OTOKLIN®
GLOBAL BUSINESS LIMITED

You, the plant owner. We, the turnkey contractor & your technological partner in progress.

The 2 of us are bound to be a smash hit

We can make a difference

You, the plant owner or a turnkey contractor. We, your Technological partner in progress.

You are constantly striving to improve the bottom line of your company.

We are constantly exploring innovative solutions to provide products and systems that can reduce your operating cost and improve the performance of your plant and product quality.

We do it by a process of constant Research and Development, by harnessing world renowned technologies rigorous testing of products for its quality and performance. All these has resulted in providing maximum value to our customers.

Our Products, like **Valveless Autowash Gravity (VAG) Filters**, have completely revolutionized the way filtration process have been carried out.

For the first time, Indian industries have a filter that requires no power or labour to operate. Yet, the filter continues to perform both filtration and cleaning of the filter bed at no cost whatsoever not a single paise spent on electricity or on an operator. These VAG Filters have been silently operating in customers' plants for over 20 years, yet incur zero cost for operation and maintenance.

Our **Water Treatment Solutions including ZLD** are custom designed in-house to cater to specific and diverse needs of clients across industries. Our solutions helps clients achieve better water efficiency & water management. This has led to huge savings through improved efficiency & water conservation.

Our **Horizontal Vacuum Belt Filters (HVBF)** have also enabled our customers to recover its cost in less than a year by improving yield and offering uninterrupted service.

Our **Automatic Back Flushing Filters** have replaced conventional **Simplex and Duplex Basket Strainers**. Power Plants, Metallurgical Industries and many other industries have improved their Plant Load Factor by its installation.

Let us know about your filtration problems. We are sure, we can offer you best solution from the vast pool of technologies available with us. Our solutions will definitely lead you to an improved bottom line of your plant and will provide peace and tranquility by its trouble free operation.

OTOKLIN SERVING ALL CORE SECTORS OF INDIA

POWER | MINING | STEEL FERROUS | FERTILIZER | OIL & GAS | DEFENSE | CHEMICAL
RAILWAY | CEMENT | SUGAR | PAINT | PAPER | RUBBER | TEXTILE
AUTO | COAL | FGD/ DEWATERING | STEEL NON FERROUS

PART LIST OF
INDUSTRIES / CLIENT / CONSULTANT

Industries	Reputed Clients	Consultant
POWER	NTPC, BHEL, DVC, NPCIL, MSEB, GSECL, TSGENCO, RRVUNL, UPRVUNL, TATA POWER etc.	DCPL, TCE, FICHTNER, DESEIN INDURE, L&T, Udhe India.
STEEL	SAIL (All Plants), ISSCO, Vedanta, JSW, TISCO, NALCO, Bhshan Steel, Hindustan Zinc etc.	MECON, CET, PAUL WURTH, OUTOTEC, M.N. DASTUR, TATA STEEL
FGD/ DEWATERING	BHEL, TSGENCO, TANGEDCO, RRVUNL, ETC,	FITCHNER, DUCON, DESEIN, DCPL
REFINERY & PETROCHEMICALS	RELIANCE GROUP, ONGC, BPCL, HPCL, HALDIA PETROCHEMICAL,	ENGINEERS INDIA LIMITED, H&G JACOBS, THYSSENKRUPP, UDHE, TOYO, IBIC ENGINEERING, FOSTER WHEELER, AKER SOLUTION
FERTLIZER	IFFCO, RCF, NFL, GNVFC, GACL, GSFC	EIL, PDIL, TOYO, UHDE, TECHNIMONT, JACOBS
CEMENT	ADITYABIRLA GROUP ACC, LAXMI CEMENTS, JK CEMENT, ADITYA BIRLA	THYSSENKRUPP, L&T.
OTHERS	CHEMANOL- KSA, INDORAMA-THAILAND. IFFCO JORDAN, ORDNANCE FACTORY, FARABI.	FOSTER WHELEER

PARTIAL LIST OF THIRD PARTY INSPECTION AGENCIES WORKED WITH

EIL I LLOYD'S I MECON I PDIL I CET I SGS I BVIS
TUV I IRQS I TPL I QUEST I INTERTEK I IRS

GLOBAL PRESENCE:

OTOKLIN® as an EPC/LSTK POWERHOUSE

Turnkey EPC/LSTK Solutions for SSF, WTP, WWTP, STP & ZLD, BELT FILTER, TWS

From Concept to Clean Water – All Under One Roof

01 Design & Process Engineering

Raw Water Analysis → Process Schemacs → System Sizing → Hydraulic Designs → 3D Plant Layouts.
We don't just supply equipment — we engineer the entire process.

02 Civil Infrastructure

RCC Clarifiers, Filtration Beds, Sludge Thickener Tanks & Pump Rooms — complete civil construction.

03 Electrical, Instrumentation & Automation

PCC/MCC Panels, HT to LT Transformers, PLC-SCADA Systems & real-time monitoring sensors installed and integrated to make your plant truly Smart.

04 Seamless Execution & Project Management

Strict PM protocols at every stage — deadlines never missed.

05 Advanced Fabrication Unit

Custom Pressure Vessels, Reaction Tanks & Complex Piping Networks (MS/SS/Alloy) — manufactured in-house to project timeline.

06 Erection & Commissioning

Site Mobilizaon → Equipment Installaon → Hydro-Tesng → Trial Run → Final Commissioning & PG Test.

Ensuring your facility is fully operational, tested handed over on schedule.

WHY CHOOSE OTOKLIN FOR EPC?

30+ Years of Filtration & WTP Expertise

More than three decades of Filtration & Water Treatment mastery applied to large-scale EPC projects — proven reliability.

QA/QC Quality Assurance

As required, joints and components undergo X-Ray, DPT & Hydro-testing under our direct supervision. No shortcuts. Ever.

Single Window Accountability

Civil to software — speak to ONE team.
No juggling vendors. Complete project ownership from Day 1.

