



HVAC
and
Process
Cooling
Water

Who is *Miller-Leaman*?

- Diversified Filtration Company Established in 1991
- 52,000 sq. ft. facility in Daytona Beach, FL
- Manufacturers of High Quality Filtration Products



<http://www.millerleaman.com>

800-881-0320



Filtration Products...



- Proprietary Patented Product



- Automatic Disc Filtration



- Manual Disc Filtration



- Automatic Sand Media

• Custom Options Available Including UV, Ozone and Non-Chemical Treatment Systems

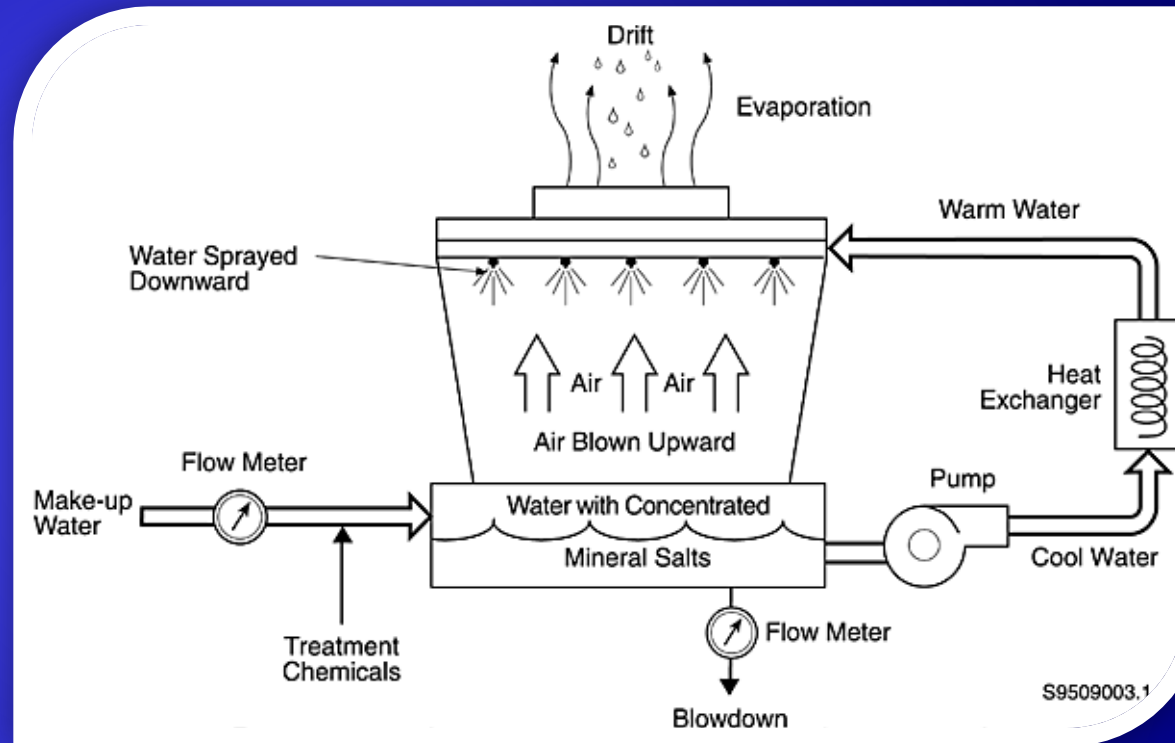
Selling Into Various Applications...



- Full flow, side-stream, and slip-stream filtration of cooling tower water
- Protection of chillers, heat exchangers, condensers, and other “wet side” components
- Process cooling or chilled water filtration

The Problem...

- Cooling towers continuously scrub contaminants from the air
- Particulate can foul heat exchangers, condenser tubes and other equipment
- Evaporation leads to concentration of contaminants
- Particulate provides a “breeding ground” for biological growth



The Problem (cont)...

How do the contaminants get into the water?

Source #1:

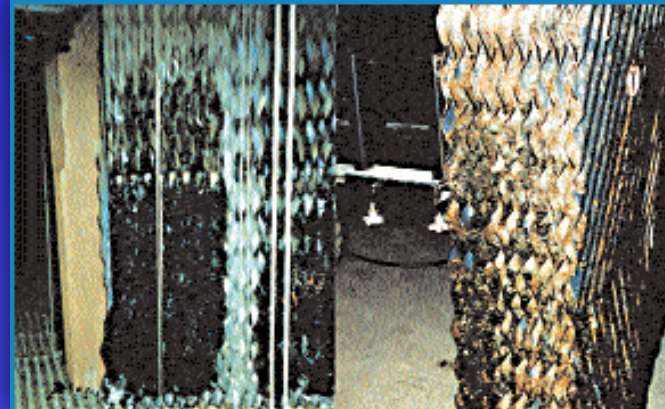
- Act as Air Scrubbers
(typical 400 ton cooling tower moves over 100,000 CFM of air)
- Collect Contaminants
- Increased use of “Free Cooling” (more air / more contaminants)

Source #2:

- The circulating water contributes solids contaminants
- Slime, algae, chemical residue, and calcium carbonate
- Particulate in make-up water

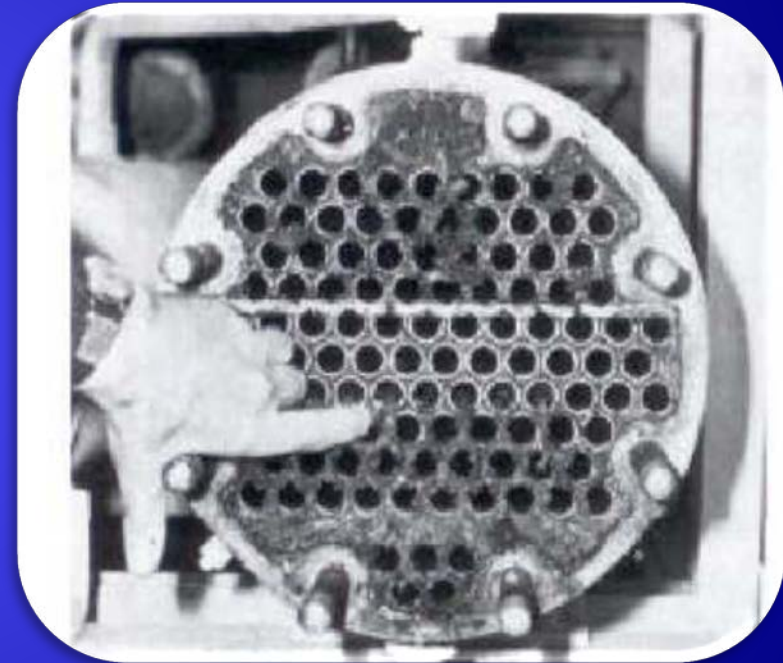
Consequences ...

- Reduced operating efficiency
- Increased downtime
- Costly repairs
- Higher water treatment costs (chemicals)
- Shortened equipment life



Consequences (cont)...

- Solid contaminants will increase fouling factor
- An increase of 0.001 in fouling factor increases energy consumption by 10%
- Cooling tower life is typically determined by the life of the basin
- A layer of solid contaminants in the basin prevents penetration of corrosion inhibitors and other chemicals
- A solid contaminant layer is an excellent “breeding ground” for bacteria and algae
- Particulates can clog heat exchangers and spray nozzles, degrading flow distribution
- Clogged nozzles require maintenance and possible shutdown



The Solution...



...Proper Filtration of Cooling Water

- Increase efficiency of heat transfer devices
- Extend equipment life
- Reduce biological problems
- Compliments chemical and non-chemical treatment
- Reduce maintenance



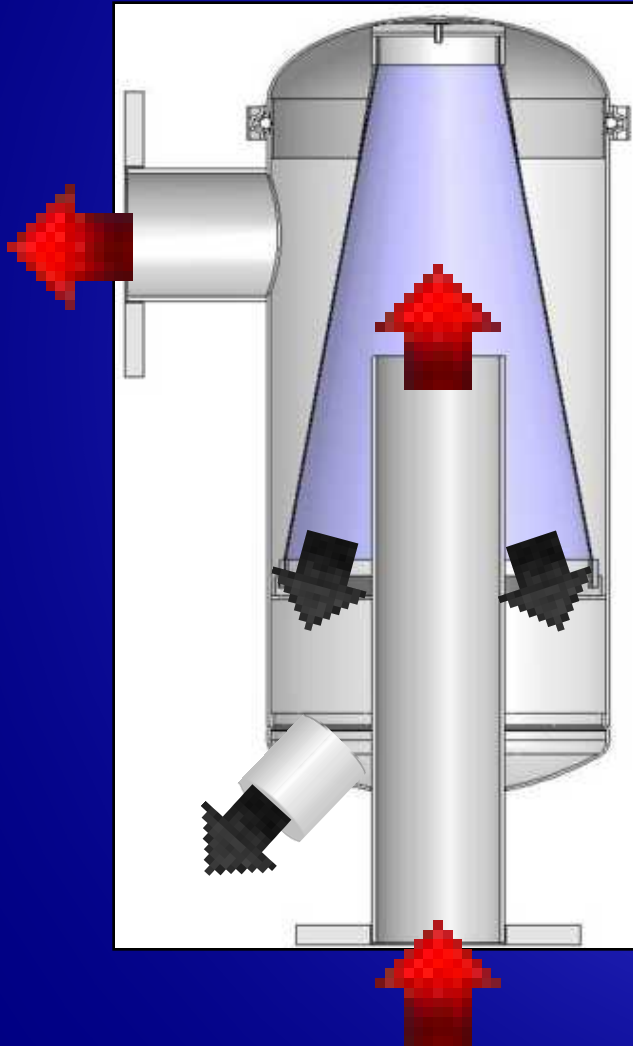
Thompson Strainers...



- Type 304 and 316 Stainless Steel (*Other Alloys Available*)
- 2", 3", 4", 6", 8", 10" Model Sizes
- Quick-Release Clamp Lid (2", 3", 4") -125-PSI Max
- Bolted Lid Assembly (4", 6", 8", 10") -150-PSI Max
- Strainer Housings Designed for Suction or Pressure Side of Pump
- Two Gauge Ports to Monitor Differential Pressure
- Multiple Screen & Perforated Options Available



The *Thompson Strainer* is an Inverted Basket Strainer...



- Dirty water enters inlet at bottom of housing
- Dirty water flows up through riser pipe assembly
- “Hydraulic” action and gravity accelerates heavier particles down to bottom reservoir
- Particles are flushed from strainer reservoir via 1 ½” port
- Clean water exits through outlet port at top of housing
- Two gauge ports for monitoring differential pressure, to determine when screen needs cleaning



Specifications...

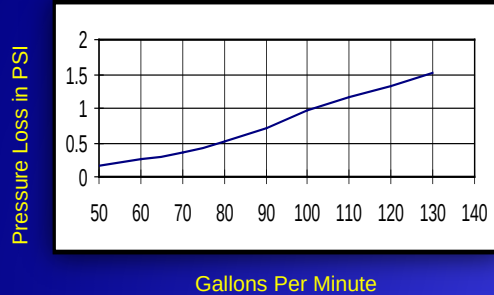
MODEL	MAX GPM	SCREEN SURFACE AREA	INLET / OUTLET SIZE/STYLE	FLUSH PORT SIZE	LID TYPE	MAX PSI
MLS-2	100	122 sq. in.	2" Male NPT	1 ½"	Clamp	125
MLS-3	200	200 sq. in.	3" Male NPT	1 ½"	Clamp	125
MLS-4C	350	367 sq. in.	4" Flanged	1 ½"	Clamp	125
MLS-4B	350	367 sq. in.	4" Flanged	1 ½"	Bolt	150
MLS-6	750	745 sq. in.	6" Flanged	1 ½"	Bolt	150
MLS-8	1,300	1,559 sq. in.	8" Flanged	1 ½"	Bolt	150
MLS-10	2,000	2,434 sq. in.	10" Flanged	1 ½"	Bolt	150

* High Pressure & Custom Duplex Strainers Available

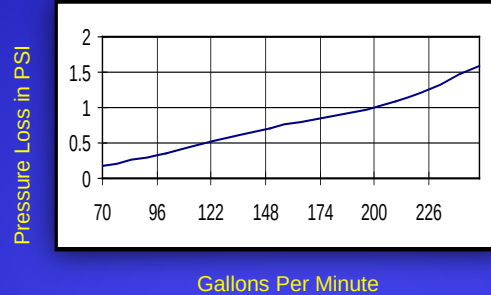


Industry's Lowest Pressure Drop...

