

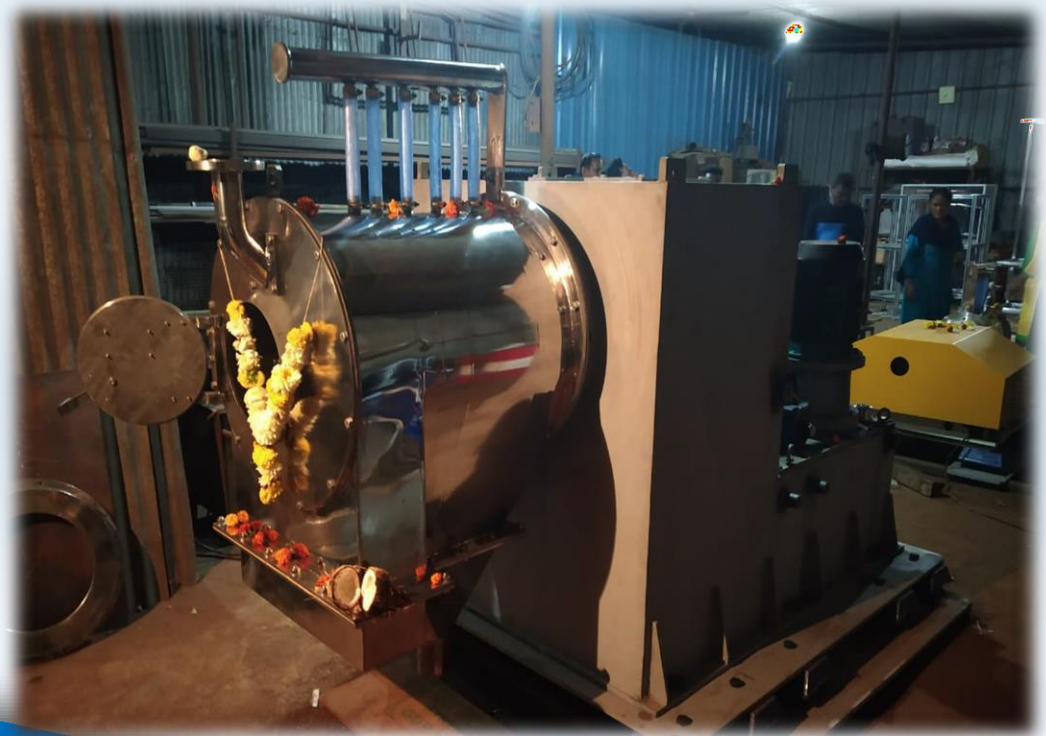


ATTAQUANT

Simplifying Technologies

ISO 9001 : 2015 CERTIFIED

CENTRIFUGE



Process Equipment Design And Development
With Manufacturing. Installation And
Commissioning.
Turnkey Projects.



www.attaquant.in



VISION

We will be the most valued solutions provider in terms of process development and design to our customers

MISSION

To become leading company in designing and manufacturing of equipment, providing services and becoming one stop reliable hub of technical resources for providing complete solution to the requirements of the industry.

To focus on meeting or exceeding customer expectation in terms of product quality and on time delivery

WHY ATTAQUANT?

- Experienced Staff
- Cutthroat pricing
- Client friendly policies
- Quality packaging
- Timely delivery
- Wide distribution reach
- Huge infrastructure
- Quality Service after Sale
- Technically feasible solutions



INTRODUCTION

"Attaquant Enterprises Pvt. Ltd.", is a company with the right expertise who have many years of relevant experience in Process Engineering. **Attaquant** is a disciplined, data-driven company who has a right approach and methodology for eliminating defects in any process – from design to manufacturing and from product to good service.

We go out of traditional way not only to offer comprehensive solutions for all your Process; but to also provide you with the information and resources you need to make refined decisions about which solutions are best for you, and your project. We have started doing flawless Engineering in designing & manufacturing of all equipment's required in Chemical, Solvent recovery, Paint industry, Water & Waste water management, Pharmaceutical Industries and in Oil & Gas. We ventured into process engineering market and started offering Energy Saving Solution to various process industries in National & International market.

