



www.nsiequipment.com
www.nsiequipments.com



Centrifuges



About Us

NSI Equipments Pvt. Ltd. is a fast emerging company specializing in the design and manufacture of **CENTRIFUGES** for industrial use for the past four decades. Over the years NSIE has consolidated its experience in its field and has developed its expertise. Our endeavor is to supply well engineered product to the specific need of our customers. Customer satisfaction is our paramount importance, which is the foundation to our business policy. We have excellent reputation for the quality of our product range as always endeavoring to advance technology, appropriate fabrication processes at all stages of manufacture.

This has been possible with the active participation of our management, staff and workers. Everyone has contributed in his own manner and ultimately it is teamwork that has won.

Vision

NSI Equipments Pvt. Ltd. vision is to excel and provide technology that is the most advanced in Asia and at par with the international league. We believe every satisfied customer is an asset and we target to satisfy each and every customer walking in through our door. We envisage achieving these ambitious growth plans as Green Progress meaning attaining the goals in symbiosis with environment and it's an integral part of our corporate vision.

Our credo is:-

Customer orientation to develop products (machines and auxiliaries) that seek to meet customer aspirations. An organization reputation that instills confidence in the customer to seek pre-purchase counseling, validation through trials and service needs that may arise.

Mission

NSI Equipments Pvt. Ltd. mission is to consolidate at the forefront of our Product Lines in Asia. We believe everything is possible with right efforts and dedication. We are confident that we will achieve our goal by:

NSI Equipments Pvt. Ltd. mission is to consolidate at the forefront of our Product Lines in Asia. We believe everything is possible with right efforts and dedication. We are confident that we will achieve our goal by:

Quality Policy

“To be passive and proactive in providing quality product and solutions to clients by continuously striving to exceed their expectations”

Our commitment to quality is unflinching. Our desire for growth is deep rooted and our capacity for details is amazing. We adhere to national and international standards across all operations: from sourcing the raw materials & till it transfers to the finished machinery and finally successful commissioning. All our suppliers operate quality management standards as dictated by specific markets. This measure undoubtedly reflects our royalty to quality assurance and our determination to provided the products and service our customers demand.

What set us apart is the depth of our commitment and the high level of our concern to deliver quality products, efficient services and total solutions.

And this is where our quality improvement comes from.

At NSIE, **quality is a way of life.**

Customer Satisfaction

Customer satisfaction is the foremost concern in our work culture. That is why a few of our products are very popular among users. We have met stringent delivery schedules and accepted challenges of precision manufacturing. We have extended our services to small scale and large-scale customers equally, and bagged repeat orders.

Principle

A centrifuge is a unique energy efficient machine and works by spinning the vessel containing the material to be separated at high speed through centrifugal force as solids and liquid. It is widely used in pharmaceutical and chemical industries for solids & liquids separation. The centrifuge spins at high speed and due to centrifugal force the liquid is forced out through filter media and the solids are retained within the filter media inside the basket. These solids are discharged by various discharging methods, like manual discharge, bag lifting type, through pneumatic / hydraulic operated scrapper.

Types/models Of Centrifuges

- PILOT PLANT CENTRIFUGE
- BOTTOM DRIVEN TOP DISCHARGE TYPE
- BAG LIFTING TYPE
- BOTTOM DISCHARGE TYPE WITH / WITHOUT SCRAPPER
- TOP DRIVEN BOTTOM DISCHARGE TYPE

Features Of Bottom Driven Centrifuges

- PILOT PLANT CENTRIFUGE
- BOTTOM DRIVEN TOP DISCHARGE TYPE
- BAG LIFTING TYPE
- BOTTOM DISCHARGE TYPE WITH / WITHOUT SCRAPPER
- TOP DRIVEN BOTTOM DISCHARGE TYPE



3-Point
Pendulum Suspension

Suspension & Mounting

- Three Point Pendulum Suspension
- Four Point Mounting With Inertia Plate & Anti Vibration Mounts

In 3-Point Suspension, the vibration of the Centrifuge is isolated with the help of springs & pendulum bolt arrangement.

