

RYB Hindustan Filtration

Say no to impurities



Industries we serve



AUTOMOTIVE

REFINERIES

FOOD & BEVERAGE

POWER

PHARMACEUTICALS

WASTE WATER TREATMENT

METAL & STEEL

OIL & GAS

RYB Hindustan Filtration

RYB Hindustan Filtration was found in 2016 to provide quality filtration for our customers worldwide. We have structured our company, and various departments within, to work together to solve customers' problems and to develop solutions for our customers. We are focused on becoming a conglomerate in filtration. We have found that commitments and fairness to our customers are equally valued elements as are quality, pride and innovative technical solutions. We continue to strive to be a leading player in R&D, Quality process improvements, customer service, technical support, training and field support. We provide custom filtration solution and 24/7 support for our clients while focusing on flexible and timely delivery. We continually improve our products and technology in our state of the art research center.

Our company always try to provide best solutions to our customers as per customers requirement and also try to provide minimum delivery times and responsiveness to our customers' requirements. Our company head office & Administrative center are

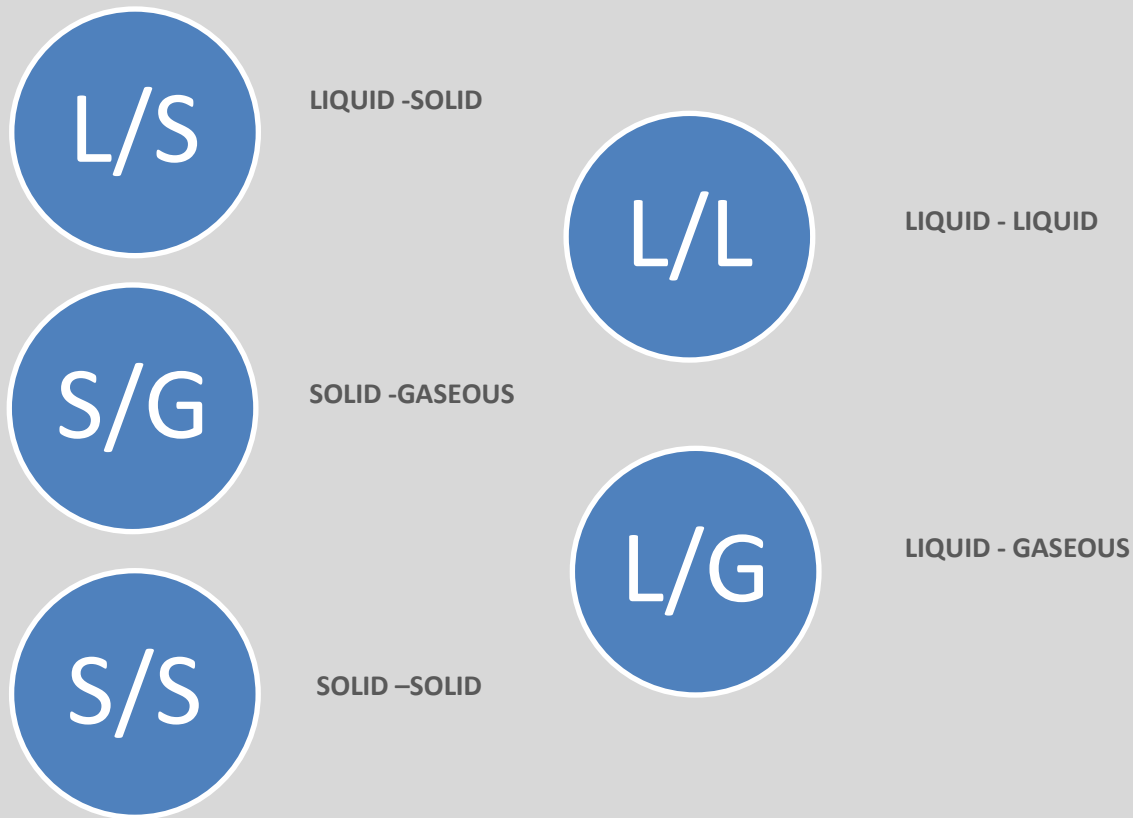
Vision

To be the global leader in high quality filtration.

Targets

To become the industry leader in high quality filtration by delivering the most efficient products for our clients' specific applications. While expanding our market presence and global reach, FTC strives to understand our clients' evolving needs and how best to support them by continuous development of innovative products on the forefront of filtration technology. We consistently develop filtration solutions to the highest standard that outperform the competition time after time. We will not supply you a product unless it is the proper solution.

FILTRATION TYPES



LIQUID – SOLID: - Filtration is the removal of solids from liquids by flowing the contaminated liquid through a filter media that will retain the solids and allow only clean product to pass through.

SOLID – GASEOUS: - The removal of solid particles from air and other gases is a common problem in society. One way to remove these particles is to pass them through a filtering system that physically collects the particles leaving a clean (or cleaner) effluent gas.

SOLID – SOLID: - Separating various size solid particles (contamination) through the use of a membrane.

