



“The Fog Engineers”
H. IKEUCHI & CO., LTD.

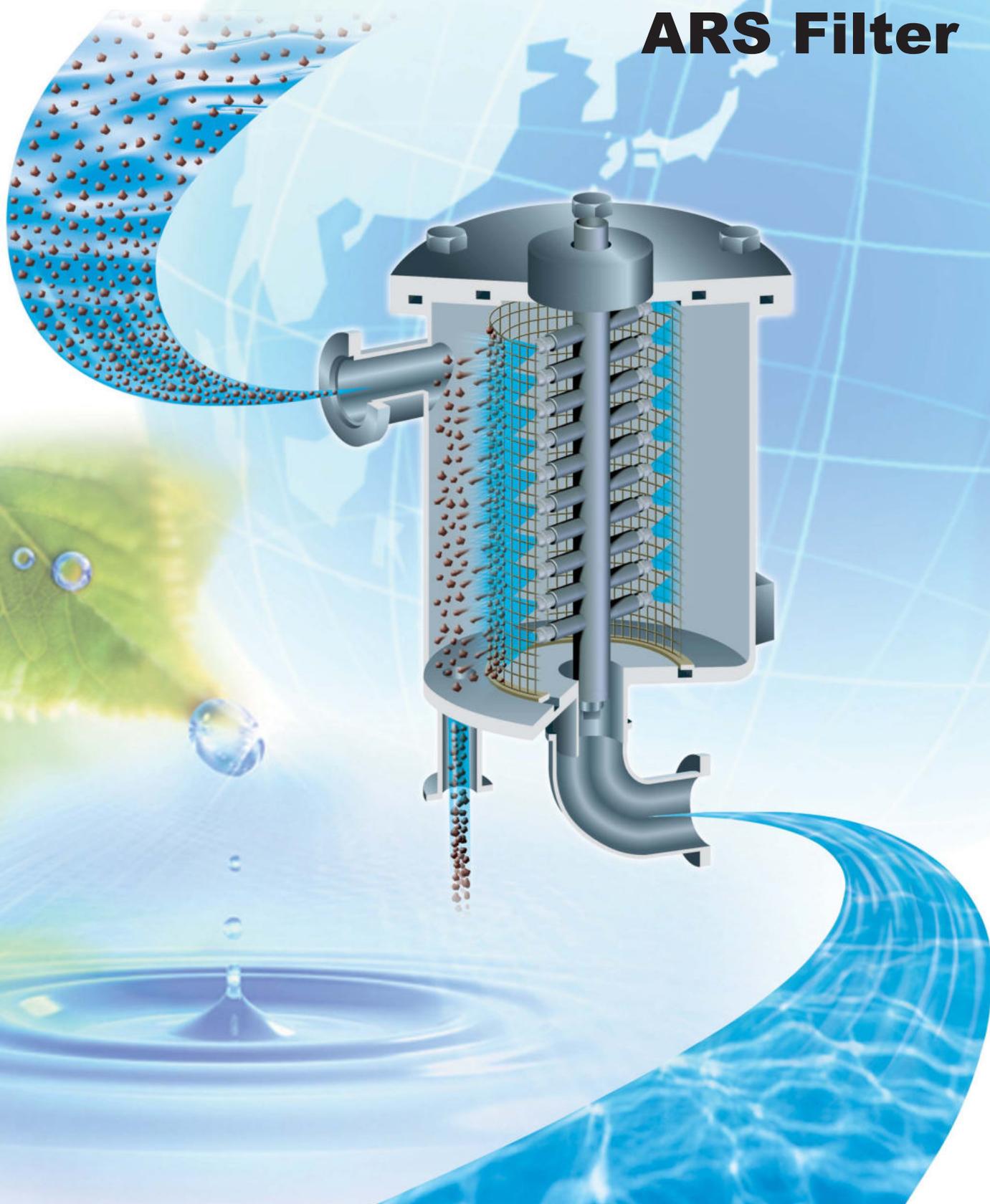
Water-saving and minimal maintenance

Jet spraying

Powerful

Auto Reverse Self-cleaning Filter

ARS Filter



High-pressure jet spray cleaning enables minimal maintenance!

Jet spraying

Auto Reverse Self-cleaning Filter

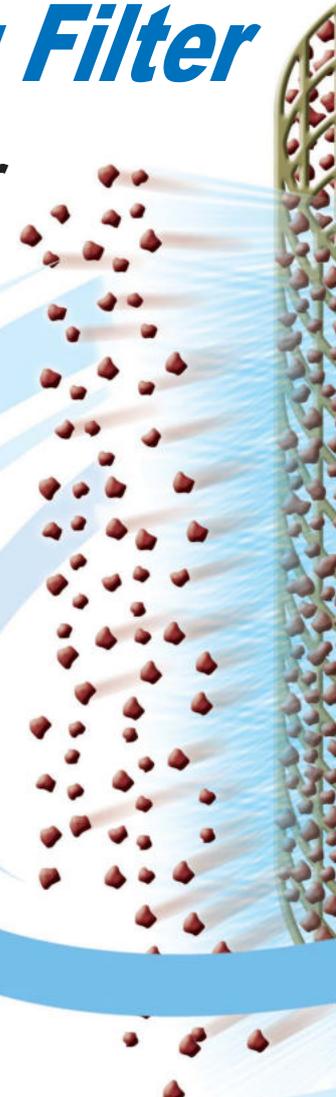
Auto Reverse Self-cleaning ARS Filter

Filtration plays more important role as recycling water use is being increased to save water.

However, conventional filters with auto self-cleaning function cause a gradual decline in filtration effect due to its insufficient cleaning capability that requires frequent maintenance work in the end.

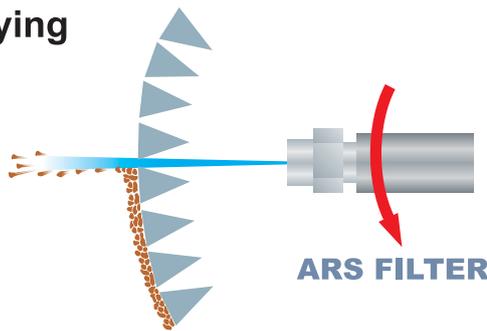
ARS Filter, with its non-contact cleaning method by jet spray, ensures maximum removal of tough particles collected on the screen. Also, it minimizes wear on the cleaning system and maintains stable, longer filtration performance.

For more dependable filtration, you can choose metal wire screens with higher opening ratio in our lineup.

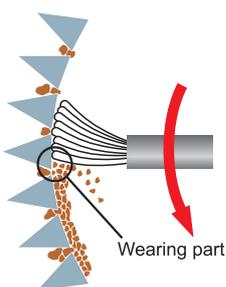


Unique Filter Cleaning Method

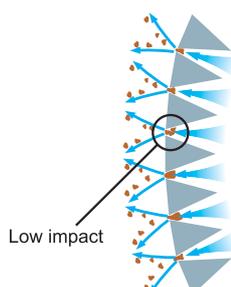
Jet spraying



Conventional method 1 (brushing)



