



**SHIV SHAKKTI**  
PROCESS EQUIPMENT PVT. LTD



ENGINEERING WITH INNOVATIVE IDEAS

# NUTSCHE FILTERS & FILTER-DRYERS



Shiv Shakkti Process Equipment  
Leaders in Filtration and Drying Technology

+91 82919 00674  
sales@shivshaktiequipments.com  
www.shivshaktiequipments.com





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# ABOUT SHIV SHAKKTI

Shiv Shakkti Process Equipment is a leading manufacturer and supplier of high-quality industrial process equipment, specializing in centrifuge machines, Nutsche filters, filter dryers, conical dryers and mixers, rotary vacuum paddle dryers, and Rotocone mixer dryers. With decades of expertise, we serve industries such as pharmaceuticals, chemicals, food processing, and more.

Our commitment to innovation, efficiency, and compliance ensures that our equipment meets global standards, including CE, cGMP, and ATEX. By integrating cutting-edge technology with robust engineering, we deliver reliable and high-performance solutions tailored to our clients' needs.

At Shiv Shakkti Process Equipment, we prioritize quality, safety, and customer satisfaction, making us a trusted partner for businesses worldwide.

 **45+**  
Years of Experience

 **7000+**  
Equipments Delivered

 **2000+**  
Customer Served

 **35+**  
Countries Served

 **135K+**  
Sq Ft of Production space

 **3**  
Manufacturing Units



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# AGITATED NUTSCHE FILTER DRYER

Shiv Shakkti's Agitated Nutsche Filter (ANF) and Agitated Nutsche Filter Dryer (ANFD) are high-efficiency solutions for solid-liquid separation, filtration, and drying in a single enclosed system. Designed for pharmaceutical, chemical, and API industries, these units ensure precise filtration, uniform cake washing, and efficient drying under vacuum conditions.

Our ANF is equipped with a robust filtration mechanism that allows for deep-bed solid-liquid separation using a fine mesh or sintered plate. It ensures high filtration efficiency, minimal product loss, and superior purity.

The ANFD extends this functionality by integrating a jacketed vessel, heated agitator blades, and vacuum drying capability, enabling seamless drying of the filtered cake to a powder in a controlled, contamination-free environment.

## Vessel & Construction:

- Design Options: Monoblock, detachable, and bayonet configurations.
- Base Flange: C-clamps or quick-lock bayonet for easy access.
- Jacketed Vessel with Seal-Welded Insulation for temperature control.
- Cleanroom Installation: Feed/discharge area isolation for contamination-free operation.



## Agitator System:

- S-Profile Agitator for effective cake formation and drying.
- Heated Design enables uniform drying and improved efficiency.
- Bolt-Free Shaft Bellow Connection ensures leak-proof operation.
- Wide Range of Shaft Sealing Options for enhanced containment.
- Design for total heel discharge, maximizing product recovery.



## Side Discharge Valve:

- Hydraulically Operated & Fail-Safe Mechanism for reliability.
- Soft Seal or Metal-to-Metal Sealing for superior leak prevention.
- Square Section Side Discharge Port ensures better product removal and minimal residue.

## Containment & Compliance:

- ATEX-Compliant Design ensures safe handling of explosive/hazardous materials.
- GMP/cGMP Design with CIP (Cleaning in Place) & SIP (Sterilization in Place) compatibility.
- Double Seal Design with Flush Connection for filter base safety.
- Integrated Isolator & Glove Box for high-potency applications (HAPI & HPAPI).
- Vacuum Drying Capability reduces solvent residues and accelerates drying.

## Customization & Scalability:

- Available in Stainless Steel 304/316L, Hastelloy, Alloy C-22, and Special Alloys for corrosion resistance.
- Modular Process Features for batch reproducibility and flexible production requirements.
- From Lab Scale to Full Production Units: Capacity ranges from 5L to 150L.
- Optional Jacketed Designs for heating/cooling requirements.
- Multiple Harvest Designs: Side discharge valves, containment valves, and isolation systems.



## Filter Plate & Media:

- Clamp Design: Supports single-layer filter media for quick replacement.
- Multi-Layer Sintered Filter Media with boltless disc design for enhanced efficiency.
- Dead-Zone Free Construction ensures complete filtration and uniform cake formation.
- Interchangeable Filter Plate Design for flexibility in process optimization.

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## WORKING OF THE AGITATED NUTSCHE FILTER DRYER



### Feeding

The slurry or suspension is fed into the filter dryer, where it is retained by a filter media.



### Filtration

The agitator mixes the slurry while the liquid phase is drawn through the filter media, leaving behind the solid particles (filter cake).



### Washing

In some cases, a washing step can be performed to remove impurities from the filter cake before drying.



### Drying

Heat is applied to the filter cake via the jacketed chamber or through internal heating elements.



### Discharge

Once the desired moisture content is achieved, the dried cake is discharged from the unit.