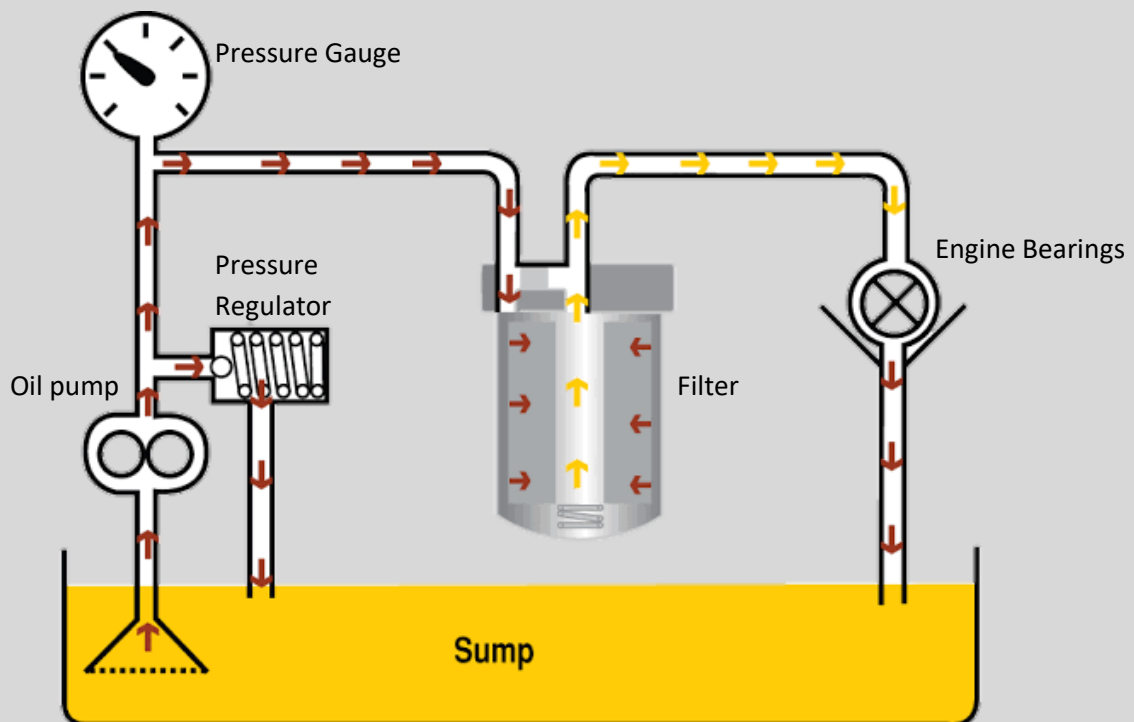
LIQUID – LIQUID: - Separation of water from fuel using specialty media is best example of LIQUID-LIQUID Filtration.

LIQUID – GASEOUS:- Removal of moisture , oil aerosol particles from compressed or natural air.

What is Hydraulic Filtration and why do you need it?

Hydraulic filters protect your hydraulic system components from damage due to contamination of oils or other hydraulic fluid in use caused by particles. Every minute, approximately one million particles larger than 1 micron enter a hydraulic system. These particles can cause damage to hydraulic system components because hydraulic oil is easily contaminated. Thus maintaining a good hydraulic filtration system will increase hydraulic component lifetime.

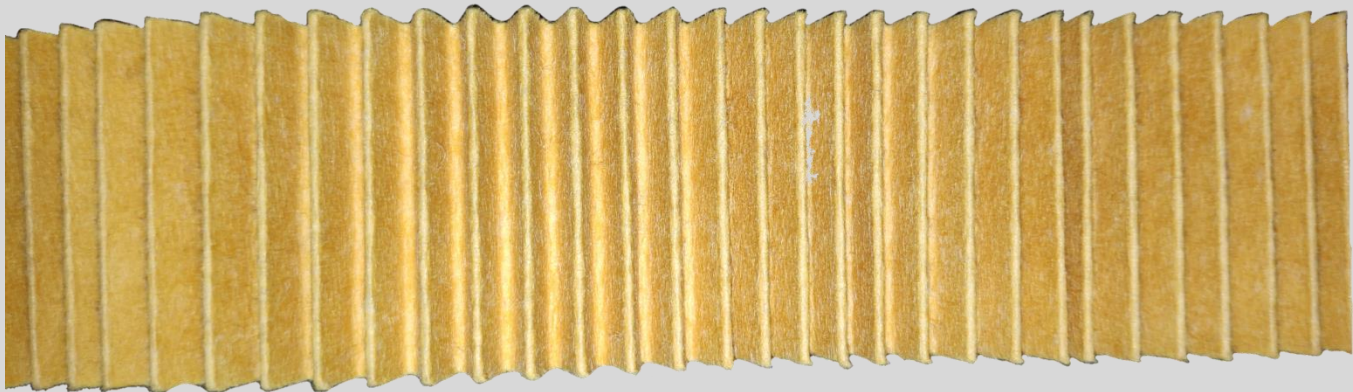
Hydraulic Filters are used anywhere in a hydraulic system particle contamination is to be removed. Particle contamination is the primary cause of hydraulic component failure. Hydraulic filters are used in three key locations of a hydraulic system, depending on the required degree of fluid cleanliness.



Type of filter media

Media	Efficiency
1)Wire Mesh	90%
2)Cellulose	90 -95%
3)Glass Fiber	99.9%

Cellulose

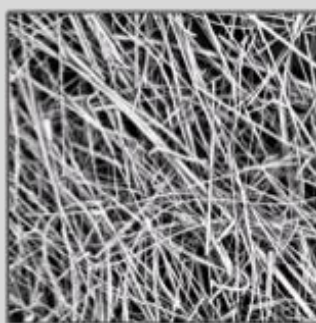


The different media technologies used in liquid filters help to achieve better efficiency, capacity balance. Cellulose, synthetic and melt blown technologies are used to meet application needs. Cellulose media is made from wood pulp fiber and is similar to paper making technology.

Glass Fiber

Glass fiber has roughly comparable mechanical properties to other fibers such as polymers and carbon fiber. Although not as rigid as carbon fiber, it is much cheaper and significantly less brittle when used in composites. Glass fiber are therefore used as a reinforcing agent for many polymer products; to foam a very strong and relatively lightweight fiber-reinforced polymer(FRP) composite material called glass reinforced plastic(GRP),also known as “Fiber Glass”.

Filter used with “Glass Fiber “media is more efficient then “Cellulose”



Typical chemical analysis of glass fiber filters

Compound	Value
Silicon Oxide	72.5%
Aluminum Oxide	1.4%
Calcium Oxide	9.2%
Magnesium Oxide	3.2%
Sodium Oxide	13.2%
Potassium Oxide	0.4%
Iron Oxide	0.1%

Efficiency difference between “CELLULOSE” and “GLASS FIBER”