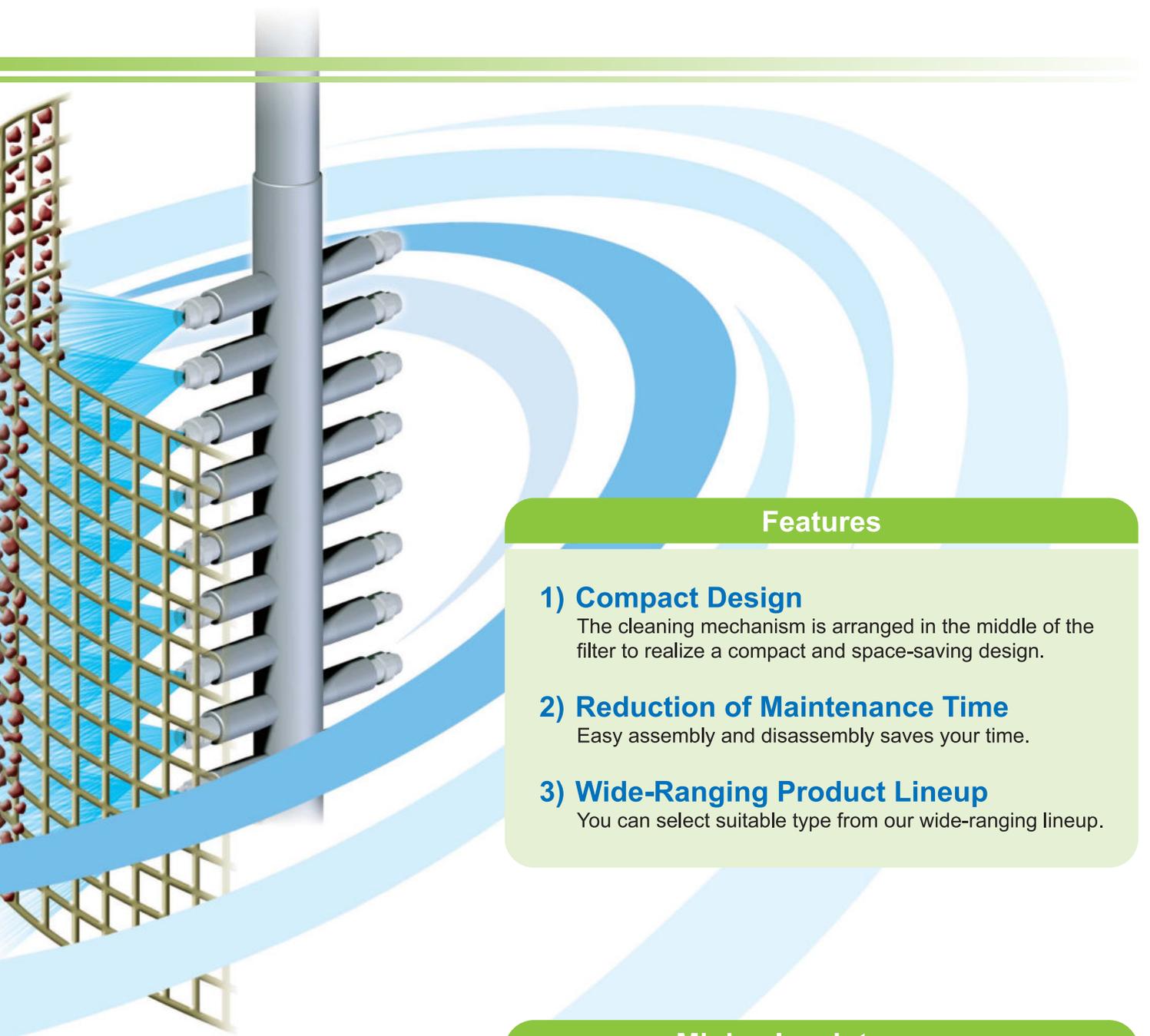
Conventional method 2 (backwashing)



Excellent Clean



Foreign particles thickly-sedimented on the filter.



Features

1) Compact Design

The cleaning mechanism is arranged in the middle of the filter to realize a compact and space-saving design.

2) Reduction of Maintenance Time

Easy assembly and disassembly saves your time.

3) Wide-Ranging Product Lineup

You can select suitable type from our wide-ranging lineup.

Cleaning Effect



After 30 seconds* of high-pressure jet cleaning, the filter has been cleaned.

*The cleaning time depends on unfiltered water conditions.

Minimal maintenance

ARS Filter, with its non-contact cleaning method by jet spray, requires minimal maintenance. Brushing and conventional backwashing method needs regular and frequent maintenance due to the wear and insufficient cleaning.

■ Cartridge type filter

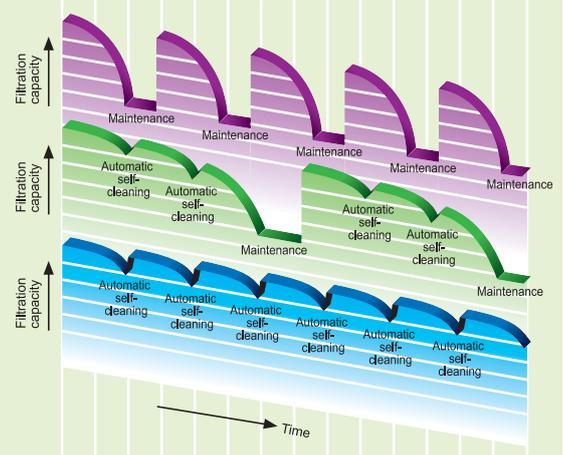
Needs maintenance everytime clogged.

■ Auto self-cleaning filter by brushing / conventional backwashing method

Brush wear and insufficient cleaning

■ ARS Filter

Minimal maintenance



Please note the following points before you purchase ARS Filters.

● Liquid to be filtered

- **Supply pressure of unfiltered water must be 0.06 MPa or more.**
Otherwise, prepare a booster pump to gain adequate supply pressure.
- **Liquid which generates precipitate or viscous liquid is not suitable.**
Examples) • Liquid containing a high concentration of minerals which precipitate on metals, such as Calcium, Silica, or Magnesium.
• Viscous liquid containing sticky ingredients, such as glue.
- **Liquid temperature should be below 50°C (120°F).**
- **Viscosity of liquid should be below 50 cP.** (Viscosity of cooking oil is around 50 cP)

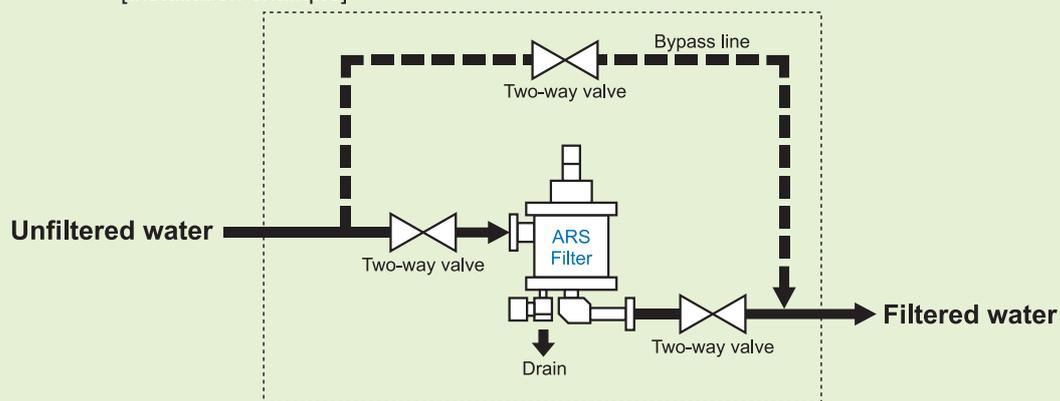
● Piping

- **Supply of clean water is required to clean the filter screen.**
- **Drain line or drain tank should be prepared.**