2" STRAINER (MLS-2)
Maximum Flow 100 GPM

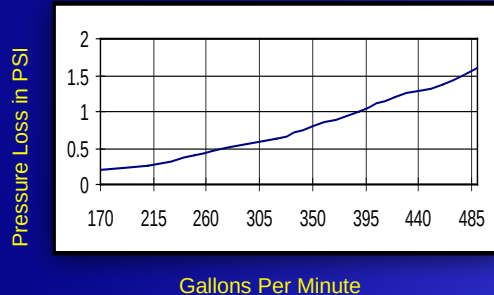


3" STRAINER (MLS-3)
Maximum Flow 200 GPM

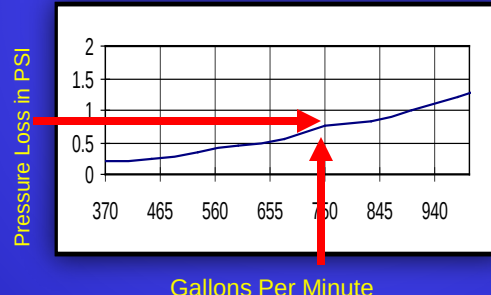


- Designed for Less than 1 PSID at Max Rated Flow

4" STRAINER (MLI-4B & MLS-4C)
Maximum Flow 350 GPM

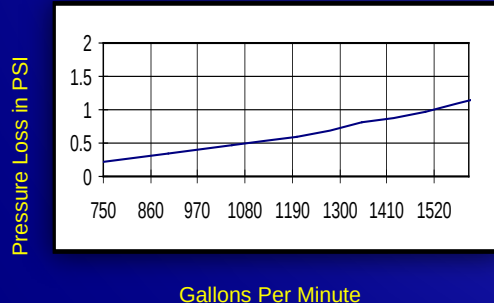


6" STRAINER (MLS-6)
Maximum Flow 750 GPM

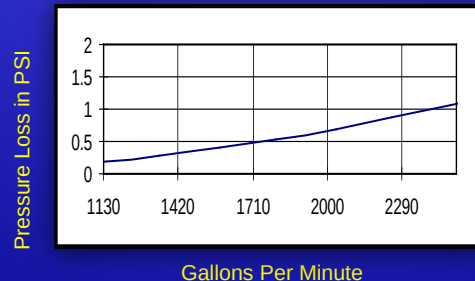


- Non-torturous Flow Path
- Less Energy Consumption

8" STRAINER (MLS-8)
Maximum Flow 1300 GPM



10" STRAINER (MLS-10)
Maximum Flow 2000 GPM



- Reduced Operating Costs

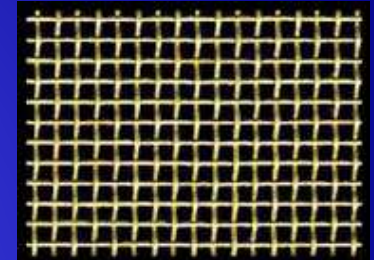
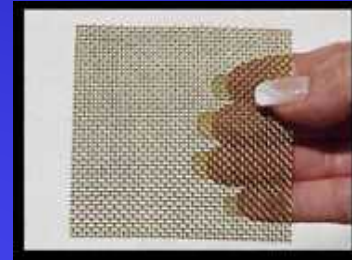


Mesh/Micron Options...

MESH / MICRON DATA SHEET

STANDARD MESH OPTIONS

Mesh	Opening (inches)	Microns	Wire Diameter (inches)	Open Area
16	0.0395	1003	0.023	39.90%
20	0.034	864	0.016	46.20%
30	0.0203	516	0.013	37.10 %
40	0.015	381	0.01	36.00%
50	0.011	279	0.009	30.30%
60	0.0092	234	0.0075	30.50%
80	0.007	178	0.0055	31.40%
100	0.0055	140	0.0045	30.30%
120*	0.0046	117	0.0037	30.70%
150 *	0.0041	104	0.0026	37.40 %



HEAVY-DUTY MESH OPTIONS

24 x 110 (~120 Mesh)	0.0045	112 - 117	.014 / .010	N/A
30 x 150 (~150 Mesh)	0.0039	95 - 100	.009 / .007	N/A
40 x 200 (~200 Mesh)	0.0030	72 - 77	.007 / .0055	N/A
50 x 250	0.0024	55 - 60	.0055 / .0045	N/A

Mesh/Micron Conversion Formula

Microns = opening in inches / .00003937

* Other Mesh Options Available Upon Request



Instrumentation Package Options...

Pressure Differential Alarm (PDA)

- Monitors Inlet and Outlet Pressure
- Signals When Screen Cleaning is Required
- Audible/Visual Alarm
- Dry Contacts (for Remote Monitoring)



Automatic Timer Flush (ATF-EA-1.5)

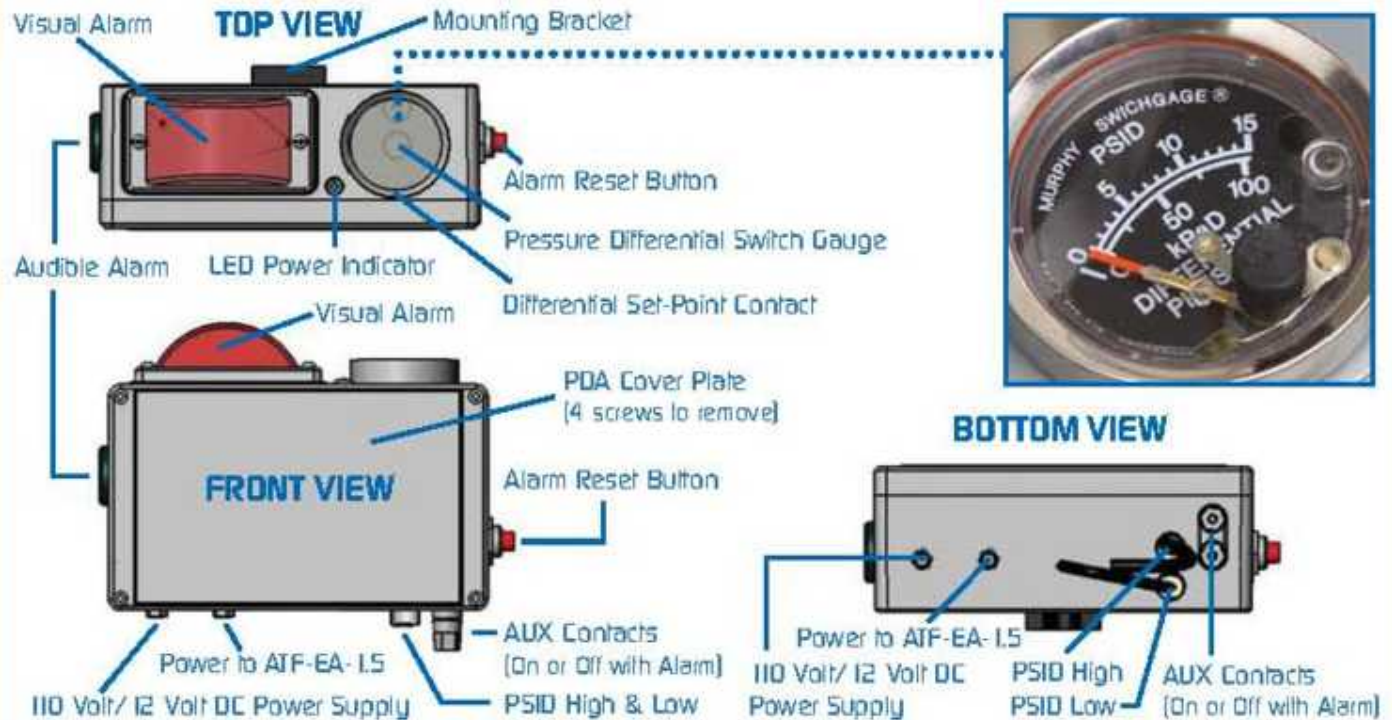
- Automatically Purges Strainer Reservoir
- Adjustable Flush Frequency and Duration
- Manual Flush Switch



Pressure Differential Alarm (PDA)



PRESSURE DIFFERENTIAL ALARM PACKAGE COMPONENTS



Automatic Timer Flush (ATF-EA-1.5)



AUTOMATIC TIMER FLUSH PACKAGE COMPONENTS

System Components: A. Valve Controller

- Adjusts flush duration (length of flush) and the flush frequency (time between flushes)

B. Electric Ball Valve Designed for Dirty Water Use



A. Valve Controller

Flush Frequency

Red pointer - Outer Ring
(time between flushes)
(factory set at 24 hours)

Flush Duration

Green pointer - Inner Ring
(length of flush)
(factory set at 8 seconds)

Valve Controller Cover Plate
(4 screws to remove)

Auto/Off/Manual Control Switch

12VDC@2.5A

Power from PDA or
110 Volt/12 Volt DC
Power Supply

B. Electric Ball Valve

**FLUSH VALVE SHOULD BE PLUMBED TO DRAIN WITH 1 1/2" (OR LARGER) PIPING.
FLUSH LINE SHOULD NOT BE PIPED TO A PRESSURIZED LINE.**

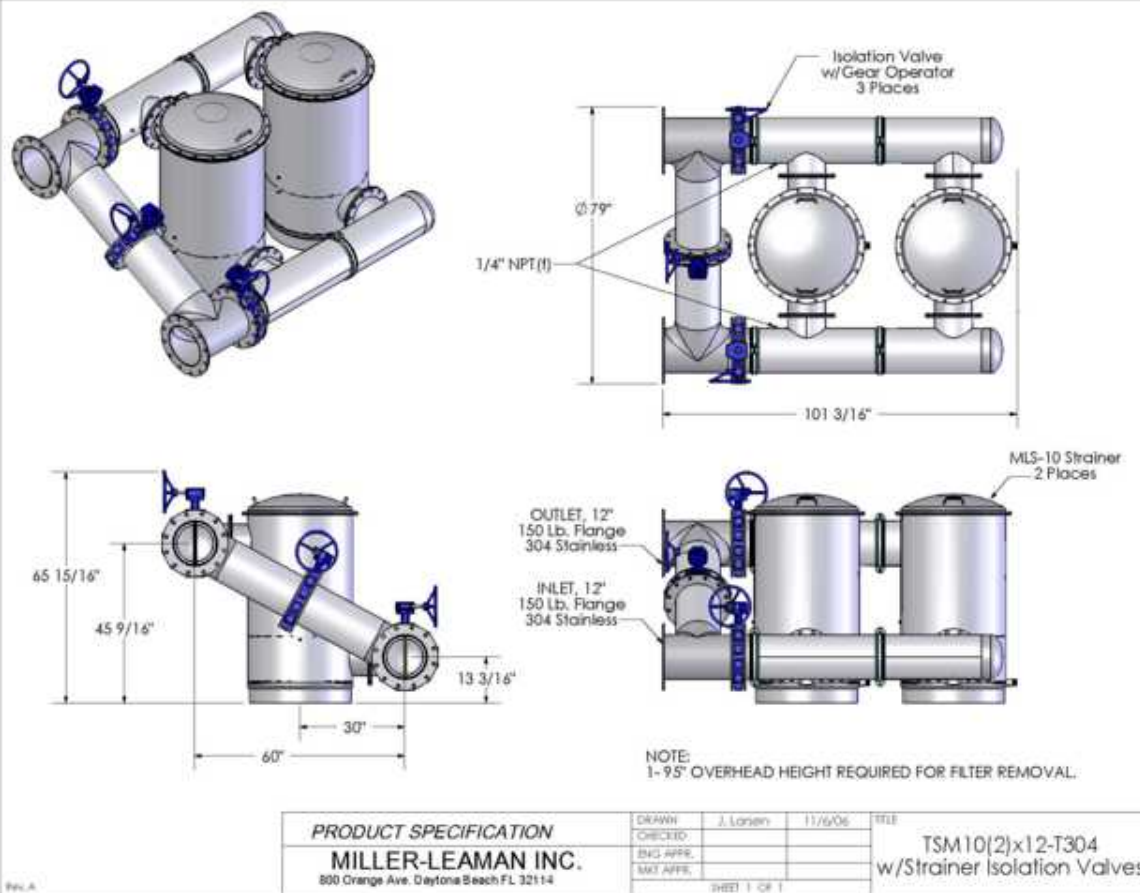


Competitive Edge...



- High Quality, Durable Construction
- Can be Customized to Exact Specifications
- Flush/Drain Particles from Reservoir, via 1 ½" Port
- Substantially More Screen Surface Area Compared to Traditional Basket Strainers (*3 – 5 Times*) Resulting in Less Maintenance
- Heavy-Duty, Thick Gauge Screen
- Flow Rates From 100 GPM to 2,000 GPM
- Low Pressure Loss (*Less than 1 PSI when clean*)

Let Us Customize It...



- Miller-Leaman Uses *SolidWorks 3-D Modeling Software (With Ability to Export as DWG File)*

Sample Specification...