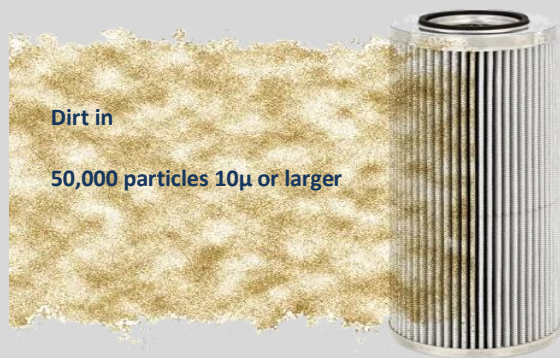
Cellulose: $\beta_{10\mu_{[C]}} = 2$



50,000 particles in

5,000 particles out

Glass: $\beta_{10\mu_{[C]}} = 1000$



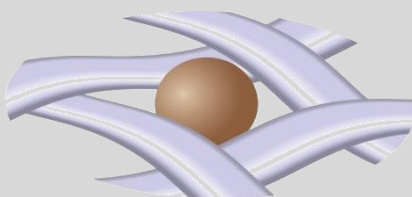
99.9%

Efficiency

50,000 particles in

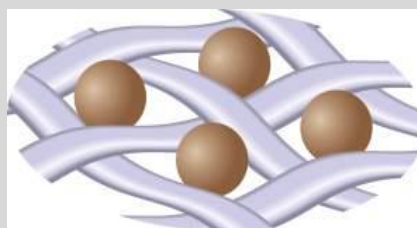
50 particles out

Cellulose



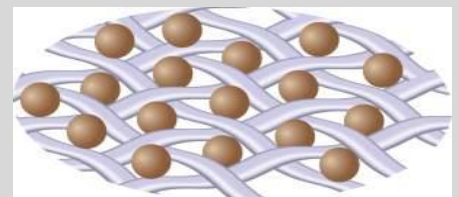
15 to 25 μm

POLYMERIC



10 to 15 μm

GLASS FIBER



1 to 5μm

Benefits of smaller fiber diameter:

- Higher dirt capacity
- Lower pressure drop
- Longer service life

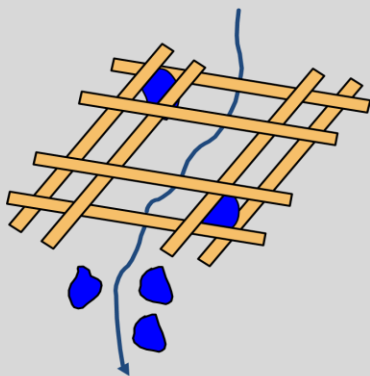
Benefits of inert inorganic fibers:

- Wide chemical compatibility
- No swelling
- No shelf life limitations

Poorly Bonded Fibres

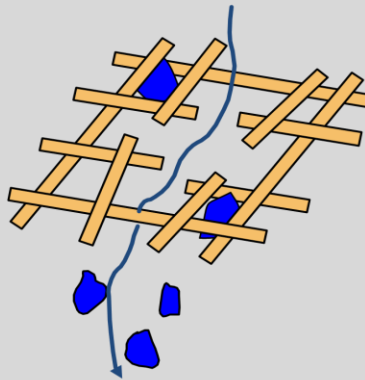
Fibres that are not rigidly held or secure will lead to:

Channeling



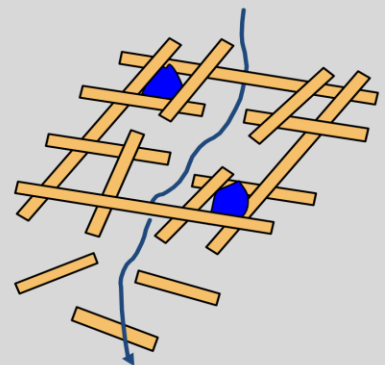
Channeled Fluid

Unloading



Released particles

Media Migration



Broken fibres

Uniform Pore Structure

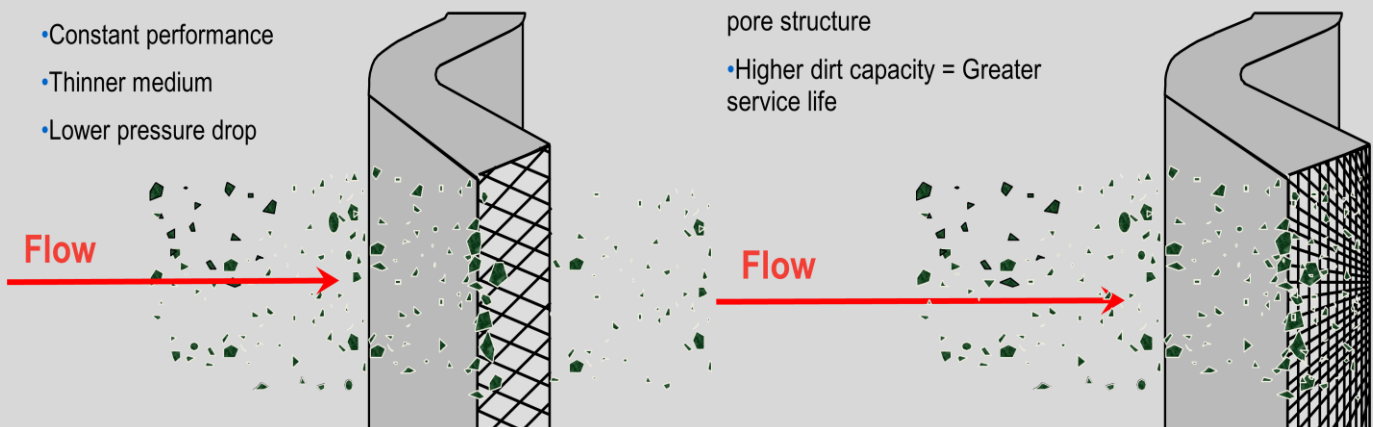
Tapered Pore Structure

Limitations :

- More Uniform Structure
- Constant performance
- Thinner medium
- Lower pressure drop

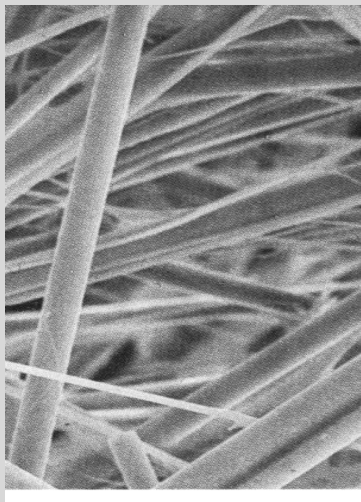
Benefits:

- Has all the benefits of a uniform pore structure
- Higher dirt capacity = Greater service life