In 4-Point, the vibration of the centrifuge is isolated with the help of heavy inertia plate & anti-vibration mounts.

Advantage Of 4 Point Mounting

- Level of vibration much lower & operates very smoothly.
- Can be easily mounted on upper floor.
- Can be easily relocated.
- Almost negligible maintenance cost of suspension/mounting system.
- The working area is free from abstracts and a clean area can be maintained.
- Additional weight of motor is taken care by additional supporting points.
- The vibration dampers are maintenance free.



4-Point
Mounting with Inertia Plate & Anti Vibration Mounts

Pilot Plant Centrifuges



Pilot Plant Centrifuge is portable, self-contained and suitable for small batch processing. The centrifuge can be mounted on a movable trolley for shifting purpose and during operation; the trolley is leveled by suitable locking screw pads provided at four ends. The portability allows it to be easily transported to the processing area when needed and stored out of the way when not in use.

Features :

- Ideal for Small Scale Processing
- Well suited to Multiple Product Use
- Variable Speed operation for Maximum Flexibility
- Accurate Scale-up to Industrial Equipment
- Skid or Cart-Mounted Installation for Easy Portability
- Available in stainless steel construction.
- cGMP Construction optional
- Volume under lip - 10 Ltrs.

Manual Top Discharge Centrifuges



It is a versatile and basic model widely used in industries, sturdy construction, provide rapid acceleration, easy to handle. Solid material is scooped and removed manually from the basket.

Features :

- Manual removal of solids in total protection of crystal structure.
- Simple operation.
- Very low solids loss in filtration.

Material Of Construction :

Stainless Steel, Carbon Steel, Rubber lined, Halar (ECTFE) & Teflon (PFA) lined.

Standard Data :

- Available size- Basket diameter - 18"(457 mm) , 24"(610 mm), 36"(915 mm), 48"(1220 mm) & 60"(1525 mm)
- Volume under lip, depend on basket size - 25 to 500 Ltrs.
- Centrifugal Force - "G" Value , depend on basket size & speed - 545 to 665
- Basket Speed, depends on basket size - 700 to 1400 rpm.
- Filtration Area, depends on basket size - 0.6 to 2.4 M²

Bag Lifting Top Discharge Centrifuges



Bag lifting type is an improvement on the basic manual top discharge centrifuge. The dynamically balanced basket shell is tapered for easy removal of filter bag + solids. The filter bag is fitted with removable basket top with a bag holding ring. The ring holds the filter bag firmly while filtering and lifting, also prevents the bag from tearing and thus preventing the solid losses.

After centrifuging process the solids are unloaded by lifting the basket top along with the filter bag and solids, either manually or through a motorized skip hoist or through a hydraulic bag lift device.

Advantages :

- Easy & fast unloading.
- Complete discharge of solids without residual heel.
- Original crystalline structure intact since scrapping / attrition does not take place.
- Useful for hard, crystalline and amorphous cake.
- Reduced human contact.
- Reduction in batch time & hence increased production.
- Easy inspection & cleaning of basket and monitor cage due to removal of basket ring and fully opening monitor cover cage.

Bag Lifting Arrangement / Bag Lifting Device



In a Bag Lifting type Centrifuge a chain pulley block/hoist is required to lift the bag along with solids out of the centrifuge. For a clean room application a specially designed hydraulic lifting device is used for lifting the basket top with filter bag along with solids after filtration. This arrangement consists of a central pillar with hydraulic ram movement inside the pillar attached to the lifting arm. These ram aids the movement of arm up and down with hydraulic power pack controlled through a control panel. After filtration the basket top cover with filter bag and solids are hooked to the arm of the bag lifting arrangement to lift the bag vertically upwards and to turn around through its pillar centre pivot point, mounted on bearings and the solids are unloaded. The system is also available conforming to cGMP standards.

