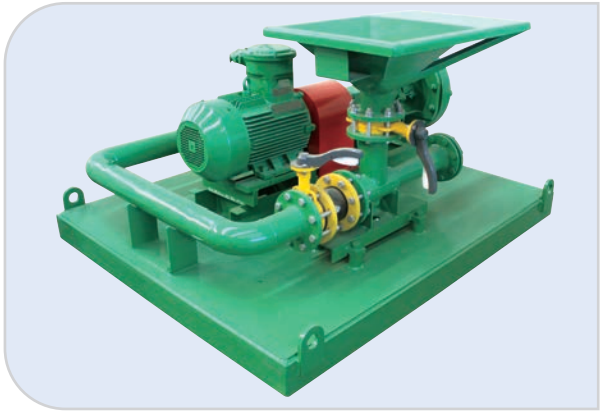
Model	GNNJQ80-3XA
Working Pressure	≤6.4 Mpa
Rotation Degree	360°
Nozzle Qty	3
Gun Diameter	3 Inch
Connection Size	G3"

4.5 Jet Mud Mixer

Mud Hopper

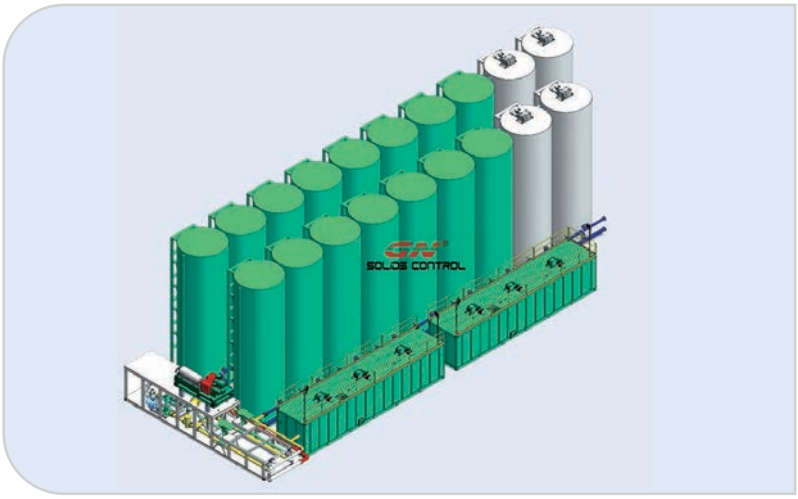
Model	Pressure	Capacity	Nozzle	Inlet	Outlet	Weight	Dimensiom
GNSLDSB	0.25~0.4Mpa	500-1500GPM (113-340m³/h)	40mm	DN150	DN150	174kg	1100×680×949mm
GNSLDMB		200-500GPM (45-113m³/h)	20mm	DN100	DN100	113kg	850×570×851mm

Jet Mud Mixer



Model	Capacity	Pressure	Motor	Inlet	Outlet	EX Standard	Weight	Dimension(mm)
GNSLH-750B	320m³/h	0.25~0.4Mpa	75kW	DN200	DN150	EXdIIBt4/ IECEX/ATEX	1785kg	2200×1840×1150
GNSLH-550B	272m³/h		55kW	DN200	DN150		1675kg	2200×1840×1100
GNSLH-450B	200m³/h		45kW	DN150	DN150		1475kg	2200×1840×1135
GNSLH-370B	150m³/h		37kW	DN150	DN150		1460kg	2200×1840×1135
GNSLH-300B	120m³/h		30kW	DN125	DN150		1380kg	2200×1840×1100
GNSLH-220B	90m³/h		22kW	DN125	DN100		1167kg	1850×1540×1000
GNSLH-185B	65m³/h		18.5kW	DN100	DN100		1147kg	1850×1540×1030
GNSLH-150B	55m³/h		15kW	DN100	DN100		970kg	1850×1540×1030
GNSLH-110B	45m³/h		11kW	DN100	DN100		950kg	1850×1540×1030
Remarks: Electrical Control Cabinet should be quoted separately, not included.								

4.6 Mud Tank



GN Solids Control designs and manufactures various types of tank including mud tank, water tank, oil tank, etc. GN Solids Control mud tanks are usually used to install solids control equipment, storage mud, mixing mud, etc. It meets utility request of the drilling solid control system, mud plant and solid-liquid separation system. According to different working conditions, mud tanks can be customized into horizontal mud tank, vertical mud tank and trailer mounted mud tank.