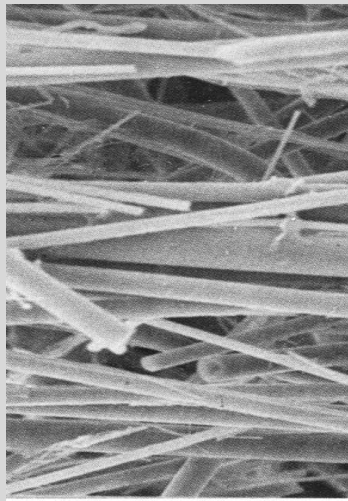


Tapered vs. Uniform Pore Media

Uniform Pore Medium

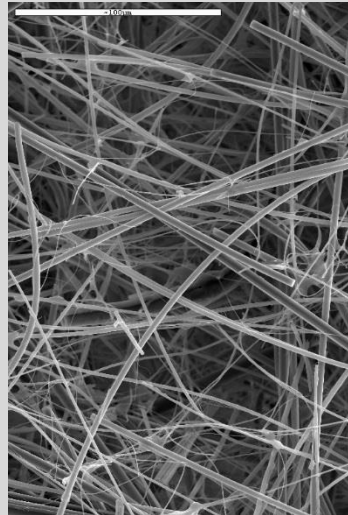


Upstream 500X

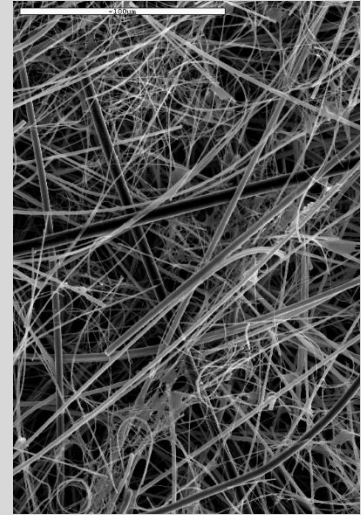


Downstream 500X

Hindustan Filtration Tapered Pore Medium



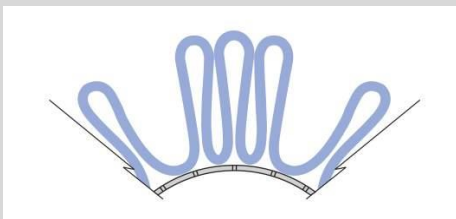
Upstream 500X



Downstream 500X

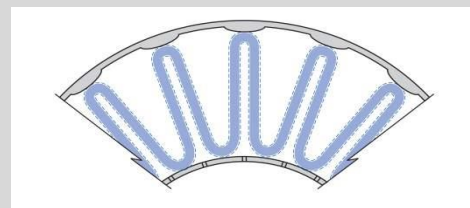
Filter Element Support and Drainage

Unsupported filter element



Reduces useable filtration area,
Fluid drainage, and filter element
Service life under high differential
Pressure or 'cold start' flow conditions

Supported filter element

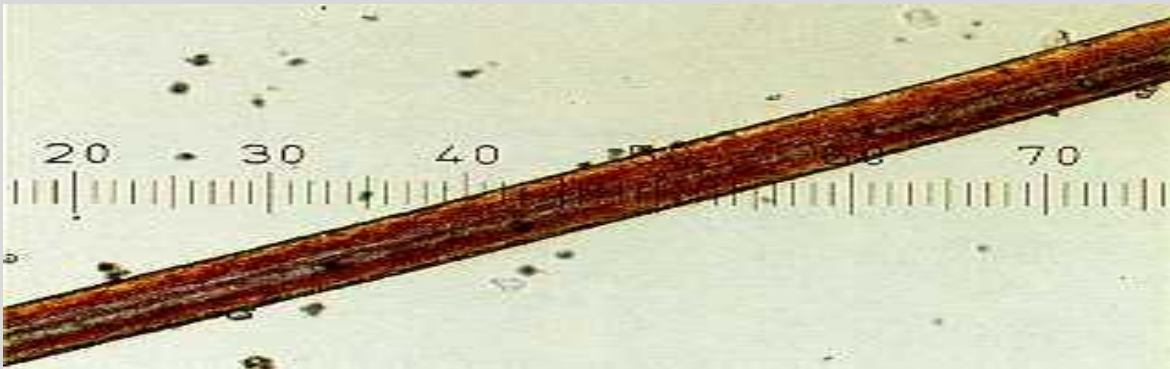


Provides consistent performance and long
service life under high differential pressure or
'cold start' flow conditions

