

### **ADVANCED EXPERTISE TECHNOLOGY PVT. LTD.**

Manufacturer of Pharma/Chemical Equipments Fluoropolymer Coating & Lining (Rotolining)

# **PRODUCT CATALOGUE**



"Serving From 6 Manufacturing Units Across India"

Gujarat - 2 units, Mumbai - 2 units, Vizag & Hyderabad





ADVANCED SPARKLER FILTER (ZERO HOLD UP)



ADVANCED PHARMA PEELER CENTRIFUGE



ADVANCED ROTOCONE VACUUM DRYER

### **About Us**



M/s Advanced Expertise Technology Pvt Ltd is a leading supplier of Pharmaceutical Equipment along with Fluoropolymer Coating & Lining of Equipments and Parts. Used in API, BULK Drug, pharmaceutical, Food, Fine Chemical, Inorganic Chemical, Petrochemical, Ore and Surface treatment.

HALAR/PVDF/ETFE/FEP/PTFE/PFA/PEEK/HDPE Coating is recommended where Highly Corrosive and Abrasive product are processed. This Corrosion resistance coating is carried out on MS/SS material of processing equipment, like Centrifuge Machine, Rotary Vacuum Cone Dryers, Agitated Nutsche Filters, Heat Exchanger, Agitators, Receivers, Tanks, vessels Pipes, Thermo wells Fittings, Strainers, Valves and Spares for Glass Lined Equipment etc.

We have an in house facility for fabrication of process equipment with Roto lining facilities for fluoropolymer coating backed up by advanced technology & skilled team.

We have set a benchmark as one-point solution provider to customers by equipment manufacturing with Coating under one roof.

We perform repair works for Centrifuge, VTD, RCVD Recoating and Relining of existing equipments.

We have a qualified team who are available 24/7 to assist our customers for a selection of fluoropolymer coating works as per process requirement.

Our service team will reach any designated site within 24 hours. We are based in Hyderabad, Vizag, Chennai, Gujarat & Mumbai Locations.

### **Industries Catered & Technical Capabilities**



#### Industries we cater:

**Pharmaceutical API & Formulation** 

**Pigments & Dyes** 

Chemical

Cosmetics

**Pesticide** 

**Food & Spices** 

### **Providing premium curated services since 1989**

OUR TECHNICAL CAPABILITIES



ISO certified CE ATEX



Curated designs as required



In-house Fabrication facility & HALAR/ ETFE/ PFA/ FEP/ PVDF/ PP Coating & Roto Lining facility run by a skilled team.



Largest coating facilities in India with all required FDA/USDA/NSF certification approved



Specially dedicated team of Service Engineers with vast experience on Erection, Commissioning and Troubleshooting.



Expert Material flow handling and supply chain management team for sourcing and delivering



Design backed up by qualified Mechanical Engineers, Chemical Engineers, Process Engineers, Electrical & PLC Programmers and 24x7 Service Engineers.

### **Our Products**



#### **FLUOROPOLYMER COATING**

- 1 HALAR (ECTFE)
- 2 PERFLUOROALKOXY ALKANE (PFA)
- 3 ETFE / PTFE / TEFZEL
- 4 POLYPROPYLENE (PP)
- 5 POLYVINYLIDENE FLUORIDE (PVDF)
- 6 PEEK

### **DRYING EQUIPMENT**

- 1 AIRTRAY DRYER
- 2 ROTARY CONE VACUUM DRYER
- 3 VACUUM TRAY DRYER
- 4 AGITATED NUTSCHE DRYER (ANFD)

#### **CONTROLLING SYSTEM**

- 5 PLC/FLP CONTROL PANEL
- 6 NITROGEN BLANKETING SYSTEM
- 7 FLOW CONTROL VALVE

#### **FILTER EQUIPMENT**

- 1 CENTRIFUGE
- 2 SPARKLER FILTER
- 3 PRESSURE NUTSCHE FILTER
- 4 BASKET FILTER
- 5 CARTRIDGE FILTER
- 6 AGITATED NUTSCHE FILTER (ANF)
- 7 LEAF FILTER
- 8 ROBO FILTER

#### **HEAVY EQUIPMENT**

- 1 PRESSURE VESSEL
- 2 STORAGE TANK
- 3 RECEIVERS
- 4 HEAT EXCHANGER
- 5 DISTILLATION COLUMN

#### **MESH WELDING**

### Fluoropolymer Lining/ Coating:



Fluoropolymer contains molecules of carbon and fluorine. It is characterized by high resistance to solvents, acids, and bases. It is a high-performance plastic material which is used in harsh chemical and high-temperature environment, primarily where a critical performance specification must be met.