Part 5: Waste Management Equipment

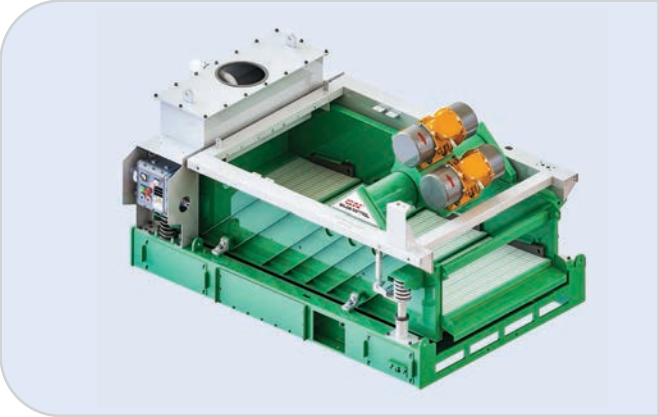
5.1 Vertical Cuttings Dryer

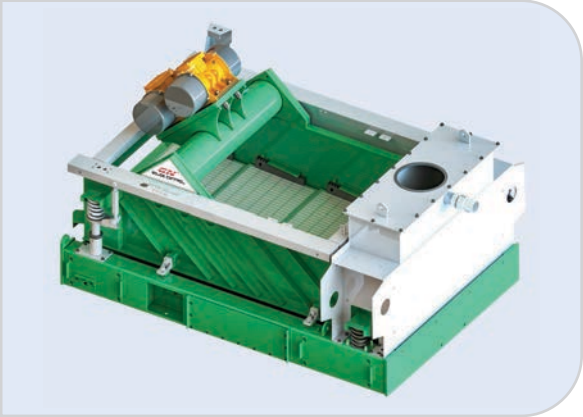
Model:	GNCD930G	GNCD930G-VFD
Treating Capacity:	30~50Tons/H	
OOC output:	OOC≤5%	
Screen Max Diameter:	930mm	
Screen Opening:	0.25mm/0.35mm/0.5mm	
Rotation Speed:	900RPM	0-900RPM
G Force	420G	0-420G
Oil Tank capacity:	48L	
Air Knife Input Pressure:	0.69Mpa	
Air Knife Input Capacity:	4.8m³/m	
Main Motor:	55Kw(75HP)-4p, Exd II BT4	
Back Motor	N/A	11KW(15HP)
Oil Pump Motor:	0.55Kw(0.75HP)-4p, Exd II BT4	
Exd Standard	ExdIIBt4/IECEX/ATEX	
Weight	4250kg	4900kg
Dimension	2685x1290x1723mm	

Features

- More Application: Working for OBM and SBM.
- High G Force: Normal 420G @ 900RPM, optional to drive by VFD with variable speed.
- FAG Brand premium bearing.
- The Flights on the rotor is hard facing to HRC 65, longer life than our competitors.
- Special high pressure air knife design to clean the basket screen automatically to avoid the screen blinding especially for high viscosity mud and water based mud.

5.2 High G Drying Shaker



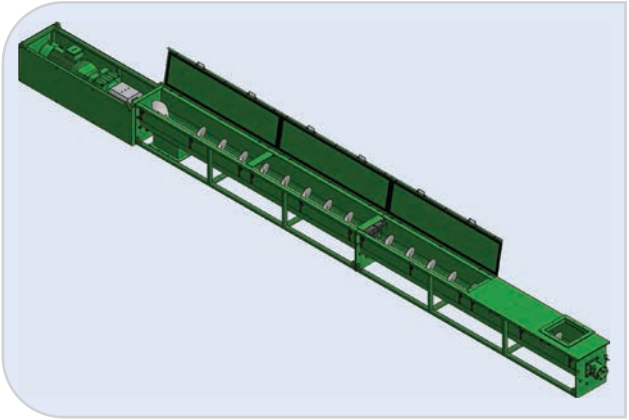


Model	GNZS594K-GZ
Vibration Model	Linear Motion
Reference Capacity	140m3/h(616GPM)
Vibration Motor	2×1.94kW
Screen Qty	4 pcs
Screen area	2.73 m2
Adjust G Force	≤8.0G
Vibration Amplitude	4.38~6.32mm
Deck Angle Range	-1~+5°(Adjustable)
Feeding Type	Top Feeder
Weir Height	1067mm
Weight (Kg)	2096
L×W×H(mm)	2962×1995×1619

Features

- The entire shaker deck undergoes heat treatment to relieve welding stress, enabling it to withstand high G force.
- The shaker screen is installed with a mechanical ratchet wrench gear for quick tightening, facilitating easy disassembly and ensuring long-lasting durability.
- The wedge blocks for tightening the screen mesh are made of nylon, providing high temperature resistance, corrosion resistance, and wear resistance.
- Vibration motor: Italian OLI brand.
- Polyurethane material is used for sealing between the shale shaker and screen, ensuring a long service life and easy replacement.
- The supporting rubber strips for the bottom frame of the vibration screen are made of stainless steel, offering strong corrosion resistance and a long service life.
- The electrical control box is made of aluminum alloy/stainless steel explosion-proof material, ensuring good sealing and strong corrosion resistance.
- The pre-tensioned shaker screen allows for convenient and quick disassembly and replacement.
- The mud outlet can be switched between bottom and side outlets, accommodating flexible installation on site.
- The angle of the shaker deck can be mechanically adjusted while working at both ends , adapting to different processing capacities.

5.3 Screw Conveyor



Model	Screw Diameter Inch/mm	Screw Length Ft/m	Capacity (Tons/Hour)	Motor Power (Kw)	Screw Speed (Rpm)
GNSC10B-24	10/250	24/7.3	15	4(5.4HP)	50~70
GNSC10B-36	10/250	36/11	15	5.5(7.5HP)	
GNSC10B-48	10/250	48/14.6	15	7.5(10HP)	
GNSC12B-24	12/315	24/7.3	20	5.5(7.5HP)	50~70
GNSC12B-36	12/315	36/11	20	7.5(10HP)	
GNSC12B-48	12/315	48/14.6	20	11(15HP)	
GNSC14B-24	14/350	24/7.3	30	7.5(10HP)	50~70
GNSC14B-36	14/350	36/11	30	11(15HP)	
GNSC14B-48	14/350	48/14.6	30	15(20HP)	
GNSC16B-24	16/400	24/7.3	45	11(15HP)	50~70
GNSC16B-36	16/400	36/11	45	15(20HP)	
GNSC16B-48	16/400	48/14.6	45	18.5(25HP)	
GNSC18B-24	18/450	24/7.3	45	15(20HP)	50~70
GNSC18B-36	18/450	36/11	45	18.5(25HP)	
GNSC18B-48	18/450	48/14.6	45	22 (30HP)	
Remarks: According to clients requirement, GN can provide customized equipment.					

Features

GN Solids utilizes a custom designed and constructed Screw Conveyor (Auger) as part of drilling waste management system. The Auger is designed with 12 feet per section which makes it a standard spare parts to interchange with each other. The anti-abrasive screw material lasts longer than our competitors. The Screw Conveyor (Auger) provides an efficient, low cost cuttings transport system for offshore and onshore drilling installations. The screw conveyor is manufactured to the highest safety standards and is fitted with protective grating or cover to prevent foreign objects for falling into the conveyor system, and to offer enhanced safety for all workers.

