

# LAKOS AUTOMATIC SELF-CLEANING SCREEN FILTERS

Low-maintenance, high-efficiency, high-flow screen filtration in a compact footprint

## APPLICATIONS

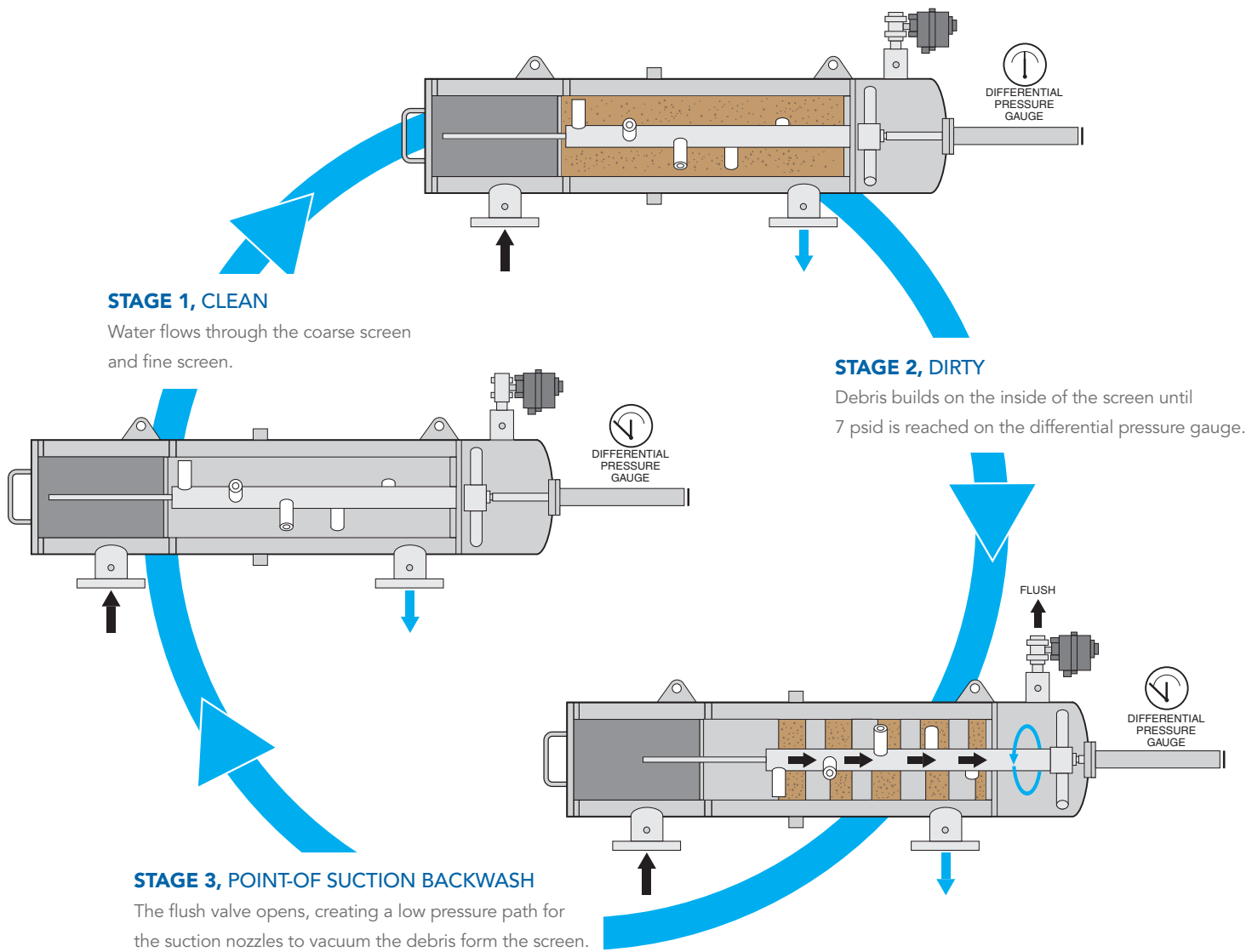
- Industrial
- Process cooling
- Chilled water
- Water treatment
- Irrigation