It is majorly used for industrial coatings because they possess a positively unique quality. **Chemical resistance** 

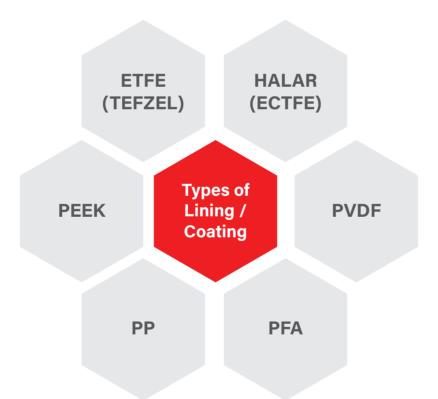
**Corrosion resistance** 

**Non-stick property** 

**Low friction** 

**Non-Wetting & Static Dissipation** 

#### **Different Types of Fluoropolymers:**



### FDA/USDA/NSF Approved Fluoropolymer Coating

Specific fluoropolymer coatings are FDA and NSF compliant, USDA approved as per ISO 10993, and are used extensively in various environment in which non-stick, insulating, and chemical or corrosive protective properties are paramount. We have a longstanding history of success in industries such as food & beverage processing and packaging, API, pharmaceutical & chemicals, and Petrochemical, Ore & Surface treatment.



### **Coated/ Lining Equipments**

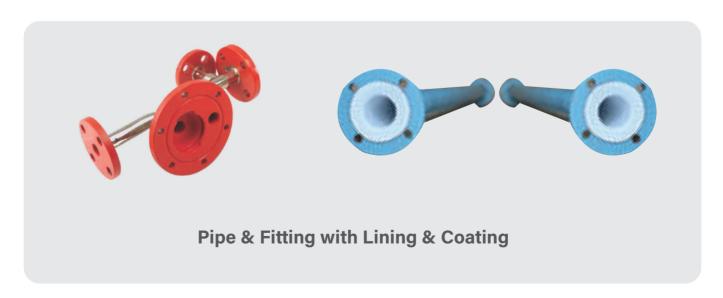












### **COATED/LINING EQUIPMENTS**















### **APPLICATIONS OF COATED/LINED EQUIPMENT**



- Agitated Nutsche Filter
- Pressure Nutsche
- Vacuum Nutsche
- Basket Filter
- Cartridge Filter
- Bag Filter
- Horizontal Plate
- Sparkler

#### Nauta

- Ribbon Blender
- Polygon Blender
- Static Mixer
- Planetary Mixer



#### Top Discharge

- Bottom Discharge
- Lifting Bag Type
- Peeler Centrifuge

# **Tank**

#### Storage Tank

- Horizontal / Vertical
- Jacketed Receiver
- ML Tank
- Dosing Tank
- Vacuum Receiver



#### ANFD

- VTD
- Tray Dryer
- FBD
- Rotary Cone
- Double Cone
- ATFD
- Rotary Drum

# **Pipe & Fitting**

### Piping

- Fitting-Bend
- Tee-Reducer
- Valves-Diaphragm
- Butterfly & Ball Valve
- Thermo Well



### **Halar Coated**



#### Anchor

- Impeller
- Special Design **Blades**

- Distillation
- Scrubber
- Absorber

#### **PVDF Coated ANFD Base**



#### **TEFZEL Coated**



# ADVANCED Roto Lining Facility with International Technology of HDPE/PP/ PVDF/HALAR/ETFE/PFA/FEP 1st Time in India



It is a computer controlled lining technology using rotational movement of equipment along with sintering process. This process creates seamless lining with virtually uniform lining thickness from 1mm to 8mm. Roto lining of HDPE, PF, PVDF, HALAR, ETFE, FEP, PFA is available in natural, FDA or Antistatic Conductive Lining.





#### **Advantages of Roto Lining:**

- 1. Better Chemical Resistance as natural Polymer is used and is heated one, unlike repeated heating in Coating, better polymer properties derived.
- 2. Better lining bonding to equipment because of centrifugal action of rotating movement and durable due to direct bonding to equipment without adhesive.
- 3. Lining thickness ranging between 1mm to 8mm within single heating.
- 4. Faster delivery due to minimum downtime.
- 5. Mono block type tanks & Receivers without main body flange can be lined.
- 6. Seamless without any weld joints.
- Suitable for full vacuum.
- 8. Suitable for heat transfer application.
- 9. Antistatic conductive, FDA Lining available.
- 10. Repair possible at site.
- 11. Non Stick properties

#### **COMPARED WITH COATING**

- Thicker Lining Possible Upto 8mm
- Uniform Lining Thickness
- Better chemical resistance as polymer heated only once above its melting point.
- Economical as less wastage of raw material.
- Longer pipes can be lined from inside
- No over spray on outside surface.
- Less Delivery Time.