5.4 Inclined Plate Clarifier

Model	Max Flow	Inlet	Outlet	Sludge Outlet	Sludge Volume	Weight (KG)	Dimension(mm)
GNIPC-07B	7m³/h	4”	4”	4”	475	1460	1655x1655x1780
GNIPC-14B	14m³/h	4”	4”	4”	1025	2070	2495x1655x1780
GNIPC-21B	21m³/h	4”	4”	4”	770	2465	2465x1655x2315
GNIPC-35B	35m³/h	4”	4”	4”	1255	3320	3205x1655x2315
GNIPC-41B	41m³/h	6”	6”	4”	1580	3905	3685x1730x2315
GNIPC-55B	55m³/h	6”	6”	4”	2175	4865	4500x1730x2315
GNIPC-69B	69m³/h	8”x8”	8”	4”	3905	6555	4065x2595x2950
GNIPC-86B	86m³/h	8”x8”	8”	4”	4975	7880	4725x2595x2950
GNIPC-103B	103m³/h	8”x8”	8”	4”	2315	9070	5360x2595x2950
GNIPC-120B	120m³/h	8”x8”	8”	4”	3710	10340	6100x2595x2950
GNIPC-137B	137m³/h	12”x10”	10”	4”	3710	12295	4980x2695x4270
GNIPC-154B	154m³/h	12”x10”	10”	4”	3710	13350	5285x2695x4270
GNIPC-188B	188m³/h	12”x10”	10”	4”	3710	15740	5970x2695x4270
GNIPC-222B	222m³/h	12”x10”	10”	4”	3710	18385	6100x2695x4270
GNIPC-273B	273m³/h	12”x10”	10”	4”	3710	21390	6100x2695x4270

Features

GN Inclined Plate Clarifier (IPC) is a high performance Lamella plate for removal of settle-able solids in a variety of waste streams. The lamella plate is made of stainless steel.

GN IPC incorporates inclined plate settling surfaces pitched at a 55° angle from the horizontal with uniform plate spacing. Due to plate angle the solids slide down the plates into the sludge hopper below the plate pack. This simple, inexpensive design, combined with sludge conveyor Auger makes the GN IPC easy to install, operate and maintain.

Chemical like polymer pretreatment often improves solids removal efficiency. The use of chemical flocculants with GNIPC is based on system efficiency, application contaminant characteristics and cost.

5.5 Chemical Dosing Equipment

GNDU2000 series 20ft container chemical dosing equipment is mainly used for mixing of flocculation, coagulation or de-emulsifier. It works together with dewatering centrifuge to separate the ultra-fine solids from the mud or waste water, to get clean water for industry applications; or support the separation of waste sludge.

Chemical Dosing System	Model: GNDU-2000A
	Include 20ft container with decoration, electric control system, exhaust system, lighting system.
Three Chamber Automatic Dosing Unit **Model: GN-2000S**	Max powder adding capacity:1-6 Kg/Hr(Speed Adjustable) Tank Material: SS304 Hopper Volume:45 L Tank Capacity:2000L Output for concentration 0.1%:2000L/Hr, if aging time is 45 Min. Mud agitator: 3 sets Dosing pump: 2 sets, single pump capacity:2000L/h(adjustable) Dimension:2000x1400x1500mm Including Ex liquid level meter, Ex electromagnetic flow meter, Ex solenoid valve, relief valve, buffer, filter and pressure gauge, etc accessories.
Single tank chemical Dosing Unit **Model: GN-2000L**	Tank Material: Outer material is carbon steel, inner material is PE Dissolving Tank Volume: 2000L Dissolving Tank Dimension 1400x2200mm(Agitator included) Mud agitator: 1 set Dosing pump: 2 sets, single pump capacity:530L/h(adjustable) Attached with Magnetism rolling board level meter, relief valve, buffer, filter and pressure gauge, etc accessories.

Part 6:Transfer Pumps

6.1 Centrifugal Pump

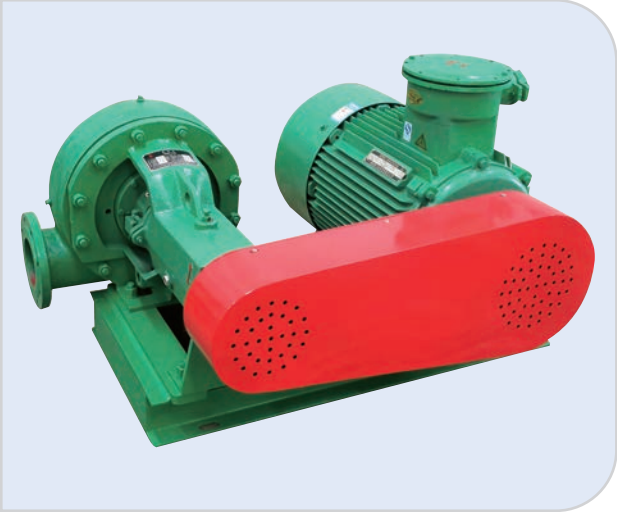
Model	Flow	Lift	Motor	Speed	Impeller
GNSB8×6C-14J	320m³/h	35m	75kW	1450RPM(50Hz)	14in
GNSB8×6C-12J				1750RPM(60Hz)	12in
GNSB8×6C-13J	272m³/h	35m	55kW	1450RPM(50Hz)	13in
GNSB8×6C-11J				1750RPM(60Hz)	11in
GNSB6×5C-13J	200m³/h	35m	45kW	1450RPM(50Hz)	13in
GNSB6×5C-10J				1750RPM(60Hz)	10in
GNSB6×5C-12J	150m³/h	30m	37kW	1450RPM(50Hz)	12in
GNSB6×5C-9.5J				1750RPM(60Hz)	9.5in
GNSB5×4C-13J	120m³/h	35m	30kW	1450RPM(50Hz)	13in
GNSB5×4C-11J				1750RPM(60Hz)	11in
GNSB5×4C-12J	90m³/h	30m	22kW	1450RPM(50Hz)	12in
GNSB5×4C-10J				1750RPM(60Hz)	10in
GNSB4×3C-13J	65m³/h	35m	18.5kW	1450RPM(50Hz)	13in
GNSB4×3C-12J				1750RPM(60Hz)	12in
GNSB4×3C-12J	55m³/h	28m	15kW	1450RPM(50Hz)	12in
GNSB4×3C-10J				1750RPM(60Hz)	10in
GNSB4×3C-11J	45m³/h	25m	11kW	1450RPM(50Hz)	11in
GNSB4×3C-9.5J				1750RPM(60Hz)	9.5in
GNSB3×2C-9J	35m³/h	35m	7.5kW	1450RPM(50Hz)	9in
GNSB3×2C-8J				1750RPM(60Hz)	8in

