Automatic Backwash Disc Filter

MAKING FILTRATION OF

DIFFERENCE

DAWNING FILTRATION SYSTEMS

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AUTOMATIC DISC FILER SYSTEM

Product Description

Automatic disc filter system with disc filtering element(as below)with2"/3"/4"backwash valves,air valve,manifolds,controller. Easy to install, with 220V automation capability.

*The disc filtering elements consist of grooved platters, where the groove intersections capture suspended solids from the water.Each module is secured with stainless steel clamps and encased in a high-pressure, fiberglass-reinforced polyamide shell.

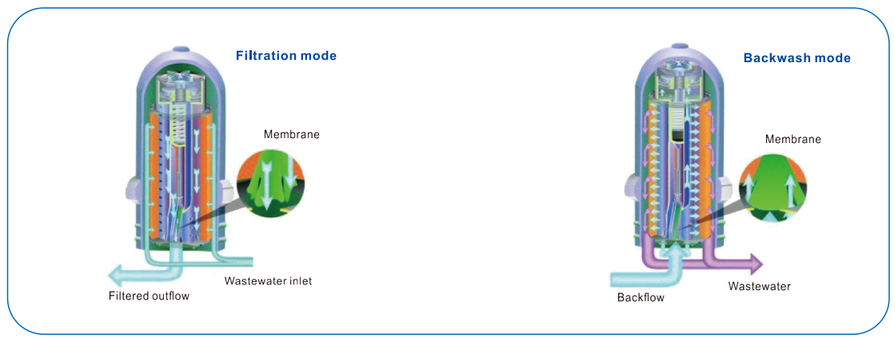
* Filtering frame is a sophisticated and precision-engineered telescopic cylinder structure，which is formed in a single injection.

Hydraulic action components are inside the excellently sealed cylinder structure, effectively prevented clogging failure and prolonged the service life.

Advantages

- Fully automatically continuous on-line self cleaning; Low water consumption; Low pressure loss.
- Optimizes the performance and minimizes the frequency of maintenance.
- Maximum saving of water with efficiency in backwashing.
- Modular configuration allows design according to customer preference or space availability.

Working Principle



Filtration Mode

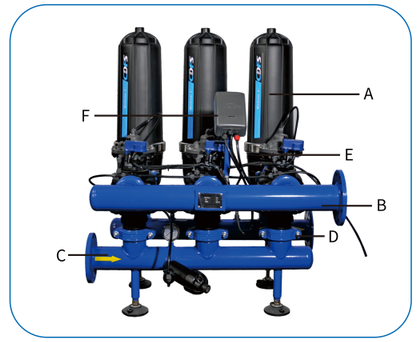
In filtration mode, turbid water flows through the filter elements, which are compressed tightly by spring and hydraulic pressure. Suspended particles are trapped at the laminated groove intersections, while filtered water flows out continuously.

Backwash Mode

When a preset pressure difference is reached or timer expires, the system automatically initiates backwash mode. The controller triggers valves to reverse the water flow; the recoil pressure releases the spring, separating the filter discs. High-pressure nozzles on the central pillar then jet tangentially, causing the discs to rotate and flush away trapped particles.

Technical Parameters

Working pressure:	2-8 bar
Back washing pressure:	1.8- 8 bar
Working temperature:	＜60℃
pH value:	4-13
The filtering module (A) number:	2-10
Power:	220/110V



Filter Materials

Main piping (B): Carbon steel / Stainless steel / Plastic
Outlet piping (C): Carbon steel / Stainless steel / Plastic
Backwash valve (E): Steel / Plastic
Filter module (A): Reinforced Polyamide (PA)
Controller (F): Fully automatic, compliant with international IP65 standards

* Please contact CDFS when need special materials.

Model Design & Selection Guide

Water Quality Classification：

A. Excellent quality: Municipal tap water, well water from stable aquifers.
B. Good quality: Cooling circulating water, surface water after sedimentation, effluent from effective sedimentation + full biological treatment.
C. Moderate quality: Groundwater from low-quality aquifers, effluent from effective sedimentation + poor biological treatment, surface water with high microbial content.
D. Poor quality: Well water with high iron/manganese levels, flood-affected surface water, effluent without sedimentation or biological treatment.