Cost Control & Value Engineering

In-house fabrication eliminates the middleman.
Better quality at directly optimized project costs.

EXPERTISE IN : Pump House | High-Rate Clarifiers | Electrical Room Chemical House | Pre-Treatment Plants | Gravity Sand Filters | WWTP & ZLD Systems | EFFLUENT & SEWAGE Treatment Plants

EPC /LSTK Projects Completed for: NPCIL, PDIL, JSW, IFFCO, BHEL, IEL, SAIL, TATA, TATA STEEL, AUM, HINDUSTAN ZINC

Products & Systems

VAG for
Drinking Water

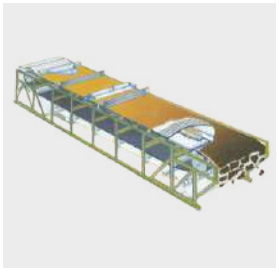
VAG for
Cooling Water
Treatment Plant

1. Valveless Autowash Gravity Filter for Filtration & Separation:

- Brief Write Up For Valveless Auto Wash Gravity (VAG) Filter
- Photographs of some of the Major installations (VAG) Filter
- Use of VAG Filter for Cooling Water Treatment Plant

2. Water & Waste Water Treatment Plants :

- Brief Write Up For Water and Waste Water Treatment Plant (ETP, STP, PTP, WTP & WWTP with ZLD, RO Plant, DM Plant)



3. Horizontal Vacuum Belt Filter (HVBF) :

- Catalogue of HVBF
- Selection chart for HVBF
- Actual Installation Photographs for Horizontal Belt Filter

4. Raw Water Screening Equipment:

- Catalogue of Raw Water Screening Devices

5. Other type of Filters & Strainers:

- General Catalogue
- Otoklin Products & Systems

VALVELESS AUTOWASH GRAVITY (VAG) FILTER

DERIVE ENERGY FROM THE CHEAPEST, SAFEST & SUREST SOURCE - NATURE!

OUTSTANDING FEATURES :

Wide Range :
20 models Flow ranging from 6m3/hr to 640m3/hr.

No Manpower :
The filter operates fully automatically, requiring no supervision, start/stop actions, or operational decisions.

No Maintenance :
Since there are no moving parts, there is no wear. Hence no maintenance (except normal periodical painting).

No Pumps :
Backwash water is stored within the unit at the correct elevation, therefore, no wash pump is needed.

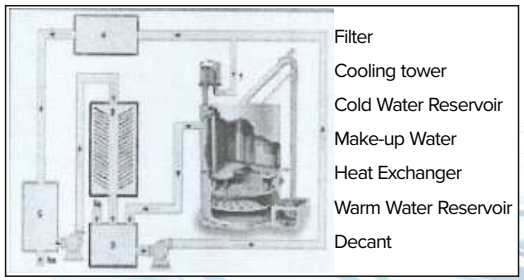
No Electricity, Compressed Air or Pressurized Water:
All operations are controlled and sequenced by the unit itself, eliminating the need for external controllers or operating consoles for any electric, pneumatic, or hydraulic functions.

No scope for Human Error :
The Valveless Filter eliminates all possibilities of human error. It cannot backwash too early or too late, too fast or too slow, or with too much or too little water. The complete rinse cycle is fixed and cannot be altered, and backwash or rinse cannot be accidentally directed to services.

No stand by :
Filter dose not require any Standby unit.

VAG FILTER FOR SIDE STREAM FILTRATION OF COOLING WATER

It is essential to filter cooling water because dirty water not only causes corrosion but also reduces the heat transfer efficiency of heat exchanger and increases maintenance and cleaning costs. Generally, cooling water is filtered by passing a small percentage of total water through a Filter and thereby constantly reducing the load of suspended solids. The system is known as Side Stream Filtration of Cooling Water.



OTOKLIN's MAJOR VAG FILTER INSTALLATIONS

16 Nos. VAG Filter at RRVUNL, Rajasthan, thru Indure

12 Nos. VAG Filter at Mejia TPS, DVC, West Bengal Thru BHEL

18 Nos. VAG Filter at Durgapur TPS, DVC, West Bengal thru BHEL

8 Nos. VAG Filter at Vemagiri TPS at Andhra Pradesh thru L&T/TCE

2 Nos. VAG Filter at Vedanta Jharsuguda thru HDO

1 No. VAG Filter at Chemanol Saudi Arabia Thru Libratech

USE OF VAG FILTER FOR COOLING WATER TREATMENT PLANT

Sustainable OTOKLIN VAG Technology for Cooling Tower for better world!

Quality of water plays a critical role in ensuring the optimized operation of condensers and cooling towers. With increasing concerns over water scarcity, this issue is not only of national importance but also significantly impacts operational costs in the manufacturing process.

OPEN RECIRCULATING COOLING SYSTEM WITHOUT FILTER:

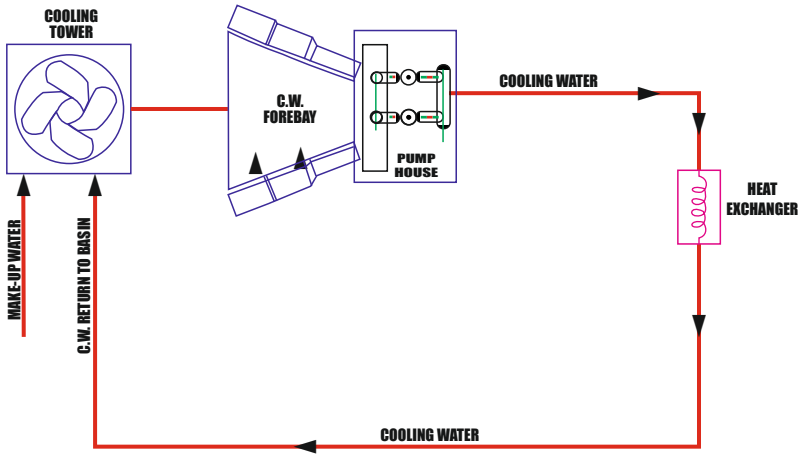


FIG-1: TYPICAL CW-CIRCUIT WITHOUT FILTRATION & DOSING SYSTEM

The heat exchange takes place in the condenser to convert steam into hot water. Further, in the cooling tower, heat is exchanged by extracting heat from this hot water to bring it down to acceptable levels of temperature. For this process, cooling towers use “water” as a medium.