Thompson Strainer

Supplier shall provide _____ (qty.) strainers. Strainer shall be designed for a flow of _____ GPM, with a maximum pressure loss during maximum flow of 1 PSI. Strainers shall be provided with a _____ mesh/micron filter element, conical in shape and vertical in orientation. Construction of the strainer housing, flanges, nipples and screens shall be of type 304 stainless steel. Strainers shall be provided with 1/4" gauge ports on inlet and outlet sides of screen and with a 1½" flush port integral to the operation of the strainer. Strainer housing shall be rated for 125/150 PSI operation. Strainers shall be constructed by Miller-Leaman, Inc. or approved equal.

Automatic Timer Flush (ATF-EA-1.5)

The ATF shall insure that the particulate that accumulates in the debris reservoir of the filter/strainer is automatically flushed. The ATF shall be provided with a stainless steel ball valve, open/close indicator, and a controller to provide a field adjustable time flush. The power supply and timer controls for the valve are to be housed in NEMA 4X control box. The controls shall include a manual override switch for manually flushing and draining the filter before cleaning. Voltage 120V, the ATF-EA-1.5 shall be constructed by Miller-Leaman, Inc. or approved equal.

Pressure Differential Alarm (PDA)

The PDA option continuously monitors the inlet and outlet system pressure. The PDA will insure that when the filter requires manual cleaning an audible siren and visual flashing alarm is energized. The PDA will be provided with nipples, pressure differential gauge and a controller to provide an audible and visual announcement of pressure differential pressure above set point alarm. The PDA shall provide auxiliary dry contacts status of pressure differential alarm for remote monitoring (i.e. building automated system). The PDA shall also provide an alarm reset button. Voltage 120V, the PDA shall be constructed by Miller-Leaman, Inc. or approved equal.



Selling Comparison...



- High Surface Area
- Low Pressure Drop
- Removes All Types Of Contaminants Including Light Weight "Floaters"
- Effective On Cottonwood Seed, Bugs, Leaves, Etc.
- Stainless Steel Construction

Leading Competitor



- Flow Dependant for Proper Performance
- Only Effective on Heavy Particulate (greater than 1.2 specific gravity)
- Light Weight "Floaters"
- Conventional Materials of Construction



Automatic *Turbo-Disc* System...

- Fully Automatic Operation
- Full-Flow, Side-Stream or Slip-Stream Configurations
- Three-Dimensional (depth) Filtration
- Modular Design
- Uses a Fraction of the Backflush Water used by Conventional Sand Filters
- Effectively Removes Particulate and light-weight, Airborne Contaminants (cottonwood seed, algae, etc.)



Automatic *Turbo-Disc* System...



16-Pod Full Stream Turbo-Disc System

- Polyamide Housings
- Polypropylene Discs
- Micron Sizes Available: 50, 100, 130, 200
- 70-100 GPM per Pod
- Pressure Rated to 125 PSI
- Temperature Rated to 140°F



System Components...

- Automatic Disc Filtration
- Minimum Backwash Water
- Stainless Steel Inlet/Outlet Manifolds
- Automatic Backflush Valves/Solenoids
- Stainless Steel Frame and Skid Assembly
- Pump & Motor Starter Relay (Single Point Electrical)
- Outlet Control Valve
- Air Over-ride Feature



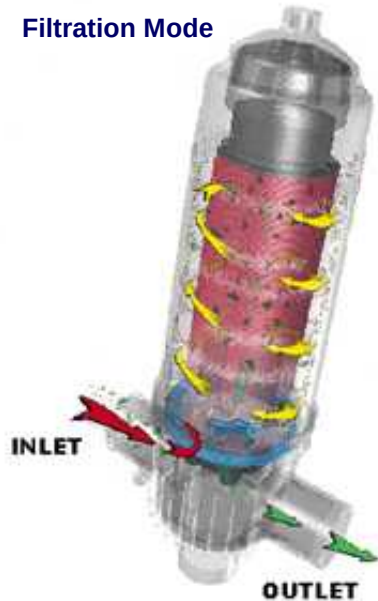
800-GPM Turbo-Disc Side-Stream Skid System



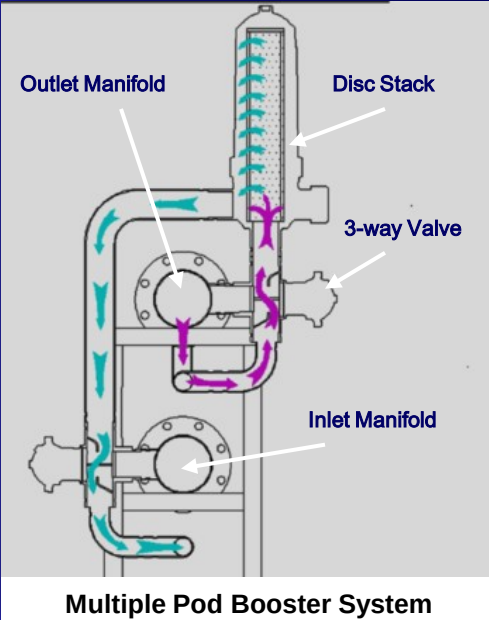
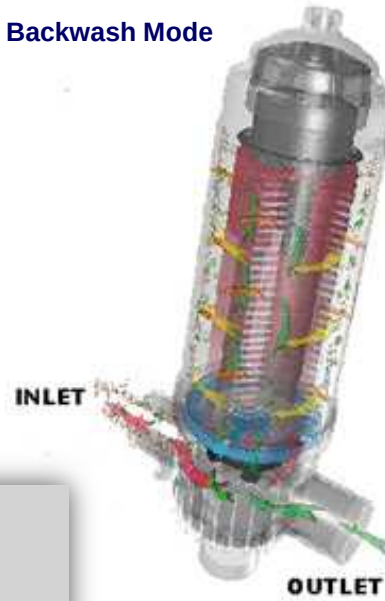
How It Works...

Filtration Mode

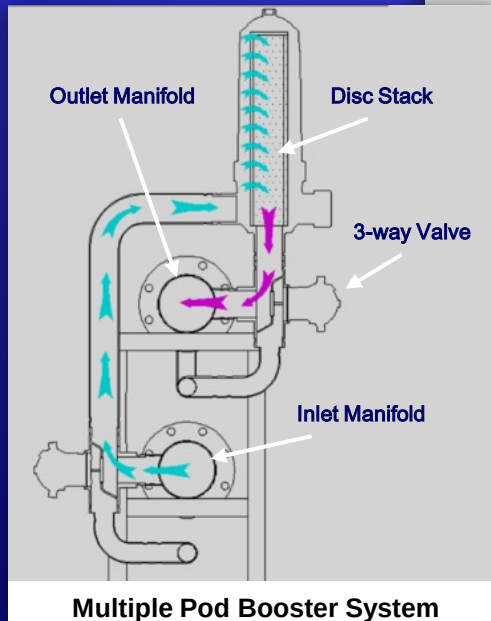
Filtration Mode



Backwash Mode



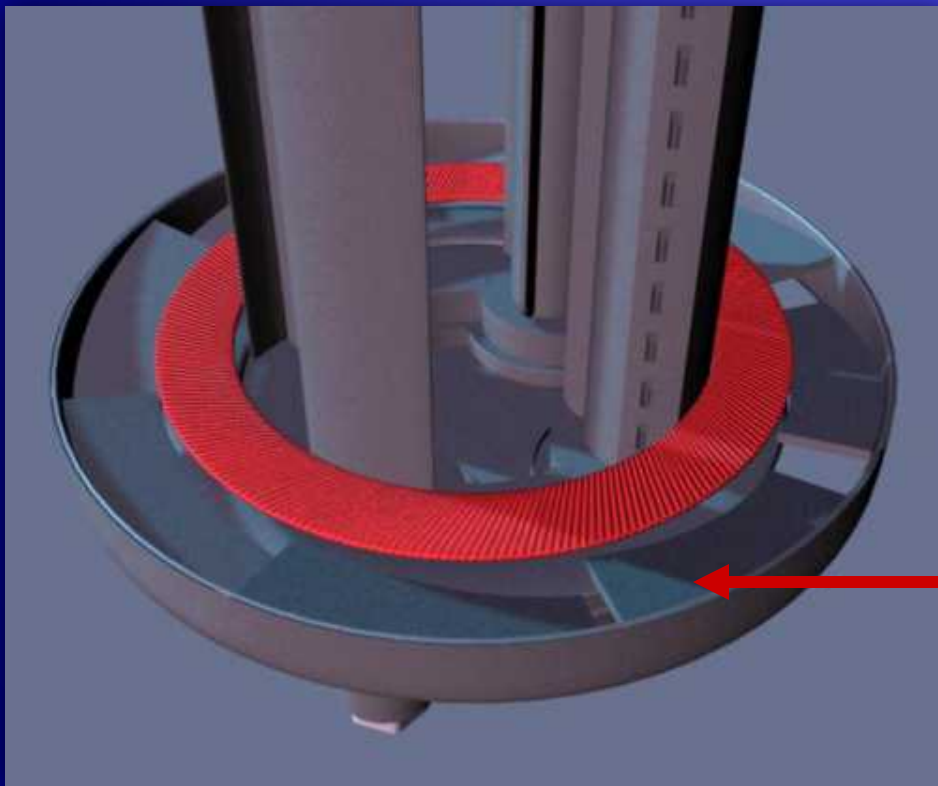
Backwash Mode





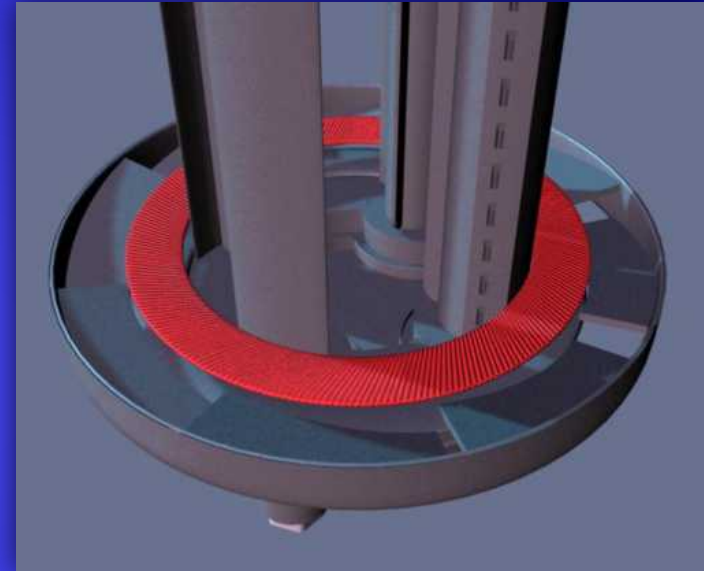
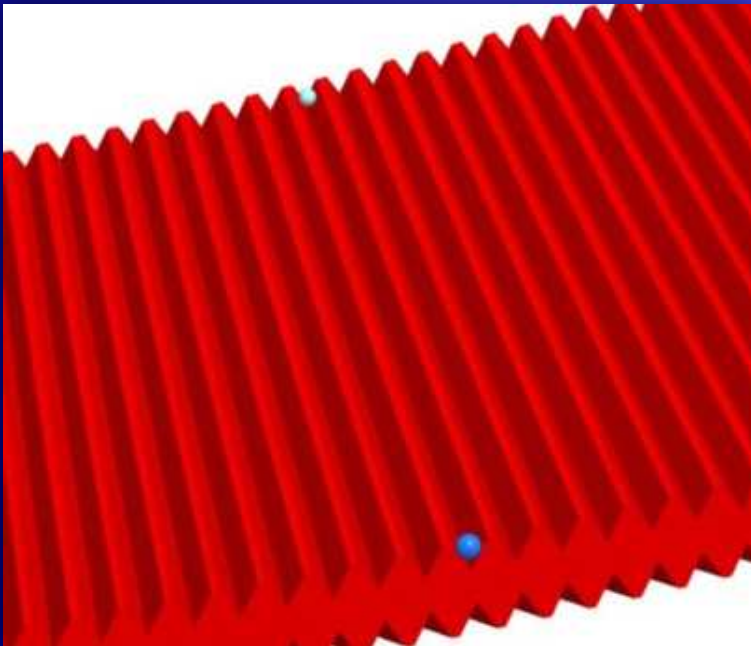
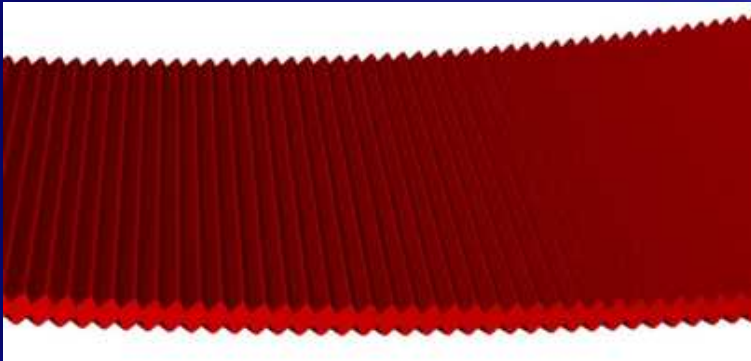
Turbo Element...