● Installation

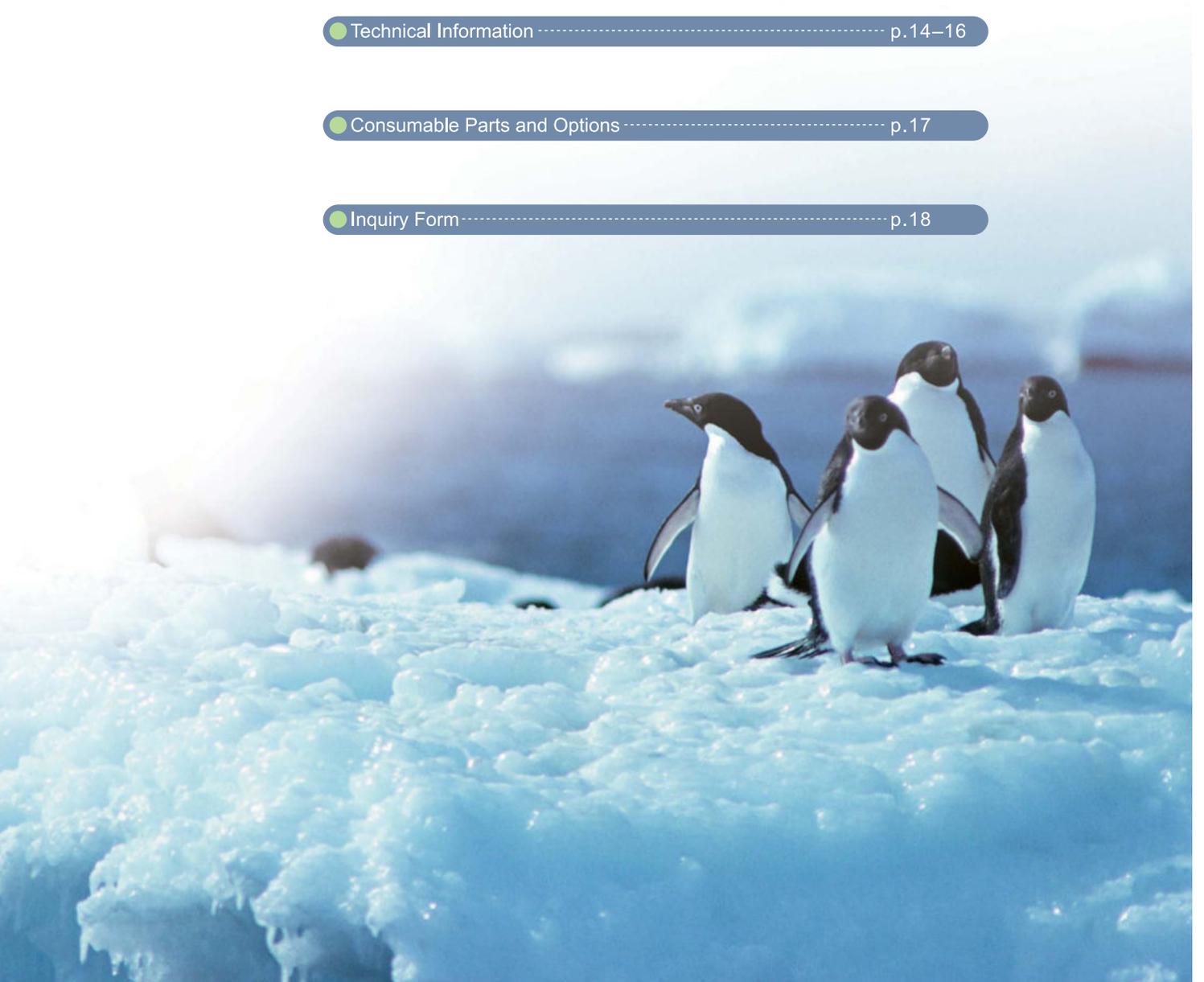
- **Indoor use only.**
- **Valves may be needed for the opening and discharge sides depending on conditions. It is recommended to build a bypass line.**

[Installation example]



Note: Where valves should be installed depends on the devices and layout.

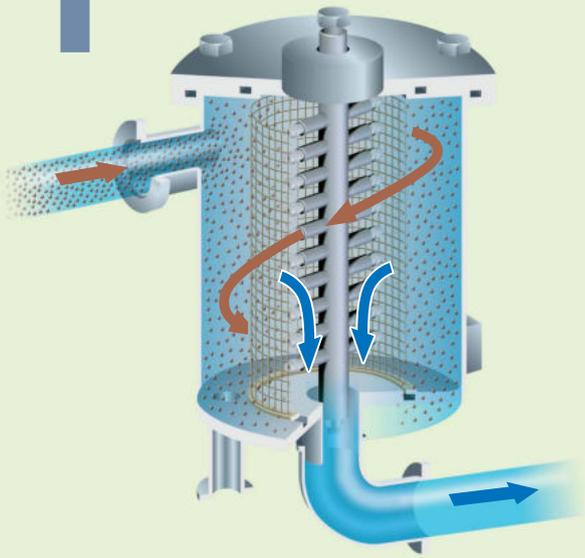
- How the ARS Filter works p.5–6
- Applications in Various Industries p.7–8
- ARS Filter Lineup p.9–10
- Structure p.11
- Specifications p.12–13
- Technical Information p.14–16
- Consumable Parts and Options p.17
- Inquiry Form p.18



How the ARS Filter works

Filtration

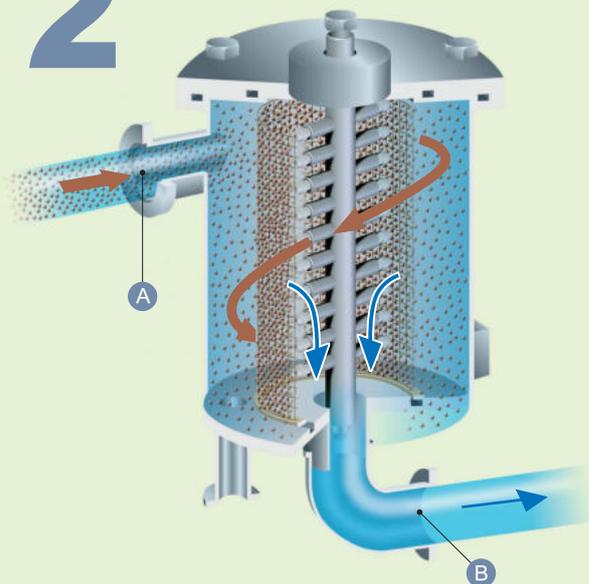
1



Unfiltered water flows from outside to inside of the filter that catches foreign particles.

Accumulation of Foreign Particles

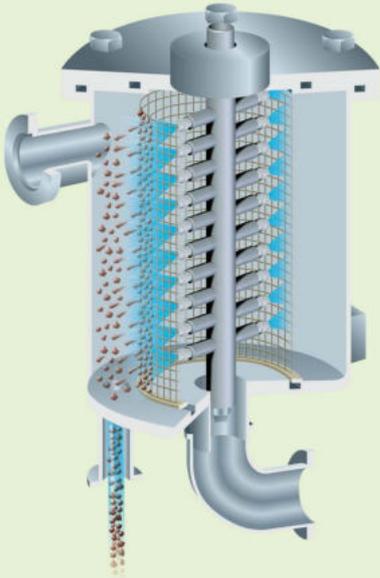
2



ARS filter detects the pressure difference between inlet **A** and outlet **B** caused by accumulation of foreign particles on the filter.

Cleaning

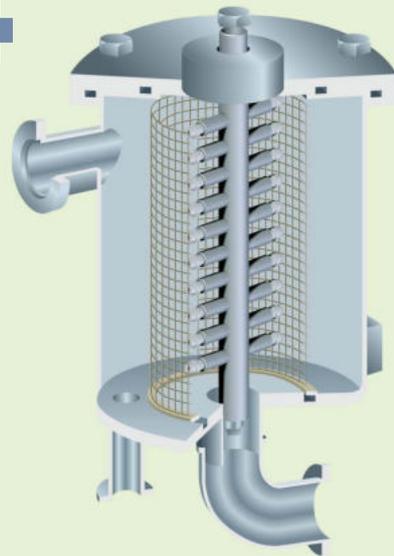
3



After suspending water supply, ARS starts jet spray cleaning then discharges foreign particles from the drain.

Completion of Cleaning

4



After the pre-set duration, cleaning stops, and supply of unfiltered water starts again (back to the step 1).

You can see how the ARS filter works.