Continuous evaporation takes place in the cooling tower, but what evaporates is pure water. What remains behind are air-borne particulate scrubbed in cooling towers from the surrounding air, which keep increasing continuously. Additionally, makeup water adds further impurities, thereby making the water dirtier.

This phenomenon of increasing dirtiness of water- “Total Suspended (TSS) increase” leads to fouling and deposition in the condenser and fills of the cooling tower. This affects heat transfer and results in higher evaporation losses.

TYPICAL PROBLEMS FACED IN AN OPEN RECIRCULATING COOLING SYSTEM:

- Fouling of HE with TSS & Microbes from Ambient air & Make-up Water.
- Macro-Fouling with Large Sized Foreign Particles of Wood, Plastic, Leaves, Organisms, etc.
- Corrosion of the System & deposition of corrosion products in the Heat Exchanger.
- Biofilm & Micro-Biologically Induced Corrosion.
- Scaling Thru Mineral Precipitation.
- Heavy Sludge Settling in CT basin.
- Heavy Blow-down required.
- Control Evaporation Loss
- Decrease Make up Water use

SOLUTION TO THE ABOVE PROBLEM:

CW TREATMENT TO CONTAINING INHIBITORS & DISPERSANTS FOR:

- pH Correction thru Sulphuric Acid Dosing
- Scale Inhibitors
- Corrosion Inhibitors
- Biocide Inhibitors
- Chlorination, as required

FILTRATION THROUGH

- 100% Filtration of Heavy Particles Greater Than 50 Microns thru Automatic Self Cleaning Filter (ASCF).
- Side Stream Filtration Thru Valveless Autowash Gravity (VAG) Filters.

OTOKLIN VAG Comes to the Rescue:

*(ASCF) Automatic Self Cleaning Filter

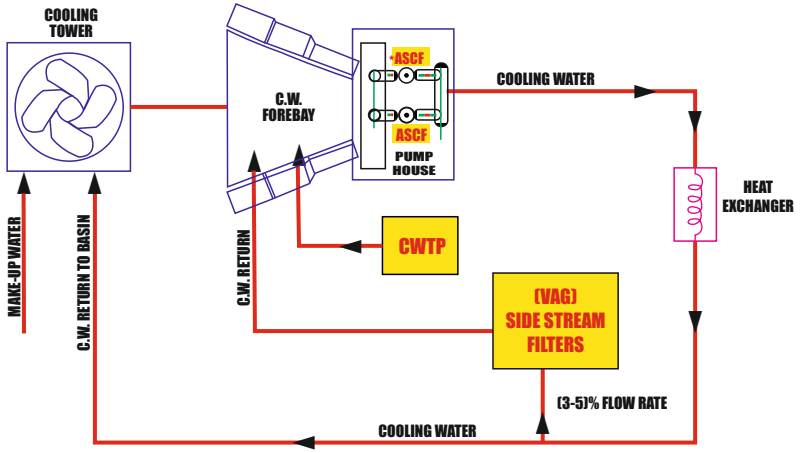


FIG.-2: CW CIRCUIT WITH FILTRATION (i.e. VAG + ASCF & CWTP -DOSING SYSTEM)

OTOKLIN VAG Technology step in here to assist plant owners in running the cooling tower operations better. This is achieved by filtering a part of cooling tower water in circulation using VAG filter.

This concept known as Side Stream Filtration (SSF) system’s use of Otoklin VAG technology with CWTP Dosing System for this purpose has become increasingly popular due to conservation of Water across industries especially Power & Steel Plant.

WTP & WWTP SYSTEMS

Effluent Treatment Plant (ETP)

Effluent Treatment Plants (ETPs) are used by leading companies in the Steel, Power, Fertilizer, and Chemical industries to purify water and remove both toxic and non-toxic substances.

These Plants are used by all companies for environment protection.

ETPs use operations like screening, sedimentation, clarification, centrifuging, evaporation with drying methods, etc. to treat wastewater.

Sewage Treatment Plant (STP)

Sewage is the wastewater coming from household, domestic and commercial outputs.

They contain excreta of humans, animals, rainwater, and debris from sewers in them.

It contains more solid waste due to the presence of such material in it and is more harmful to human use.

Application Areas:

Used in community, Real estate industries, Hospitals & Township Projects.

Pre-Treatment Plant (PTP)

Urban wastewater and raw water often contain suspended solids, grit, oil, grease, and other impurities that can damage pipelines, pumps, and treatment systems. Pre-treatment is the first and most critical step to ensure smooth operation of a Water Treatment Plant.

Key Pre-Treatment Processes

- Screening & Straining
- Grit & Grease Removal
- Coagulation & Flocculation
- Filtration (Sand, Micro, Ultra, Nano)

Reverse Osmosis (RO)

Reverse Osmosis (RO) is one of the most advanced and effective methods for producing pure water. it works by forcing water through a semi-permeable membrane that removes up to 99% of dissolved salts, impurities, and contaminants.

Why RO Treatment?

For centuries, availability of clean water has been a challenge due to salinity, dissolved solids, contaminant, and uneven distribution. RO technology offers a reliable solution by converting raw water into safe, high-quality water for drinking and industrial use.

Waste Water Treatment with Zero Liquid Discharge (WWTP With ZLD)

Zero Liquid Discharge (ZLD) is a strategic waste water management system that ensures that there will be no discharge of industrial waste water into the environment.

It is achieved by treating waste water through recycling and then recovery and reuse for industrial purpose.

Hence ZLD is a cycle of closed loop with no water loss/wastage

DM Water Plant

The Water free from any mineral is called.