Flow Rates <b>50-7350 GPM</b>	Maximum Working Pressure <b>150 PSI</b>	Total Dissolved Solids <b>1-2000 PPM</b>	Fluid Viscosity <b>0.2-20cP</b>
Micron Ratings <b>5-500</b>	Total Suspended Solids <b>1-100 PPM</b>	pH <b>4-11</b>	

## KEY BENEFITS

- Continuous automatic operation, requires no operator intervention, ideal for remote sites
- Low water consumption for cleaning, less than 1% of total flow
- No interruption of downstream flow during cleaning
- Automatic flushing based on pressure-differential, hydraulic and electric control options
- Removal of both organic (algae, slime, floating debris) as well as sand, grit and inorganic particles to a fine micron level
- Each filter comes complete with housing, screen, flush ball valve, controller and DP switch
- ASME, CE, and PED available. NSF pending.
- Intelligently engineered, focusing on wear points to maximize durability and ensure maximum operating hours before required maintenance
- Unlike competitive PVC-backed screens, LAKOS screen is fused to stainless steel plate for maximum durability
- 304 Stainless Steel Housing and 316 stainless steel screen standard, other materials available upon request
- Smart design, resulting in minimal moving parts and easy maintenance
- Compact designs allow flexibility in installation position and orientation
- Over 140 different models available, each with 20 different screen options to meet any application requirement





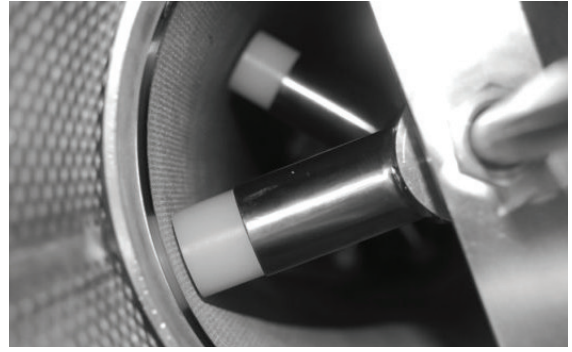
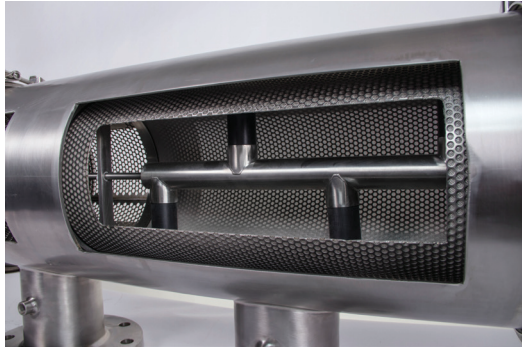
## HOW IT WORKS

The Lakos self-cleaning screen filter cleans itself during operation allowing continuous full flow.

The cylinder screen strains particles from a water source, trapping debris on the inside. As debris builds-up, a pressure differential between inlet pressure and outlet pressure develops. A controller monitors the pressure differential and actuates the cleaning mechanism when it senses the differential has reached the cleaning threshold (typically 5-7 PSI). Rapid flow through the internal cleaning

apparatus vacuums debris from the screen and expels it. An entire cleaning takes 6-20 seconds, depending on model.

The backflush cycle does not require the entire system flow to stop and reverse, as is the case for many other types of filters. Instead, a point-of-suction backwash reverses flow across the screen only directly in front of suction nozzles. This allows the cleaning mechanism to scan and clean the screen incrementally without disrupting the main flow through the filter.



## PRECISION ENGINEERING AND ROBUST COMPONENT DESIGN

LAKOS Self Cleaning Screen Filters incorporate components designed for smooth integration and robust operating lifespans. The total design focuses on details

that simplify installation and service. Each unit offers simple access for routine maintenance.

## RIGOROUS EQUIPMENT TESTING

LAKOS Self Cleaning Screen Filters offer superior construction of typical wear parts. By subjecting equipment to the harshest environments, component designs are validated to assure long life. Test units are subjected to high pressure, high solids environments with water that contains abrasive particles such as sand and silica. The continuous

backwash test guarantees high performance and durability even during extreme conditions. The rigorous testing ensures LAKOS filters will not be adversely impacted by seasonal / periodic spikes in particle loading that might otherwise force the filter into high frequency cleaning.