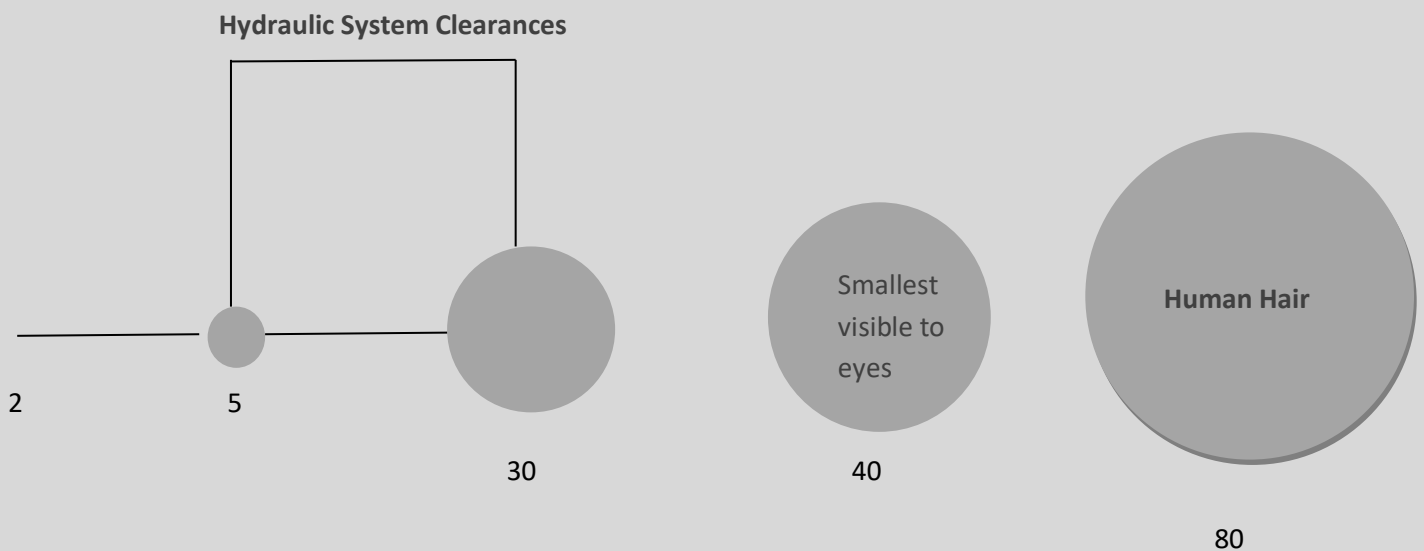
How Small is Micron

The Micrometer (μm) = 10^{-6} meter

- Smallest dot you can see = $40\ \mu\text{m}$
- $25\ \mu\text{m}$ = 1/1000 of an inch
- $1\ \mu\text{m}$ = 0.00004 inch



Human hair (75-80 μm), particles (10 μm) at 100x (14 μm /division)



Oil Filtration

Low Pressure Filter

Low pressure filters operate at pressure of 10 bar or less. Suction filters are used for coarse filtration and return line filters or bypass filtration for fine filtration.

Type of low pressure filters

- Spin-on filters
- Return line filters
- Suction filters

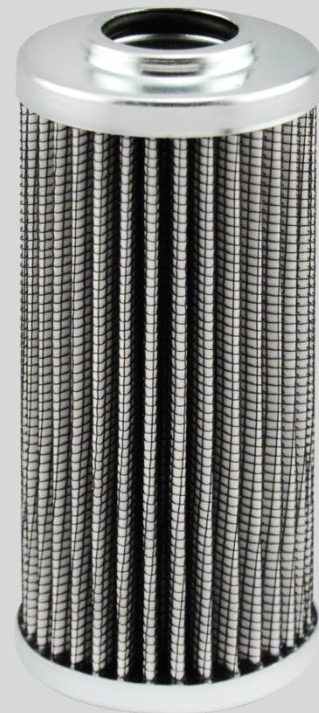


Heavy Duty Filtration

Heavy duty filtration for demanding hydraulic applications under tough conditions in continuous operation. Its flow rate is high at low to medium hydraulic system pressure.

Type of heavy duty filters

- Duplex filters
- Medium pressure filters
- Low pressure filters



Contamination Control

Contamination control is a very important element of a hydraulic filtration system. Changing filter elements on a regular basis prevents clogging and improves oil quality.

Type of contamination control

- Hydraulic testing equipment
- Fluid condition monitoring
- Portable filtration system
- Filter indicators

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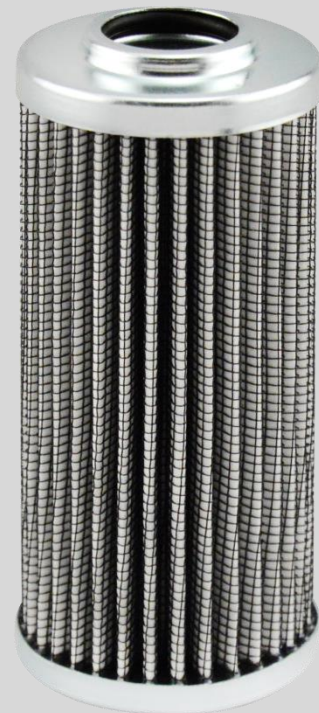


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Oil Filtration

Pressure Line Filters

- Hydraulic oil.
- Lubricating oil.

Features:

- Medium & High pressure filters ranging from (100 – 350 Bar)
- For pressure line application High efficiency up to 99.9% with beta ratios of ≥ 1000 .
- For other applications standard beta ratio of ≥ 200 with 99.5% efficiency.

Housing Material

- For medium pressure up to 100 Bars (Aluminum/Steel) used for Housing Construction.
- For high pressure up to 200 Bars (Aluminum/Steel).
- For Extremely High pressure up to and above 350 Bars (Alloy Steel/Stainless Steel) used for Housing Construction.

Filter Element Media

- Glass Fiber
- Wire mesh
- Cellulose



Media Temperature	Micron Rating	Operating
Glass Fiber	1 - 25 μ	Up to 70C – 80C
Wire Mesh	5 - 500 μ	Up to 150C
Cellulose	20 μ	80C – 120C
	(Other value on demand)	

Oil Filtration

Return Line Filters

SIMPLEX & DUPLEX ASSEMBLIES

- Hydraulic oil.
- Lubricating oil.
- FO, LDO, Coolant oil etc.

Factors:

- Low pressure filters ranging up to (25Bar)
- Glass fiber & Wire mesh are used as filter media.
- High efficiency up to 99.5% with beta ratios of ≥ 200 for glass fiber.
- Duplex Assemblies designed for continuous operation.

Housing Material

- (Steel/Stainless Steel) used for Housing Construction.

Filter Element Media

- Glass Fiber
- Wire mesh
- Cellulose



Media	Micron Rating	Operating Temperature	Efficiency
Glass Fiber	1 - 25 μ	Up to 70C – 80C	99.9%
Wire Mesh	5 - 500 μ	Up to 150C	90 - 95%
Cellulose	20 μ	80C – 120C	90%