#### **COMPARED WITH SHEET LINING**

- No welding line/ Seamless surface
- Better Bonding with metal without air gap
- Better operating Temperature up to 200°C
- Possibility of heat transfer
- Suitable for full vacuum
- Better purity of product as no adhesive is used
- Higher operating pressure for equipment
- Available Antistatic Conductive Lining with Resistance of 10e4 to 10e8 OHM
- Less Delivery Time



#### **ADVANCED SPARKLER FILTER (ZERO HOLD UP)**

ADVANCED acquires various range of GMP Model Zero Hold up Sparkler Filter (Horizontal type) used in Pharmaceuticals, Biotech, API, Bulk-Drugs, Chemicals, Distilleries, Food, and other related Industries.

The operation of the sparkler filter press is to filter the impure liquid. Placed on top of each horizontal plate with increasing pressure, the filter media holds back the impurities and allows the filter to pass through the centre by interlocking cups, which takes the filtrate to the outlet of the filter.

- Capacity (Dia In Inch) 8, 14, 18, 24 & 33 with Suitable No. of Plates.
- Accessories- Pressure Gauge, Safety Valve, Air Vent, Ball Valves, Sampling Valve, Filter Media (PP/Cellulose) & Suitable Elastomer Silicon/ PTFE/ EPDM/ Viton.
- cGMP Model and Design as per ASME guidelines.
- MOC-SS304/SS316/SS316L/Hastelloy/ PP/Solid PTFE
- Suitable model to be suggested as per the actual requirements of holding capacity and filtration area.

- Various types of Coating for Wet parts like-HALAR/ ETFE/PFA/PVDF/PP (Food Grade) & Hastelloy for friction parts etc.
- Available Lining- PVDF, PP PFA & Teflon.
- Options for Various range of Pumps (KSB, Antico, QVC, Flurolined, Sulzer, Johnson, Alfa Laval, or as per requirement).
- Qualified Documents- IQ, DQ, OQ & FAT Protocol



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#### **ADVANCED NUTSCHE PRESSURE FILTER**

Nutsche Filter is a closed vessel designed to separate solid & liquid by filtration under pressure or vacuum. The closed system ensures odorless, contamination-free, and non-polluting working conditions maintaining product purity and hygiene.

- Capacity (Día in MM)- 300, 500, 550, 600, 900, 1000 and 1200
- Accessories- Pressure Gauge, Ball Valves, & Suitable Elastomer Silicon/PTFE/EPDM/Viton.
- GMP Model and Design as per ASME guidelines.
- Various types of Coating for Wet parts like- HALAR/ETFE/PFA/PVDF/PP (Food Grade) & Hastelloy for Friction Parts etc.
- Available Lining- PVDF, PP and Teflon.
- Qualified Documents- IQ, DQ, OQ and FAT Protocol





#### **ADVANCED MANUAL TOP DISCHARGE**

Manual Top discharge A regular and always in demand 4-point suspension Centrifuge which is widely used in various Pharmaceutical, Chemical, R & D - Plant, Cosmetic, Food industry.



#### **Material of Construction:**

- Carbon Steel, Stainless Steel, Hastelloy etc MOC.
- Fluoropolymer Coatings like Halar (ECTFE),
   PVDF, ETFE, Teflon (PFA), Rubber Lined etc. can be perform on contact surface.
- Coating can be provided on the contact parts as well as on the exterior body (non-contact surface) to prevent spills & corrosive atmosphere

#### **Advantages:**

- Simple in construction.
- Easy manual removal of solids from top portion of the equipment.
- Residue next to zero.

#### **Accessories offered with equipment.**

- 1. Inverter drive
- 2. FLP Panel
- 3. N2 Purging arrangement
- 4. CIP arrangement
- 5. Zero speed interlock
- 6. Heel blow back
- 7. Vibration tripper limit switch
- 8. Vibration monitoring system
- 9. FLP switch / proxy sensor
- 10. N2 blanketing system
- 11. Customized design

ADVANCED MTD Centrifuge Model	Unit	18" MTD	24" MTD	36" MTD	48" MTD	60" MTD
Basket Diameter	mm.	457	610	915	1220	1524
Basket Depth	mm.	300	300	450	450-500	450-600
Working Capacity under lip	Its.	24	48	169	294-327	467-519
Basket load (Max)	kgs.	24	48	169	294-327	467-519
Basket Revolutions	rpm.	900	900	900	900	800
Centrifuge Force	G.	206.2	275.2	412.8	550.4	543.3
Filtration Area	sq.mts.	0.43	0.57	1.29	1.72-1.92	2.152.87
Motor Power	kW.	2	3	7.5	15	20
Overall Dimension:						
Length	mm.	1050	1350	1800	2000	2500
Width	mm.	750	1000	1250	1500	2000
Height	mm.	1300	1500	1900	2100	2100
Empty Weight	kgs.	800	1150	2750	4200	5500

#### **ADVANCED PHARMA PEELER CENTRIFUGE**



Operates on the principle of centrifugal force to separate the solids from the liquid. Horizontally designed useful for batch and continous centrifuge processes. This pharma version is easy to clean and validation with full access to all process wet parts, assured by a fully openable casing.