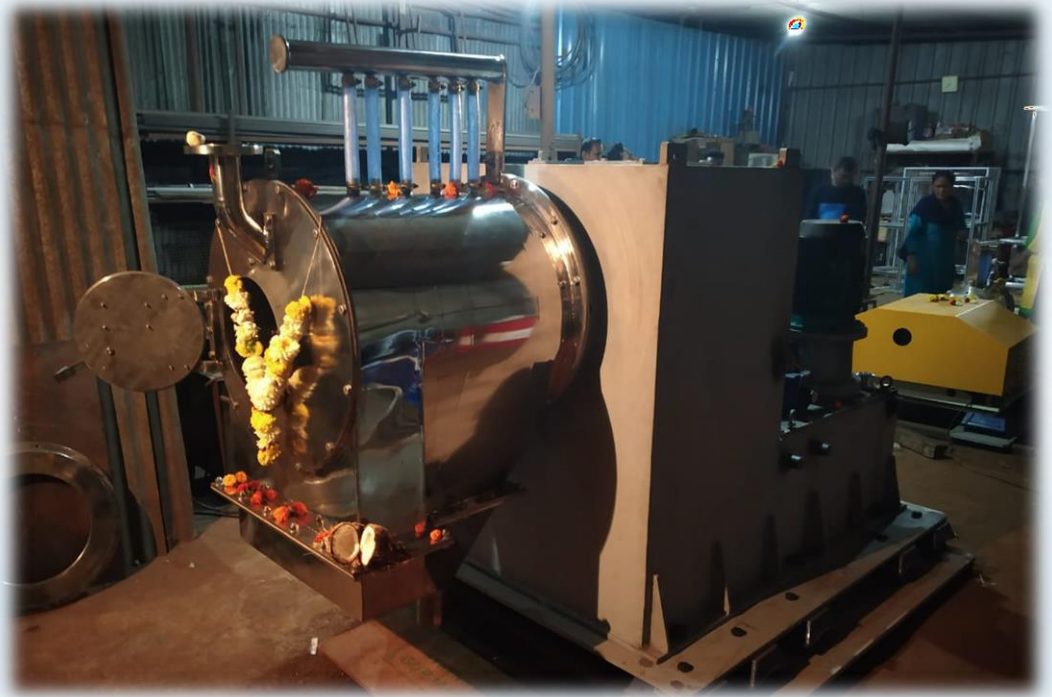
We are one of the leading manufacturers, traders and exporters of a wide range of the premium quality Process plant Equipment. Our product range includes Plate Fin Heat Exchanger Set Up, Static Mixer, Demister pads / Mist eliminators, Low pressure vessels, Distillation column trays and related internals and Hot Water System we offer a wide range of products. For manufacturing the offered range as per the industry set norms and regulations, our professionals make use of latest tools and machinery. Their current stability, strong construction, optimum functionality, low maintenance and high performance, makes our products highly demanded in the market of process industries of all sections.

The company now introduces eco-friendly pre-fabricated insulation panel systems in a range of profiles, thicknesses, and finishes. The speciality of these panels is that, they are perfect for the speedy creation of cold stores of any size at the site due to their precise interlocking design and great insulation properties, and are also eco-friendly both in their material and in their manufacturing process itself. These new eco-friendly panel solutions from Attaquant can be used to create cold storages of any size, from small walk-ins to very large cold rooms.

Large production capacity has helped us in managing the bulk projects in the most efficient manner. To avoid any damage while transportation, we pack the offered range with tamper-proof packaging before dispatch. Timely delivery of the offered range of products is assured, due to our extensive distribution network.



INDUSTRIAL CENTRIFUGE



AEPL is an engineering company which specialises in the design, manufacturing and supply types of Centrifuges to industries like chemical and pharma for their many applications. We offer customised centrifuges according to requirements in both GMP and Non-GMP model.

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. 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 OF ROTOR DESIGN:

- ✓ Fixed angle centrifuges are designed to hold the sample containers at a constant angle relative to the central axis.
- ✓ Swinging head centrifuges, in contrast to fixed- angle centrifuges, have a hinge where the sample containers are attached to the central rotor. This allows all the samples to swing outwards as the centrifuge is spun.
- ✓ Continuous tubular centrifuges do not have individual sample vessels and are used for high volume applications.



BENEFITS

- ✓ Level of vibration is much lower & operates very smoothly.
- ✓ Can be mounted on upper floor and can be easily relocated.
- ✓ Almost negligible maintenance cost.
- ✓ Working area is free from abstracts and a clean area can be maintained.

PRODUCT RANGE

Pilot plant centrifuge

- ✓ Pusher Type Centrifuge
- ✓ Bottom driven top discharge type
- ✓ Bag lifting type
- ✓ Bottom discharge type with / without scrapper
- ✓ Top driven bottom discharge type

MATERIAL OF CONSTRUCTION

- ✓ Carbon Steel, Stainless Steel, Hastelloy, Rubber Lined.
- ✓ Fluoropolymer Coatings like PVDF (ETFE), Teflon (PFA) etc.
- ✓ Lining / Coating can be provided on the contact parts as well as on the exterior body for prevention from spillage and corrosive atmosphere.