## SCREEN OPTIONS

### SINTERED MESH ON PERFORATED METAL PLATE



- **Degree of Filtration Options (Micron):** 5, 10, 25, 50, 75, 100, 120, 150, 200, 300, 500
- **Material:** Standard 316L stainless. Screen is fused to stainless steel perforated plate for maximum durability. (Most competitive offerings use screen glued to PVC plastic frame)
- **Particle Removal:** 98-100% particle removal efficiency above the degree of filtration
- **Flow Capacity:** Maximize flow per square inch of screen area with sintered mesh

### WEDGE WIRE



- **Degree of Filtration Options (Micron):** 25, 50, 75, 100, 120, 150, 200, 300, 500
- **Material:** Standard 316L stainless.
- **Particle Removal:** 98-100% particle removal efficiency above the degree of filtration. Great for removal of fibrous material including pulp and paper fibers, fibrous algae, fruit fiber in juice processing, etc.
- **Bursting Pressure:** Robust construction ideal for high pressure environments

# HOW TO SIZE AND SELECT A LAKOS AUTOMATIC SCREEN FILTER

## STEP#1 - DETERMINE DESIRED MICRON FILTRATION LEVEL

### Guidelines:

- City Water > 5 micron
- Ground/Well Water > 25 micron
- Seawater > 40 micron
- Cooling Tower Process water > 50 micron
- Lake/Pond Water > 75 micron
- River/Produced/Waste Water > 150 micron
- Typically you will use 1/3 of the micron rating of the downstream equipment.

## STEP#2 - DETERMINE CONTAMINATION LEVEL OF CURRENT WATER SOURCE (PPM)

Clean: 0 to 25 PPM

Moderate: 26 to 70 PPM

Dirty: 71 to 100 PPM

## STEP#3 - IDENTIFY FLOW PER AREA, DETERMINE SQUARE INCHES OF SCREEN REQUIRED

Using information from step 1 and 2, determine flow per area from table.

FLOW PER AREA (GPM PER SQUARE INCH)

Water Quality	PPM	5µ GPM	10µ GPM	25µ GPM	50µ GPM	75µ GPM	100µ GPM	120µ GPM	150µ GPM	200µ GPM	300µ GPM	400µ GPM	500µ GPM
Clean	0 to 25 ppm	0.208	0.278	0.521	1.042	1.285	1.528	1.667	1.771	1.910	2.083	2.222	2.431
Moderate	26 to 70 ppm	N/A	N/A	N/A	0.688	1.042	1.389	1.458	1.528	1.667	1.806	1.910	2.083
Dirty	71 to 100 ppm	N/A	N/A	N/A	N/A	0.590	0.694	0.729	0.764	0.833	0.903	0.972	1.042

$$\text{Screen Area Required (Square Inches)} = \text{Required Total Flow (GPM)} / \text{Flow per Area (from table)}$$

## STEP#4 - IDENTIFY DESIRED FILTER CONFIGURATION

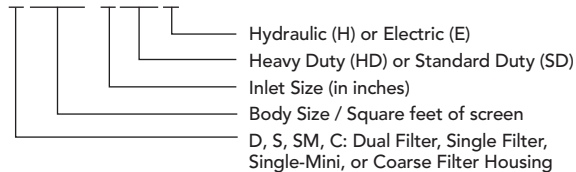
- Use dual screen models where there is potential for large particles over ¼" diameter
- Use hydraulic piston with >40psi operating pressure, electric piston for 15psi to 40psi operating pressure.
- Heavy-duty models offer higher flows

## STEP#5 - SELECT FILTER MODEL FROM TABLE

- Identify model with equal or higher amount of square inches of screen
- Verify that model selected has a maximum flow higher than required total flow