This equipment can be used in a clean room area application where it is separated by through wall. Feeding, Washing, discharge carried out in processed area where motor, hydraulic power, bearing housing kept. Widely use in APIs, Chemical, pharmaceutical intermediates, antibiotics and various industries

#### **Material of Construction:**

- Stainless Steel, Hastelloy etc MOC.
- Fluoropolymer Coatings like Halar (ECTFE),
   PVDF, ETFE, Teflon (PFA), Rubber Lined etc. can be done on contact surface
- Coating can be provided on the contact parts as well as on the exterior body (non-contact surface) to prevent spills & corrosive atmosphere.

#### **Advantages:**

- Robust & reliable design for durability & continuous smooth operation.
- Excellent design feature as per "cGMP" norms.
- Lower residual cake moisture due to high centrifugal force.
- Horizontal peeler centrifuge provides higher centrifugal forces than vertical peeler, and increases performances and flexibility.
- Due to continuous discharge of filtered liquid through perforated inner surface of rotating basket, the pressure drop, main driving force of filtration is increased across the solid cake & filter medium, as a result, the filtration rate can be boosted.





#### **ADVANCED CHEMICAL PEELER CENTRIFUGE**



Operates on the principle of centrifugal force to separate the solids from the liquid. Horizontally designed useful for batch and continous centrifuge processes. This chemical version is used to separate medium to large quantities of product that can be washed and then spin-dried.

These machines are fit with a highly polished discharge chute with zero dead ends to prevent solid accumulation. Widely use in APIs, Chemical, pharmaceutical intermediates, antibiotics, petrochemical and various industries.

#### **Material of Construction:**

- Carbon Steel, Stainless Steel, Hastelloy etc MOC.
- Fluoropolymer Coatings like Halar (ECTFE),
   PVDF, ETFE, Teflon (PFA), Rubber Lined etc. can
   be done on contact surface
- Coating can be provided on the contact parts as well as on the exterior body (non-contact surface) to prevent spills & corrosive atmosphere.

#### **Advantages**

- High speed rotating machine, classified as "High G" centrifuges.
- Full opening of lid gives complete access to entire processing area.
- Easy to Maintain, clean and inspection.
- Low residual moisture achieved by high G effect.





### ADVANCED BOTTOM DISCHARGE CENTRIFUGE

A unique design for unloading of solid products from the bottom of a 4-point suspension Centrifuge which is widely used in various Pharmaceutical, Chemical, Cosmetic, Food industry, Mining, Rubber, Crop Protection etc industries.

#### **Material of Construction:**

- Carbon Steel, Stainless Steel, Hastelloy etc MOC.
- Fluoropolymer Coatings like Halar (ECTFE),
   PVDF, ETFE, Teflon (PFA), Rubber Lined etc. can
   be done on contact surface
- Coating can be provided on the contact parts as well as on the exterior body (non-contact surface) to prevent spills & corrosive atmosphere.

#### **Advantages:**

- Simple in construction.
- Easy manual removal of solids from the bottom side of equipment.
- No scrapper knife required as scrapper exist in machines.
- Residual is almost zero



#### **Accessories offered with equipment.**

- 1. Inverter drive
- 2. FLP Panel
- 3. N2 Purging arrangement
- 4. CIP arrangement
- 5. Zero speed interlock
- 6. Vibration tripper limit switch
- 7. Vibration monitoring system
- 8. FLP switch / proxy sensor
- 9. Full Automation
- 10. Customized design

AETPL BD Centrifuge Model	Unit	18	24	36	48	60
Basket Diameter	mm.	457	610	1220	1220	1524
Basket Depth	mm.	300	300	500	450-500	450-600
Working Capacity under lip	Its.	24	48	300	294-327	467-519
Basket load (Max)	kgs.	24	48	375	294-327	467-519
Max. Basket Revolutions	rpm.	900	900	1000	900	800
Centrifuge Force	G.	206.2	275.2	682	550.4	543.3
Filtration Area	sq.mts.	0.43	0.57	1.91	1.72-1.92	2.15-2.87
Motor Power	kW.	2	3	15.0	15	20
Length	mm.	1050	1350	2150	2000	2500
Width	mm.	750	1000	1600	1500	2000
Height	mm.	1300	1500	2325	2100	2100
Empty Weight	kgs.	800	1150	4500	4200	5500



### ADVANCED BAG LIFTING CENTRIFUGE

Improvised design of Manual discharge centrifuge. After removal of solvent/liquid the solid products is completely discharged by lifting the filter bag from the Top. The filter bag is lifted by Bag lifting device (BLD) hence complete discharge of solids can be achieved. This 4-point suspension system can be used in various Pharmaceutical, Chemical, R & D - Plant, Petrochemical, Cosmetic, Food industry etc industry.