You Tube **IKEUCHI Channel**

You Tube ARS Filter

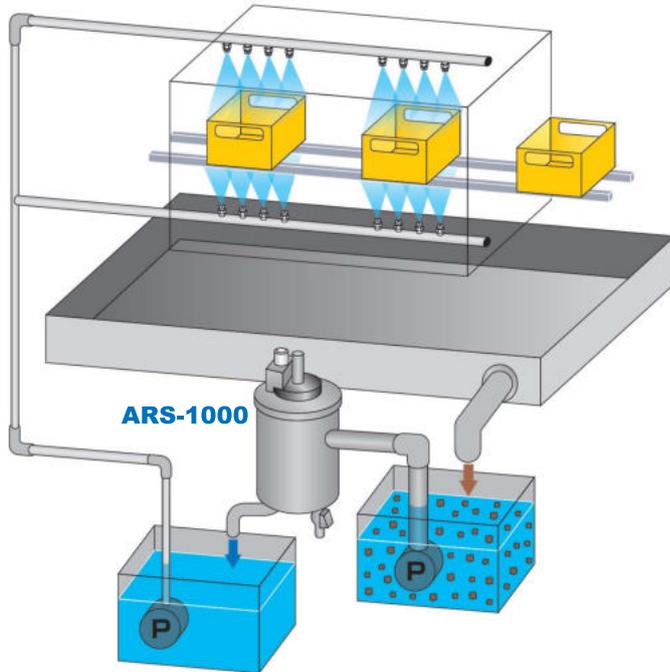


Applications in Various Industries

Food Industry

Recycling of cleaning wastewater, Prefilter for water treatment

Recycling of container cleaning water



Much time wasted on cleaning of filter clogged with foreign particles



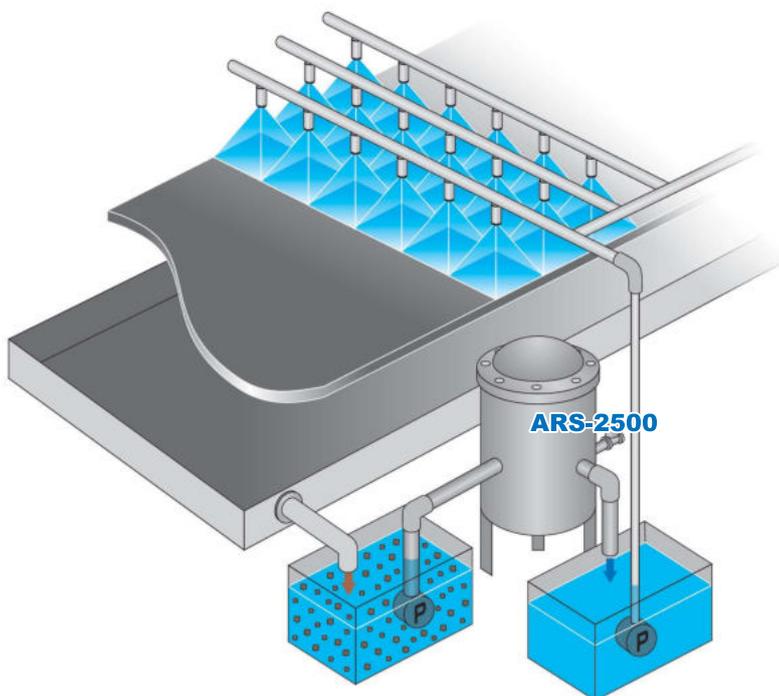
Labor cost reduced due to less frequent maintenance

- Liquid: Water
- Foreign particles: Paper scraps, etc.
- Screen mesh size: 150 μm
- Type of screen: Wedge wire

Steel Industry

Industrial water filtration, Cooling water filtration

Recycling of industrial water for cooling steel plate



Nozzles became clogged due to foreign particles in the industrial water



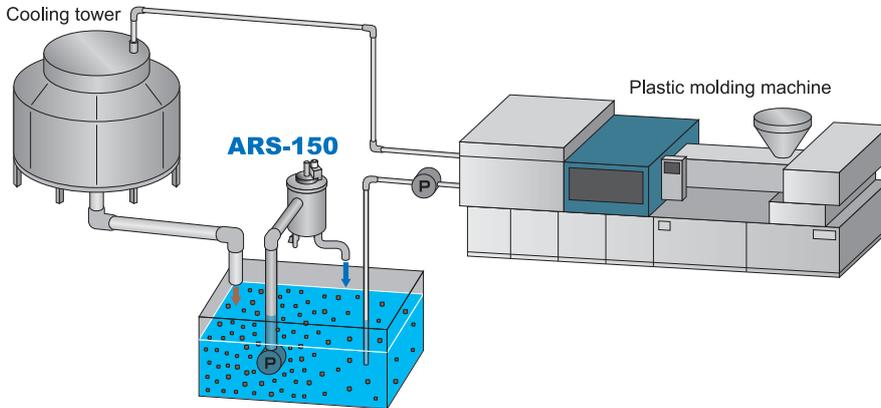
Stable production and stable operation

- Liquid: Industrial water
- Foreign particles: Algae, sand, etc.
- Screen mesh size: 100, 300 μm
- Type of screen: Wedge wire

Plastic Industry

Filtration of cooling water from cooling tower

Recycling of cooling water for plastic molding machine



Pipes clogged due to accumulated foreign particles in cooling water



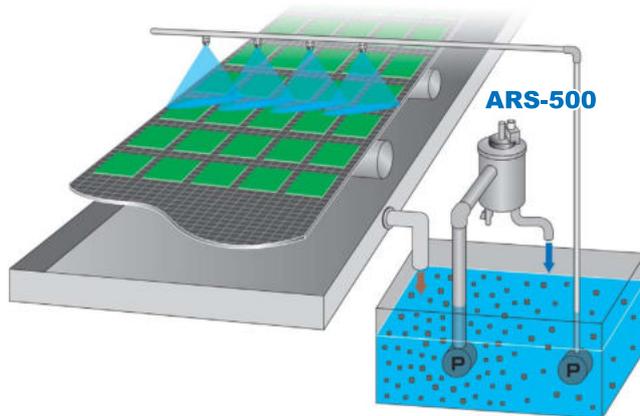
Stable operation
Minimal maintenance

- Liquid: Water
- Foreign particles: Dust, sand, etc.
- Screen mesh size: #150 (109 μm)
- Type of screen: Metal wire

Electronics Industry

Stripping agent filtration

Recycling of stripping agent



Used to separate resist by the centrifuge



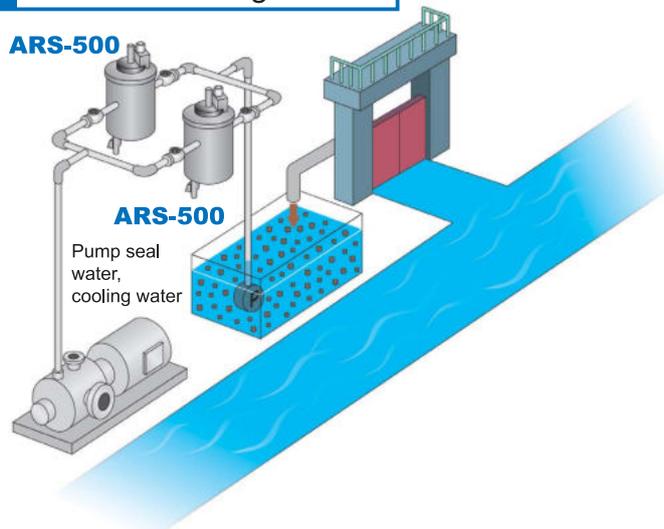
Resist removal ratio increases dramatically

- Liquid: Chemical (alkali)
- Foreign particles: Resist scraps
- Screen mesh size: #150 (109 μm)
- Type of screen: Metal wire

Other Industries

River water filtration, Recycling of wastewater

River water usage



Existing strainer requiring frequent cleaning



Minimal maintenance

- Liquid: River water
- Foreign particles: Algae, sand, etc.
- Screen mesh size: #60 (240 μm)
- Type of screen: Metal wire

Note:

By setting ARS Filters parallel, continuous filtration is available without stopping while doing maintenance.