Remarks: Spare Parts interchangeable with Mission pump.

Features:

GN SB Series Centrifugal pump is used for transferring drilling mud. It can be used as feeding pump for desander, desilter, or used as mixing pump for Jet Mud Mixer. Also it can be used as trip pump, and supercharging pump for rig mud pump. All GN model centrifugal pumps use tungsten carbide mechanical seal, with famous brand Bearing. And spare parts interchangeable with most of the international Brand pump which helps customer to source spare parts easily. Open impeller design that lowers axial thrust loads, and make it easier for installation, repair and maintenance.

6.2 Shear Pump



Model	Flow	Lift	Motor	Speed	EX Standard	Weight	Dimension(mm)
GNJQB6X5C-550	155m^3/h	32m	55kW	1900RPM	EXdIIBt4/ IECEX/ATEX	965kg	1333x1000x931mm

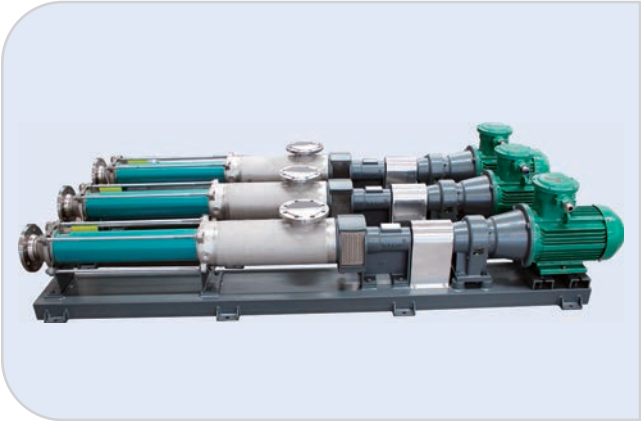
Features:

The GN shear pump reduces the cost of mixing polymers and clays while improving mud properties. Shearing the polymers eliminates fish eyes and prevents polymer chaining (long strings), which cannot pass through the shaker screens. The GN shear pump is available as a belt-driven or diesel-driven package including a hopper, mud gun, and transfer line orifice plate. A complete system with skid, tanks, and piping are also available.

GN Shear Pump impeller is specially designed to have a wider flow pass and smooth vanes, with larger flow area and smooth fluid pass, making the shear pump reach the internationally advanced level in shear pump efficiency and energy-saving, 10% higher than similar products.The shear pump has adopted a shell thicker than normal one, with rational pass and less turbulence.

GN Shear pump Impeller and shell are made of high wear resistant cast irons, with longer servicing life. The shear pump shaft has high strength that can bear certain load, reducing shafts deflection and extending seals service life;The shaft is lubricated with lubricants and lubricating grease and the oil seal is made of special structure and materials, suitable for high and low temperatures and complicated environment;Front opening structure is used for convenient installation, repair and maintenance.

6.3 Screw Pump



Model	Flow	Pressure	Motor	Max Speed	Inlet	Outlet	Ex Standard	Weight	Dimension (mm)
GNG10-040C	10m^3/h	0.3MPa	4kW	244RPM	DN80	DN80	EXdIIBt4/ IECEX/ ATEX	245kg	2245×320×550
GNG20-055C	20m^3/h	0.3MPa	5.5kW	210RPM	DN80	DN80		323kg	2450×340×562
GNG30-075C	30m^3/h	0.3MPa	7.5kW	258RPM	DN100	DN100		386kg	2761×370×600
GNG40-110C	40m^3/h	0.3MPa	11kW	252RPM	DN100	DN100		454kg	3270×370×665
GNG50-110C	50m^3/h	0.3MPa	11kW	273RPM	DN125	DN125		608kg	3790×400×782
GNG60-150C	60m^3/h	0.3MPa	15kW	225RPM	DN125	DN125		649kg	3322×550×740
GNG70-220C	70m^3/h	0.3MPa	22kW	230RPM	DN150	DN150		875kg	3740×420×785
GNG80-220C	80m^3/h	0.3MPa	22kW	283RPM	DN150	DN150		875kg	3740×420×785
GNG90-220C	90m^3/h	0.3MPa	22kW	205RPM	DN150	DN150		875kg	3740×420×785

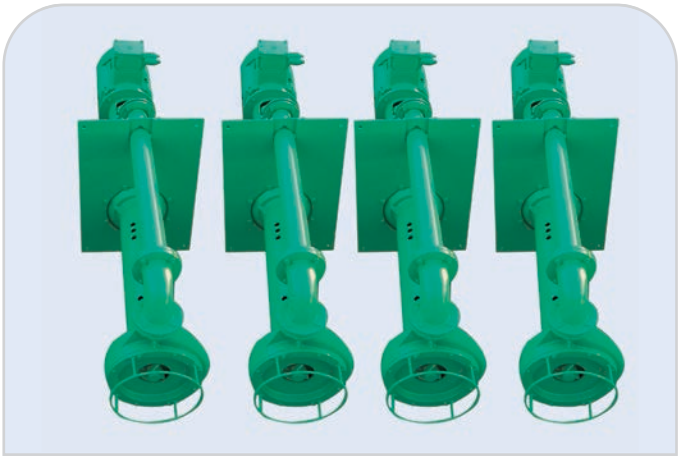
Features:

The GNG Series Positive Displacement Pump is a single screw pump .The pump is an ideal pump for feeding to decanter centrifuge without shearing or agitating the drilling mud. The main parts are screw shaft (rotor) and screw shaft bushing (stator). Because of the special geometry shape of the two parts, they form pressurize capacity separately. The fluids flow along with the shaft, inner flow speed is slow, capacity remains, pressure is steady, so it will not generate vortex and agitating. The shaft of the pump is made from Stainless steel, GNG series pump is available for option with complete stainless steel body,

It can drive by coupler, or adjust the speed by using variable speed motor, Triangle V-belt, gear box, etc. G series positive displacement pump is with less accessories, compact structure, small volume, easy maintenance, rotor and stator are wear parts of this pump, it is convenient to replace.

The stator is made of elastomeric material, so it has particular advantages than other pump to transfer the fluids of high viscosity and hard suspended particles included.

6.4 Submersible Slurry Pump



Model	Capacity (m3/h)	Height (m)	Motor Power (kw)	Motor Rotating Speed (r/min)	Outlet (Diameter)
GN50YZ20-18J	20m³/h	18m	3kW	1450RPM(50Hz) 1750RPM(60Hz)	DN50
GN50YZ40-10J	40m³/h	10m	5.5kW	1450RPM (50Hz) 1750RPM (60Hz)	DN50
GN80YZ50-20J	50m³/h	20m	7.5kW	1450RPM(50Hz) 1750RPM (60Hz)	DN80
GN80YZ80-20J	80m³/h	20m	11kW	1450RPM(50Hz) 1750RPM (60Hz)	DN80
GN100YZ100-30AJ	90m³/h	20m	18.5kW	1450RPM(50Hz) 1750RPM (60Hz)	DN100
GN100YZ100-30J	100m³/h	30m	22kW	1450RPM(50Hz) 1750RPM (60Hz)	DN100
GN100YZ100-30ZJ	120m³/h	31m	30kW	1450RPM(50Hz) 1750RPM (60Hz)	DN100
GN100YZ160-38J	160m³/h	38m	37kW	1450RPM(50Hz) 1750RPM (60Hz)	DN100
GN150YZ250-40AJ	200m³/h	30m	45kW	1450RPM(50Hz) 1750RPM (60Hz)	DN150
GN150YZ250-40BJ	250m³/h	40m	55kW	1450RPM(50Hz) 1750RPM (60Hz)	DN150
Remarks: The weight and dimension is for the standard submersible length pump: 1.3m					

Features:

GN YZ Series Submersible slurry pump is with structure of vertical single stage and single suction system overhung centrifugal pump, it is made of abrasion-resistant alloy, it can transfer medium with high concentration particle. The normal submersible length is 1.3m, customized length is available. There is no bearing and Gland Seal between impeller and pump body, so the slurry pump is maintenance-free and high temperature resistance, the slurry pump is the ideal centrifugal pump for feeding to decanter centrifuge, and feeding from mud pit for to the shale shakers on the mud system, it can also be used as feeding pump for desander and desilter.

6.5 Vacuum Pump

Waste vacuum pump, also named as solids transfer pump. With special structure design, it can be used at tough environment for solids transfer, high working performance and less maintenance. The pump can transfer material with high gravity and high density, solids content max. up to 80%.

GN Sludge Vacuum Pump Parameter

Model	GNSP-40B	GNSP-20B	GNSP-10B
Max Capacity(m^3/h)	40m^3/h	20m^3/h	10m^3/h
Inlet/Outlet Size(Inch)	4”(114mm)	4”(114mm)	3”(89mm)
Vacuum Degree	25”HG (Mercury Column)	85Kpa/25 inch HG(Mercury Column)	
Max Suction Distance(m)	50m		
Max Discharge Distance(m)	1000m	500m	
Max Solids Content	80%		
Max Solids Size(mm)	75mm	50mm	
Pressure Request	550Kpa~785Kpa (80~114PSI)	550Kpa~690Kpa (80~100PSI)	
Air Demand	17m^3/min (600CFM)	8m^3/min(280CFM)	4.3 m^3/min(150CFM)
Weight(kg)	892kg	386kg	320kg
Dimension: L×W×H(mm)	1690×1468×1983mm	1421×900×1448mm	1283×800×1370mm

