

iX-Masters® Series

In-Vessel-Technology For Water Treatment Utilities

“Applying iX-Master® technology in resin & media units of water treatment utilities”

Our extensive field experience in the field of ‘Water Treatment’ led us to explore new, innovative techniques which could be applied in resin & media units. It is not beyond the chemistry of adsorption /ion-exchange, but simple **immaculate hydraulics!**

Various types of distribution / collection systems (as internals of the vessels) currently being used, results in inaccurate column operations, with respect to uniform flows, required over cross-section of the vessel, resulting efficiency loss!

Many astute engineers & plant operators new this fact, over a period of time, through their actual plant results.

Solution to the malfunctioning of the internals had been addressed by numbers & there are few technologies available in the world.....but not simple as our following developments:

“Flow Modulation Techniques For Fluid Processing Units”

(Indian Patent Pending)

“An Improvement In The Nozzles /Screens Used In The Fluid Processing Units”

(Indian Patent Pending & USA Patented)



The new development features:

- Highest efficiency of the media column — Guaranteed
- Lesser regeneration & backwash required
- Simplest construction of the internals & lower pressure drops
- Easy implementation of the internals in the smallest to the largest pressure vessels !
- Applicable for varied flow & pressurized conditions !
- Minimum & easy maintenance
- Can be implemented in the existing units during retrofit (Conditions apply)

Shripad Ecosys Private Limited;

E1/201, Rajyog Township,
Wadgaon (kd), Sinhagad Road,
Pune-411041

Phone: +91-20-67501782

Cell: +91-9822453763

+91-8484927780

Email: spw@shripadecosys.com

Web: www.shripadecosys.com

What Is iX-Master® Technology?


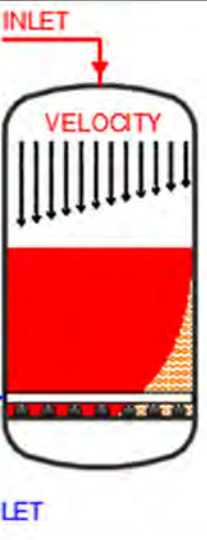
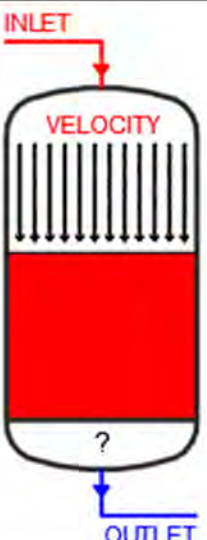
iX-Master® technology consist of unique “proprietary” arrangement of internals in the “distribution / collection” system of the resin /media units used in the water treatment & any separation application in the fluid /chemical processing (such as — All types of Ion-Exchange Units, Adsorption Columns & Media Filters).

iX-Master® technology consists TWO of our major developments in the components to improve hydraulics in the working column.

What Is Flow Modulation Techniques ?

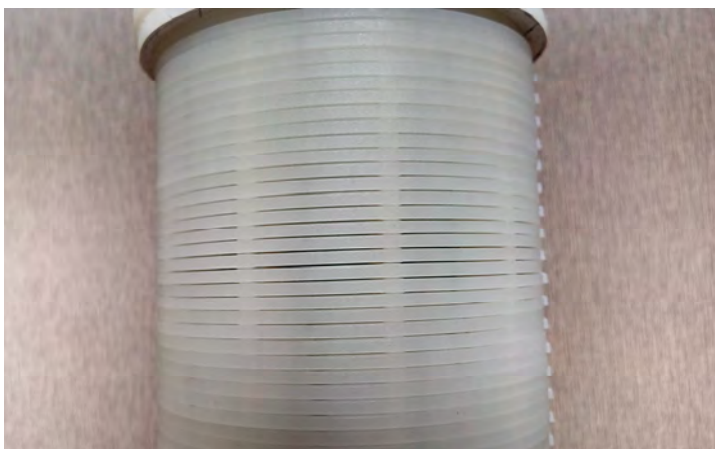
Flow Modulation refers to “manipulation of the distribution & collection network” involved inside the pressure vessel so as to equalize fluid flow distribution over entire cross-section. So, achieving uniform flow distribution over cross-section of the media column by manipulating nozzle lengths and / or aperture control. (Illustration given below)

Illustration:

Plate Type ‘Underdrain’	Header Lateral Underdrain	Flow Modulated ‘iX-Masters™ Series
		
Peripheral resin less utilized	Peripheral resin less utilized on one side	Uniform resin utilization

What are Improved Nozzles / Screens ?