ARS Filter Lineup

ARS-150

Conditions of liquid to be filtered

- Filtration capacity: Max. 150 ℓ / min (9 m³/hr)
- Pressure: Max. 0.7 MPa
- Temperature: Max. 40°C
- Filterable size of foreign particles: Over 50 μm

ARS-500

Conditions of liquid to be filtered

- Filtration capacity: Max. 500 ℓ / min (30 m³/hr)
- Pressure: Max. 0.7 MPa
(Max. 0.3 MPa for clamp lid)
- Temperature: Max. 50°C
- Filterable size of foreign particles: Over 100 μm

ARS-1000

Conditions of liquid to be filtered

- Filtration capacity: Max. 1,000 ℓ / min (60 m³/hr)
- Pressure: Max. 0.7 MPa
- Temperature: Max. 50°C
- Filterable size of foreign particles: Over 100 μm

ARS-2500

Conditions of liquid to be filtered

- Filtration capacity: Max. 2,500 ℓ / min (150 m³/hr)
- Pressure: Max. 0.5 MPa
- Temperature: Max. 50°C
- Filterable size of foreign particles: Over 100 μm

Please select from the options below to achieve the optimum filtration performance for the ARS Filter. Product code is in parenthesis [].

1 Filtration capacity

Four types available depending on your needs.

- Maximum filtration capacity: 150 ℓ /min (9 m³/hr) → [ARS-150]
- Maximum filtration capacity: 500 ℓ /min (30 m³/hr) → [ARS-500]
- Maximum filtration capacity: 1,000 ℓ /min (60 m³/hr) → [ARS-1000]
- Maximum filtration capacity: 2,500 ℓ /min (150 m³/hr) → [ARS-2500]

2 Lid options

For ARS-500, there are two lid options.

- Flange lid → [F]
- Clamp lid* → [D]
- Flange lid → [F]
- Flange lid → [F]

Only flange lid is available for ARS-150, ARS-1000, and ARS-2500.

*Clamp lid is easy to be assembled or disassembled, however, the maximum allowable pressure is 0.3 MPa.

3 Types of screen and features

See p. 14 "How to Select Screen Mesh Size" for more details.

Two kinds of screens are available depending on the liquid to be filtered. Select a suitable screen mesh size depending on the size of foreign particles.

- **Metal wire screen [K]:** With its high opening ratio, effective cleaning and stable filtration are possible.
45 μm = #300 [300K], 109 μm = #150 [150K], 145 μm = #100 [100K], 240 μm = #60 [60K], 520 μm = #35 [35K]
Note: 45 μm = #300 (300K) is available only for ARS-150.
- **Wedge wire screen [W]:** Having high strength and high wear-resistance, suitable for large foreign particles like grit and solid particles like iron powder.
100 μm [100W], 150 μm [150W], 300 μm [300W], 500 μm [500W]

It is recommended to have a spare metal wire screen because it is a consumable part.

4 Screen self-cleaning system

See p. 15–16 for more details.

Two kinds of self-cleaning system are available depending on your needs. Specifications differ by self-cleaning system to achieve optimum cleaning.

● Backwashing while filtering suspended:

This system stops filtration while cleaning the filter screen. Ideal for removal of sticky impurities collected on the screen.

[CV] Controls unfiltered water supply by interlocking with entry valve.

[CP] Controls unfiltered water supply by interlocking with unfiltered water supply pump.

[CC] Controls unfiltered water supply by combined interlocking with entry valve and unfiltered water supply pump.

● Backwashing while filtering suspended/parallel-connected:

By using two ARS Filters in parallel, this system continues filtration while cleaning the filter screen.

[CW] Connecting two ARS Filters in parallel, either ARS Filter runs alternately by interlocking with three-way valves.

5 Frequency

Choose either 50 Hz [50] or 60 Hz [60].

6 Specific identification number

An internal identification number is added when special specifications are required; such as explosion protection, outside use, high-temperature resistance, etc.

Product coding system (The product shall be described as below according to the options selected above.)

ARS 500

1 Filtration capacity

- 150
- 500
- 1000
- 2500

F

2 Lid options

- D
- F
(D is only for ARS-500)

150K

3 Types of screen and features

- 300K ■ 100W
- 150K ■ 150W
- 100K ■ 300W
- 60K ■ 500W
- 35K
(300K is only for ARS-150)

CC

4 Screen self-cleaning system

- CV
- CP
- CC
- CW

60

5 Frequency

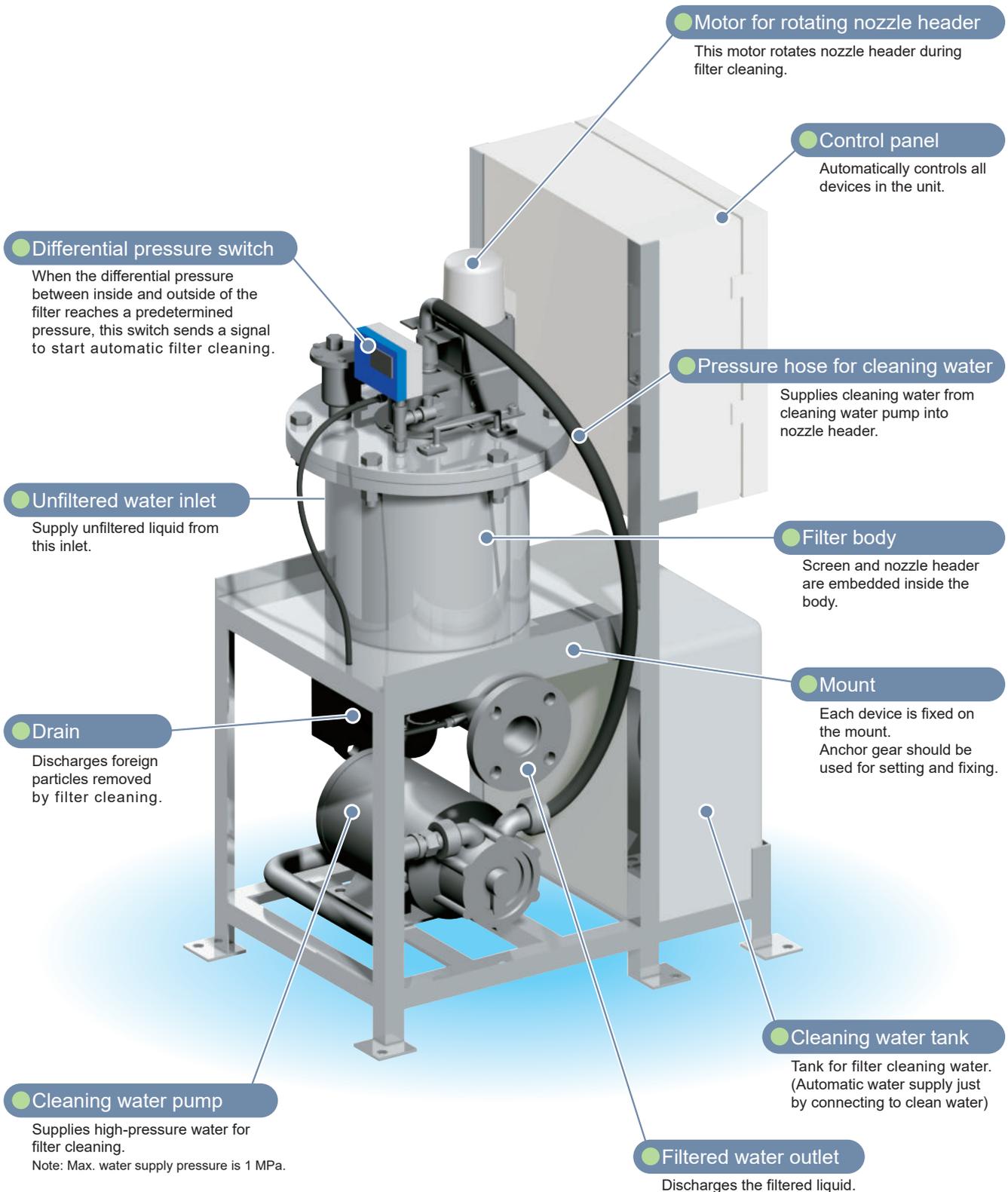
- 50
- 60

E001

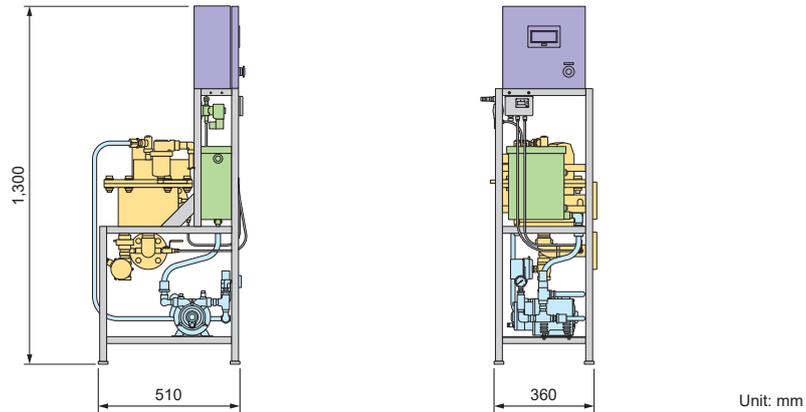
6 Specific identification number

Part names and functions

(Example: ARS-500)