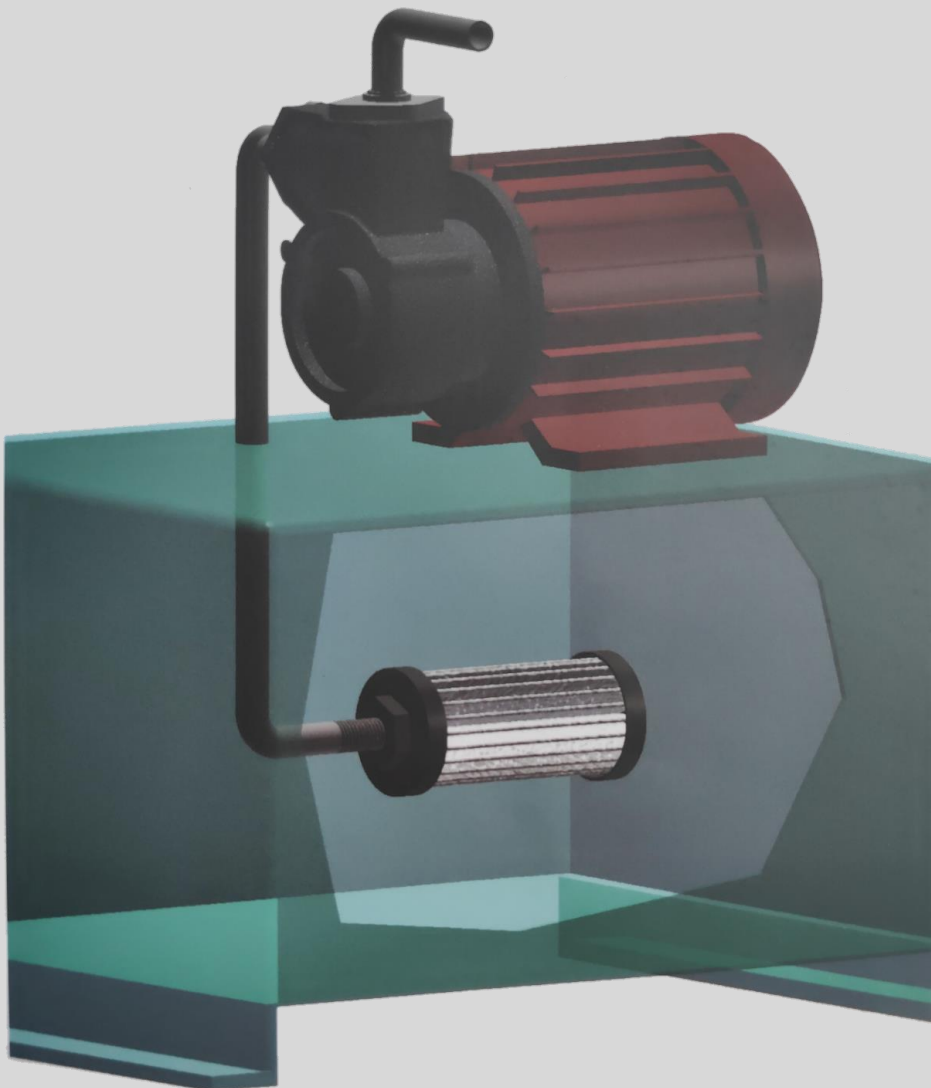
Oil Filtration

STRAINERS

- For all type of oil applications

Factors:

- For easy installation and removal Strainers
Are designed with female thread
- Filter media is wire mesh
- 150 Micron rating is standard
- Strainers are capable to bear temp. -25C – 100C



Water Filtration

Is a general term that refers to any system or process that is used to filter out particles and pollutants from water, Anything that removes any amount of particles, sediment, bacteria, and other chlorine taste can be called water filtration.

Our Products for Filtration Are

- Cartridge filter systems
- Bag filter systems
- Automatic backwash filter systems
- Activated carbon
- Zero liquid discharge solutions
- Sewage treatment systems



Our filter media capabilities are

- Polypropylene
- HDPE
- Glass fiber
- PTFE
- Compound pp
- Cellulose
- Micro glass fiber
- Bronze
- Borosilicate
- Etc



Water Filtration

Cartridge Filter systems

- Single/Multi Cartridge Metallic Filter Housings.
- High Flow Filter Housings.
- FRP/GRP Filter Housings.
- PP/PET Filter Housings.
- PP Jumbo Filter Housings.
- UPVC Multi Cartridge Filter Housings.
- PP Slim Filter Housings.
- Skid Mounted Multistage Filter System.



Material we used for Filter Housings

- | | |
|------------------|-----------------|
| ➤ <u>CS</u> | ➤ SS316L |
| ➤ <u>MS</u> | ➤ SS304 |
| ➤ <u>CSRL</u> | ➤ MSRL |
| ➤ <u>SS 2205</u> | ➤ SS316L |
| ➤ <u>SS 2507</u> | ➤ PLOYPROPYLENE |
| ➤ <u>SS316</u> | ➤ FRP |
| ➤ <u>HDPE</u> | ➤ UPVC |

Water Filtration

STANDARD FILTER CARTRIDGES

Melt blown Filter Cartridge

- Standard Melt Blown Filter Cartridge
- High Efficiency Melt Blown Filter Cartridge

Wound Filter Cartridge

- Standard String Wound Filter Cartridge
- High Efficiency Wound Filter Cartridge

Pleated filter cartridge

- Beta 5000 Rated Pleated Cartridge
- High Efficiency Pleated Cartridge
- PTFE Pleated Cartridge

Bicomponent Filter Cartridge

- Bicomponent High Efficiency Filter Cartridge
- High Pressure Filter Cartridge
- Bicomponent Multilayer Filter Cartridge
- Bicomponent Filter Cartridge For High Temperatures

Resin Bonded Cartridge

High Flow rate & Large Diameter Cartridge

Antimicrobial Polypropylene Cartridge

Washable Filter Cartridge

Activated Carbon Block for VOC, CTO, Cyst Lead Removal

Oil-Absorption Logs

Re-Usable UHMWPE & HDPE Porous Elements



Sizes

- 5"
- 10"
- 20"
- 30"
- 40"
- 50"
- 60"
- 72"

Water Filtration

Bag Filter Systems

- Single/Multi Bag Filter Housings
- UPVC Bag Filter Housings
- Polypropylene Bag Filter Housings

Bag Filters

- Woven Filter Bags
- Oil Absorbing Filter Bags
- High Efficiency Non-Woven Filter Bags

Sizes

- Size #1
- Size#2
- Size#3
- Size#4
- Size#5
- Up to #35



Automatic Backwash Filter for High and Medium Viscose Media (AKF, KKF, ViscoFil)

- Viscosity Up to 200000 cP
- 3μ Absolute with Stainless Steel.
- High Filtration Efficiency
- Filter Material Service Life Up to Two Year & 80000 Backwashes.
- Practically no operation expenses.