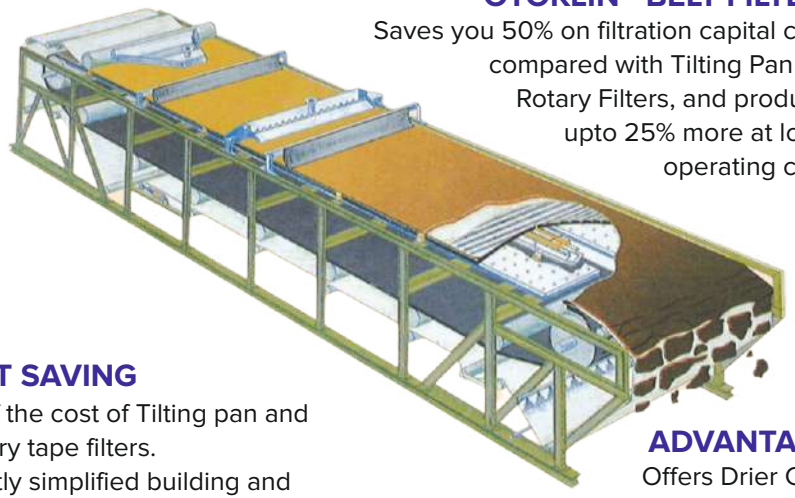
Demineralized Water (D.M. Water). Naturally occurring Water has various salts in dilute form which are called Total dissolved solids. (TDS).

When the Water having such mineral is required to be free from this, it is to be treated in ION Exchange Resins column (H from) which absorbs the positively charged ion. Now the cations free passed through Anion Resin Column (OH form) which absorbs the negatively charged anions and water free from the total ions shall comes out from the system.

OTOKLIN®

HORIZONTAL VACUUM BELT FILTERS-(HVBF)

Widely used Filtration Technology in FGD, DEWATERING SYSTEMS, FERTILIZER, METALLURGICAL & CHEMICAL INDUSTRIES



OTOKLIN - BELT FILTERS

Saves you 50% on filtration capital costs compared with Tilting Pan and Rotary Filters, and produces upto 25% more at lower operating costs

COST SAVING

- Half the cost of Tilting pan and rotary tape filters.
- Vastly simplified building and civil requirements.
  Cloth life In excess of 3000 hours.

ADVANTAGE:

Offers Drier Cake
Easy to maintain.
Higher Productivity per unit area.

UNIQUE COST SAVING BELT FILTRATION CONCEPT

OTOKLIN is constantly striving to offer you the finest in filtration technology from the world and to help maximize your profits with cost effective operation of your capital equipment.

A total new concept in BELT FILTRATION making use of unique process features resulting in large capital and operating cost savings is introduced to India.

It outperforms traditional Rotary Drum, Tilting Pan and Table Filters in all situations where capacity, efficient washing and maximum liquor dilution are required. It has also been adapted to flotation concentrates and sand drying applications where considerable reductions in cake moisture are achieved.

OTOKLIN HORIZONTAL VACUUM BELT FILTER (HVBF) manufactured in India has been developed and improved in mechanical design by close liaison and co-operation with engineers and operators at existing key installations. Today we are able to offer a range of units from the smallest 0.4m2 pilot filter upto 250m2 in effective filtration area. All these units are capable of running speeds upto 50 meters per minute at vacuums of 80 Torr (27.0 inches of mercury at sea level).

This new design capability making use of the most modern materials of construction makes the OTOKLIN HORIZONTAL VACUUM BELT FILTER (HVBF) an efficient and reliable liquid/solids separation unit having low capital, running and maintenance costs.

OPERATING PRINCIPLE

A. Top feed arrangement enables filtration of process slurries such as coarse, granular, fine slime or fibrous materials Necessity for classification of solids on the basis of size is also done away with by such feed arrangement. Feed slurry is uniformly distributed over the full width of filter. Gravity aids filtration, minimizing vacuum energy while reducing cake formation time. Fast setting solids and coarse material settle first to cause stratification, which aids filtration.

B. Cake travelling on the filter media above the drainage belt is effectively de-watered. Co-current or counter-current wash systems are designed to meet the process requirements, employing multiple and independent washing zones to optimize product recoveries.

C. Filtrate is drained through the grooves in transporter belt towards center and through drainage hole into the vacuum box, to get separated into the filtrate/wash receivers.

D. The cake is discharged as the filter media travels around a small diameter roll after the media separates from the drainage belt.

E. A series of wash sprays clean the belt and filter media independently to extend the life of both. Several patented design features incorporated in OTOKLIN BELT FILTERS enables superior performance.

LOW OPERATING AND MAINTENANCE COSTS

The Otoklin filters use specially designed vacuum seals to reduce friction. This coupled with an open and accessible design results in long life wearing parts and low running costs.

COUNTER-CURRENT WASHING

Counter-current washing in several stages can be used to minimize the amounts of wash liquor.

HIGH FILTRATION RATES

Typically the Otoklin Filter will require only one third to one half of the area required by a rotary drum or disc filter. This is due to the top feed application of slurry which allows coarser particles to from pre-coat on the filter medium.

DRIER FILTER CAKE

Due to better packing of the particles in the filter cake the Otoklin filter gives drier filter cakes than other vacuum filters. Otoklin has unique designs which can reduce the final cake moisture by up to 50% compared to conventional vacuum filters.

BETTER WASHING EFFICIENCY

The displacement of mother liquor in the cake by plug flow washing gives maximum efficiency with a minimum amount of wash liquor. This ensures a high purity cake and minimizes effluent problems.

FLEXIBILITY OF OPERATION

In the Otoklin Filter system, the cake thickness, wash rate, vacuum and cycle time can be varied to achieve optimum filtration conditions. This results in lower investment costs.