#### **Material of Construction:**

- Carbon Steel, Stainless Steel, Hastelloy etc MOC.
- Fluoropolymer Coatings like Halar (ECTFE),
   PVDF, ETFE, Teflon (PFA), Rubber Lined etc. can
   be done on contact surface
- Coating can be provided on the contact parts as well as on the exterior body (non-contact surface) to prevent spills & corrosive atmosphere.



#### **Advantages:**

- Time required for Solid Cake removal is less.
- Spill of cake on the floor is minimum.
- Manual contact with product can be avoided.
- Residual is almost zero.
- Easy cleaning of basket.
- Production can be increased.

			36" LBT	48" LBT	60" LBT
mm.	450	600	900	1200	1500
mm.	300	300	450	450-500	450-500
Lts.	23	47	159	285 - 315	442 -5 90
kgs.	23	47	159	285 - 315	442 - 590
rpm.	900	900	900	900	800
G.	203	271	406	542	535
m2	0.42	0.57	1.27	1.7 - 2.26	2.12 - 2.83
kW.	2	5	7.5	15	20
mm.	1050	1250	1800	2000	2500
mm.	750	900	1250	1500	2000
mm.	900	1825	2500	3100	3500
kgs.	800	1150	3200	4200	5700
	mm. Lts. kgs. rpm. G. m2 kW. mm. mm.	mm. 300 Lts. 23 kgs. 23 rpm. 900 G. 203 m2 0.42 kW. 2 mm. 1050 mm. 750 mm. 900	mm. 300 300  Lts. 23 47  kgs. 23 47  rpm. 900 900  G. 203 271  m2 0.42 0.57  kW. 2 5  mm. 1050 1250  mm. 750 900  mm. 900 1825	mm.       300       300       450         Lts.       23       47       159         kgs.       23       47       159         rpm.       900       900       900         G.       203       271       406         m2       0.42       0.57       1.27         kW.       2       5       7.5         mm.       1050       1250       1800         mm.       750       900       1250         mm.       900       1825       2500	mm.       300       300       450       450-500         Lts.       23       47       159       285 - 315         kgs.       23       47       159       285 - 315         rpm.       900       900       900       900         G.       203       271       406       542         m2       0.42       0.57       1.27       1.7 - 2.26         kW.       2       5       7.5       15         mm.       1050       1250       1800       2000         mm.       750       900       1250       1500         mm.       900       1825       2500       3100



#### ADVANCED ROTOCONE VACUUM DRYER (RCVD)



Rotocone Vacuum Dryer (RCVD) is suitable for drying of material that cannot resist high temperature, material which are easily oxidized, volatile material which should be retrieved, material that are strong irritants and poisonous in nature.

#### **Material of Construction:**

- Capacity: 5 4000 LTRS
- MOC-SS304/SS316/SS316L/Hastelloy
- cGMP Model and Design as per ASME guidelines.
- Drying at a lower temperature under vacuum.
- Complete discharge.
- Closed system Automatic charging & discharging.
- Qualified Documentation like- IQ, DQ, OQ & FAT Protocol

#### **Optional Items/Accessories:**

- Provision for Lump breaker.
- Nitrogen purging arrangement.
- Various types of Coating for Wet parts like -HALAR/ ETFE/ PVDF /PFA (Food Grade).
- Direct drive to avoid greasing of the gear.

NB: Spare items also available like Gasket, Vacuum Shaft, Valves, and other related components, overall maintenance.



#### **ADVANCED REACTORS**

Reactor is the generic term for a type of vessel widely used in processing industry. A typical reactor consists of a storage tank with an agitator and integral heating or cooling system.

# **Application: Pharma, Chemical, Food and Beverages etc.**

- Capacity: 5 25000 LTRS
- cGMP and Non-GMP Model Available.
- MOC-SS304/SS316/SS316L/Hastelloy.
- Jacketed/Limpet/Fermenter/Reaction Vessel.
- Qualified Documents: IQ, DQ, OQ and FAT
- Protocol

NB: Spare items also available like Agitator Assembly, Man Hole Covers, Gaskets, Baffles, Discharge Valves, and other related components.



#### **Optional Items/Accessories: -**

- SIP/ CIP
- Reactor Assembly
- Various types of Coating for Wet Parts like -HALAR/ ETFE/ PVDF/ PFA (Food Grade).

#### **ADVANCED VIBRO SHIFTERS**

This machine works on the principle of gyratory vibrations. The material is separated based on it's particle size. Once the motor gets energized, vibration is caused in the screen/sieve making the material travel across the sieves according to its particle size.



#### **Material of Construction:**

- Capacity (In Inch) 12, 20, 30, 36, and 48
- cGMP Model and Design as per ASME guidelines
- MOC-SS304/SS316/SS316L/Hastellov
- Qualified Documents- IQ, DQ, OQ and FAT Protocol

#### **Optional Items/Accessories: -**

- Ultrasonic vibrating screen mesh arrangement for better results (Powder sifting acceleration, less powder wastage, a decrease of sieve screen blinding and Clogging)
- Mesh De-Blinding Kit with Silicon/ PTFE Balls.
- Flame safe and Flameproof Motor(Imported)
- FLP DOL Starter.
- Magnetic Grill
- Single/ Double/ Three/ Four deck.
- USFDA Grade Lead-free Silicon molded Screen.