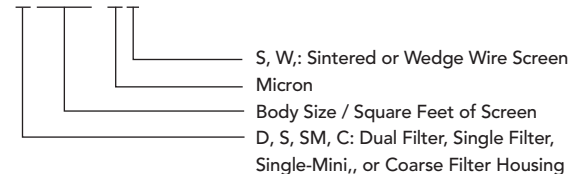
### HOUSING PART NUMBER FORMAT

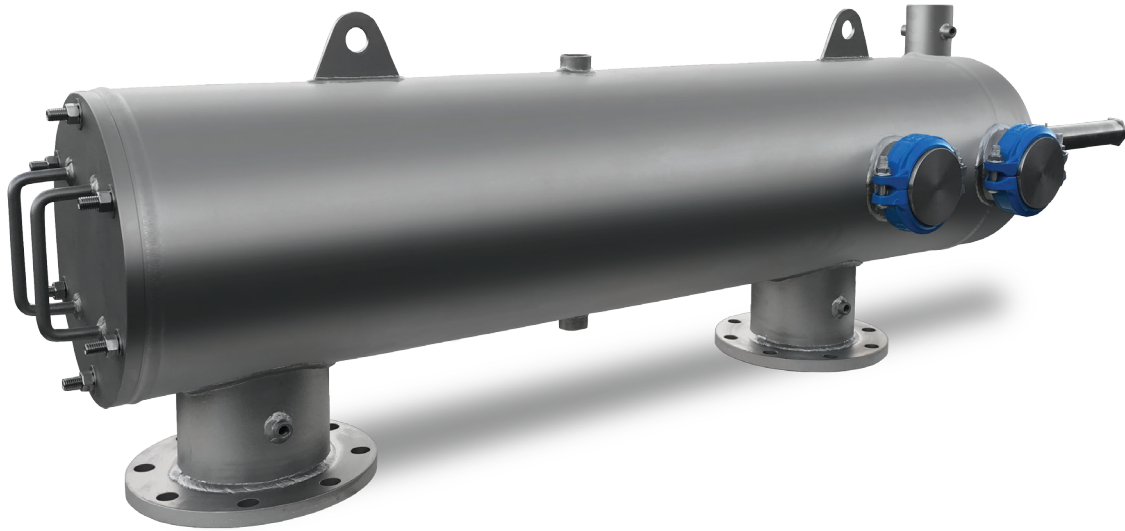
**D2.65-2HDH**



### SCREEN PART NUMBER FORMAT

**D2.65-5S**





## DUAL SCREEN HEAVY DUTY - THE PREMIUM CHOICE FOR HIGH FLOWS

### FILTER CHARACTERISTICS

Flow Rate: 15 – 7,350 GPM

Flush Cycle Duration: 6 – 20 seconds

Flush Valve Size: Single 1" or 2"

Screen openings (micron): 5-500

Temperature: 33-210° F

Working Pressure: 35 – 150 psi (hydraulic) 15-150 (electric)

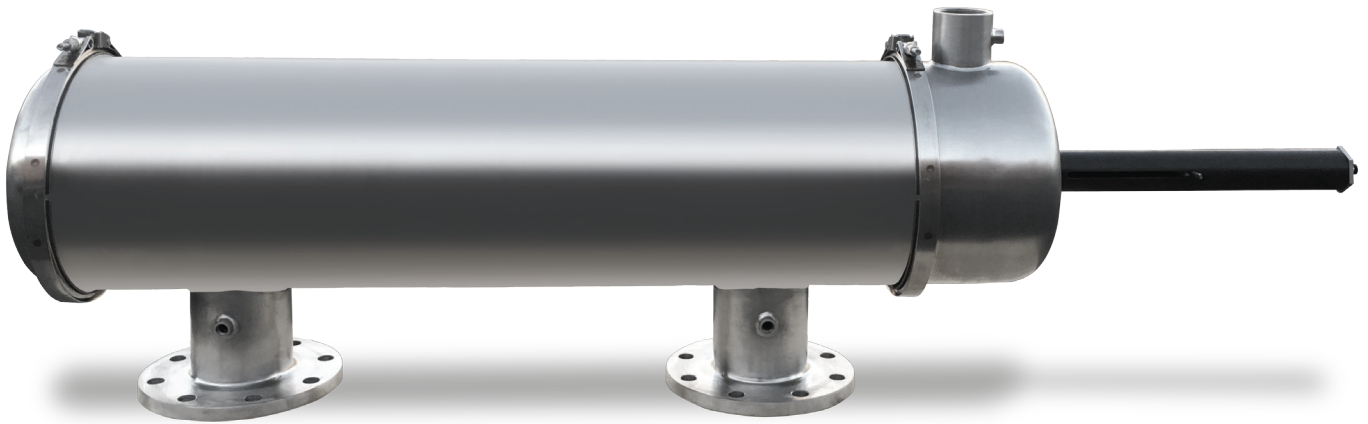
Flush Volume: 2-50 gallons per backwash.