CONTINUOUS CLEANING OF THE FILTER CLOTH

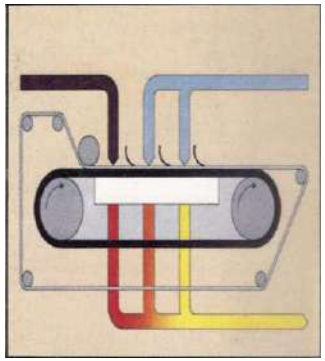
Both sides of the filter cloth are cleaned by wash sprays to ensure long life and to prevent blinding throughout the cloth life cycle.

EXPERIENCE

Belt Filters are successfully operating in Chemical, Fertilizer plants etc. Many users have reported payback period of less than a year

WASHING APPLICATIONS

High extraction efficiencies are the Key to profitability in most washing applications whether gold, uranium, phosphoric acid, copper or alumina. Wash efficiencies greater than 99% can be achieved when a flooded level of solution is maintained in the wash zone allowing displacement plug flow. Efficient separation of wash zone and form zone is the secret to achieving this. Otoklin has developed patented techniques to ensure this.

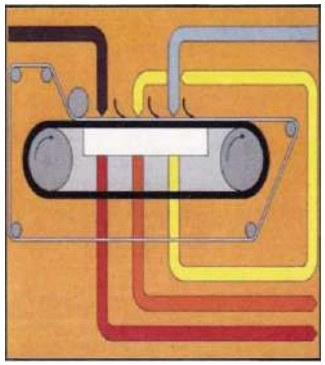


Co-current Washing

Co-current washing in several stages gives excellent washing efficiency when filtrate dilution is not critical. In gold 99.8% recovery is common with two to three displacement washes

Typical Applications:

- Gold and silver recovery in cyanide processes.
- Recovery of metals in solution followed by precipitation.
- Washing of phosphate rock.
- Recovery of manganese.
- Cement copper.
- Tailings washing as final stage after CCD.



Counter-Current Washing

This method is used when downstream treatment of filtrates requires minimum dilution such as when liquid has to be evaporated or when limited wash water is available. Both cake filtration zones and vacuum box zones can be effectively and easily divided to give optimum washing performance.

Typical Applications:

- Hemi and Dehydrate calcium sulphate from phosphoric acid.
- Recovery of alumina from sintered mud.
- Uranium recovering after acid or carbonate leaching.
- Recovery of Yellow cake.
- Cellulose pulp washing.
- Vanadium and tungsten recovery.
- Sugarcane mud washing.

DRYING APPLICATIONS

Otoklin can supply Belt Filters for Dewatering and drying flotation concentrate and sand, etc to obtain lower residual cake moisture compared to conventional Vacuum Filters.

Typical Application:

a) Drying of flotation concentrates or tailing including.

- Coal
- Copper
- Lead
- Nickel
- Zinc
- Pyrite
- Phosphate Rock

b) Drying of heavy and coarse materials including.

- Limenite
- Rutile
- Zircon
- Chromite
- Dewatering of paper machine effluents
- Iron ore
- Silica sand
- Power station ashes
- Tin
- Smuts from bagasse boilers
- Sand

c) Also Dewatering of gold uranium slurries, sludges & effluents.

By feeding the slurry on top of the filter, the coarser particles settle out first in the form zone forming an effective precoat layer. This results in higher to pack tightly reducing voidage and thus a lower residual moisture.

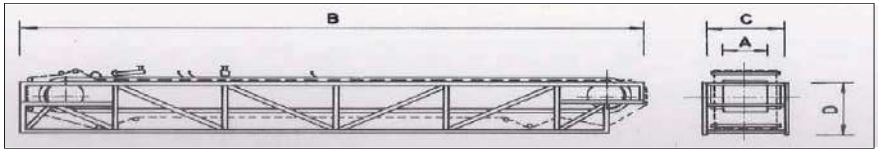
We have further developed a low pressure steam hood and the Otoklin Vibro-Dri technique, which reduces the final cake moisture by a further 35%. in many applications, this can eliminate thermal drying completely, resulting in dramatic energy savings and a reduction in transportation cost.

HVBF SELECTION CHART

OTOKLIN-STANDARD FILTER DIMESIONS

The listed dimensions refer to the Otoklin standard range of filters Large units up to 250 m² in area are also available on request for specific industry requirements. All dimensions and other data are approximate and could be changed without notice. Refer to certified drawings for construction purposes.

Otoklin-filter type 05B and 08B



FILTER TYPE	FILTER AREA m2	BELT WIDTH mm	LENGTH mm	WIDTH mm	HEIGHT mm
058/01-27V	1	500	4500	850	1000
088/01-27V	2	800	4600	1200	1000

Otoklin-filter type 12B and 16B

FILTER TYPE	FILTER AREA m²	BELT WIDTH mm	LENGTH mm	WIDTH mm	HEIGHT mm
12B/02-24V	5	1200	9750	1910	2000
12B/03-24V	7.5	1200	12150	1910	2000
12B/04-24V	10	1200	14550	1910	2000
12B/01-30V	3	1200	7950	1910	2000
12B/02-30V	6	1200	10950	1910	2000
12B/03-30V	10	1200	13950	1910	2000
12B/04-30V	13	1200	16950	1910	2000
16B/02-24V	7.5	1600	9750	2320	2000
16B/03-24V	10	1600	12150	2320	2000
16B/04-24V	14	1600	14550	2320	2000
16B/05-24V	18	1600	16950	2320	2000
16B/01-30V	5	1600	7950	2320	2000
16B/02-30V	9	1600	10950	2320	2000
16B/03-30V	13	1600	13950	2320	2000
16B/04-30V	18	1600	16950	2320	2000
16B/05-30V	22	1600	19950	2320	2000