Flow of single filtration unit:

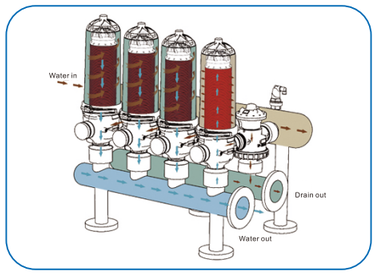
Filtration unit	Precision (μm)	Back washing flow (L/S)	Filtration flow(m³/h)			
			Excellent quality	Good quality	Moderate quality	Poor quality
2 inch	20	8-11	7	6	4	3
	50		13	11	8	6
	100-130		24	20	18	12
	200-400		24	20	18	12
3inch	20	20-27	9	7	5	3
	50		17	14	10	7
	100-130		32	29	23	14
	200-400		36	31	25	16
4 inch	20	40-55	18	14	10	6
	50		34	28	20	14
	100-130		64	59	47	28
	200-400		72	63	51	32

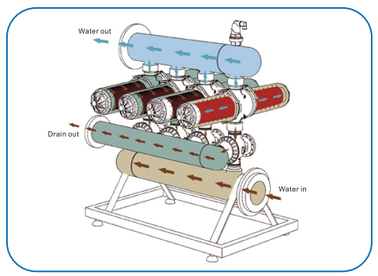
Selection of Precision

Selecting the correct disc filtration precision (disc size) is critical to system performance. Below are recommended precision levels for common applications:

Application of filtration system	Selection of Precision
Pretreatment for high-quality water	20μ
Drinking water pretreatment; water for production processes; nozzle protection	50μ
Circulating water filtration; Feedwater pre-filtration	100μ
Recycled water treatment; waste water treatment	200μ

Filtration/backwash State





Selection Of Backwash Modes

Endogenous Backwash (No Valve Required)

This mode can be selected when:

- Inlet pressure ≥ Minimum backwash pressure + 1.2 bar
- Filtration flow ≥ 5 × Backwash flow

No additional backwash pressure valve is needed.

Endogenous Backwash (With Pressure Holding Valve)

This mode can be selected when:

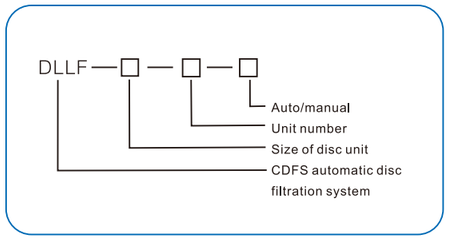
- Inlet pressure ≥ Minimum backwash pressure
- Filtration flow ≥ 1.5 × Backwash flow

An additional pressure holding valve must be installed at the water outlet.

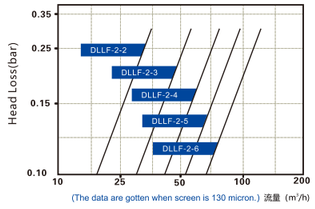
Exogenous Backwash / Collective Backwash

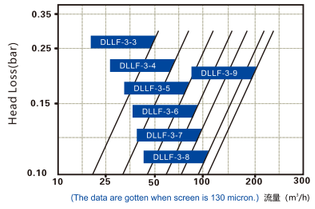
This mode is required for all other operating conditions that do not meet the above criteria.

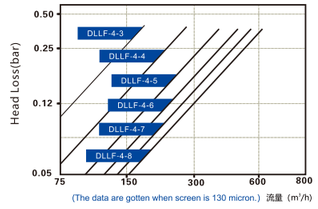
Model Clarification



Head Loss







Technical Parameters of Automatic Disc Filter System

Water quality	Excellent Quality			Good Quality			Moderate Quality			Poor Quality		
Filtration precision	200μ	100μ	50μ	200μ	100μ	50μ	200μ	100μ	50μ	200μ	100μ	50μ
Model	Flow Rate (m³/h)			Flow Rate (m³/h)			Flow Rate (m³/h)			Flow Rate (m³/h)		
DLLF-2-2	⩽38	⩽30	⩽22	⩽29	⩽22	⩽18	⩽21	⩽15	⩽13	⩽13	⩽10	⩽8
DLLF-2-3	57	45	33	43	33	26	31	22	18	18	14	10
DLLF-2-4	76	60	44	57	44	35	41	30	24	25	19	14
DLLF-2-5	95	75	55	72	84	44	51	37	30	31	23	17
DLLF-2-6	114	90	66	86	66	53	62	45	36	37	28	21
DLLF-3-3	111	90	60	84	66	48	60	45	33	36	28	19
DLLF-3-4	148	120	80	112	88	64	80	60	44	48	37	26
DLLF-3-5	185	150	100	140	110	80	100	75	55	60	47	32
DLLF-3-6	222	180	120	168	132	96	120	90	66	75	56	39
DLLF-3-7	259	210	140	196	154	112	140	105	77	84	66	45
DLLF-3-8	296	240	160	224	176	128	160	120	88	96	75	52
DLLF-3-9	333	270	180	252	198	144	180	135	99	108	85	58
DLLF-3-10	370	300	200	280	210	160	200	150	110	120	94	65
DLLF-4-3	224	176	128	168	129	102	120	88	70	72	55	40
DLLF-4-4	280	210	160	210	154	128	150	105	88	90	65	51
DLLF-4-5	374	294	214	281	205	171	200	147	118	120	91	68
DLLF-4-6	448	352	256	336	258	205	240	176	141	144	109	81
DLLF-4-7	522	410	298	392	301	238	280	205	164	168	127	94
DLLF-4-8	597	469	341	448	344	273	320	234	188	192	146	108

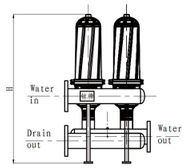
* For higher flow rate requirements, please contact us.