#### **ADVANCED MULTI MILL**



This is a self-contained portable unit useful for high speed granulating, pulverizing, mixing, shredding, and chopping of a wide range of wet and dry materials without special attachments. It operates on the principle of variable force swing beaters having both knife and impact edges rotating within a selected screen to get the required size reduction. The material is fed in the hopper, shredded and milled through beaters consisting of knife and impact edges.

#### **Optional Items/Accessories:**

- Belt Drive
- Direct Drive with VFD
- Full SS Construction including Bearing Housing and Motor mounting Plate.
- Flameproof Motor and FLP Starter with Reversible switch FLP Panel Magnetic Grill for Outlet
- Mechanical Seal
- Sieves available: 0.3 12 MM
- Vacuum loading system to charge the material.

#### **Material of Construction:**

- Capacity (In HP): 1, 3, 5 and 7.5
- cGMP Model and Design as per ASME guidelines
- MOC: SS304/ SS316/ SS316L/ Hastelloyy
- Qualification Documents: IQ, DQ, OQ & FAT Protocol

#### ADVANCED MANUFACTURING & STORAGE VESSEL







#### **Material of Construction:**

- Capacity- 10 30000 LTRS
- MOC-SS304/SS316/SS316L/MS
- Various types of coating.
- Vessel design as per cGMP/ USFDA/ ASME guidelines.
- Options of Mechanical and Magnetic Stirrer and High Shear Mixer with Sterile flanges
- Load Cell
- Sensors (pH, Conductivity, Temp. etc.) and suitable accessories. Capacity- 10 30000 LTRS

#### **FLUID BED DRYER (FBD)**



Fluid Bed Dryer (FBD) is a kind of equipment used extensively in the pharmaceutical industries to reduce the moisture content of pharmaceutical powder and granules. The wet solids are lifted from the bottom and suspended in a stream of air (fluidized state).

FBD work on the principle of fluidization, a process in which hot gas or air is introduced into the spaces between solid particles. Upward forces on the particles increase as the air's velocity increases causing them to equal the gravitational forces below.

#### **Material of Construction:**

- Capacity: 2.5 500 Kg
- cGMP & Non-GMP Model Available
- MOC- MS / SS304 / SS316 / SS316L / HASTELLOY
- Inflatable silicon tube for bag sealing & product container sealing
- Food Grade Elastomers
- Online Sampling Device
- Telescopic Cylinder for Bag shaking (Top/Side)
- Safety Interlock (Motor Overload, Emergency Shut off, Inlet Temp high- Close steam control valve, Blower failure, low seal gasket pressure- Top & Bottom etc.)
- Steam Valve controlled through Panel with solenoid valve to control the steam temperature
- Qualification Documents- IQ, DQ, OQ & FAT Protocol



#### **Options:**

- Solid Monitor Flow
- PLC with HMI / SCADA
- FLP Motor & FLP Panel
- Double Skin AHU Body
- Air Handling Unit with Hepa Filtration
- Pneumatically operated Inlet & outlet Dampers

- Racking System in the container with Motor, Gear Box, Stirrer, Bearing- Housing & Combined control Panel
- Various type of Coating for Wetted Parts likeHALAR / ETFE / PVDF / PFA (Food Grade)
- VFD for Blower
- 21 CFR Part 11- Provision & Compliance
- Silencer
- Rupture Disc

#### **ADVANCED AIR TRAY DRYER (ATD)**



Widely used for material drying in Pharmaceutical and Chemical Industries. It's drying process is based on circulation of hot air through the chamber having material. A Tray Dryer is a convectional drying equipment with enclosed insulated chambers and trays placed on top of each other in a trolley.

#### **Material of Construction:**

- Capacity (No. of Trays): 3, 6, 12, 24, 48, 96 & 192
- cGMP Model and Non-GMP Model
- MOC-SS304/SS316/SS316L/Hastelloy
- Various type of Coating for Wetted Parts like HALAR/ ETFE/ PFA/ PVDF/ PP (Food Grade).
- Qualified Documents- IQ, DQ, OQ and FAT Protocol
- Optional Items/Accessories:
- Flame proof Construction
- Double Skin Body
- AHU





#### **ADVANCED VACUUM TRAY DRYER (VTD)**

Mainly used for drying of high grade, temperature and oxygen sensitive products. It is highly suitable for drying hygroscopic substances, which are dried on very low residual moisture, content level.