Bottom Discharge Centrifuges



The process of filtration is similar to other type of centrifuges, the difference being in the method of unloading the solids. In this type of centrifuge the centrifuged solids are discharged from the bottom of the basket. The solids are discharged through port openings in the basket bottom and bottom base/inertia plate.

The centrifuged solids are scrapped by means of a scrapper arrangement operated either (a) manually, (b) pneumatically or (c) through hydraulic cylinder.

The drive motor is controlled by a variable AC inverter drive to vary the basket speed with built in dynamic braking system. The centrifuge is driven at 3 speeds i.e. the feed speed, centrifuging speed and scrapping speed (around 60 rpm).

The AC drive is incorporated with microcomputer and has facility to interface with Programmable Logic Controller (PLC) for complete automation.



Advantages :

- Easy scrapping of cake through scrapper with quick cake discharge without manual contact.
- Less manual labour and cake handling.
- The centrifuge can be optional under totally vapour tight condition during scrapping.
- The solids discharge at the bottom and its handling can be done easily for subsequent processing or can be transferred with the help of conveyor or trolley.

Optional Accessories :

- Zero speed interlock
- Charge regulator
- Vibration Tripper
- Nitrogen Purging Control system
- Vibration monitoring system
- Residual heel removal system
- Cleaning in place (CIP)
- Leak Test as per DIN 24 400
- Cake sensor
- Automation

Top Driven Bottom Discharge Centrifuges



The centrifuge is a single point suspension system, having central spindle suspended at top in the bearing housing. The centrifuge basket is mounted over the central spindle. In this type of centrifuge the material is top loaded and discharged from bottom through the pockets provided in the centre of the basket. The drive is through fluid coupling or mechanical clutch pulley arrangement. The centrifuge is mounted in a single joist frame with working platform.

A release valve is provided inside the basket which covers the discharge pockets during the operation of the centrifuge. After centrifuging the product, the solids formed inside the basket shell are scrapped manually and discharged through the pockets after lifting the release valve. The valve is operated either manually or through pneumatic/hydraulic cylinders.

Suspension / Mounting :

The centrifuge is a single point suspension system where the basket is suspended through a central spindle top in the bearing housing. The centrifuge is mounted in a single joist frame and is supplied with the working platform attached with base frame for easy operation.

Basket :

The basket is suspended through a central spindle top in the bearing housing. The basket shell is adequately thick to withstand the load caused by the centrifugal force developed by the charge. It is perforated and consists of ample holes for speedy retraction of water/solvent. The centrifuged product is discharged through the pockets provided at the bottom of the basket after lifting the release valve.

Working Platform:

The centrifuge is supplied with working platform attached with the base frame for easy operation for the Model : NSI-36 TD & NSI-48 TD.

Drive & Transmission

- Mechanical Clutch Pulley
- Variable Frequency Drive
- Fluid Coupling

OPTIONAL FEATURES/ACCESSORIES FOR BOTTOM DRIVEN CENTRIFUGES

- **Nitrogen Blanketing** - Nitrogen blanketing system can be provided to maintain the pressure of the centrifuge between 0.02 & 0.03 bar. Pipe lines are provided for the Nitrogen purging for the Centrifuge body and for blanketing the bearing housing.
- **Residual Heel (cake) Removal System** - Special nozzles provided to spray high pressure nitrogen, air or water to dislodge the residual cake.
- **Cleaning In Place (cip)** - Special nozzles are provided at strategic locations on the outer casing and bottom, when shut water is sprayed through these nozzles to reach out most of the inside of the centrifuge for effective cleaning.
- **Leak Test As Per Din 24 400** - The Centrifuge can be manufactured for leak tighten at 0.02 to 0.04 bar.
- **Cake Sensor** - Special nozzles are provided at strategic locations on the outer casing and bottom, when shut water is sprayed through these nozzles to reach out most of the inside of the centrifuge for effective cleaning.
- **Speed Indication With Zero Speed Switch** -
 - The speed indicator displays the actual speed of the basket (rpm). It also positively locks the lid and prevents it from being opened above a pre-determined safe speed.