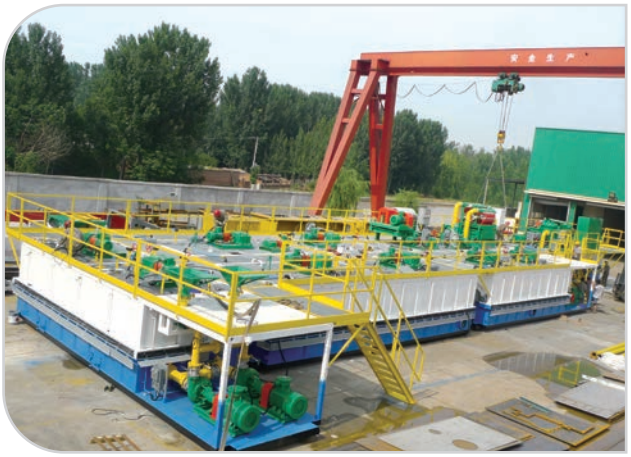
Material transfer applications

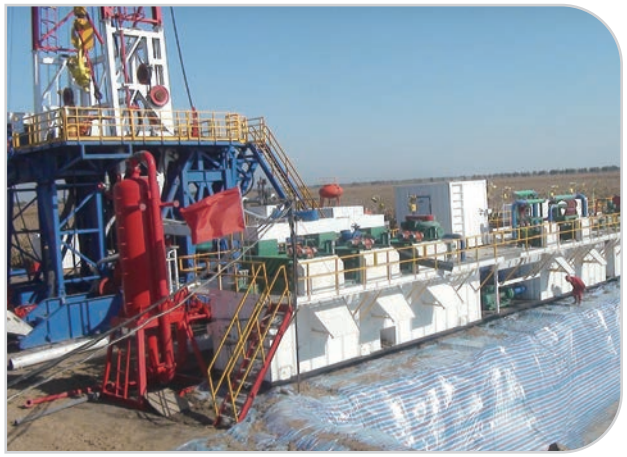
1) Waste mud and waste solids discharged from shale shaker, mud cleaner and centrifuge transfer
2) Drilling mud transfer
3) Waste pit cleaning
4) Hazardous waste recovery
5) Oil sludge, tank bottoms residual removal and transfer
6) Barge holdings and vessel bottom clean out
7) Bulk tank and silo transfer of material
8) Sand; Course, fine, conventional and frac sand
9) Diatomaceous earth
10) Animal waste etc.

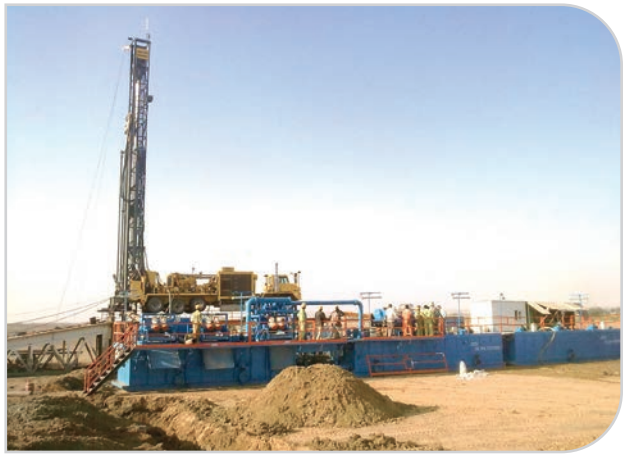
Part 7: Industry Application

7.1 Oil & Gas Drilling Solids Control System

GN Solids Control manufactures all solids control equipment. Mud tanks are also designed and manufactured to compose whole mud systems to meet the demands of drilling rigs from 250HP to 3000HP. As a solids control manufacturer owns USA API and ISO certifications, GN Solids Control also certified by Europe CE for exporting to developed countries.



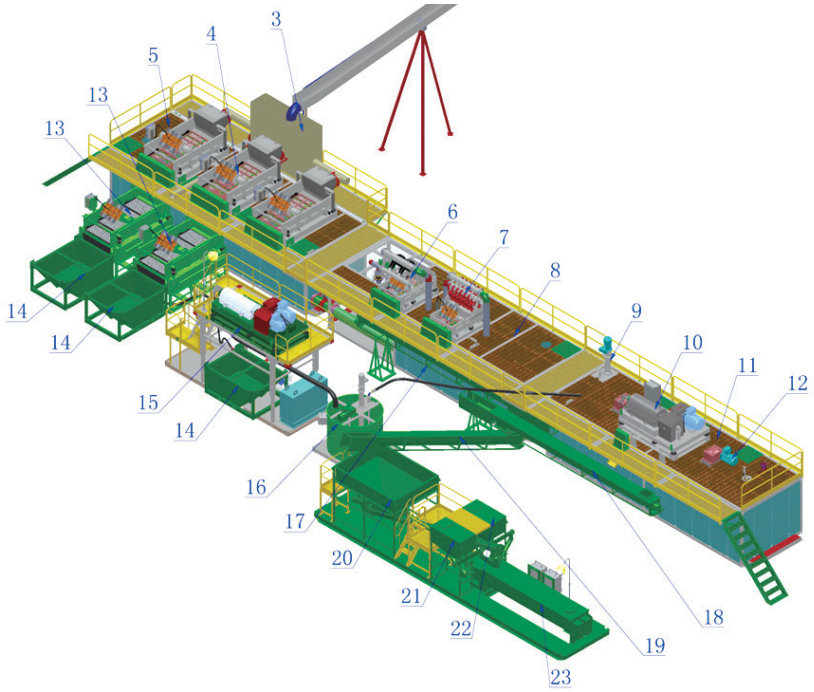




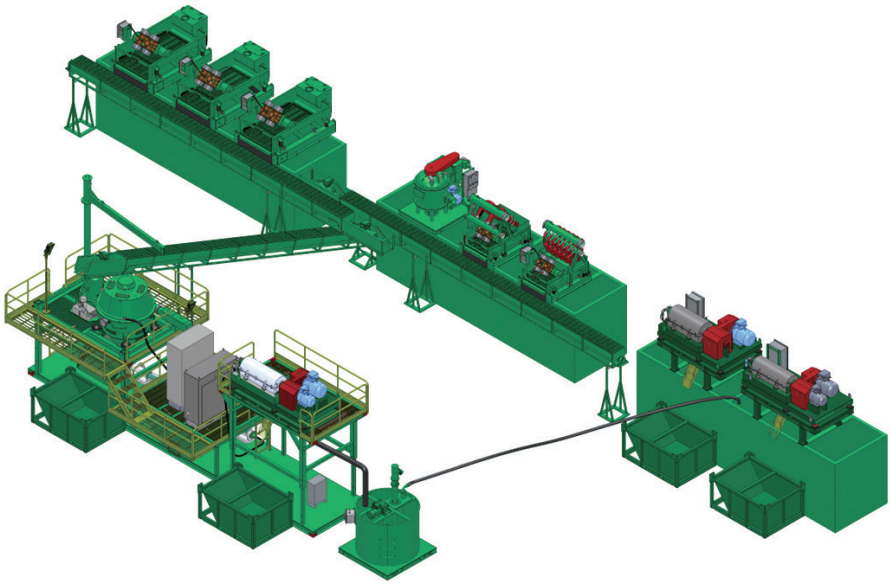
7.2 Drilling Waste Management System

GN Solids Control provides turnkey solutions for closed loop drilling mud and drilling waste management system. Key equipment includes Hi-G Shaker, Cuttings Dryer, Decanter Centrifuge, and Flocculating Dosing Unit. They can be used to treat WBM, OBM and SBM.