Otoklin-filter type 20B and 24B

FILTER TYPE	FILTER AREA (m²)	BELT WIDTH (mm)	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)
20B/03-24V	13	2000	12880	2730	2800
20B/04-24V	18	2000	15280	2730	2800
20B/05-24V	22	2000	17680	2730	2800
20B/06-24V	27	2000	20080	2730	2800
20B/07-24V	30	2000	22480	2730	2800
20B/08-24V	35	2000	24880	2730	2800
20B/09-24V	40	2000	27280	2730	2800
20B/10-24V	44	2000	29680	2730	2800
20B/11-24V	48	2000	32080	2730	2800
24B/03-24V	16	2400	12880	3130	2800
24B/04-24V	21	2400	15280	3130	2800
24B/05-24V	27	2400	17680	3130	2800
24B/06-24V	32	2400	20080	3130	2800
24B/07-24V	37	2400	22480	3130	2800
24B/08-24V	43	2400	24880	3130	2800
24B/09-24V	48	2400	27280	3130	2800

Otoklin-filter type 32B

FILTER TYPE	FILTER AREA (m²)	BELT WIDTH (mm)	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)
32B/03-24V	22	3200	13580	3930	2800
32B/04-24V	29	3200	15980	3930	2800
32B/05-24V	36	3200	18380	3930	2800
32B/06-24V	44	3200	20780	3033	2800
32B/07-24V	51	3200	23180	3930	2800
32B/08-24V	58	3200	25580	3930	2800
32B/09-24V	65	3200	27980	3930	2800
32B/10-24V	72	3200	30380	3930	2800
32B/11-24V	80	3200	32780	3930	2800
32B/12-24V	87	3200	35180	3930	2800
32B/13-24V	95	3200	37580	3930	2800
32B/14-24V	100	3200	39980	3930	2800

Otoklin-filter type 42 B

FILTER TYPE	FILTER AREA (m²)	BELT WIDTH (mm)	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)
42B/05-24V	49	4200	18380	4930	2800
42B/06-24V	58	4200	20780	4930	2800
42B/07-24V	68	4200	23180	4930	2800
42B/08-24V	78	4200	25580	4930	2800
42B/09-24V	87	4200	27980	4930	2800
42B/10-24V	97	4200	30380	4930	2800
42B/11-24V	107	4200	32780	4930	2800
42B/12-24V	117	4200	35180	4930	2800
42B/13-24V	126	4200	37580	4930	2800
42B/14-24V	136	4200	39980	4930	2800
42B/15-24V	146	4200	42380	4930	2800
42B/16-24V	155	4200	44780	4930	2800

(INTERMEDIATE AND LARGER SIZE ALSO AVAILABLE)

ACTUAL INSTALLATION PHOTOGRAPHS FOR HORIZONTAL BELT FILTER

HUGE SAVINGS DAY AFTER DAY

- Higher recovery of mother liquor
- Savings in Water & Power
- Reduction in Steam consumption
- Savings in maintenance

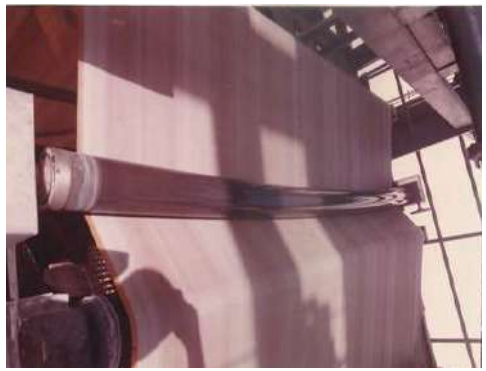
One of our clients managed to earn profits in year 2 of installation as their filter cost was recovered in double quick time.

MAIN BELT FILTER BUILDING

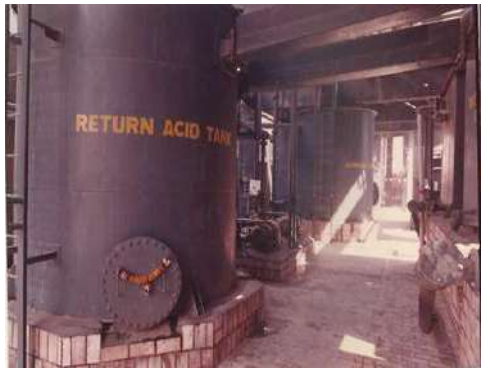
MAIN BELT FILTER BUILDING

SLURRY FEED MECHANISM

FILTRATE RECEIVER SEAL TANKS



BOWED ROLLER FOR DE-CREEING



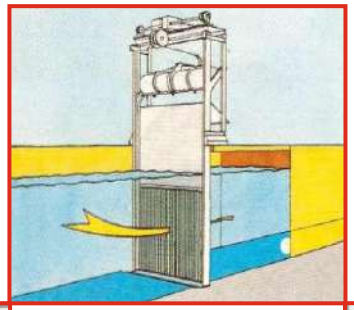
FILTRATE RECEIVER TANKS

MAIN BELT FILTER

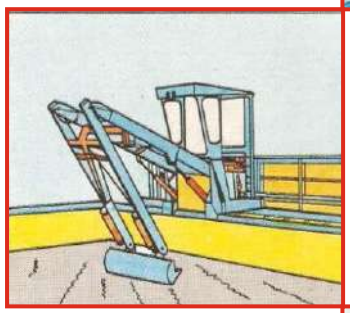
PIPING FOR FILTRATE

OTOKLIN GLOBAL BUSINESS LIMITED

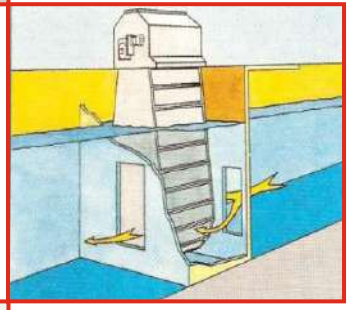
RAW WATER SCREENING EQUIPMENT



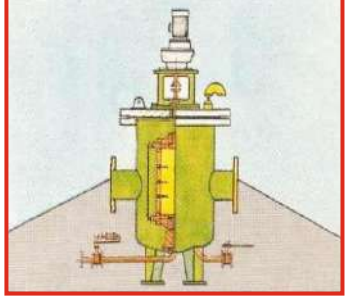
Bar Screens
With Automatic Trash Rakes



Mobile Hydraulic Cleaning Machine
for Bar Screens



Travelling Band Screens



Automatic Self Cleaning Strainers

OTOKLIN offers a complete range of screening equipments for raw water intakes and pumping stations, e.g.