ARS-150

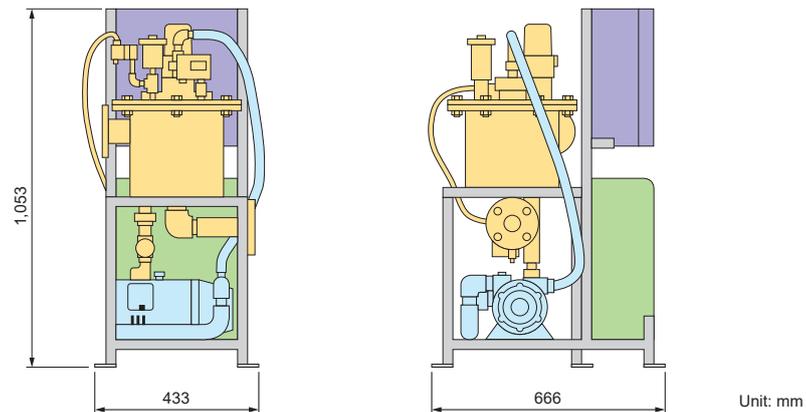


Unit: mm

Maximum filtration capacity	150 ℓ /min (9 m ³ /hr)
Maximum operating pressure	0.7 MPa
Dimensions	360 x 510 x 1,300 mm (W x D x H)
Power supply	100 VAC, 0.3 kW [when with a steel pump] 100 VAC, 0.5 kW [when with an optional stainless steel pump]
Pipe connection size	Inlet: 32 A Outlet: 32 A Drain: 25 A
Filter screen mesh size and type	Metal wire screen: #300 (45 μm), #150 (109 μm), #100 (145 μm), #60 (240 μm), or #35 (520 μm)
Lid options	Flange lid
Mass	67 kg (without water), 76 kg (with water) [when with a steel pump] 71 kg (without water), 80 kg (with water) [when with an optional stainless steel pump]
Volume of cleaning water consumption	Initial setting: 0.95 ℓ / 13 seconds per cleaning [when with a steel pump] Initial setting: 0.91 ℓ / 13 seconds per cleaning [when with an optional stainless steel pump]
Cleaning water tank capacity	3.7 ℓ (with float valve)
Required height*	1,300 mm

*Minimum height required to remove the screen

ARS-500

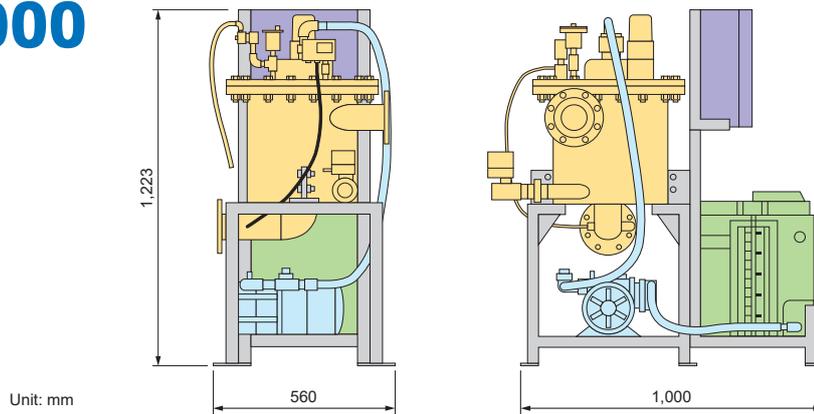


Unit: mm

Maximum filtration capacity	500 ℓ /min (30 m ³ /hr)
Maximum operating pressure	0.7 MPa (Flange lid) / 0.3 MPa (Clamp lid)
Dimensions	433 x 666 x 1,053 mm (W x D x H)
Power supply	200 VAC 3-phase 1.7 kW
Pipe connection size	Inlet: 50 A Outlet: 50 A Drain: 25 A
Filter screen mesh size and type	Metal wire screen: #150 (109 μm), #100 (145 μm), #60 (240 μm), or #35 (520 μm) Wedge wire screen: 100 μm, 150 μm, 300 μm, or 500 μm
Lid options	Flange lid, Clamp lid
Mass	115 kg (without water), 165 kg (with water)
Volume of cleaning water consumption	Initial setting: 18.7 ℓ / 34 seconds per cleaning
Cleaning water tank capacity	30 ℓ (with float valve)
Required height*	1,400 mm

*Minimum height required to remove the screen

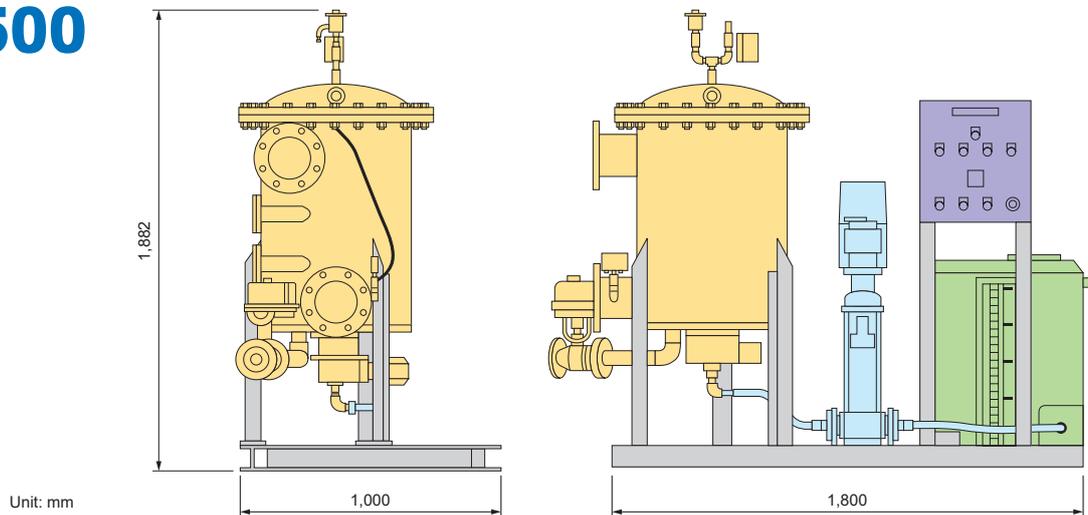
ARS-1000



Maximum filtration capacity	1,000 ℓ /min (60 m ³ /hr)
Maximum operating pressure	0.7 MPa
Dimensions	560 x 1,000 x 1,223 mm (W x D x H)
Power supply	200 VAC 3-phase 2.5 kW
Pipe connection size	Inlet: 80 A Outlet: 80 A Drain: 40 A
Filter screen mesh size and type	Metal wire screen: #150 (109 μm), #100 (145 μm), #60 (240 μm), or #35 (520 μm) Wedge wire screen: 100 μm, 150 μm, 300 μm, or 500 μm
Lid options	Flange lid
Mass (calculated value)	175 kg (without water), 260 kg (with water)
Volume of cleaning water consumption	Initial setting: 42.7 ℓ / 50 seconds per cleaning
Cleaning water tank capacity	50 ℓ (with float valve)
Required height*	1,700 mm