These premium filters include a two-stage filtering process. The coarse screen captures large debris. The fine screen purifies water to its designated quality. The body includes robust flanged connections.

### AVAILABLE CONFIGURATIONS

Filter Model	Line Size (in.)	Maximum Flow Rate (gpm)	Screen Area (in <sup>2</sup> )
SF-D2.65-2/HD/X	2	200	382
SF-D2.65-3/HD/X	3	300	382
SF-D2.65-4/HD/X	4	500	382
SF-D2.65-6/HD/X	6	650	382
SF-D5.25-4/HD/X	4	500	756
SF-D5.25-6/HD/X	6	1000	756
SF-D5.25-8/HD/X	8	1400	756
SF-D7-4/HD/X	4	500	1008
SF-D7-6/HD/X	6	1000	1008
SF-D7-8/HD/X	8	1700	1008
SF-D7-10/HD/X	10	1900	1008
SF-D9.25-4/HD/X	4	500	1332
SF-D9.25-6/HD/X	6	1000	1332
SF-D9.25-8/HD/X	8	2000	1332
SF-D9.25-10/HD/X	10	2000	1332
SF-D9.25-12/HD/X	12	2700	1332
SF-D12.25-10/HD/X	10	2700	1764

Filter Model	Line Size (in.)	Maximum Flow Rate (gpm)	Screen Area (in <sup>2</sup> )
SF-D12.25-12/HD/X	12	3100	1764
SF-D12.25-14/HD/X	14	3100	1764
SF-D12.25-16/HD/X	16	3100	1764
SF-D15.25-12/HD/X	12	3800	2196
SF-D15.25-14/HD/X	14	3800	2196
SF-D15.25-16/HD/X	16	3800	2196
SF-D15.25-18/HD/X	18	3800	2196
SF-D18-14/HD/X	14	4500	2592
SF-D18-16/HD/X	16	4500	2592
SF-D18-18/HD/X	18	4500	2592
SF-D18-20/HD/X	20	4500	2592
SF-D24.5-16/HD/X	16	6125	3528
SF-D24.5-18/HD/X	18	6125	3528
SF-D24.5-20/HD/X	20	7350	3528
SF-D24.5-24/HD/X	24	7350	3528
SF-D24.5-30/HD/X	30	7350	3528



## DUAL SCREEN STANDARD DUTY

### FILTER CHARACTERISTICS

Flow Rate: 15 – 1,000 GPM  
 Flush Cycle Duration: 4 – 10 seconds  
 Flush Valve Size: Single 1"  
 Screen Opening Micron: 5-500  
 Temperature: 33-210°F  
 Flush Volume: 3 – 7 gallons per backwash  
 Working Pressure: 35 – 150 psi (hydraulic)  
 15-150 PSI (electric)

Dual-screen standard duty filter is more compact and lightweight alternative to the heavy-duty models. It also offers a first-stage coarse protection screen, and a second-stage fine screen. The body uses a clamp-style for easy access.

With a lower flow range, the units require only a single 1" flush valve. Flush volume is as little as 3 – 7 gallons per backwash, depending on the selected model.

## AVAILABLE CONFIGURATIONS

Filter Model	Line Size (in.)	Maximum Flow Rate (gpm)	Screen Area (in <sup>2</sup> )
SF-D1-2/SD/X	2	200	144
SF-D1-3/SD/X	3	200	144
SF-D2-2/SD/X	2	200	288
SF-D2-3/SD/X	3	300	288
SF-D2-4/SD/X	4	400	288
SF-D3-2/SD/X	2	200	432
SF-D3-3/SD/X	3	300	432
SF-D3-4/SD/X	4	500	432
SF-D3-6/SD/X	6	600	432

Filter Model	Line Size (in.)	Maximum Flow Rate (gpm)	Screen Area (in <sup>2</sup> )
SF-D4-2/SD/X	2	200	576
SF-D4-3/SD/X	3	300	576
SF-D4-4/SD/X	4	500	576
SF-D4-6/SD/X	6	800	576
SF-D4-8/SD/X	8	800	576
SF-D5-2/SD/X	2	200	720
SF-D5-3/SD/X	3	300	720
SF-D5-4/SD/X	4	500	720
SF-D5-6/SD/X	6	1000	720
SF-D5-8/SD/X	8	1000	720
SF-D5-10/SD/X	10	1000	720



## SINGLE SCREEN, STANDARD DUTY

These compact self cleaning water filters have a right angle flange configuration that allows them to be used in small spaces. The single-screen design achieves specified water quality in one step. These are offered in hydraulic drive only. Single Screen SD Series water filters are ideal where large debris from the source water is not a concern.