Water Filtration

Automatic Backwash Filter for Fine and Microfiltration

- Filter Fineness down to $3\mu\text{m}$ absolute with stainless-steel
- Filter Fineness of $1\mu\text{m}$ in special applications.
- High solid content at lowest reject quantity
- Low investment costs.
- Practically unlimited filter material service life.
- Practically no operation expenses.

Automatic Backwash Filter for cooling & processing water

- Filter Fineness down to $50\mu\text{m}$
- For low solid content & high quantities of water
- Low investment costs
- Practically no operation expenses

Sewage Treatment System

SQ-Mem process is a modification of the conventional process with

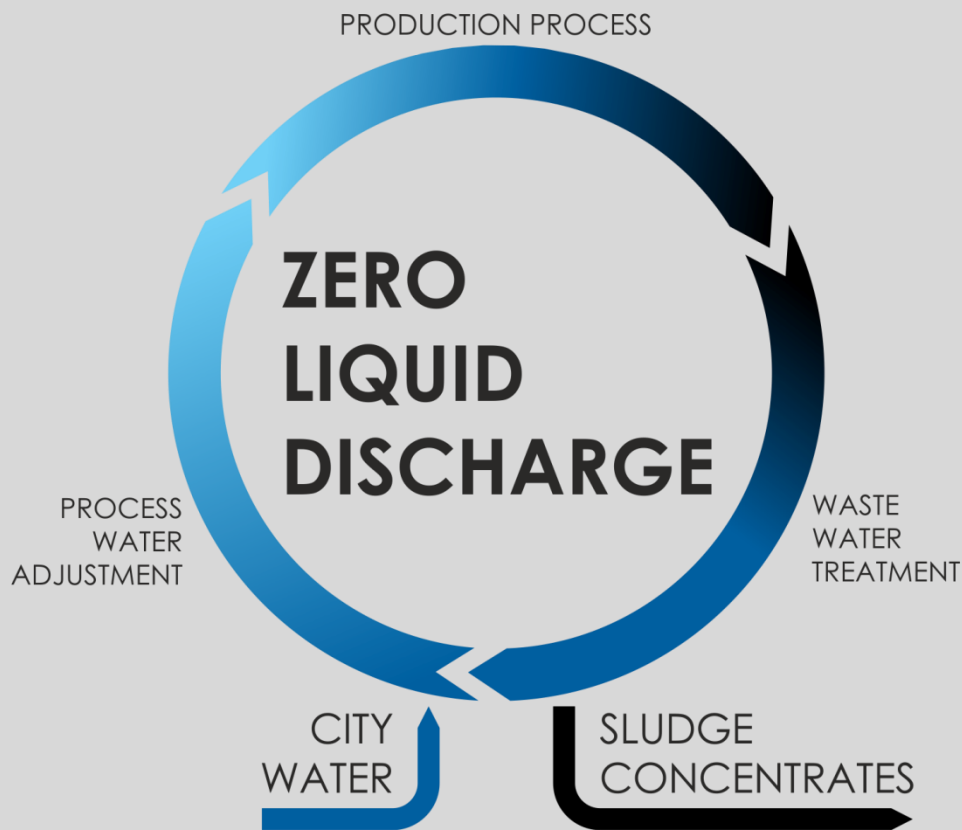
More compact system and highly efficient sludge separation based on the membrane system, wherein the sewage is passed through 0.1μ pore size resulting in removal of all the suspended solids, micro-biological, virus and other contaminants.



Water Filtration

Zero Liquid Discharge Solutions

- POREX Tubular Membrane Filter Modules provide consistent, reliable solid/liquid separation.
- Multiple Membrane pore size available on two different substrate options.
- PVDF Membrane offers high-performance tubular membrane with superior operating characteristics.
- High chemical & abrasion resistant.
- Multiple configurations available to suit your application's flux and solids level requirements(up to 5% by weight)



Each POREX Tubular Membrane Filter module contains multiple tubular membranes. These structural membrane tubes are made from a PE or PVDF sintered porous substance that creates an intricate network of open – celled, Omni-directional pores. These substrate pores are then filled with membrane which gives our tubes a unique combination of filtering capability and structural strength.

Water Filtration

Activated Carbon

RYB Hindustan Filtration offers a full range of activated carbon services including rental systems, carbon reactivation, bulk delivery and change –out, carbon evaluation, as well as technical service and support to help customers meet their specific purification needs.



Water

Pharma

Gas & Air

Food & Beverage

Chemicals

Automotive

Mining

Catalyst

Air Filtration

A particulate air filter is a device composed of fibrous or porous materials which removes solid particulates such as dust, pollen, mold and bacteria from the air. Air filters are used in applications where air quality is important, notably in building ventilation systems and in engines.

AHU (Air Handling Unit)

An air Handling Unit (AHU) is used to re-condition and circulate air as part of a heating, ventilating and air-conditioning system. The basic function of the AHU is take in outside air, re-condition it and supplies it as fresh air to a building.

The commercial air handling unit (AHU) is the backbone of this system, filtering and ensuring efficient circulation throughout your entire duct system. AHU parts include the housing, heating and cooling coils, blower (or fan), humidifier, air filters and dampers.

Type of Air Filters We Provide

- HVAC FILTERS
- HEPA FILTERS
- ULPA FILTERS
- FINE FILTERS
- PRE-FILTERS



HVAC FILTERS

HVAC air filters (Heating, Ventilating, and Air Conditioning) are broad terms to describe different type of air filters in HVAC field. HVAC term include heat pump, air conditioner unit, furnace unit, geothermal, window units, etc. HVAC filters are the same as air conditioner filters or furnace filters.

HEPA FILTERS

HEPA filters stand for high – efficiency particulate air. A HEPA filter is a type of mechanical air filter; it works by forcing air through a fine mesh that traps harmful particles such as pollen, pet dander, dust mites, and tobacco smoke. You can find HEPA filters in most air purifiers.



Air Filtration

ULPA FILTERS

ULPA is an acronym for “Ultra Low Particulate Air (filter)” An ULPA filter can remove from the air at least 99.999% of dust, pollen, mould, bacteria and any airborne particles with a size of 100 nanometers (0.1µm) or larger.