Typical WBM Treating System Layout



Typical OBM Treating System Layout



Drilling Waste Management Projects

European Treating Plant Project

Shell (Sichuan) Project

Siberia Russia Project

Africa OBM Treating Project

Inner Mongolia WBM Treating Project

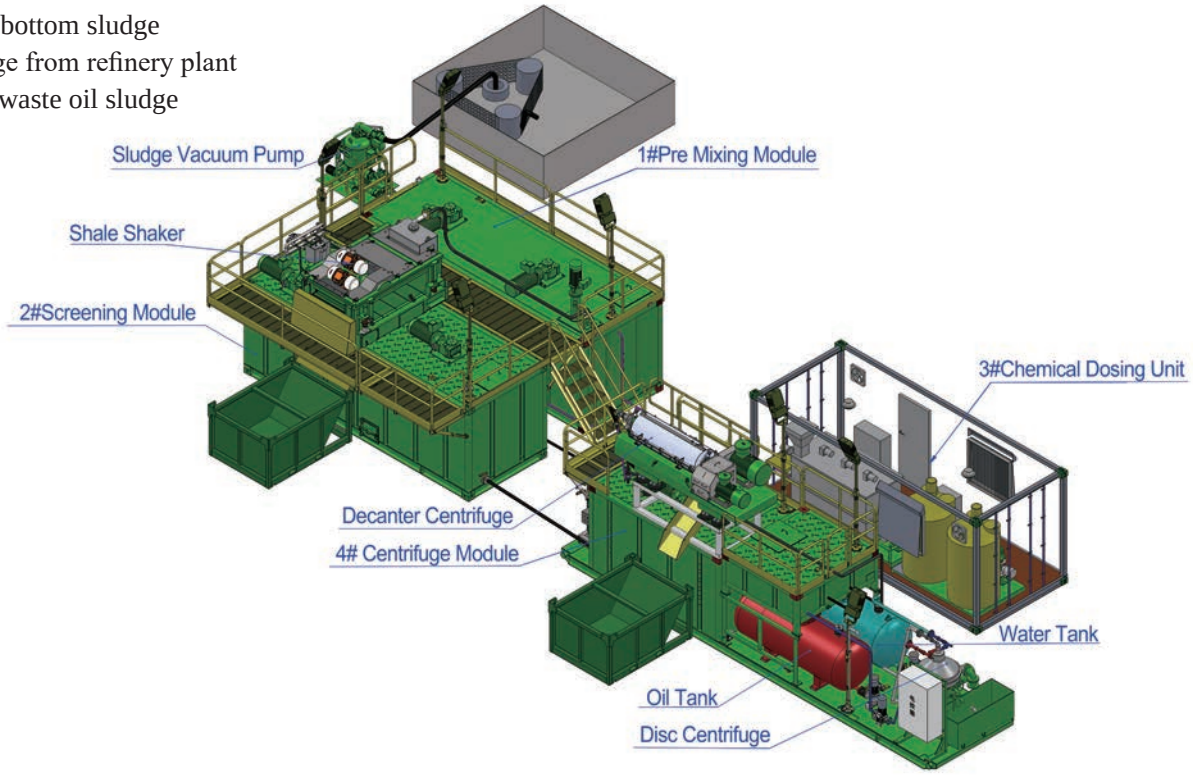
Argentina WBM Treating Project

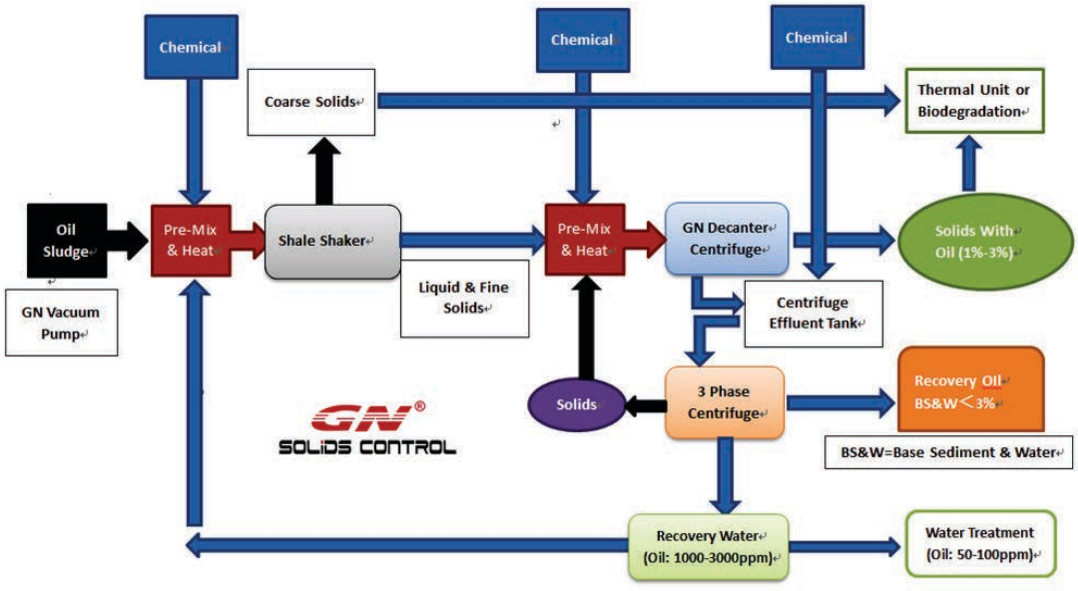
7.3 Oil Sludge Treatment

GN Oil Sludge Treatment System uses chemicals to wash the oil sludge when heat to 60-70 C degree. After washing, the slurry is pumped to GN equipment to separate into oil, water and solids. The recycled water can be reused in the washing process, and the oil is clean enough to sell to the refinery company, the discharged solids with oil can be sent to bio-degradation or thermal unit for final disposal.