#### **Material of Construction:**

- Capacity (No. of Trays): 3, 6, 12, 24, 48, 96 & 192
- cGMP Model and Non-GMP Model
- MOC: MS/SS304/SS316/SS316L/Hastelloy
- Various type of Coating for Wetted Parts like HALAR/ ETFE/ PFA/ PVDF/ PP (Food Grade).
- Qualified Documents: IQ, DQ, OQ and FAT Protocol
- Optional Items/Accessories:
- Flame proof Construction
- Double Skin Body
- AHU



NB: Spare items also available like Gasket, Motor, Filter, Heater, and other components etc.

#### **ADVANCED AGITATED NUTSCHE FILTER DRYER (ANFD)**



Advanced Agitated Nutsche Filter Dryer widley used in chemical, pharmaceutical, Agro chemicals, fine chemicals, Herbal, pharma the food industry for filtration, separation, drying of solid + liquid-based slurry.

The closed system which works under pressure / vacuum to separate the solid from liquids. The closed operation ensure safe operation (containment free, without human intervention)

#### **Key Feature of ADVANCED ANFD**

- Available in size from 5 Litres to 10,000 Litres
- MOC:- SS316L/SS304/MS/ Hastelloy/ Duplex
- Special Fluoropolymer Coating/ Roto lining /Sheet Lining On contact parts PFA / Tefzel /ETFE/HALAR/PVDF/PP
- MS/RUBBER LINING, MS/FRP LINING, GLASSFLEX COATING
- Available in Customise design, Monoblock type, Detachable plate type, Super C Bayonet Clamping, Teethed Bayonet etc.
- For filtration dual filtration arrangement can be provided. (Filter cloth+ Multi-layered Sintered Mesh)



#### **ADVANCED LEAF FILTER**



Leaf Filter is used for filtration of liquid with higher solid content in edible oil, chemical food & pharmaceutical industry.

The liquid passes through filter leaf leaving behind the solids in the form of a cake. The filtered liquid (filtrate, or clean effluent) exits the filter through the manifold connecting all the filter leaf. The filter cake is then discharged from the vessel either by manually or tilted by hydraulically.

#### **Key Feature of ADVANCED LEAF FILTER**

- Leaf Filter can available from size 50 litres to 1000 litres cake holding volume.
- MOC:- SS316L/SS304/MS/ Hastelloy/ Duplex
- Special Fluoropolymer On contact parts PFA/Tefzel/ETFE/HALAR/PP





Robo Filter is used for filtration/separation of liquid from solid with less manual intervention.

### **Key Feature of ADVANCED ROBO NUTSCHE FILTER**

- Robo Nutsche Filter can available from size 50 litres to 600 litres Filteration volume.
- MOC:- SS316L/SS304/MS/ Hastelloy
- Special Fluoropolymer On contact parts PFA/ TEFZEL / ETFE / HALAR / PP



#### **CONTROLLING SYSTEM FOR INDUSTRIAL AUTOMATION**





# **Advanced VFD Control Panel On User Requirement & Application**

Integration of VFD in Flame Proof & Non Flame Proof Control Panel. Reputed brand likeSiemens, ABB, Allen Bradley, Schneider, Delta & many more based on user requirement.



#### **Advanced Starter Control Panels**

Customized PLC Control Panel with integration of Siemens, ABB, Allen Bradley, Schneider, Delta PLC for various machines & process automation.



#### **Advanced PLC & HMI Control Panel**

Customized PLC Control Panel with Integration of Siemens, ABB, Allen Bradley, Schneider, Delta PLC for various machines & process automation





## Advanced Flame/ Weather Proof PLC & HMI Control Panel

CIMFR / PESO Certified Customized FLP Enclosure with complete design & Integration of PLC & HMI of reputed makes such as Siemens, ABB, Allen Bradley, Schneider, Delta based on customer requirement & application.





#### **Advanced MCC & PCC Control Panel**

Compartmentalized Motor Control Panel & Power Control Panels with Integration of reputed make switchgears & accessories.



# Advanced Flame Proof/ Weather Proof Power Distribution Panel

- CIMFR / PESO Certified FLP Enclosure.
- Gas Group IIA, IIB & IIC.
- Certified for Zone 1 & Zone 2.
- Customized Distribution Panels with reputed make switchgears.





Advanced Flame Proof/weather Proof Electrical Equipments - Hooter, Beacon Lamps, Lights, Switch Sockets Etc.

- CIMFR / PESO Certified FLP Enclosure.
- Gas Group IIA, IIB & IIC.
- Certified for Zone 1 & Zone 2.





# **Advanced FLP/WP Junction Box junction Boxes**

- CIMFR/PESO Certified FLP Enclosure.
- Gas Group IIA, IIB & IIC.
- Certified for Zone 1 & Zone 2.



# Advanced FLP & Non FLP Air Curtains Junction Boxes

- Flame Proof / Weather Proof Air Curtains.
- Suitable for gas group II-A, II-B & II-C
- Certified for Zone 1 & Zone 2.
- Non Flame Proof Air Curtains for clean room area.