*Minimum height required to remove the screen

ARS-2500

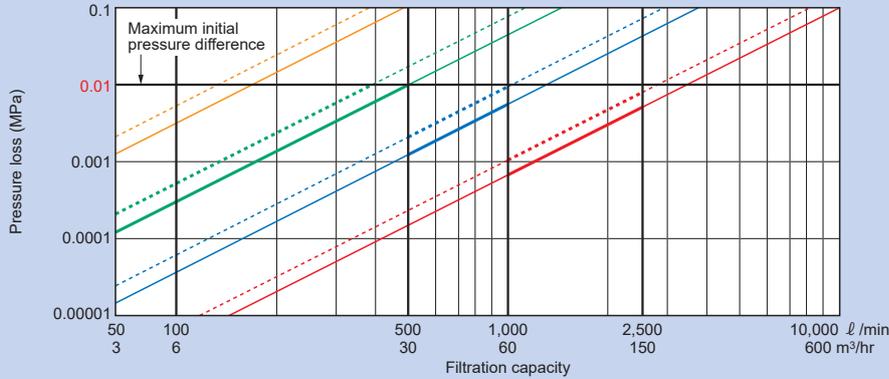


Maximum filtration capacity	2,500 ℓ /min (150 m ³ /hr)
Maximum operating pressure	0.5 MPa
Dimensions	1,000 x 1,800 x 1,882 mm (W x D x H)
Power supply	200 VAC 3-phase 3.8 kW
Pipe connection size	Inlet: 150 A Outlet: 150 A Drain: 50 A
Filter screen mesh size and type	Metal wire screen: #150 (109 μm), #100 (145 μm), #60 (240 μm), or #35 (520 μm) Wedge wire screen: 100 μm, 150 μm, 300 μm, or 500 μm
Lid options	Flange lid
Mass (calculated value)	850 kg (without water), 1,240 kg (with water)
Volume of cleaning water consumption	Initial setting: 79.4 ℓ / 62 seconds per cleaning
Cleaning water tank capacity	200 ℓ (with float valve)
Required height*	2,350 mm

*Minimum height required to remove the screen

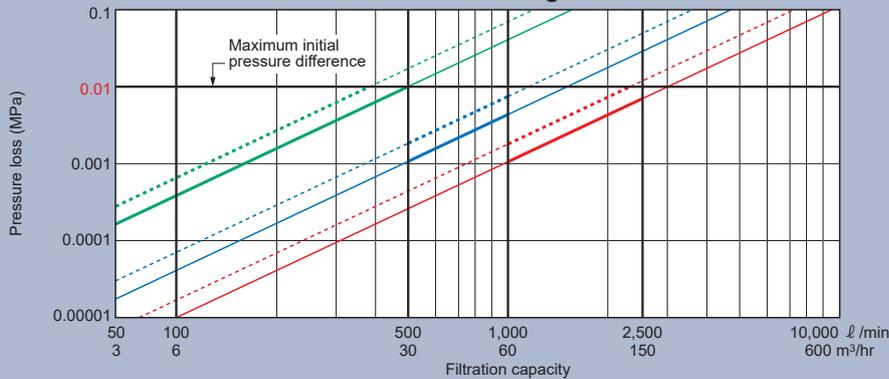
Flow Rate and Initial Pressure Loss

Pressure loss of metal wire screen



- ARS-150 #150 (109 µm)
- ARS-150 #60 (240 µm)
- ARS-500 #150 (109 µm)
- ARS-500 #60 (240 µm)
- ARS-1000 #150 (109 µm)
- ARS-1000 #60 (240 µm)
- ARS-2500 #150 (109 µm)
- ARS-2500 #60 (240 µm)

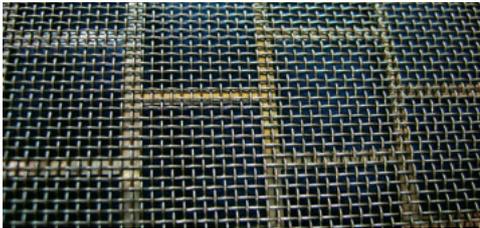
Pressure loss of wedge wire screen



- ARS-500 100 µm
- ARS-500 300 µm
- ARS-1000 100 µm
- ARS-1000 300 µm
- ARS-2500 100 µm
- ARS-2500 300 µm

How to Select Screen Mesh Size

Choose either a metal wire screen or a wedge wire screen and a suitable mesh size according to the liquid to be filtered and the size of foreign particles.

Structure										
Types of screen		Metal wire screen					Wedge wire screen			
Features		With its high opening ratio, effective cleaning and stable filtration are available.					Having high strength and high wear-resistance, suitable for large or hard foreign particles.			
Screen code		300K (#300)	150K (#150)	100K (#100)	60K (#60)	35K (#35)	100W	150W	300W	500W
Screen mesh size (µm)		45	109	145	240	520	100	150	300	500
Opening ratio (%)	ARS-150	16.5	24.5	19.1	19.3	29.9	—			
	ARS-500	—	22.9	17.8	18.0	27.9	8.5	12.3	18.8	23.5
	ARS-1000		21.6	16.8	17.0	26.4				
	ARS-2500		22.9	17.8	18.0	27.9				
Mass (kg)	ARS-150	0.7								
	ARS-500	1.9					4.0			
	ARS-1000	5.0					10.5			
	ARS-2500	15.0					23.0			

Screen Self-Cleaning System

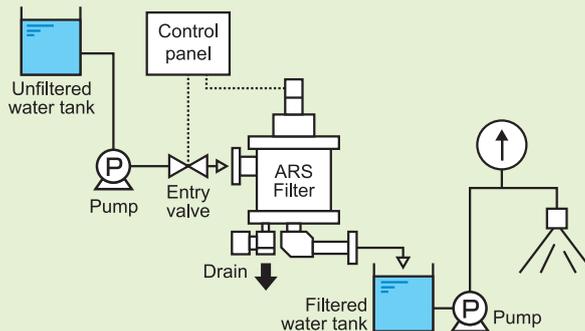
Choose the most suitable system layout to achieve optimal cleaning according to conditions.

Backwashing while filtering suspended (CV/CP/CC)

This system stops filtration while cleaning the filter screen. Ideal for removal of sticky impurities collected on the screen.

CV

Controls unfiltered water supply by interlocking with entry valve.
CV is suitable in case unfiltered water tank is located above ARS Filter or bypass is used and supply pump is not stopped.

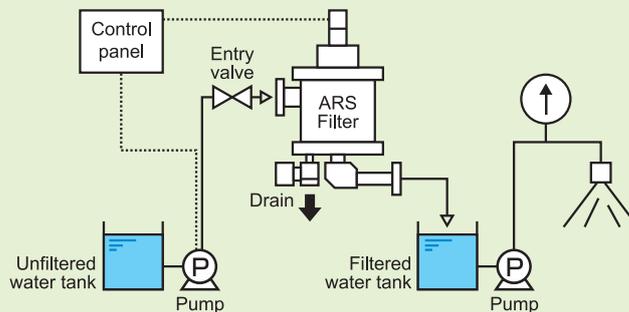


- Pumps for unfiltered/filtered water are not included in the unit.
- Entry valve is an extra-cost option.

Filtration	ON	OFF	ON	OFF	ON
Self-cleaning	OFF	ON	OFF	ON	OFF

CP

Controls unfiltered water supply by interlocking with unfiltered water supply pump.
CP is suitable in case unfiltered water tank is located below ARS Filter.

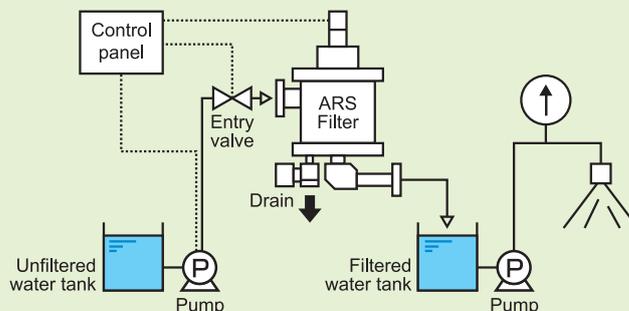


- Pumps for unfiltered/filtered water are not included in the unit.
- Entry valve is an extra-cost option.