Typical Oily Sludge source:

- Oil tank bottom sludge
- Oil sludge from refinery plant
- Drilling waste oil sludge





7.4 Trenchless/HDD Mud Recycling System

GN is committed to research and develop trenchless mud recycling system, mud mixing system, decanter centrifuge etc. As an international famous brand, GN products have been exported to over 70 countries and regions, and GN has set up branches & service stations in Houston, USA and Brisbana, Australia along with global partners.

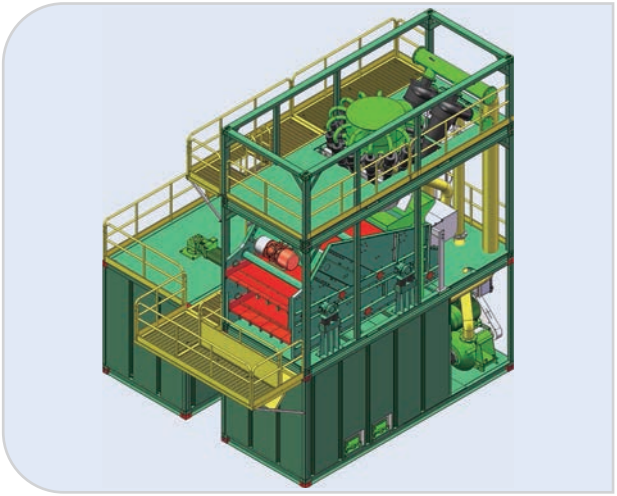
Type	High Configuration			
System Function	Mud Recovery, Mud Mixing, Mud Storage			
Model No.	GNMS-200B	GNMS-400B	GNMS-600B	GNMS-800B
Capacity	50 m³/h	100m³/h	150m³/h	200m³/h
Separation Grades	2	2	2	3
Separation Size	20 micron	20 microns	20 micron	20 micron
System Volume	5 m³	8.5 m³	15 m³	19.5 m³

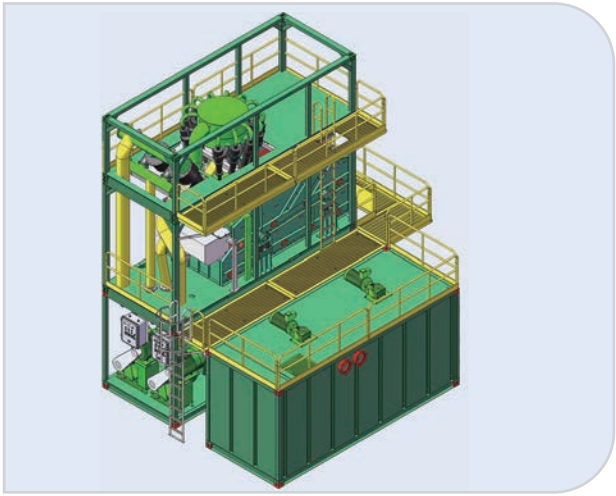
Advantages of GN Recycling Equipment

- Preferred supplier of well-known rig manufacturers and contractors.
- Leading capabilities on both hardware and software, welcome for facility site visiting.
- Certified with US API, Europe CE and Russia CU-TR standard.
- High level material selected: stainless steel shaker deck bottom frame, Italy OLI vibration motor and Siemens electric components.
- Independent research and manufacturing on 4-Stage cleaning equipment: Shale Shaker, Desander, Desilter and Decanter Centrifuge.

7.5 TBM & Bored Piling Mud Cleaning

GN Solids Control is providing the assembled-type mud cleaning system for piling and TBM projects. The production line includes models with capacity of 120m³/h, 240m³/h, 360m³/h, 500m³/h, 1000m³/h, 1500m³/h, 2000m³/h, 3000m³/h. In addition, GN also provides big bowl decanter centrifuge and chemical dosing system for treating the mud to dischargeable water.





Bored Pile Desander

Configuration Type	Economic Configuration		
System Function	Mud Cleaning/Recycling		
Model	GNMS-200D	GNMS-500D	GNMS-1000D
Capacity	50m³/h	120m³/h	240m³/h
Cleaning Stage	2 Stages	2 Stages	2 Stages
Treating Precision	20μm	40μm	40μm
System Volume	1m³	1~5m³	1.5m³

7.6 Industrial Solids & Liquid Separation System

As a professional manufacturer of solids and liquid separation equipment, GN Solids Control provides many kinds of separation equipment includes vibration screen equipment, horizontal decanter centrifuge, hydro cyclone separation equipment, gravity settlement separation equipment, and 3-Phase separation equipment. According to different separation request, GN is able to provide customized solution to maximize the treating result and reduce the cost for customers' biggest profit.

Mining & Core Drilling Mud Solids and Liquid Separation

Water Well Drilling Mud Recycling

Geothermal Well Drilling Mud Cleaning

Mining Slurry Solids and Liquid Separation

Dredging Slurry Solids and Liquid Separation

Hydrovac Slurry Treatment System

Equipment Separation Cut Point

Particle Size (Microns)	0-2	2-5	5-20	20-40	40-60	60-1000	1000-2000	>2000
Solids Control Stages	4th Stage			3rd Stage	2nd Stage	1st Stage		
Shale Shaker	No				API 270/325	≤API 230	API 10/20	≤API 10
Desander	No				Yes			No
Desilter	No			Yes			No	
Decanter Centrifuge	Flocculant	High Speed	Middle Speed	Middle Speed	Low Speed			No
Inclined Plate Clarifier	Flocculant	Flocculant	Yes					
Vertical Cuttings Dryer	No					Solids Should be above 250 microns		
Centrifugal Pump	Yes						No	

Remarks: The above table is for reference only.

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