The patented Turbo-Element creates a centrifugal action, spiraling heavier particulate away from the disc stack. This dramatically reduces the backflush frequency and water consumption. This saves on water and reduces chemical usage.



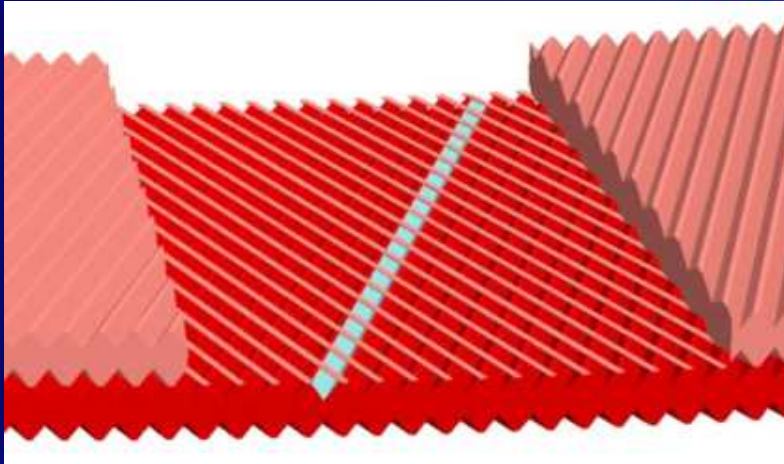
Turbo-Element

Polypropylene Discs...

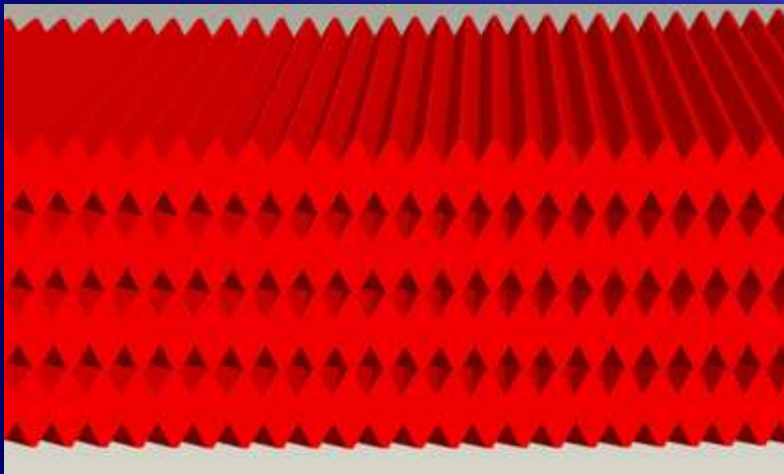


- Grooves On Both Sides of Discs
- Grooves Narrow Towards Center
- Grooves Cut on Angle

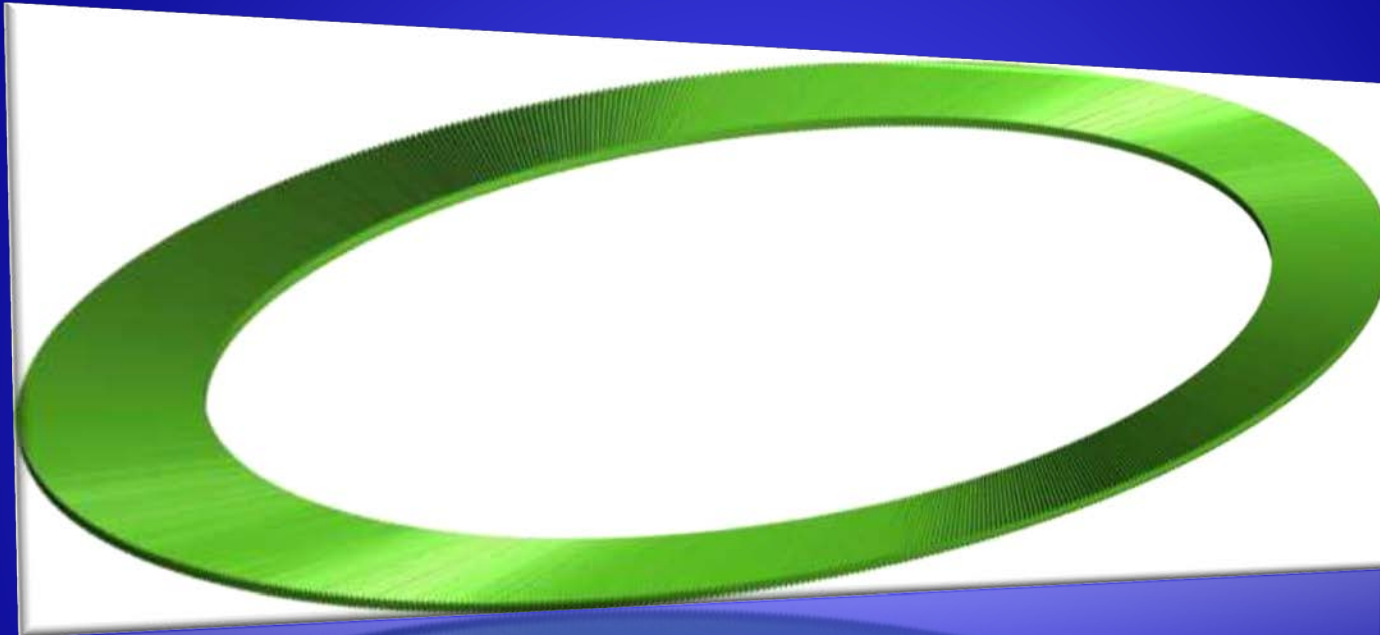
Disc Stack...



- Angle of Grooves Results in “Cross Hatching” When Stacked
- Stacking of Discs Creates Pores and Torturous Path for Flow
- Disc Stack Provides 3 Dimensional, “Depth” Filtration



Disc Options...



Several Color-coded Disc Options:

50 micron

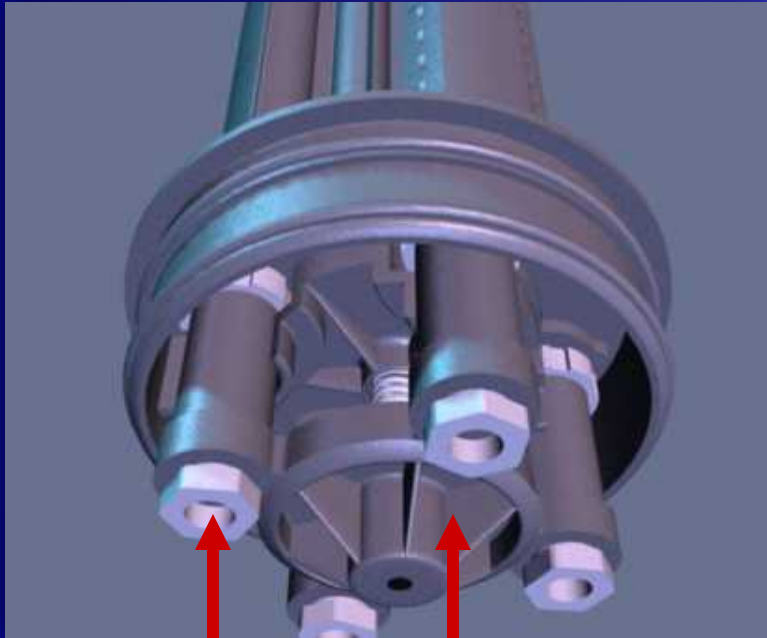
100 micron

130 micron

200 micron

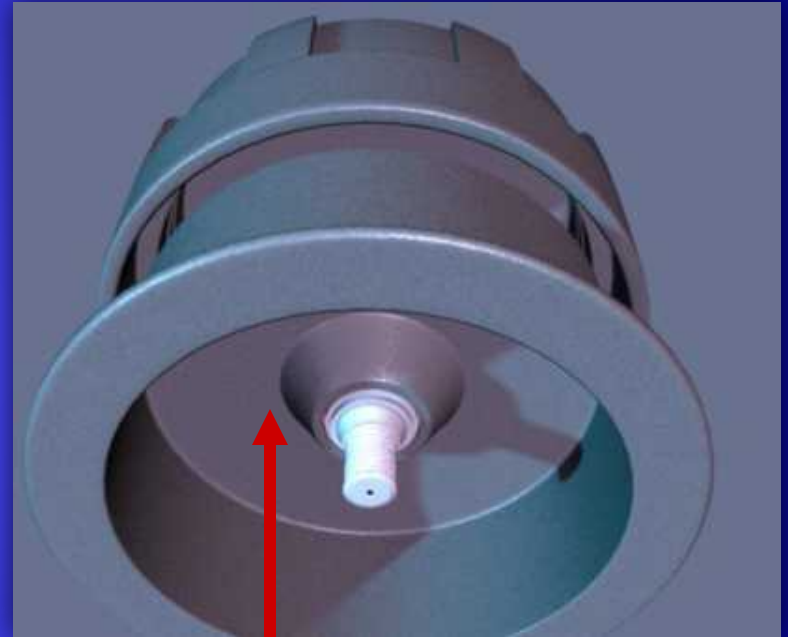


Reversing Flow Direction...



Check valve – closes during backflush mode

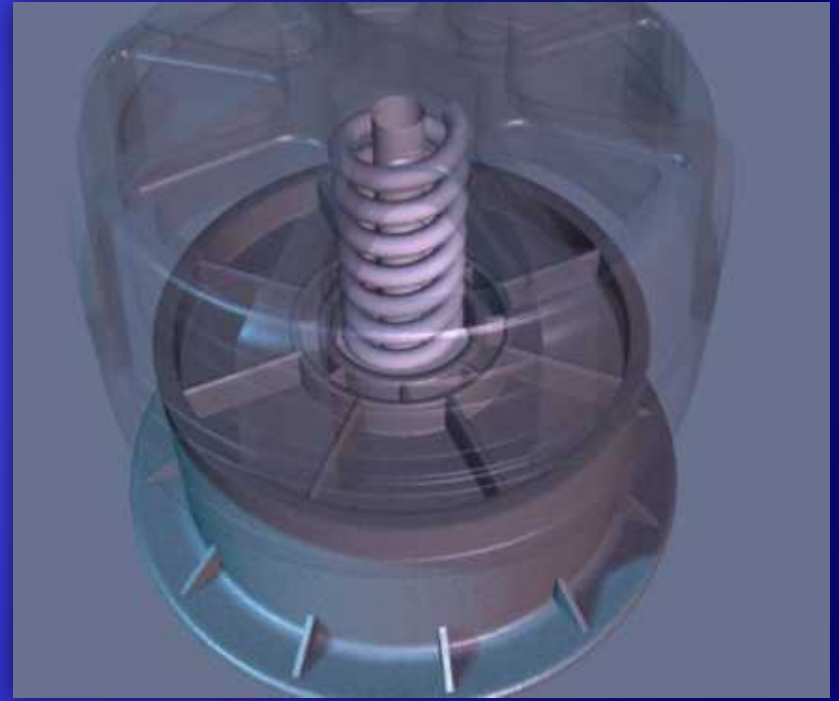
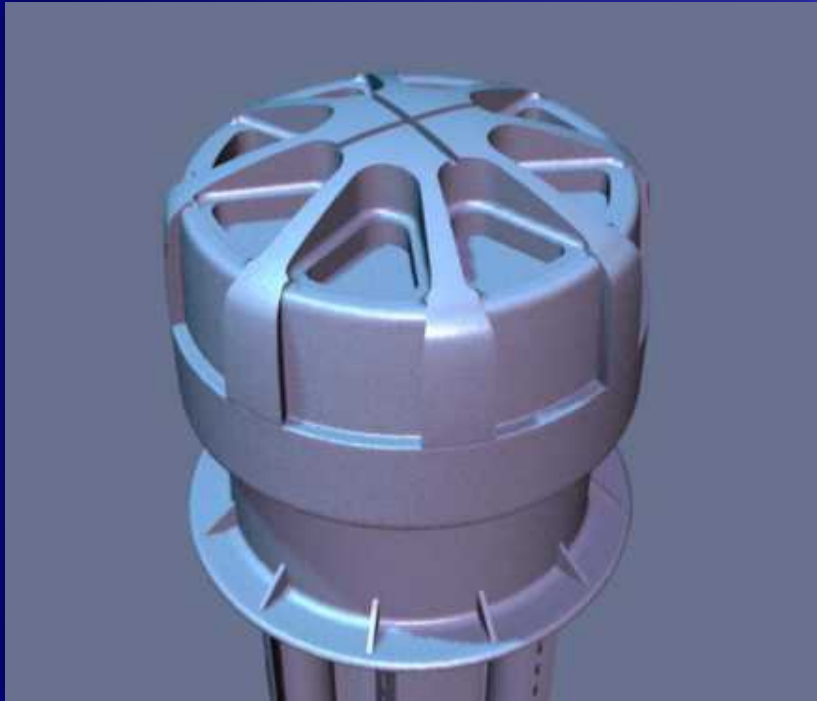
Riser post openings - water enters here during backflush