Users

- Microelectronics
- Pharmaceutical
- Bio & gene technology
- Chemical industry
- Nuclear air ventilation
- Waste incinerators
- Hospital operating rooms
- Emergency burn centers
- Cosmetics
- Medical industry
- Food industry
- Optical industry
- Automotive industry
- Surface engineering
- Nanomaterials
- Space industry
- Power & energy plants
- Movie theatre industry

A filter's percent efficiency can be calculated using the simple equation below.

$$E = (1 - D/U) \times 100$$

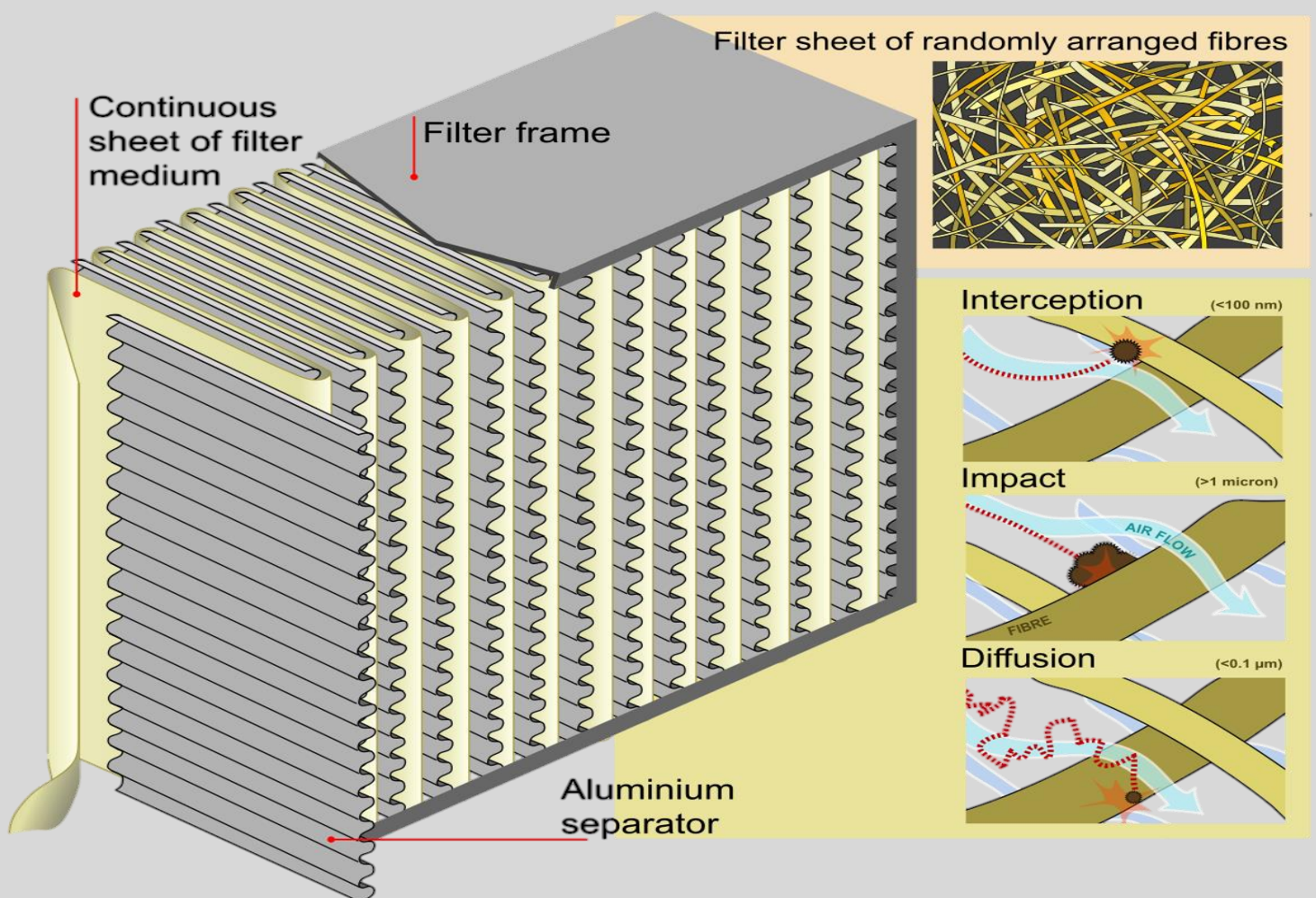
E=Percent efficiency

D=downstream concentration (of contaminants)

U= upstream concentration (of contaminants)

Air Filtration

HEPA Class	Retention (total)	Retention (local)
E10	>85%	-
E11	>95%	-
E12	>99.5%	-
H13	>99.95%	>99.75%
H14	>99.995%	>99.975%
U15	>99.9995%	>99.9975%
U16	>99.99995%	>99.99975%



Air Filtration

PANEL FILTERS

Panel filters are pleated filter which are assembled within a moisture – resistant cardboard frame. Panel filters are used as a pre-filter for air treatment cabinets, air conditioning system and industrial systems.

Advantages of panel filters

- Large filter surface
- High particle interception capacity
- Lengthy service life
- Low energy consumption
- Moisture-resistant cardboard frame



Application	Pre-filter HVAC,Industry,Spray booth
Frame	Galvanized steel, Firm cardboard, Plastic
Medium	Synthetic,PET,Hydrophobe,Glass fiber
Max.pressure drop	250Pa-600Pa
Max. temperature	65C – 70C
Max. relative humidity	90% - 100%
Gasket	Optional, Continuous poured gasket



Air Filtration

Bag Filters

The Bag filters are constructed from bags with a unique structure through which as low a resistance as possible can be realized. The bags are assembled in aluminum, plastic or steel frame. The filters resist up to 70C and 95% RH.

Advantages of Bag Filters

- Large Filter area
- Unique construction and opening of bag filter
- Filter long life
- Low energy consumption
- Corrosion free
- Simple waste processing



SPECIFICATIONS

Application:-Pre-filter; Fine filter, HVAC, Industry, Gas turbines

Frame: - Aluminum, Galvanized steel,

Medium:-Glass fiber, Synthetic,

Max.pressure drop:-450Pa

Max. Temperature:-70C

Max. Relative humidity:- 90%



We Believe In Quality.

We Believe In Customer Satisfaction.

WE Believe In Team Work.



RYB Hindustan Filtration

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