Large debris removal

screening

fine screening

Sailent Features :

- State-of-The-Art Technology
- Complete range of equipment for raw water.
- **Automatic :** Hence suitable for remote operation including for Nuclear Power Plants
- Sturdy and highly reliable
- Principals are specialist in screening equipment
- More than 500 installation operating throughout the world
- Suitable for severest environments
  - Sea Water
  - Tropical Climate
  - Nuclear Power Plants

Bar Screens with Automatic Trash Rakes

These equipment are installed in raw water gravity channels.

They retain and remove the trash automatically by means of differential pressure switches automatic cleaning rakes.

Width : 1.2 to 5 metres
Flow rate : 2.500 to 54.000 m^3/hr
Space between bars : 10 to 100 mm

Travelling Band Screens

These equipment are installed in raw water gravity channels with varying water levels, and located upstream to pumps. Both Through Flow and Dual Flow screens can be provided, for comparison, please see adjacent page.

- Flow rate 90 to 72.000 m^3/hr
- Mesh size 0.6 to 10mm
- Types N
  NCA/NCB
  NCC
  depending on criticality

Automatic Self Cleaning Strainers

These equipment are installed at the delivery end of the pumps for fine screening of the water depending on end use, The removal of sludge from the filtering elements is without any stoppage of the flow.

- Flow rate 22 to 6.600 m^3/hr
- Service pressure 2 to 25 bar
- Mesh size 0.1 to 5 mm

Mobile Hydraulic Cleaning Machine for Bar Screens

This machine can clean a series of adjacent bar screens effectively and economically.

OTHER FILTERS & STRAINERS

BACK FLUSHING FILTERS

AUTOMATIC BACKFLUSHING STRAINER (STR)

FLOW RATE : 22 to 6600 m^3/ hr
SERVICE PRESSURE : 2 to 25bar
MESH SIZE : 50 micron and above

OPERATION :

These Self Cleaning Filters are used for coarse to fine filtration of water, The cleaning of the filtering element and removal of sludge is automatically done without stopping screening operation.

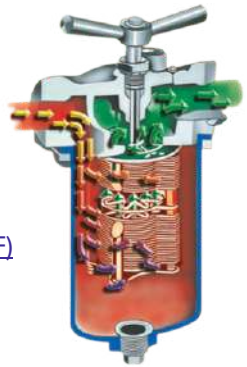
OUTSTANDING FEATURES:

Wide Range : 4 models to suit flows upto 6600 m^3 /hr.

No Manpower : Contrary to Duplex Filters, no manpower required for change over or cleaning

No scope of human Error : In a conventional Simplex or Duplex Filter, one needs to keep an eye over increase in pressure Drop and change the flow directions or isolate the Filter when the Pressure Drop exceeds the set value our Automatic Back Flushing Filters do not need such human attention. As soon as Pressure Drop exceeds set value, the Filter Mesh Is automatically cleaned. During such cleaning operation, flow reduces only by 3 % and that too for only a few minutes, depending upto the stickiness of impurities.

No stand by unit required : Our Automatic Back Flushing Filters do not necessitate a stand by unit. Filters are cleaned without interruption of flow.



SELF CLEANING FILTERS

MANUAL/MOTORISED SELF CLEANING FILTER (DSCF)

SALIENT FEATURES :

1. Just turn the handle for cleaning - minimum operation cost.
2. NO replacement needed.
3. Lowest pressure drop.
4. No risk of clogged cartridge.
5. lasts the life of the plant.
6. Cleaning without interruption of flow - minimum out of service time.
7. Mesh size available upto 0.001" (25 Micron)
8. Small size, big capacity.
9. Cleaning without dismantling - No risk of fire.
10. Single unit can handle flows ranging from 5 Lpm to 6000 Lpm.

TYPICAL APPLICATIONS:

Lubrication oil, Hydraulic fluids, Air cleaner oil, Cutting oil, Grease, Fuel oil, Quenching oil, Diesel oil, Wax, Tar, Paints, Emulsions, Cellulose, Resins, Enamels, Detergents, Soaps, Glue, Dim water, Molasses, Rubber, Cement, Alcohol, Bunker 'C', Benzene, Methanol, Hydrogen, Nitrogen, Steam and so on ...

STRAINERS & CARTRIDGE FILTERS

Basket Strainer

- Uses one or more baskets in one housing.
- Baskets normally made from perforated sheets and wire mesh.
- Housing : Carbon Steel, Stainless Steel (Fabricated). Cast Iron, Cast Steel, etc with or without lining.
- Element : Stainless Steel, Monel etc.
- Size : Upto NB 600.
- Filtration : Upto 10 micron

Multi Seive Baskets

- Depending upon flow rate, pressure drop and degree of filtration, surface area of filtration is increased by providing large nos. of sieves in parallel.

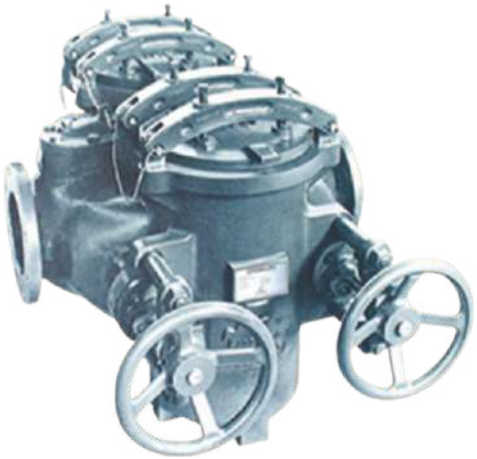
Cartridge Filters and Filter Elements

- Made from Fiber Glass, Nylon, Polypropylene, Cotton, Paper, Fuller's Earth, Activated Carbon, etc.
- Suitable for filtration upto 0.2 micron.
- Filter Elements made from Paper, Wire Mesh, Fibre, Cloth, etc, are made to suit customer's specifications, samples and drawings for various plant equipments and machineries.