Pressure is applied to bottom side of cap to decompress disc stack during backflush



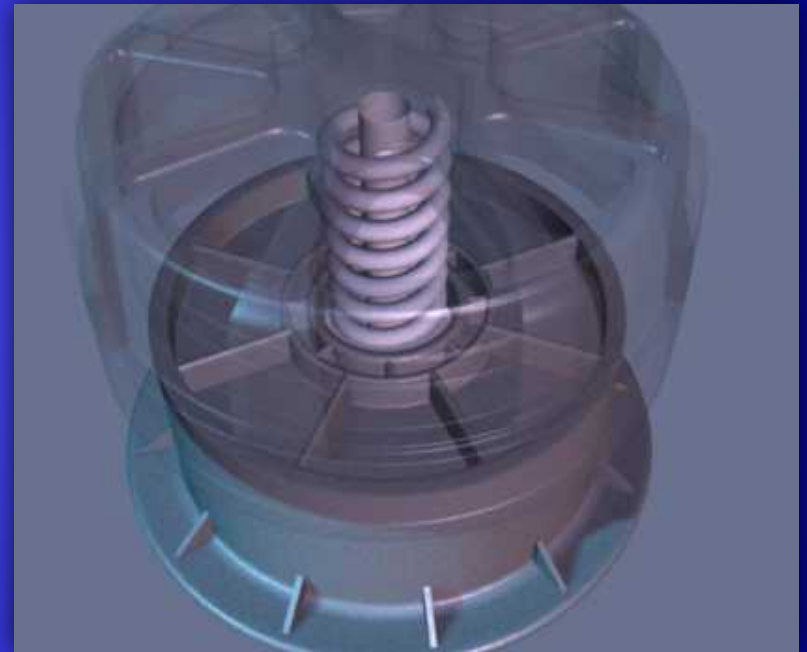
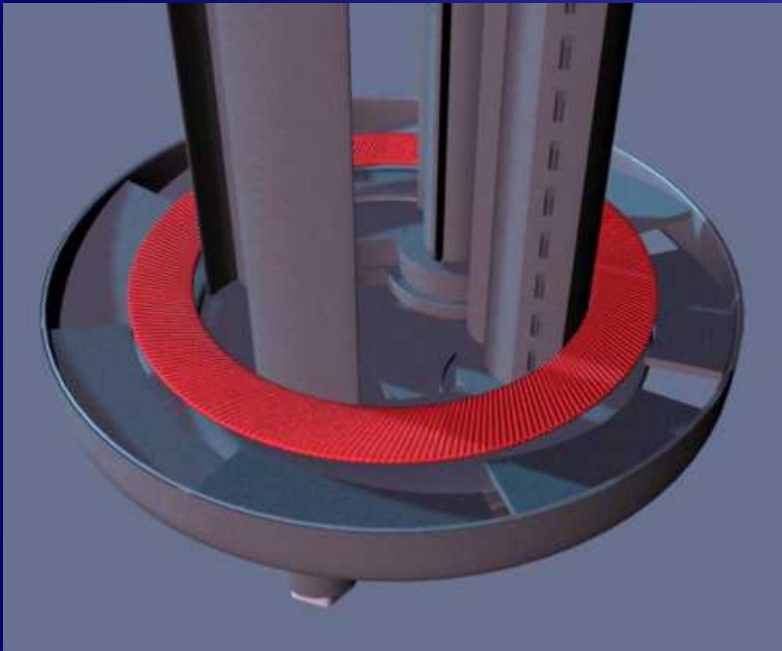
Spring Loaded Cap Assembly...



The spring loaded cap keeps the disc stack compressed tightly until backflush mode begins.



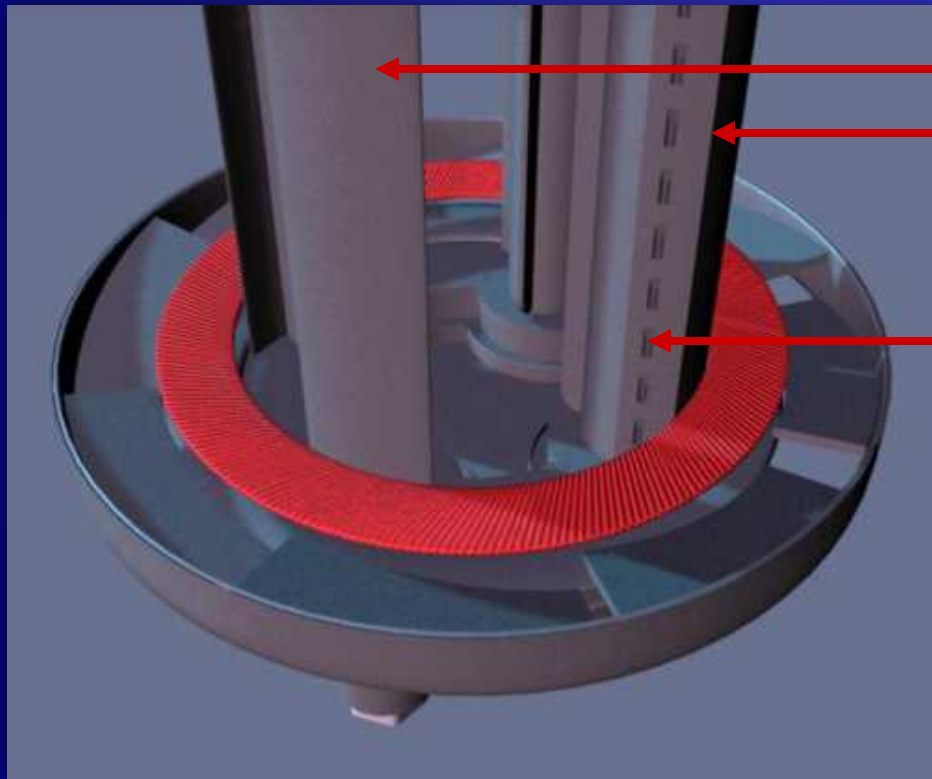
Decompressing Disc Stack...



Once the top cap has lifted, pressure is removed from the disc stack which allows the discs to separate enhancing the cleaning during backflush.



Backflush Mode...



Riser Posts

Openings

During backflush, water sprays from the 120 openings in a tangential direction to the discs. This causes the discs to spin during backflush, enhancing the backflush efficiency.



Backflush

- 3-Pod 300 GPM System
- Uses approximately 30 gallons for backflush





Packaged Systems...

- Stainless Steel Inlet/Outlet Manifolds
- Automatic Backflush Valves/Solenoids
- *Maxim* Backflush Controller
- Single Point Electrical Connection – Pump Motor Starter
- Stainless Steel Frame and Skid Assembly
- Air Override Feature (air enhances backflush efficiency)
- Systems shipped pre-wired, pre-tested, and completely assembled
- No Special Tools Required for Maintenance
- Corrosion Resistant Materials of Construction
- Small Footprint





Maxim Backwash Controller...

- Menu-Driven Real-Time LCD Display
- NEMA Corrosion Proof Enclosure
- Up to 12 Input
- EEPROM Memory Chip
- Ability to Upload Custom Programs
- Quick Connect Wiring Points
- Standard 110-VAC Plug
- Differential Pressure Switch Plug





Turbo-Disc Filter Systems...

Side-Stream System

- Complete with Re-Circulating Pump



150 GPM 2-Pod Skid System



70 GPM Turbo-Disc Filter Air-Assist System



Automatic Turbo-Disc Configurations...

Single Pod Air-Assist



- 10 – 100 GPM Flow
- Stainless Steel Circulation Pump
- Extra Pod for Clean Water Reservoir
- Air Compressor Provides Backflush Pressure



Automatic Turbo-Disc Configurations...

Full-Flow In-Line with Booster Pump



- Booster Pump Required to Raise System Pressure for Backflush



Automatic Turbo-Disc Configurations...



Side-Stream

- Circulating Pump Provides System Flow and Pressure for Backflush



Automatic Turbo-Disc Configurations...

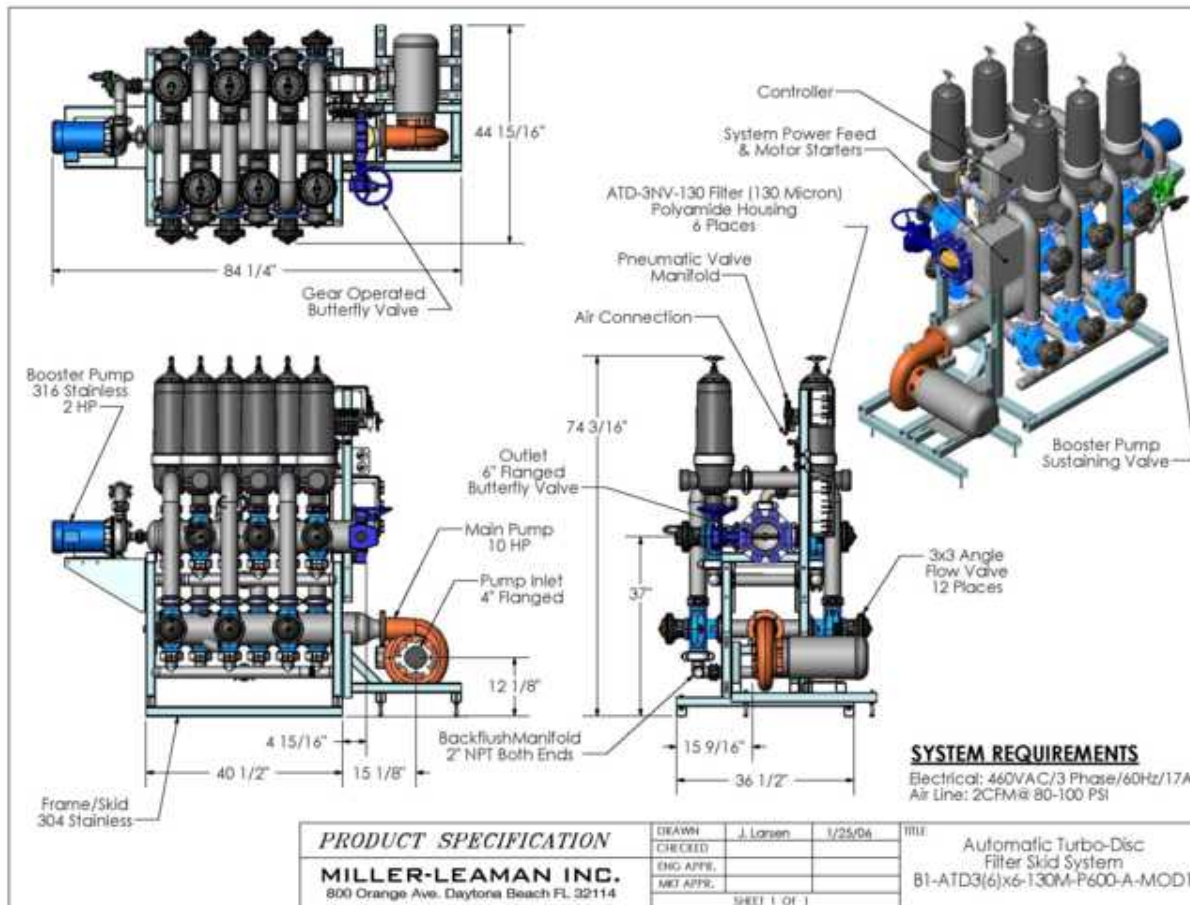
Side-Stream with Booster Pump



- Main Pump Provides System Flow
- Booster Pump Raises System Pressure for Backflush



SolidWorks...



- Miller-Leaman uses *SolidWorks* 3-D Modeling Software (With Ability to Export as DWG File)



Sample Specification...

SECTION _____

Automatic Self Cleaning Disc Filters

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required for and automatic self cleaning disc filter system including, filter pods, stainless steel piping manifold, valves, air compressor, control system and related accessories as in hereafter specified to perform the intended function and achieve a fully integrated and operational filtration system.
- B. These Specifications are intended to give a general description of what is required, but do not cover all details which will vary in accordance with the requirements of the equipment furnished. They are, however, intended to cover the furnishing and delivery of all materials, equipment, and appurtenances for the complete automatic self cleaning disc filter system herein specified, whether specifically mentioned in these Specifications or not.
- C. The CONTRACTOR is to purchase the pre-engineered, pre-manufactured automatic self cleaning disc filter system with installation to be provided by the CONTRACTOR.
- D. The CONTRACTOR will provide the installation site, crane to off-load, an adequately sized concrete equipment slab, the installation labor and material, all external piping, main electrical service and system wiring outside of the main control panel, and "protective fencing" (if "protective fencing" is required by the OWNER).

CONTINUED.....



Selling Comparison...