CENTRIFUGE PRODUCT RANGE

PUSHER CENTRIFUGE

Solids collected on the screen and feed liquors drain through. The pusher plate rotates with the basket and reciprocates.

On the forward stroke, the plate pushes solids along the screen, Consolidating the solids into a uniform cake.

On the reverse stroke, fresh screen is exposed and more slurry is deposited. Cake dries as it moves along the length of the screen and wash liquor May be applied to remove impurities.

Cake is pushed off the discharge end of the screen and directed to the Collection chute.

Applications

ABS, Ammonium Chloride, Ammonium Sulphate, borax, Common Salt, Cellulose acetate, Ferrous Sulphate, Dichlorobenzene, Hydroquinone, Hexamine, Nickel Sulphate, Lithium compound, Nitrocellulose, Potassium Carbonate, Potassium Chloride, Oxalic acid, Potassium Carbonate, Sodium Chloride, Sodium bicarbonate, Sodium Carbonate, Sodium Chlorate, Sodium Cyanide, Urea, and in general ANY Crystalline Inorganic salt.





FEATURES

- ✓ Process: Continuous
- ✓ Solid content: >25% by wt.
- ✓ Average particle size: 80-2000µm
- ✓ Solid throughput: 400 to 25,000kg/hr
- ✓ Solids recovery: >98%
- ✓ MOC: Stainless steel, Special materials

OPERATIONAL REQUIREMENTS

- ✓ Product should be crystalline
- ✓ Minimum particle size: 80 µm
- ✓ Maximum particle size: About 2000 µm
- ✓ Feed requirement: High solid content & uniform slurry concentration

MAIN COMPONENTS & SPARES

- ✓ Main Shaft & Pusher Shaft
- ✓ Basket-1st& 2nd Stage
- ✓ Sieves Segments or Screen
- ✓ Pusher Hub & Pusher Plate
- ✓ Front & Rear Bushes
- ✓ Excluder Seals



TECHNICAL SPECIFICATIONS

SPECIFICATION	ATQT1	ATQT2	ATQT3	ATQT4	ATQT5
BASKET DIA MM	140/180	180/230	230/300	290/360	410/500
PUSHER STROKE MM	34	35	50	50	50
MAX. SPEED RPM	3000	3000	3000	3000	2500
MECHNISUM	MECHANICAL	MECHANICAL	HYDRAULIC	HYDRAULIC	HYDRAULIC
OPERATING PRESSURE BAR	NA	NA	15	15	20
MOTOR POWER KW	1.5	2.2	7.5	7.5/11	18
ROTOR POWER KW	2.2	3.7	11	11	22
THROUGH PUT KG/HR	400	1000	3000	6000	12500
MACHINE WT KG	750	1000	2750	3500	4500
SIZE MM (L ×H×W)	1500×700× 1000	1800×865×1250	2550×1350×1400	2600×1400×1400	3450×1800×1600



PILOT PLANT CENTRIFUGE

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 levelled 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

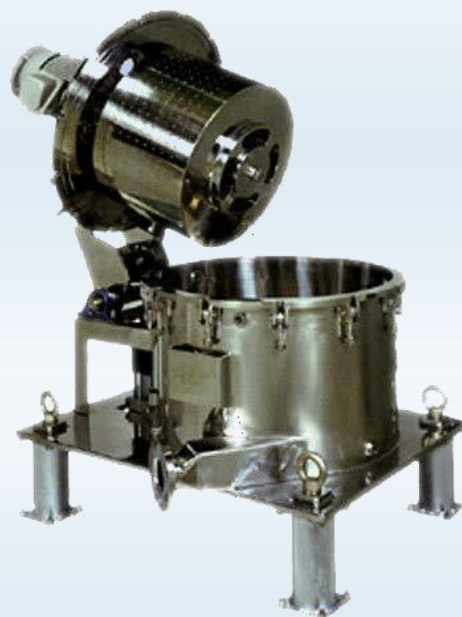
It is a versatile and basic model widely used in industries, sturdy construction, provide rapid acceleration, easy to handle. Solid material is scooped and removed manually from the basket.