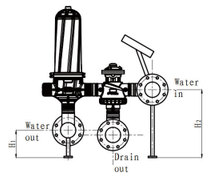
Applications of Automatic Disc Filtration Systems

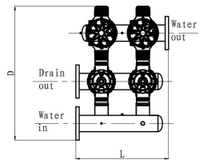
Application	Description	Function	Industry
Circulating cooling water	Cooling water for air conditioner and other facilities	To prevent congestion and pollution of heat exchanger pipes,nozzle, guarantee the heat exchange efficiency, and save water and energy, as well as improve the concentration ratio of the cooling water	Iron and steel, electric power, automobile, chemical industry, etc
Recycled water	Recycling of wastewater, paper-making water, process water	To remove the particles in water, making water to meet the reuse requirements, and protect equipment pipes, nozzle, products, etc	Electric power, paper-making, steel, automobile, etc
General water	Total feed water, washing water, process water, drinking water	To remove the impurities in water, prolonging the regeneration time or service life of the protected equipment, and save the recoil water and replacement cost	Electric power, chemical industry, automobile Paper making, etc
Protection for water treatment equipment	Protecting the sand filter, resin and elements	To remove large impurities in water, soft impurities and fiber impurities to protect membrane	All industries
Membrane protection	Pretreatment of UF/ RO and Ion exchange membrane	To remove impurities and seawater organisms, and the full-plastic system is anti-corrosion	Water treatment
Seawater filtration	Pre-filter of seawater desalination, seawater mariculture, seawater circulating	To remove the impurities in water, prolonging the regeneration time or service life of the protected equipment, and save the recoil water and replacement cost	Water treatment
Waste water treatment	Waste water filtration and discharging; pretreatment of biological water and gray water recycling	To lower BOD and COD particles in water, reducing the impurities and organic living (bacteria, algae and parasites)	All industries
Other chemical fluid	Solvent, emulsion	To meet the production requirements and protection equipment	All industries

Filter System Size

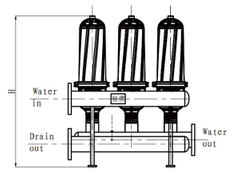
2 INCH SYSTEM

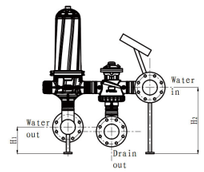


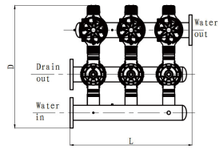




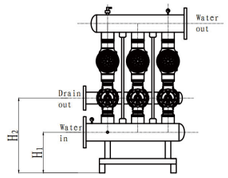
3 INCH SYSTEM

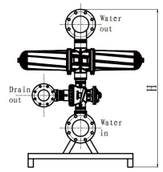


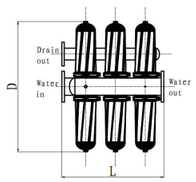




4 INCH SYSTEM



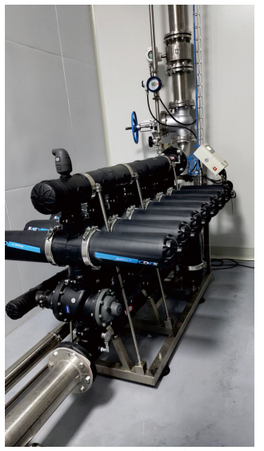




Model	Water in/out (mm)	H(mm)	H1(mm)	H2(mm)	D(mm)	L(mm)
DLLF-2-2-A	80	884.5	150	413	776.5	890
DLLF-2-3-A	100	904	160	432.5	796	1165
DLLF-2-4-A	100	904	160	432.5	796	1440
DLLF-2-5-A	150	944.5	175	473	854	1715
DLLF-3-2-A	100	1049	175	461	875	890
DLLF-3-3-A	150	1074.5	175	486.5	933	1165
DLLF-3-4-A	150	1092	192.5	504	933	1440
DLLF-3-5-A	150	1092	192.5	504	933	1715
DLLF-4-3-A	150	1416.5	282.5	594	1200	1195
DLLF-4-4-A	200	1531.5	310	651.5	1200	1470
DLLF-4-5-A	200	1531.5	310	651.5	1200	1745
DLLF-4-6-A	250	1630.5	332.5	701	1200	2020
DLLF-4-7-A	200	1630.5	332.5	701	1200	2295

Application Diagram

Hvac Water System Filtration



Water Treatment Plant Water System Filtration

Wastewater Treatment Plant Water System Filtration

Membrane System Protection Filtration

Membrane System Protection Filtration

Agricultural Irrigation Head Filtration

Automotive Water System Filtration

Agricultural Irrigation Head Filtration

Reclaimed Water Plant Project