- Minimal Backflush Water Required (10-12 gal/pod)
- Low Operating Cost
- Small Footprint
- Easy Maintenance (no special tools required)
- Superior Materials of Construction



- High Backflush Water Consumption (full flow; 3-8 minutes)
- Drainage May be an Issue
- Wasted Chemicals
- Large Footprint
- Sand Replacement is Messy and Labor Intensive



Sales Tools...

- Demo Trailer



Our Demonstration Trailer is equipped with a 3-Pod ATD Filtration System complete with a 150 gallon water reservoir or it can be connected to an external water source. No external utilities are required to operate our trailer.

Sales Tools...

- **Water Analysis**



Georgia College & State University • Milledgeville, Georgia

"Automatic Disc Filter Keeps University's Cooling Water Clean"

An often overlooked aspect of cooling water systems is adequate filtration. An increasing number of cooling tower users are installing automatic filtration systems to remove particulate and control contamination levels. At Georgia College & State University in Milledgeville, Georgia, automatic, self-cleaning disc filters have provided an efficient and cost-effective solution to maintaining cleanliness and optimum performance of their cooling towers.

Cooling towers, by their nature, are excellent air scrubbers. The cascading water washes airborne particles into the tower basin. These particles collect in the system and cause an array of problems with downstream equipment and the tower itself. Reduced cooling efficiency, shortened equipment life, increased maintenance and frequent downtime all can result from high concentrations of particulate. In addition, particles provide a "breeding ground" for algae and biological growth. Effective control of contaminants can enhance chemical water treatment and reduce costs by limiting "sites" for organic growth.

Kevin Mumer, Associate Director of Operations and Maintenance, evaluated several filtration options for a new, three-cell cooling tower at the college. An automatic *Turbo-Disc Filter* system, manufactured by Miller Leaman, Inc., was chosen based on prior experience with a smaller *Turbo-Disc Filter* system. The smaller *Turbo-Disc Filter* system performed well and provided effective, automatic filtration with minimal maintenance and operating costs.

The 10-pod automatic *Turbo-Disc Filter* is installed on a side-stream loop and pulls dirty water from the tower basin at a rate of 1,000 GPM and returns the clean, filtered water back into the basin. Side-stream filtration results in the entire system volume being circulated through the filter multiple times

per day. The system is comprised of multiple "pods" of disc filters, stainless steel manifolds and piping, a circulation pump for system flow, and controls for automatic operation.

The filter pod utilizes a stack of polypropylene discs with grooves molded into each disc's surface. When stacked, the grooves overlap in a "cross hatching" effect, therefore creating a tortuous path through which the dirty water must flow. Particles are trapped by the discs and accumulate until the filter requires backwashing. Disc filtration technology was developed decades ago (continued on page 2)



Georgia College & State University



Turbo-Disc System installation on the GA College Cooling Tower

Georgia College Installation...



HD / HS Series

Helix Filters...

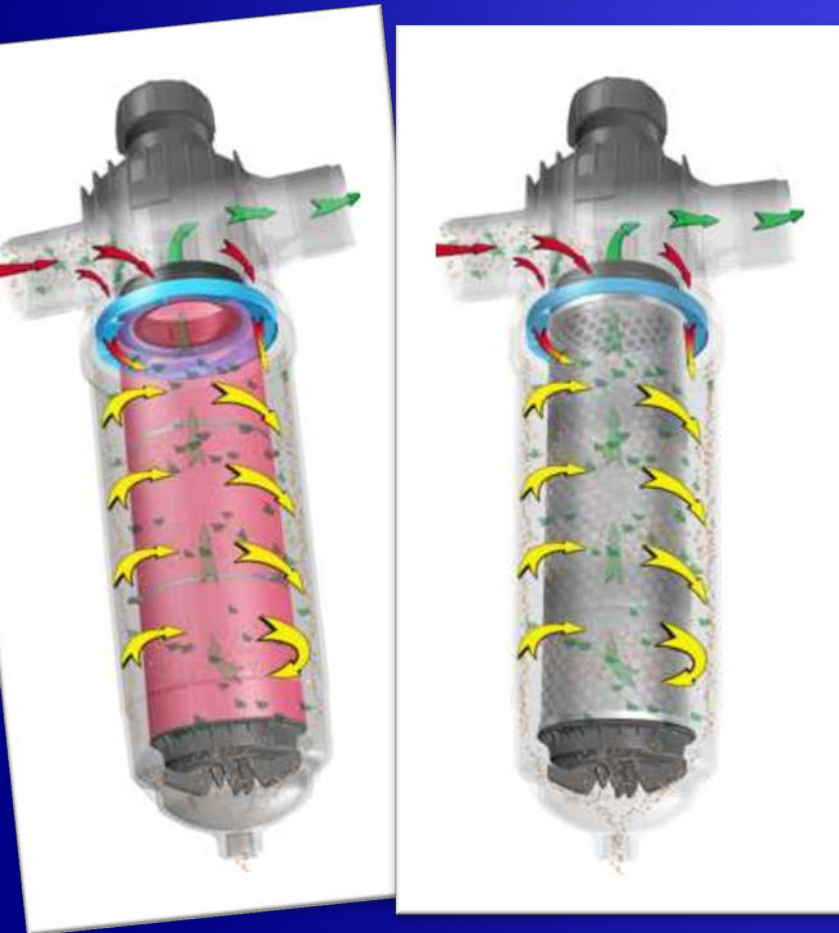
- Injection Molded Polyamide Housing
- 2", 2" Super, 3" Model Sizes
- Quick-Release Clamp Lid
- In-line and 90-degree Configurations Standard
- Polypropylene Discs or Stainless Steel Screen Cartridges
- Gauge Port to Monitor Differential Pressure
- Temperature Rated to 140°F
- Pressure Rated to 125 PSI
- Standard Flush Port – 3/4" NPT
- Flow Rates 100 GPM -200 GPM (Multiple Pods are Manifolded for Higher Flow Rates)





HD / HS Series

How It Works...



- Dirty water enters the filter housing through the inlet connection.
- As dirty water passes through the Helix-Element, a high velocity centrifugal spinning action causes particles to spin away from the disc/screen.
- Particles are flushed via the $\frac{3}{4}$ " flush port connection.
- Dirty water passes from the outside to the inside of the filter media.
- The filtered water flows upward and exits the filter through one of the outlets.

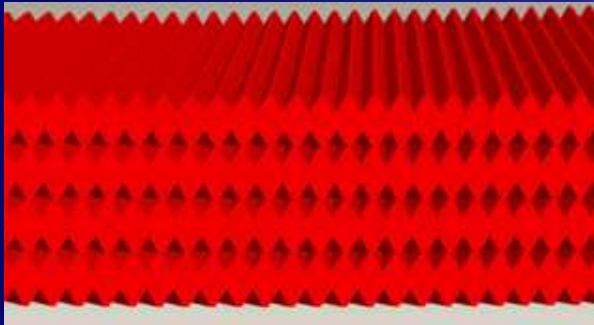


HD / HS Series

Filter Media...

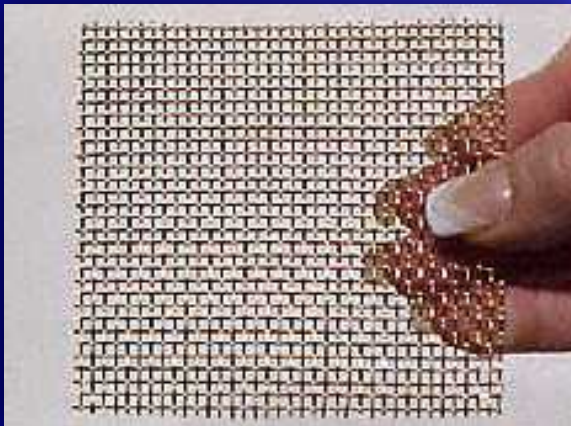
Disc Media – HD Series

- Polypropylene
- Micron Sizes Available: 50, 100, 130, 200
- Grooved Ridges to Capture Particles



Screen Media – HS Series

- Type 316 Stainless Steel
- Mesh Sizes Available: 16, 30, 40, 50, 60, 80, 100, 120, 150, 200
- Perforation Available: 1/4", 1/8", 5/64", 1/16"





HD / HS Series

Surface Area...



Model	Type	Surface Area
HD/HS 2"	Regular	186 sq. in.
HD/HS 2"	Super	263 sq. in.
HD/HS 3"	Regular	263 sq. in.





HD / HS Series

Low Maintenance...

- Cartridges are easily removed for cleaning, no tools required.
- Disc/Screen cartridges do not need to be replaced, reducing inventory costs.



Optional Flush Valve...



HD / HS Series

- Automatic Drain Valve
- Adjustable Cycle Time
- Digital Readout
- 3.5 Second Flush



- 110 VAC
- Weatherproof Polycarbonate Housing
- No Clog Design
- 200 PSI Max Pressure

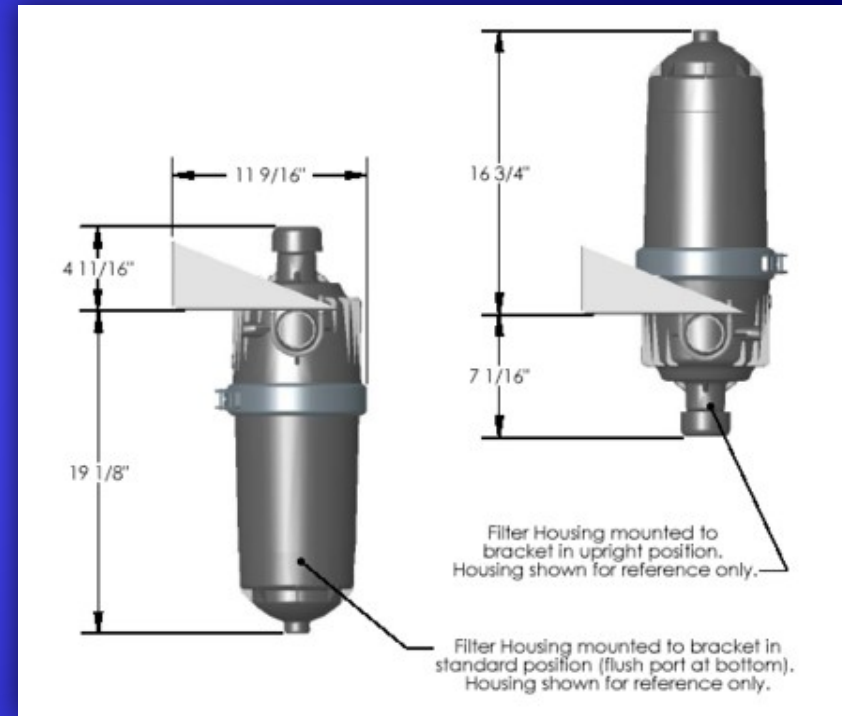


HD / HS Series

Helix Configurations...

Inlet/Outlet Configurations:

- 2" and 3" Models Available with NPT or Victaulic Inlet/Outlet Connections
- In-line and 90° Configuration Standard (cap supplied for outlet port not in use)
- Optional Stainless Steel Mounting Bracket Assembly





HD / HS Series

Selling Comparison...

Leading Competitor



- High Surface Area
- Screen or Disc Options
- Easy Maintenance (no tools)
- Longer Interval Between Cleanings
- Discs Are Ideal For Soft or Organic Contaminants
- Corrosion Resistant Materials
- Optional Instrumentation



- Small Surface Area
- Frequent Cleaning Required
- Not Effective on Organic or Extrudable Contaminants
- Conventional Materials of Construction
- No Instrumentation

TowerGuard Features...



- Particulate Removal Down to 10-Micron
- Robust Fiberglass Reinforced Polyester Vessel
- Corrosion Resistant, Electrically Actuated PVC 3-way Valves
- TEFC Pump With Built-In Pre-Strainer
- Single Point Electrical Connection
- User Adjustable Maxim Backwash Controller
- Optional Backflushing with Source or City Water
- Completely Assembled and Factory Tested





Specifications....