## TECHNICAL DATA

MODEL	Filtration Area (SQ. M)	Working Volume (L)	Cake Holding Volume Max (L)	Vessel ID (mm)	Vessel Height (mm)	Agitator Stroke Max (mm)	Discharge Valve Dia (mm)	Agitator RPM	Motor Load (kw)
SS/ANFD - 10	0.04	10	3	220	330	80	50	15-120	1.5
SS/ANFD - 25	0.07	25	8	300	450	120	65	12-120	2.2
SS/ANFD - 50	0.1	50	17	380	570	150	65	8-10	3
SS/ANFD - 100	0.2	100	32	500	550	175	150	5-50	4
SS/ANFD - 200	0.32	230	80	640	720	250	200	7-74	4
SS/ANFD - 250	0.38	280	115	700	750	300	200	7-70	5.5
SS/ANFD - 350	0.5	400	150	800	800	300	200	6-60	5.5
SS/ANFD - 500	0.7	640	210	955	900	300	200	5-46	7.5
SS/ANFD - 750	0.85	770	340	1050	900	400	250	4-40	7.5
SS/ANFD - 1000	1.26	1140	505	1270	900	400	250	4-37	11
SS/ANFD - 1500	1.5	1500	750	1380	1000	500	250	3-30	15
SS/ANFD - 2000	2	2000	1000	1600	1000	500	350	3-30	18.5
SS/ANFD - 2500	2.5	2500	1250	1800	1000	500	350	3-25	18.5
SS/ANFD - 3000	3	3000	1500	1960	1000	500	350	3-25	22
SS/ANFD - 4000	4	4000	2000	2260	1000	500	350	2-21	22
SS/ANFD - 5000	5	5000	2500	2535	1000	500	350	2-18	30
SS/ANFD - 6000	6	6000	3000	2765	1000	500	350	2-17	30
SS/ANFD - 7000	7	7000	3500	3000	1000	500	450	2-16	37
SS/ANFD - 8000	8	8000	4000	3190	1000	500	450	2-15	37
SS/ANFD - 9000	9	9000	4500	3390	1000	500	450	2-15	45
SS/ANFD - 10000	10	10000	5000	3570	1000	500	450	2-14	45
SS/ANFD - 12000	12	12000	6000	3910	1000	500	450	1-12	55
SS/ANFD - 15000	15	15000	7500	4200	1000	500	450	1-10	60
SS/ANFD - 20000	20	20000	10000	5000	1000	500	450	1-9	75

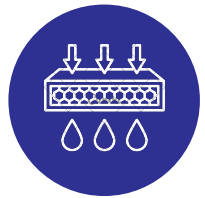
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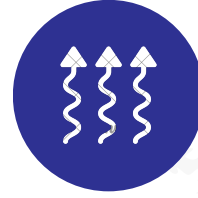
#### FILTRATION

Pressure / Nutsche Filter  
Agitated Nutsche Filter  
Sparkler Filter - Zero Hold Up  
Pressure / Leaf Filter



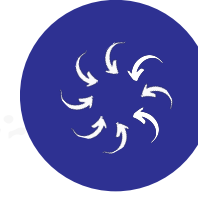
#### CENTRIFUGATION

Manual Top Discharge Centrifuge  
Bottom Discharge Type Centrifuge  
Bag Lifting Type Centrifuge  
Horizontal Peeler Type Centrifuge



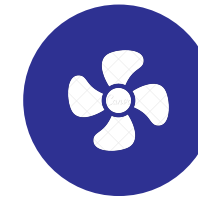
#### VACUUM DRYING

Agitated Nutsche Filter Dryer  
Nauta Conical Vacuum Dryer  
Rotary Vacuum Paddle Dryer  
Roto Cone Vacuum Dryer  
Vacuum Tray Dryer



#### MIXING

Conical Screw Mixer  
Double Cone Blenders  
Octagonal Blenders  
Ribbon Blenders



#### REACTION

SS/Hastelloy Reactor  
Mixing Tank  
ANFD Reactor  
Crystallizer

## COMMITTED TO EXCELLENCE FOR 45 YEARS

With 45 years of excellence in the industry, we are committed to delivering the highest quality products and innovative solutions. Our dedication to precision, reliability, and customer satisfaction drives us forward. Trust us for world-class equipment that meets your needs today and beyond.

### Corporate office

406, 407, Shivam Chambers, S.V. Road, Goregaon West, Mumbai 400104 India.

### Manufacturing Facilities

Unit #1 J-232 Tarapur MIDC, Boisar, Dist.: Palghar-401506, Maharashtra, India

Unit #2 L-73 Tarapur MIDC, Boisar, Dist.: Palghar-401506, Maharashtra, India

Unit #3 L-98, MIDC Tarapur, Boisar, Dist. Palghar-401506, Maharashtra, India.

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