### FILTER CHARACTERISTICS

Flow Rate: 15 – 1,600 GPM  
 Flush Cycle Duration: 4 – 10 seconds  
 Flush Valve Size: Single 1" or 1.5"  
 Screen Opening (Microns): 5-500  
 Temperature: 33-210°F  
 Flush Volume: 1 – 8 gallons per backwash  
 Working Pressure: 35 – 150 psi (hydraulic)

### AVAILABLE CONFIGURATIONS

Filter Model	Line Size Size (in.)	Maximum Flow Rate (gpm)	Screen Area (in <sup>2</sup> )
SF-S0.4-0.75/SD/H	0.75	50	58
SF-S0.4-1/SD/H	1	75	58
SF-S0.4-1.5/SD/H	1.5	100	58
SF-S0.4-2/SD/H	2	100	58
SF-SM1-2/SD/H	2	200	144
SF-SM1-3/SD/H	3	200	144
SF-S1-1/SD/H	1	75	144
SF-S1-1.5/SD/H	1.5	150	144
SF-S1-2/SD/H	2	200	144
SF-S1-3/SD/H	3	200	144
SF-S2-2/SD/H	2	200	288
SF-S2-3/SD/H	3	300	288
SF-S2-4/SD/H	4	400	288
SF-S3-2/SD/H	2	200	432
SF-S3-3/SD/H	3	300	432
SF-S3-4/SD/H	4	500	432
SF-S3-6/SD/H	6	600	432
SF-S3-8/SD/H	8	600	432
SF-S4-3/SD/H	3	300	576

Filter Model	Line Size Size (in.)	Maximum Flow Rate (gpm)	Screen Area (in <sup>2</sup> )
SF-S4-4/SD/H	4	500	576
SF-S4-6/SD/H	6	800	576
SF-S5-3/SD/H	3	300	720
SF-S5-4/SD/H	4	500	720
SF-S5-6/SD/H	6	1000	720
SF-S5-8/SD/H	8	1000	720
SF-S5-10/SD/H	10	1000	720
SF-S0.4-3/SD/H	3	300	612
SF-S0.4-4/SD/H	4	500	612
SF-S0.4-6/SD/H	6	850	612
SF-S0.4-8/SD/H	8	850	612
SF-S6.25-4/SD/H	4	500	900
SF-S6.25-6/SD/H	6	1000	900
SF-S6.25-8/SD/H	8	1250	900
SF-S6.25-10/SD/H	10	1250	900
SF-S8-4/SD/H	4	500	1152
SF-S8-6/SD/H	6	1000	1152
SF-S8-8/SD/H	8	1600	1152
SF-S8-10/SD/H	10	1600	1152

## COARSE STRAINER HEAVY DUTY

LAKOS Coarse Strainer manual filters have an inline flange design which allows for direct installation into an existing pipeline. This first-stage automatic water filter is designed to eliminate large debris from source water and is frequently used with other LAKOS products to provide complete equipment protection.



### FILTER CHARACTERISTICS

Flow Rate: 15 – 1320 GPM

Flush valve size: Single 2", 3", or 4"

Micron rating: 500-4000

Temperature: 33-210°F

Working pressure: 150 PSI maximum

Material: Stainless Steel

### AVAILABLE CONFIGURATIONS

Coarse Strainers Model	Line Size (in.)	Maximum Flow Rate (gpm)	Screen Area (in <sup>2</sup> )
SF-C0.4-1/HD	1	35	57.6
SF-C0.4-1.5/HD	1.5	65	57.6
SF-C0.4-2/HD	2	110	57.6
SF-C1-3/HD	3	175	144
SF-C2-4/HD	4	350	288
SF-C3-6/HD	6	660	432
SF-C3-8/HD	8	1320	432

### PERFORATED PLATE

- Stainless Steel 316L
- Ideal for Coarse Filtration