Model #	Flow Rate (GPM)*	Filtration Area (sq. ft.)	Max Pressure (PSI)	Inlet/Outlet Size and Type	Backflush Line Size and Type	Optional City Water Line Size and Type	Pump HP	System Voltage/AMPS**
TG-20	44 GPM	2.2 sq. ft.	50 PSI	Inlet: 2" Pipe Outlet: 2" NPT(F)	2" NPT (m)	2" NPT (m)	1 HP	115 VAC (13 amps) or 230 VAC (6.5 amps)
TG-24	62 GPM	3.1 sq. ft.	50 PSI	Inlet: 2" Pipe Outlet: 2" NPT(F)	2" NPT (m)	2" NPT (m)	1.5 HP	115 VAC (16 amps) or 230 VAC (8 amps)
TG-30	98 GPM	4.9 sq. ft.	50 PSI	Inlet: 2" Pipe Outlet: 2" NPT(F)	2" NPT (m)	2" NPT (m)	2.5 HP	230 VAC (11 amps)

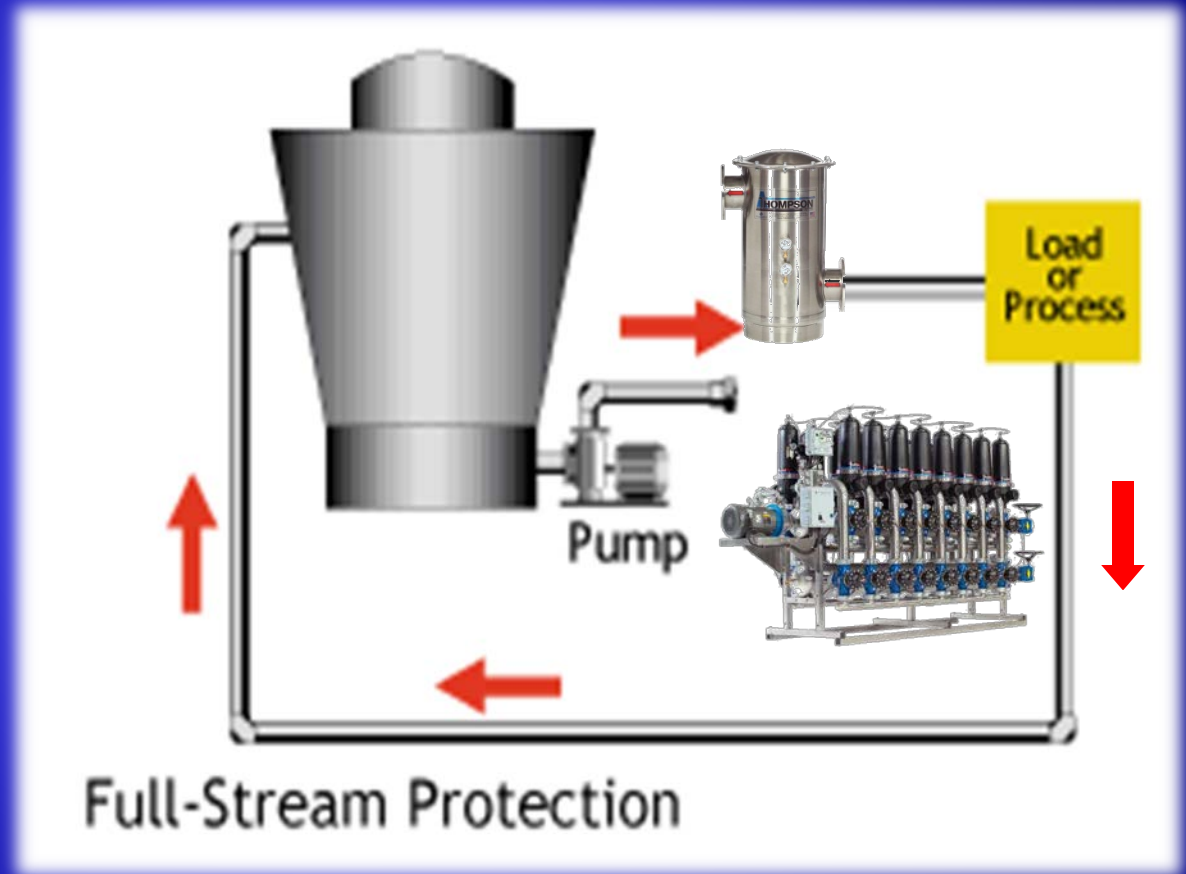
Full Flow Filtration...

Pros

- Complete Protection
- Entire Flow is Filtered
- Utilizes System Pump

Cons

- Larger Filter Required
- More Costly



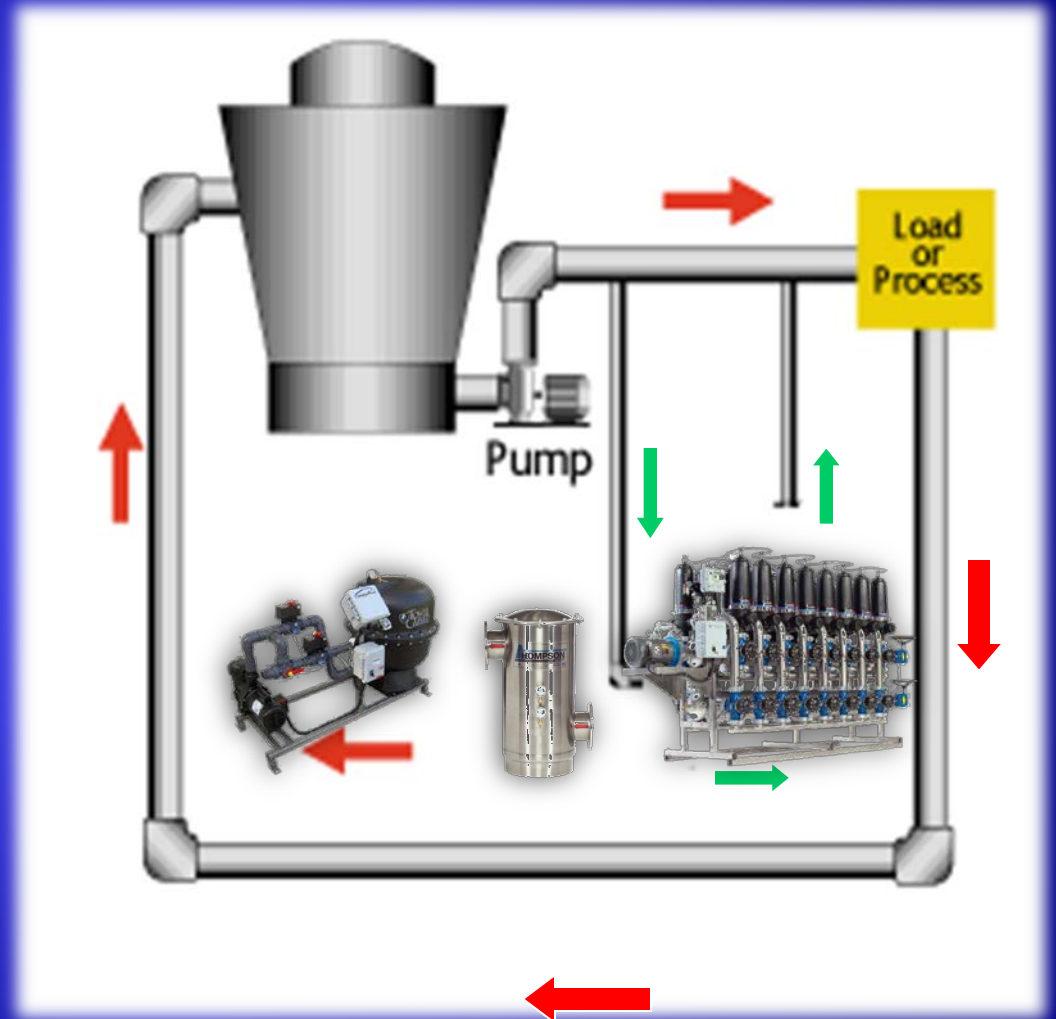
Slip-stream Filtration...

Pros

- Smaller Flow Filtered
- Less Expensive
- Utilizes System Pump
- Installation Flexibility (location of filter)

Cons

- Does Not Filter Full Flow
- Does Not Address Tower Basin
- Pump Must Have Sufficient Capacity



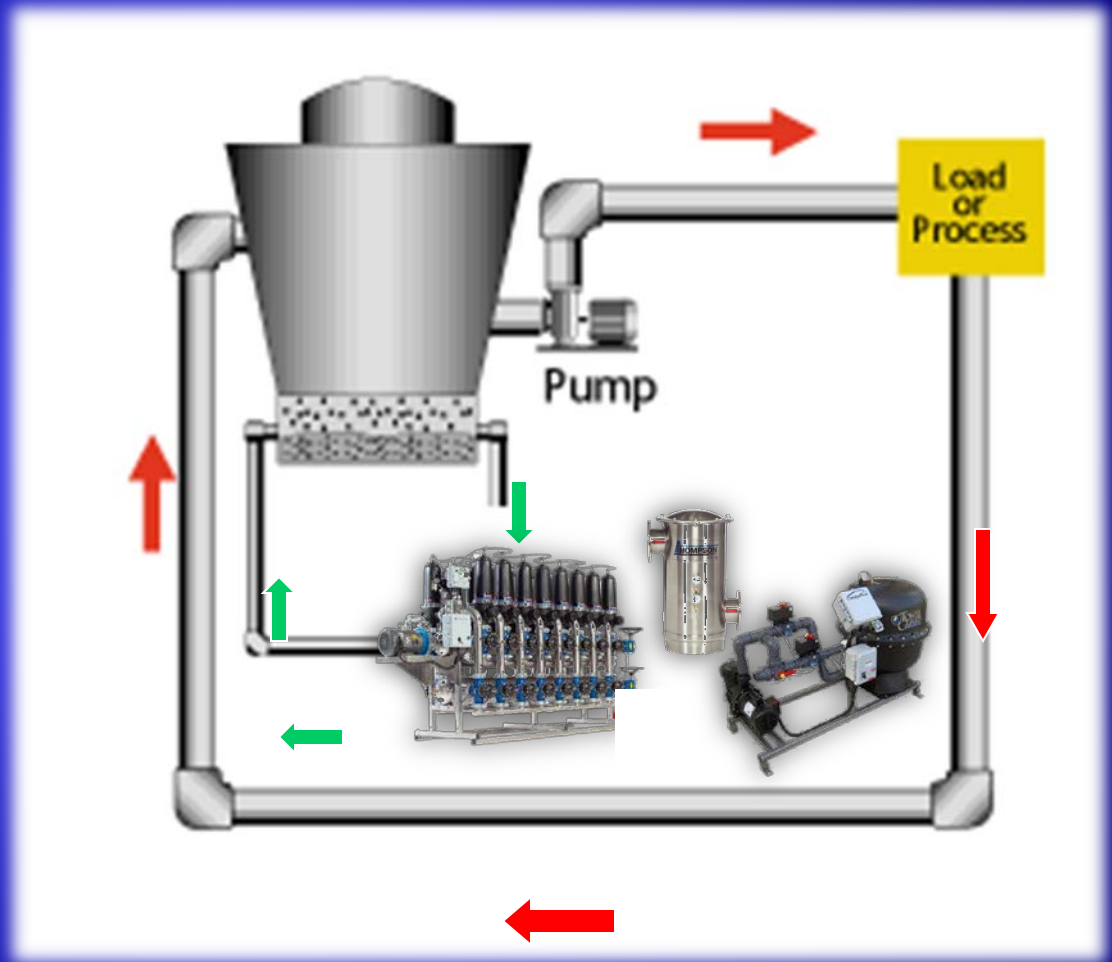
Side-Stream Filtration...

Pros

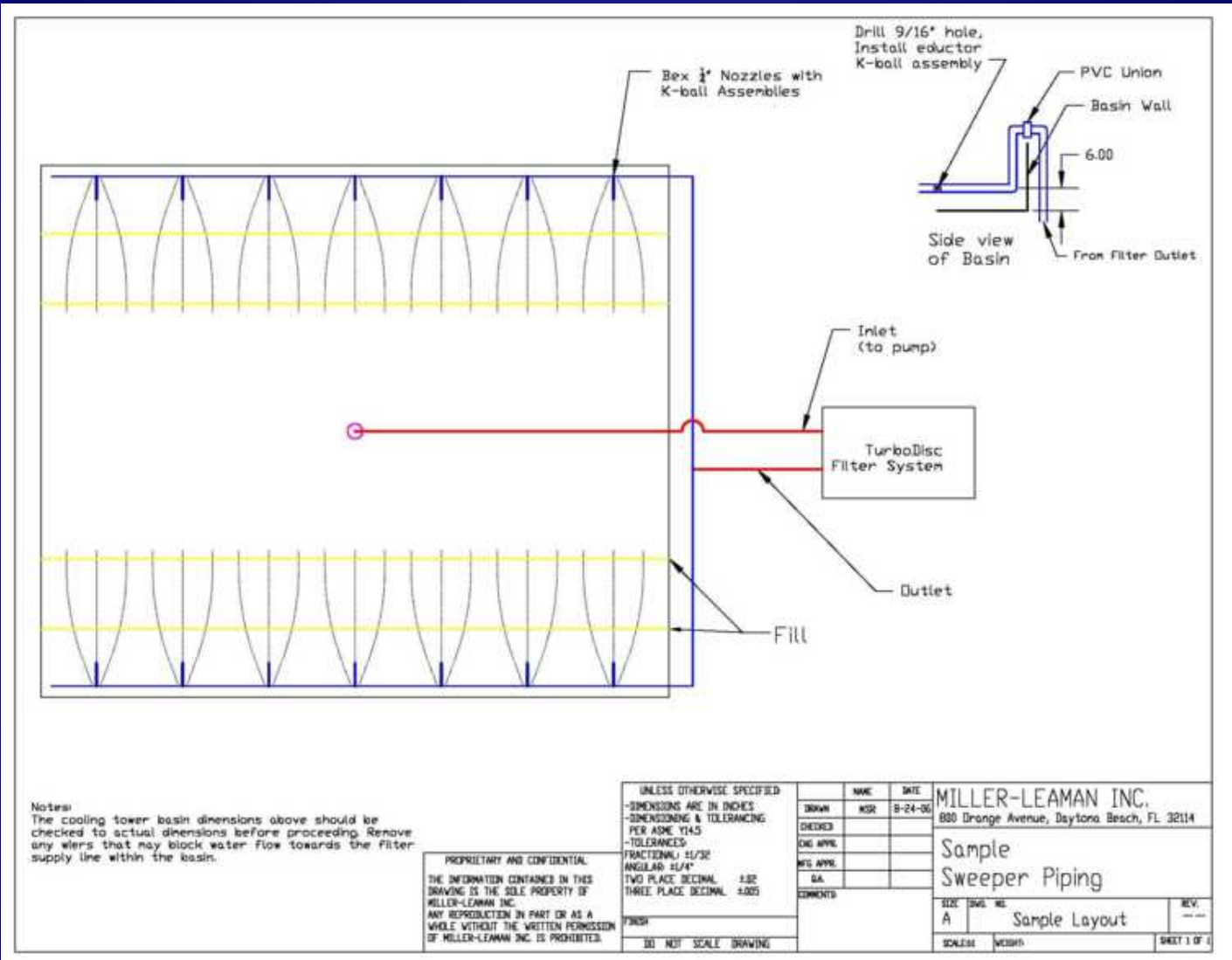
- Smaller Flow Filtered
- Less Expensive
- Cleans Tower Basin
- Most Effective Location (with Sweeper Piping)