Our “iX Masters Series” of nozzles are simple plastic replica of proven wedge wire screens— holding ‘Non-clogging’ properties & higher flow compared to other nozzles / screens. The popular HDPE /PP or UHMWPE plastics hold outstanding chemical resistance properties required in number of applications. Our nozzles/screens MOCs are different thermoplastics, suitable for varied applications.



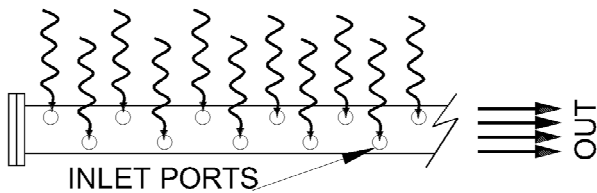
Where iX-Master® Nozzles/Screens can be applied ?

- Pre-Treatment Filters (Various Media Units)
- Packed Bed—Ion Exchange Units (Up-flow /Downflow)
- Conventional Ion Exchange Units (Co-flow / Counter Flow)
- Condensate Polishing Units (Any pressure rating)
- Adsorption Columns (Any commercial size)
- Retrofit of the above units (Conditions apply)

How Improved Nozzles / Screens work?

Conventional Media Filter

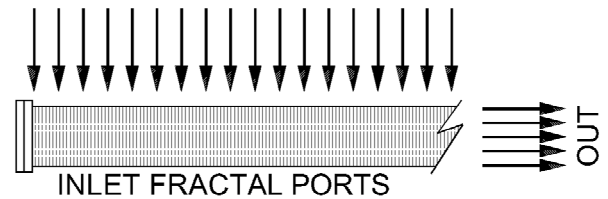
Hydraulics controlled by_
Lateral Pipes: 6-12mm Holes



Prime collection area = A sq.cm.
High velocity, unequal fluid flow

'iX-Masters 360N' Series

Hydraulics controlled by_
Laterals - Fractal Screen (200 microns)



Prime collection area = 3.5 to 6 x A sq.cm.
Optimum, uniform fluid flow (Low Velocity)

Illustration:

Above figure explains the way hydraulics created in the 'Conventional Perforated Lateral & iX-Masters® 360N Series' laterals in the media filter units. This ultimately improves—Loading capacity, quality of treated fluid & purging (backwash) efficiency!

Where iX-Master® technology can be applied ?

Thermal Power Plants



Petrochemicals / Refineries



Municipal Water Treatment



Fertilizer Plants



Aquaculture / Agriculture



Almost all industrial sectors having
'Water Treatment' Utilities

- Boiler feed
- Cooling Towers
- Process & washing
- Potable Water

**Existing - In Vessel Technologies
(Water Treatment Utilities)**

Performance Shortfalls
Due To
“Hydraulics & Screens”

Patent—A
[Flow Modulation Techniques For
Fluid Processing Units]

Patent—B
[An Improvement In The Nozzles/
Screens Used in Fluid Processing
Units]

Innovation in the
‘Internals’
to correct Hydraulics

Fractal Screens
for
Distribution & Collection

Product Developed —
In Vessel Technology
{iX-Masters® Series}

Features:
High Efficiency,
Higher Life Cycle,
Lower Maintenance,
Easy Implementation,
& Scalable Technology

Wins ON:
Capex (Capital Exp..)
Opex (Operating Exp.)
Comparison Platform

Application In

Pressure Media Filters

- Pr. Sand Filters
- Multi-Media Filters
- Iron Removal Filters
- Activated Carbon Filters
- Organic Scavenger Filters
- Heavy Metals Removal Filters

Micron Filters

- UF Pre-Treatment
- Agricultural (Irrigation)
- Rain Water Harvesting
- Pump suction screens

Ion-Exchange Units

- Co-Current Units
- Counter-Current Units
- Packed-Bed (Up-Flow)
- Packed-Bed (Downflow)
- Layered-Bed Units