FEATURES

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

STANDARD DATA

- ✓ Available size- Basket diameter – 18”(457 mm), 24”(610 mm), 36”(915 mm), 48”(1220 mm) & 60”(1525 mm)





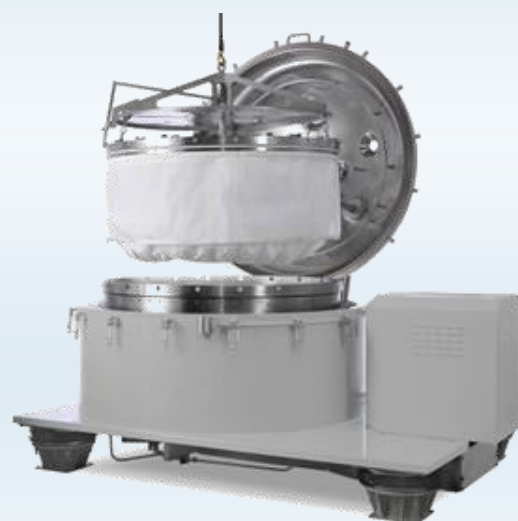
BAG LIFTING TOP DISCHARGE CENTRIFUGES

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.
- ✓ Easy inspection & cleaning of basket and monitor cage due to removal of basket ring and fully opening monitor cover cage.





AEPL Process Plant Solution

AEPL is excellent in developing a process concept into an installed plant solution operating with a guaranteed plant performance

AEPL is a full-service provider for key equipment and process plant solutions. Our excellent position comprises an extensive know-how and long-standing experience in developing process concepts into installed plant solutions operating with a guaranteed performance.

Basic Engineering

As soon as the customer has agreed upon the conceptual design it can be further developed into a basic engineering package for a commercial size plant. At this stage we bring in our expertise and capabilities in scaling-up pilot and demonstration plants into commercial size process units. A basic engineering package typically consists of:

- ✓ Process Flow Diagrams (PFD)
- ✓ Heat & Mass Balance
- ✓ Piping & Instrumentation Diagrams (P&ID's)
- ✓ Equipment specifications
- ✓ Instrument specifications
- ✓ Functional design specifications for plant control and safeguarding
- ✓ Preliminary equipment layout
- ✓ Capital cost calculation for skid mounted units
- ✓ Capital cost estimate based on factors when the total project scope consists of a basic engineering package plus key equipment only

Detail Engineering

For skid mounted units, upon approval of the basic engineering package, the project moves into the detail engineering phase, resulting in:

- ✓ P&ID's final for construction
- ✓ Equipment and instrument specifications final for construction
- ✓ Mechanical drawings for key equipment
- ✓ 3-D plant model
- ✓ Piping isometrics
- ✓ Plant automation concept



Project Management

All of the above activities are performed by highly qualified and experienced in-house staff. We rely upon our people and strive for business excellence. Project teams work under the guidance of the project manager who has overall responsibility for the project budget, schedule and quality.

Throughout the entire project, the project manager remains in close contact with the customer.

In all its activities our employs an efficient Quality Assurance System which is accredited in accordance with the latest standards of ISO9001 for Quality, Safety, Health and Environment.

Standard procedures, protocols and test documentation are used from initial design to the final plant performance test and ensure a continued high-quality result.

Proprietary Equipment

All proprietary and key process equipment is produced either in our modern workshop or sourced from approved and certified sub-suppliers. Our in-house fabrication fulfils all applicable requirements and design codes. The range of construction materials includes stainless steel, special alloys as well as titanium, zirconium and tantalum.

Skid Mounted Plants

Skids are assembled in our modern, purpose-built workshop or at selected, certified sub-contractors. Larger plants consist of more than one module.

The modular assembly includes the installation of:

- Steel structure Equipment
- Piping and valves
- Instrumentation
- Cabling and junction boxes
- Insulation

Advantages of skid mounted; turn-key plants are:

- Short delivery time through an integrated fast track execution
- Low overall investment costs
- Reduced on-site erection and hook-up time and thus minimal site disruption Manufacture of the complete plant under workshop conditions ensuring the high-est quality
- Completion of the Factory Acceptance Test (FAT) prior to delivery



- Qualification tests prior to plant delivery

Transport and Installation

AEPL has a team of highly experienced installation supervisors, who provide construction support services for site-built plants, and for the off-loading and installation of skid mounted plants. These supervisors liaise closely with the customer's construction manager, safety officer and mechanical contractor, to ensure a safe and trouble-free installation.

Commissioning and Start-up

Following completion of all mechanical and electrical tie-ins to the plant, process engineers are mobilized to undertake plant commissioning. The commissioning team is usually headed by the process engineer responsible for the plant design. Plant commissioning follows a structured plan and ends with the start-up of the process unit followed by a Site Acceptance Test (SAT). Training of customer's operators often takes place in parallel.



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