Cons

- Does Not Filter Full Flow
- Requires Additional Pump



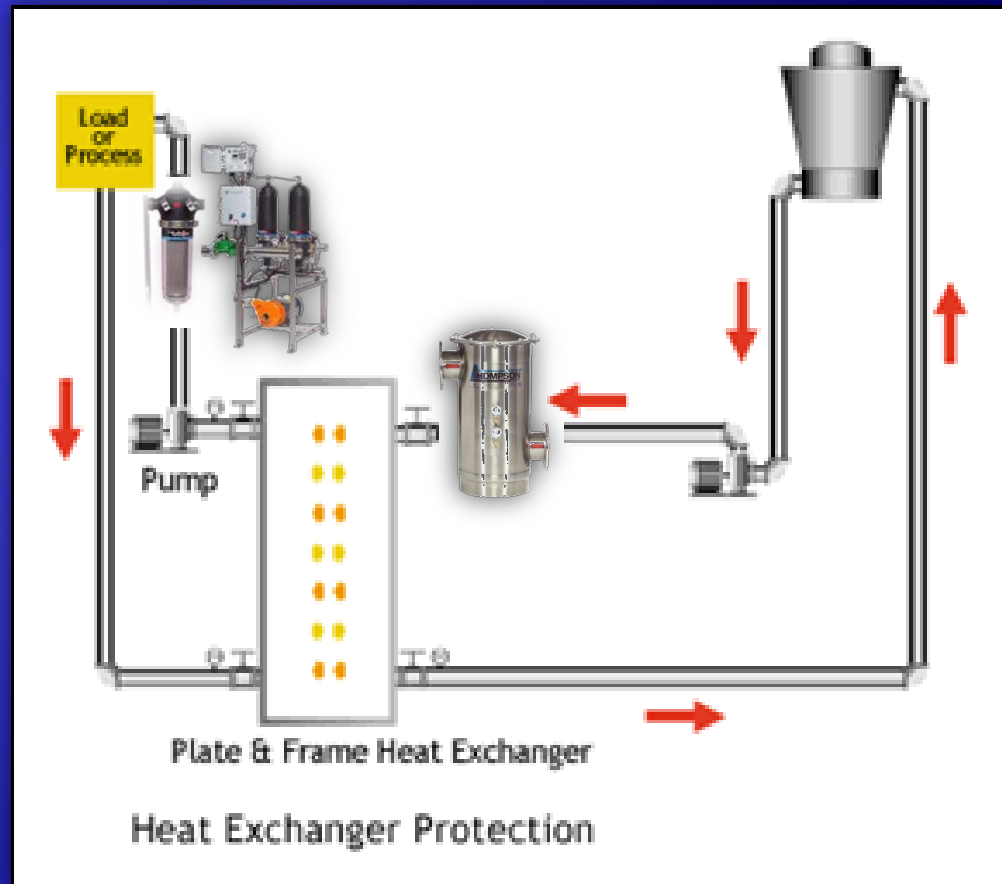
Sweeper Piping...



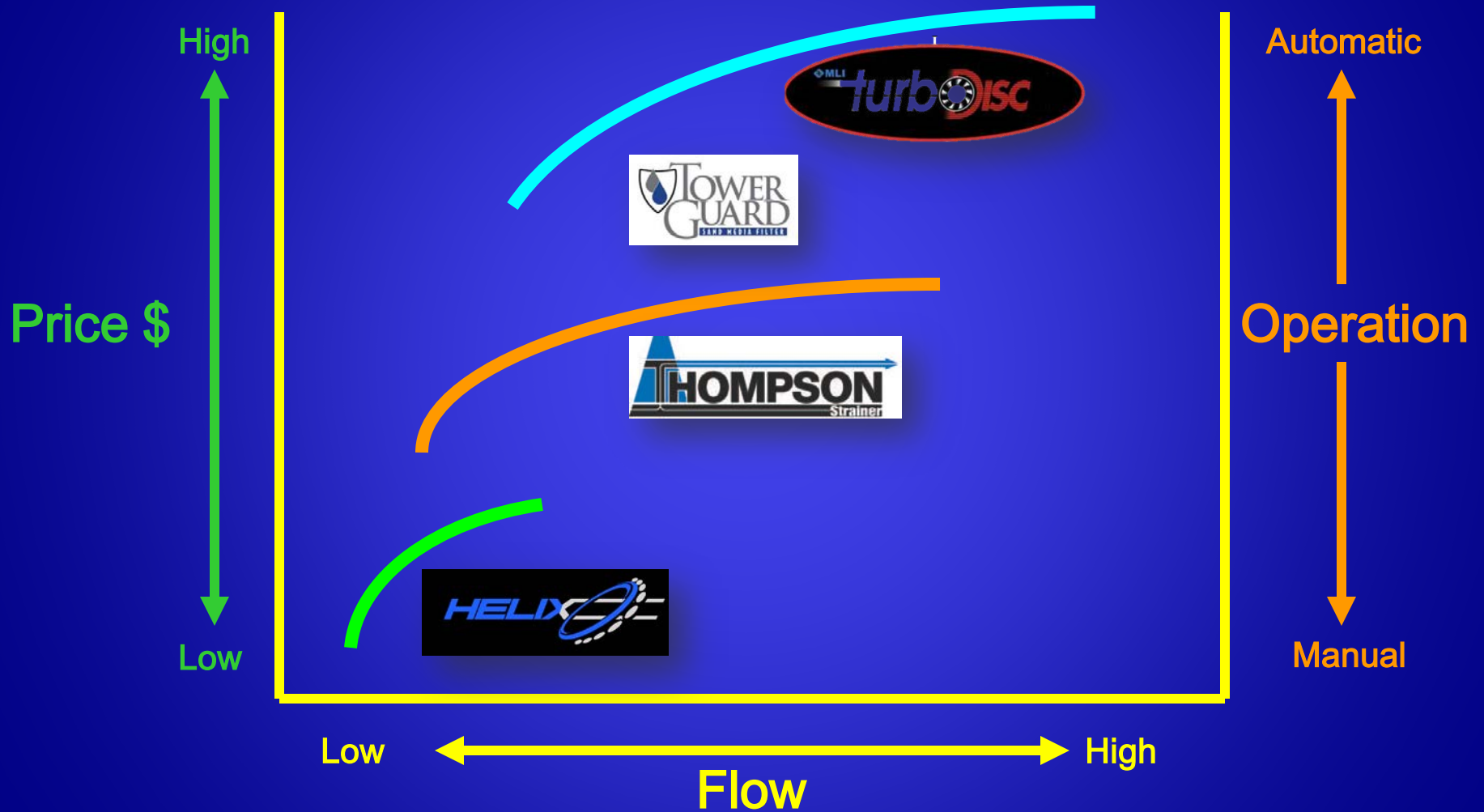
Point of Use Filtration...

Use Thompson Strainers and Helix Filters To Protect:

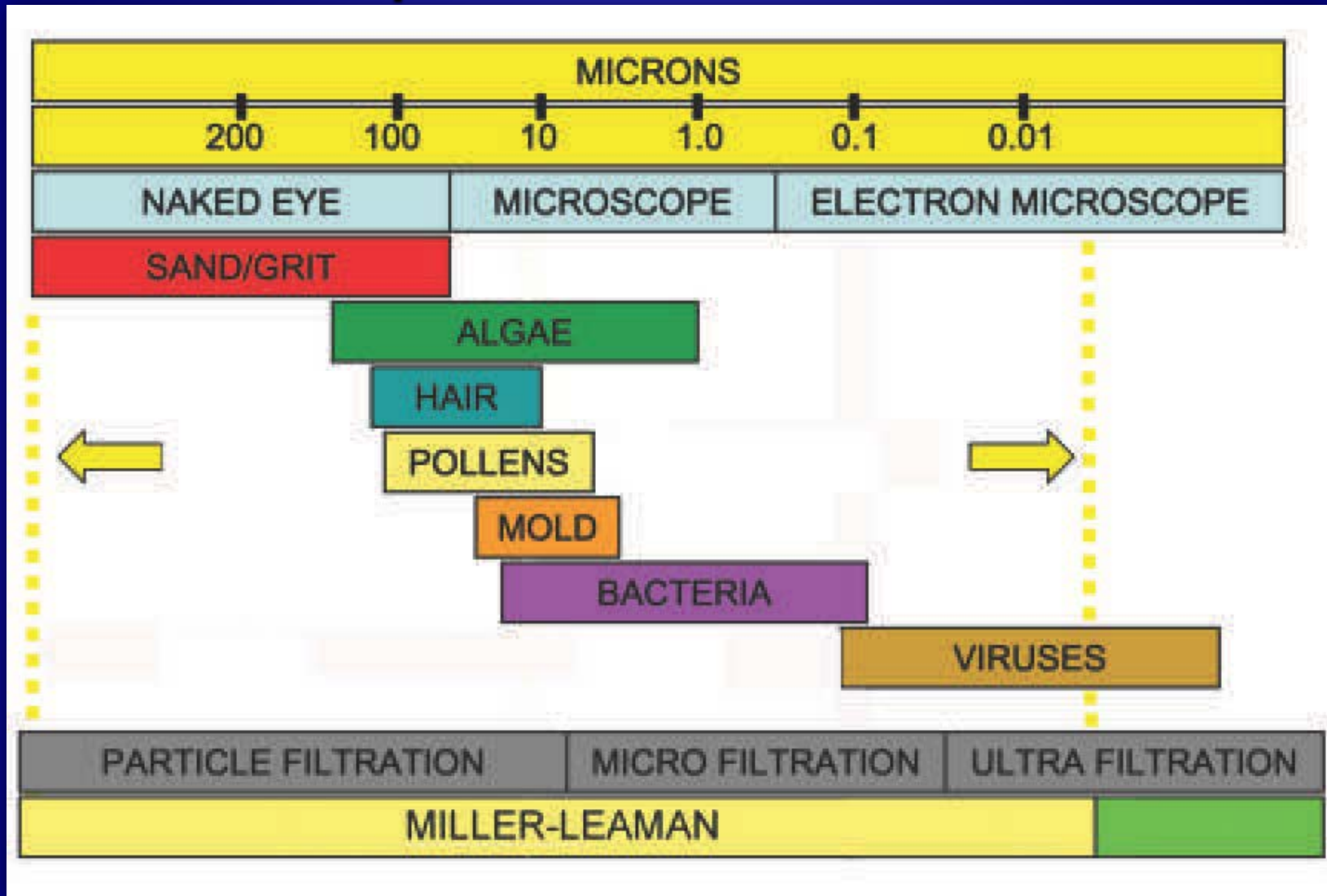
- Heat Exchangers
- Chillers
- Condensers
- Machinery



Product Positioning...



Filtration Spectrum...



Why Miller-Leaman?

- Experienced, Field-proven Filtration Solutions
- Unique, Patented Technology
- Innovative Designs
- High Quality Manufacturing
- Responsive, Technical Factory Support
- Customer Focused Sales Organization





We Would Appreciate Your Business!