Filtration	ON	OFF	ON	OFF	ON
Self-cleaning	OFF	ON	OFF	ON	OFF

CC

Controls unfiltered water supply by combined interlocking with entry valve and unfiltered water supply pump.
CC is suitable if water supply has to be stopped without fail.



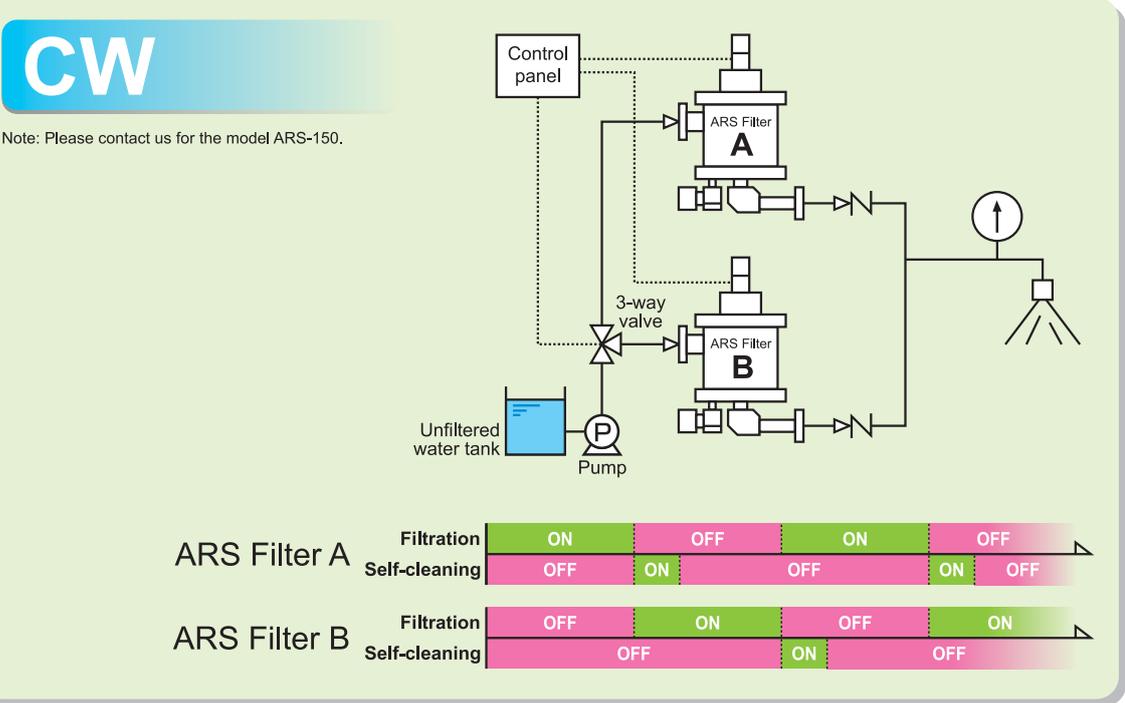
- Pumps for unfiltered/filtered water are not included in the unit.
- Entry valve is an extra-cost option.

Filtration	ON	OFF	ON	OFF	ON
Self-cleaning	OFF	ON	OFF	ON	OFF

Note: The above figures are for illustration only, and actual wiring and routes are different.

Backwashing while filtering suspended/parallel-connected (CW)

By connecting two ARS Filters with "Backwashing while filtering suspended" system in parallel, ARS Filters run alternately without stopping filtration and constantly supply filtered water and do maintenance work.



Note: The above figures are for illustration only, and actual wiring and routes are different.



Consumable Parts

For long and stable operation of ARS Filter, regular maintenance work and replacement of consumable parts are required.

ARS-150/500/1000

No.	Components	ARS-150	ARS-500	ARS-1000	Materials
		Quantity	Quantity	Quantity	
1	O-ring for top cover	1 pc.	1 pc.	1 pc.	FKM
2	O-ring for bearing	3 pcs.	2 pcs.	1 pc.	FKM
3	O-ring for screen (upper)	1 pc.	1 pc.	1 pc.	FKM
4	O-ring for screen (lower)	1 pc.	1 pc.	1 pc.	FKM
5	Rotation seal	None	1 pc.	1 pc.	PE+SUS

ARS-2500

No.	Components	ARS-2500	Materials
		Quantity	
1	O-ring for bearing	1 pc.	FKM
2	O-ring for screen (lower)	1 pc.	FKM
3	Full-face packing for top lid	1 pc.	FKM
4	Rotation seal	1 pc.	PE+SUS
5	O-ring for nozzle header	1 pc.	FKM

Optional parts

Spare screen

If the screen meets one of the following conditions, please remove the screen and clean it. Please use a spare screen to continue operation.

- Foreign particles are thickly-sedimented on the screen and cannot be removed by self-cleaning.
- On periodic maintenance. (recommended every year)

It is recommended to have a spare metal wire screen because it is a consumable part.



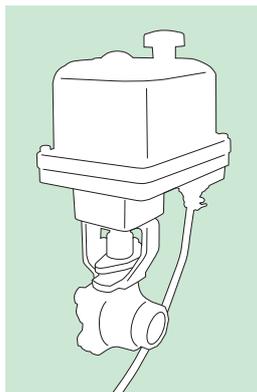
Solenoid valve / Check valve

Solenoid valve and check valve are available as options for optimal use of ARS Filter.

Solenoid valve

For automatic control of unfiltered water supply.

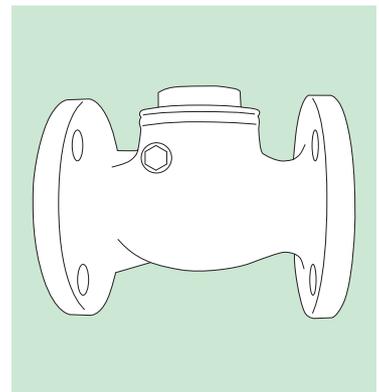
In "backwashing while filtering suspended" system, it is interlocked with control panel for automatic control.



Check valve

Non-return valve to prevent backflow.

For the "backwashing while filtering suspended" system, it is necessary to empty the inside of the filter while self-cleaning. This valve prevents filtered water from flowing back into the filter.



For inquiries, please fill in the form below and e-mail it to us so that we can offer the product most suitable for your needs.

Subject		Contents		Remarks
Your company information	Company name			
	Department			
	Contact person			
	Tel/Fax	Tel:	Fax:	
	Email			
	Country		Voltage (VAC), Frequency (Hz)	
	Industrial sector			
Site	Applications/purpose			
	Installation location			
Present	Present system			
	Name of device in use			
Liquid	Liquid to be filtered			
	Filtration accuracy			See p.14 "How to Select Screen Mesh Size".
	Liquid temperature			
Foreign particles in liquid	Types of foreign particles			
	Approx. diameter of foreign particles	μm (ppm)		
	Screen type & size	<ul style="list-style-type: none"> • Metal wire screen (#300, #150, #100, #60, or #35) • Wedge wire screen (100 μm, 150 μm, 300 μm, or 500 μm) 		See p.14 "How to Select Screen Mesh Size".
	Mixing of cleaning water			Is it acceptable if cleaning water mixes in the liquid being filtered?
	Self-cleaning system	Check the appropriate box. <input type="checkbox"/> CV <input type="checkbox"/> CP <input type="checkbox"/> CC <input type="checkbox"/> CW		See p.15–16 "Screen Self-Cleaning System".
Line	Line pressure			
	Average flow rate of water line			
Control	Your request of control method			
Other requests or questions				



“The Fog Engineers”
H. IKEUCHI & CO., LTD.



ISO9001:2015 certified
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