# Advanced Self Actuated Pressure Control Valve Up Stream/ Down Stream Control Valve

The basic working principal for this valve is force balance principal acheived by spring diaphragm mechaninism. This PRV monitors and control outlet pressure irrespective of variation in inlet pressure and flow rate..



#### **Advanced Back Pressure Relief Valve**

This BPRV is an active protection device designed to protect the tank from possible over pressurization. The pressurization can be positive or negative.

BPRV is combination of pressure relief valve & vacuum relief valve.



#### **Advanced Gas Flow Transmitter**

Gas flow Transmitter for measurement and control of flow of various gas.

Compatible with various communicating devices like PLC & SCADA.

Available in Flame Proof & Non Flame Proof body.

#### ADVANCED NITROGEN BLANKETING SYSTEM



#### **Advanced Nitrogen Blanketing System**

Nitrogen blanketing, while widely used in the chemical, pharmaceutical, food processing and refining industries, is often overlooked as a way to improve safety, productivity and quality. Although blanketing is a simple plant practice, there are options for improvements that balance achieving desired safety or quality results with minimizing cost. Poor choices may add cost, waste nitrogen or increase plant emissions.



#### **Application of Nitrogen blanketing system**

- 1. Storage Tank/process Vessel Blanketing
- 2. Centrifuge Blanketing

#### **Manual Operated Centrifuge Blanketing System**

This is a user friendly system where user will operate the purging & blanketing process manually.

For purging & blanketing there are two separate isolation ball valves. During the purging process operator will open one valve for 40-45 secs & once purging is completed, another isolation for blanketing has to be kept open throughout the process.

#### **Timer Based Semi Automated Centrifuge Blanketing System**

This system operates automatically based on its timer which is predefined by manufacturer for which the flameproof PLC or control panel will be provided to operate the purging & blanketing valve smoothly as per requirement.

This system also generates an alarm in case low/high pressure, failure of Nitrogen supply, centrifuge lid open.

The most important benefit of this system over manual system will be, loss of N2 due to human error will be nil.

This system requires Single phase AC/DC supply to operate.

### **Fully Automated Centrifuge Blanketing System**

This system will be provided with flameproof PLC or relay-based control panel. Oxygen analyzer is used which will going to continuously monitor the O2 level in basket. User can define the desired setpoint. N2 purging will commence by the start button on the panel, If the O2 level is less than setpoint, system will move into blanketing mode & will allow the machine to run. If the oxygen level increases than the desired setpoint then process will be repeat from purging.

This system also includes an alarm generator for low & high pressure, N2 source failure, Lid open, O2 level high, or any other malfunction.





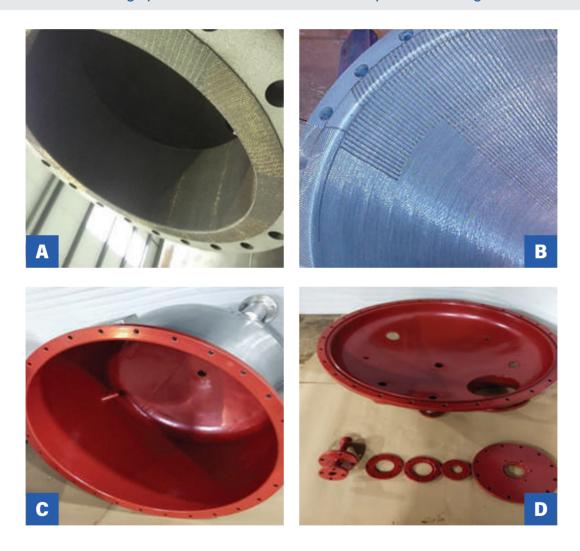
#### **Mesh Welding**

Mesh welded coated equipments is a newly developed technique for operations under full vacuum and tough/sharp materials are used.

Advantage is, it is not only suitable under full vacuum but also gives longer life to coating as it causes high and better bonding with metal and polymer. It is also repairable at site.

We have successfully supplied mesh welded coated equipment to M/s SRF Lts., M/s Lupin Ltd., KVC Process Systems, Aastrid Life Sciences Pvt. Ltd. & Deccan Fine Chemicals which has derived satisfactory results.

A & B: photo of a meshed vessel. The image shows the stainless steel meshed after being spot welded to the vessel interior prior to coating.



C & D: Photo after PFA coating process of the meshed vessel.

#### PROCEDURE OF MESH WELDING

The 304L/SS 316/MS/SS 316L/BQ wire mesh with a wire thickness of 1 TO 1.2mm is spot welded to the 304L/SS 316/MS/SS 316L/BQ substrate such that the weld seams arc run in the same direction with a distance of 4 openings between each weld run. The size of each welding spot will be 1 to 4mm.

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NB: Above clients are associated with our sister concern companies as well.

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UNIT 6: HYDERABAD

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