TECHNICAL SPECIFICATIONS FOR BOTTOM DRIVEN CENTRIFUGE MACHINES

MODEL	Unit	NSI-14 Pilot	NSI-24	NSI-36	NSI-48	NSI-60
Basket Diameter	mm	355 (14")	610 (24")	915 (36")	1220 (48")	1525 (60")
Basket Height	mm	178 (7")	305 (12")	457 (18")	510 (20")	600 (24")
Working Capacity Under Lip	Ltrs.	10	45	165	300	500
Basket Speed (max.)	rpm	1600	1400	1000	800	650
Centrifugal Force	G	510	665	511	436	359
Filtration Area	M ²	0.2	0.60	1.30	1.92	2.40
Motor Power	hp	2	5	7.5/10	15	20
OVER ALL DIMENSION OF THE MACHINE						
Length on Motor Side (appx.)	mm	1000	1500	1900	2100	2400
Width (appx.)	mm	800	1050	1400	1760	1750
Height (appx.)	mm	900	1000	1200	1185	2000

TECHNICAL SPECIFICATIONS FOR TOP DRIVEN CENTRIFUGE MACHINES

MODEL	Unit	NSI-14 Pilot	NSI-24	NSI-36	NSI-48
Basket Diameter	mm	355 (14")	610 (24")	915 (36")	1220 (48")
Basket Height	mm	178 (7")	305 (12")	457 (18")	510 (20")
Working Capacity Under Lip	Ltrs.	10	45	165	300
Basket Speed (max.)	rpm	1600	1400	1000	800
Centrifugal Force	G	510	665	511	436
Filtration Area	M ²	0.2	0.60	1.30	1.92
Motor Power	hp	2	5	7.5/10	15
OVER ALL DIMENSION OF THE MACHINE					
Length on Motor Side (appx.)	mm	1000	1500	1900	2100
Width (appx.)	mm	800	1050	1400	1760
Height (appx.)	mm	900	1000	1200	1185

Note :

1. Values indicated are approximate and may vary on actual machine.
2. Centrifugal force relates to the basket diameter and the maximum speed.
3. NSIE reserve the right to alter the size and design features.

Photo Gallery





NSI EQUIPMENTS PVT. LTD.

LIST OF EQUIPMENTS MANUFACTURED BY US

- CENTRIFUGES
- REACTION VESSELS
- ROTARY VACUUM DRYERS
- ROTARY DRYERS
- ROTARY DRUM DRYER
- SPRAY DRYER
- SPIN FLASH DRYERS
- AGITATED NUTSCHE FILTER & DRYER
- RIBBON BLENDERS
- ROTARY FLAKER
- BALL MILLS
- AIR CLASSIFYING MILLS (ACM)
- JET MILLS
- ROTARY AUTOCLAVE
- EVAPORATOR
- CONDENSER
- BUCKET ELEVATOR
- SCREW CONVEYOR
- BELT CONVEYOR
- FLUE GAS DESULPHITER

Contact Us



NSI EQUIPMENTS PVT. LTD.

Contact Person :

Lokesh Varshney (Director)

Address : Opposite Block Development Office,
Delhi Road, Meerut - 250002, Uttar Pradesh, India

Mobile :

+(91) - 9897700681

+(91) - 8279636108

Phone :

+(91) - (121) - 4030530

+(91) - (121) - 2519225

+(91) - (121) - 2521154

Email :

info@nsiequipment.com

lokeshvarshney2012@gmail.com

Website :

www.nsiequipment.com

www.nsiequipments.com

Southern Regional Office :

Address : 734. Mount Road,
Chennai - 600 006

E-mail :

kannan@nsiequipment.com