TEE and Y Strainers

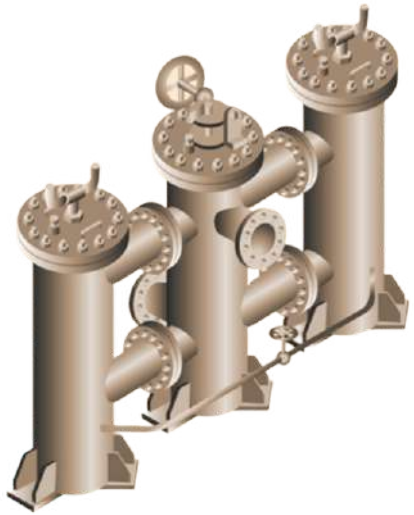
- Made from Carbon Steel, Stainless Steel and Low Alloy Steels.
- Size : Upto NB 600.
- Rating : Upto 2500 class ANSI rating.

Duplex Strainers



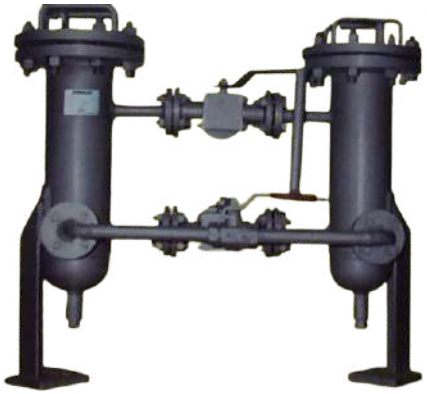
Duplex Basket Strainers

- Illustration shows strainer made from one piece housing construction.
- Housing made from cast iron, cast steel, etc. with or without rubber lining.
- Also provided with Valve Actuator, DP Switch, DP Gauge and Control Panel.
- Size : Upto NB 800.



Duplex Strainers

- Uses Six Port Transfer Valves.
- Flow diverted from one to another strainer simply by turning handle provided on top.
- Very Easy to Operate.
- Size : Upto NB 600.



Duplex Filters

- Uses 2 Nos. 3-Way Ball valves or 4 Nos. Butterfly valves.
- Housing : Carbon Steel, Stainless Steel, etc.
- Element : Brass, Stainless Steel, Monel, etc.
- Filtration : Upto 3 micron.
- Pressure : Upto 2500 class ANSI rating.
- Size : Upto NB 200.

OTOKLIN PRODUCTS & SYSTEMS

Sr. No.	Products	Salient Features	Advantages
1.	Valveless Autowash Gravity Filter Type : VAG	Cooling Water Dining Water Process Water (Side Stream Filtration of Cooling Water) Up to 640 M^3/hr x Multiple Filter	Fully Automatic yet... No Labour / No Power / Material maintenance
2.	Horizontal Vaccum Belt Filter Type : HVBF	For solid liquid separation of Slurries designs to suit washing of slurries, so that liquids trapped in inter granular space can also be recovered Up to 500 Tonnes Per hour. 5 Micron and above	Construction is better suited for those application Where filtration area required is not very high.
3.	WTP & WWTP Systems	• Sewage Treatment Plant • Effluent Treatment Plant • De-mineralization Plant • Pre Treatment Plant • Waste Water Treatment Plant with Zero Liquid Discharge • Reverse Osmosis Plant	• Removal of Impurities, TSS & TDS • Water Conservation & Pollution • Control Requirement Zero Water • Loss & Water Management
4.	Raw Water Screening Devices	• Travelling Band Screens • Mobile hydraulic Cleaning Machine • Automatic Self Cleaning Strainers • Bar Screens	Large debris removal screening fine screening
5.	Automatic Self Cleaning Strainer Type : STR	Up to 6600 Mp/hr 0.1 mm and above	Back-washed Automatically No attendance required High Debris holding capacity Individual for Raw water screening system
6.	Self Clearing Filter Type : DSC Type : M-DSC	All types oils like Lubricating, Hydraulic, Cutting, Fuel Quenching etc. Molasses, Paints, Enamels, Cement, Resins etc., Up to 180 M3/hr 25 Micron and above.	Just turn of a handle cleans the fiber media. Debris falls in house which should be removed during shut down, No Spares are required Life long Service, Eliminates fire risk.
7.	Simplex Basket Strainers/Filter Type : SBF	Any Industrial application for chemicals, Oils, Water Air and Gas. Up to 8000 M/hr 25 Micron and above	Basket needs periodical cleaning. Most advanced designs to reduce cleaning time and cost of replacements.
8.	Duplex Basket Strainers/Filter Type : SBF	Any Industrial application for chemicals, Oils, Water Air and Gas. Up to 8000 M/hr 25 Micron and above	Basket needs periodical cleaning. Most advanced designs to reduce cleaning time and cost of replacements. Various Options to suit Varying needs of different industry and his application.
9.	Cartridge Filter Type : CRTF	Any Industrial application for chemicals, Oils, Water, Air and Gas. 0.3 Micron and above	Cartridges are made of different material like cotton, nylon polypropylene, wire mesh, sintered stainless steel etc. to suit operating conditions some cartridges are suitable for clearable.
10.	Y type Strainers Type : Y	Protection of Instruments etc. used in all pipe lines such as for Water Supply, Gas, Oil, Chemicals etc 0.1 to 0.5 mm	Advanced construction features as certain finer retention of particle high filtration area, low pressure drop and easy removal & installation of filter element.
	Tee type Strainer Type : Tee	Generally used for trapping pipe line impurities like rust scale jointing compound etc. Directly Welded in pipe line. 0.1 to 0.5mm	Although directly welded in pipe line, it has a provision for removal and replacement of filter Element.

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