

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

Conventional filters with auto self-cleaning function often show a gradual decline in filtration effect due to its insufficient cleaning capability, which 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.

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

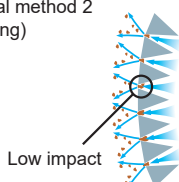
You can select suitable type from our wide-ranging lineup.

Unique Filter Cleaning Method

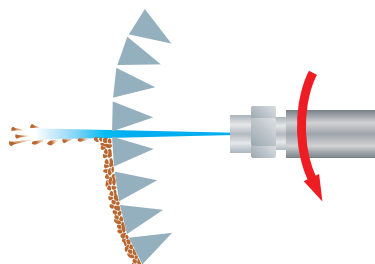
Conventional method 1
(brushing)



Conventional method 2
(backwashing)



Jet spraying



ARS FILTER

Excellent Cleaning



Foreign particles thickly-sedimented on the filter.

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Cleaning Effect



After 30 seconds* of high-pressure jet cleaning, the filter has been cleaned.
*The cleaning time depends on liquid conditions.

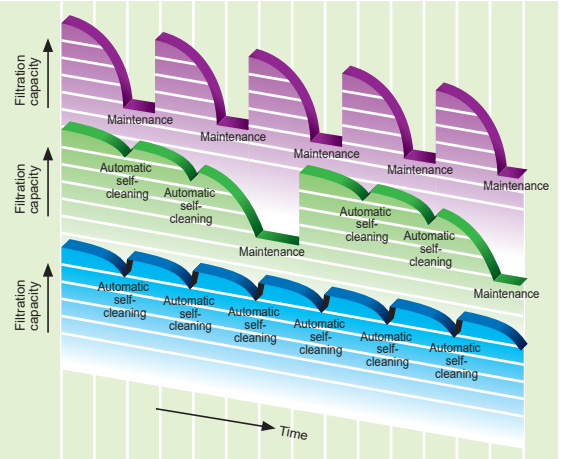
Minimal maintenance

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 every time 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.
- **This unit cannot be used in a condition where the inside of the filter is under forcible negative-pressure, such as a pump for suctioning out the filtered water is equipped with.**
- **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)

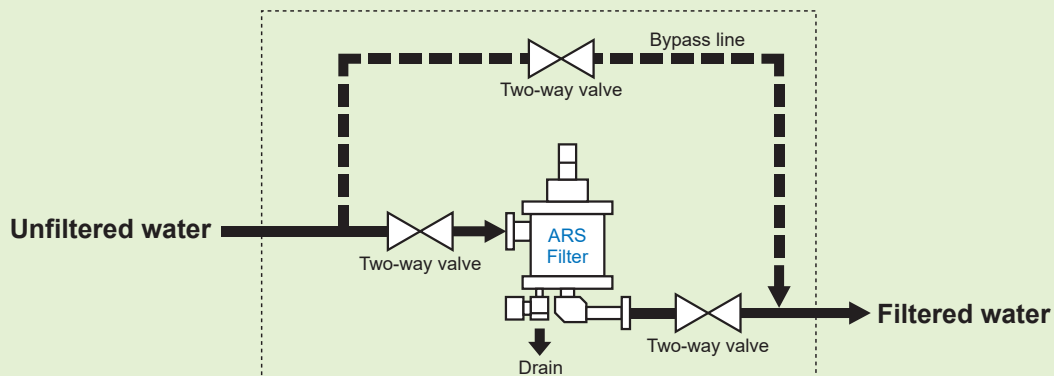
● Piping

- **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.**

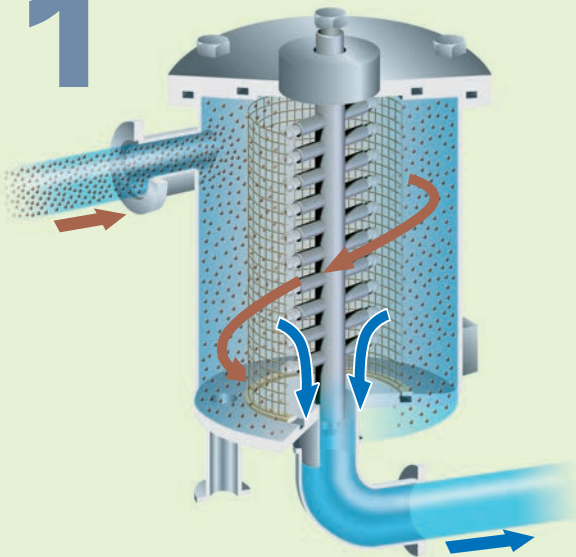
[Installation example]



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

Filtration

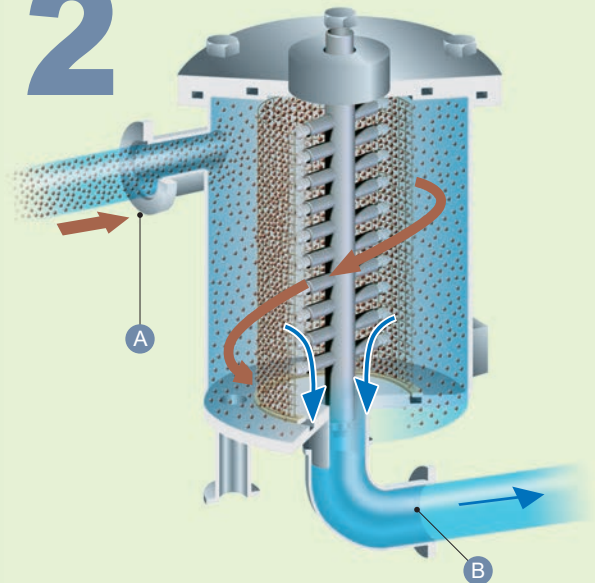
1



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

Accumulation of Foreign Particles

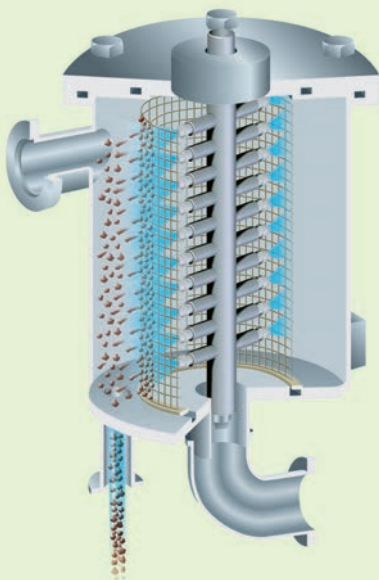
2



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

Cleaning

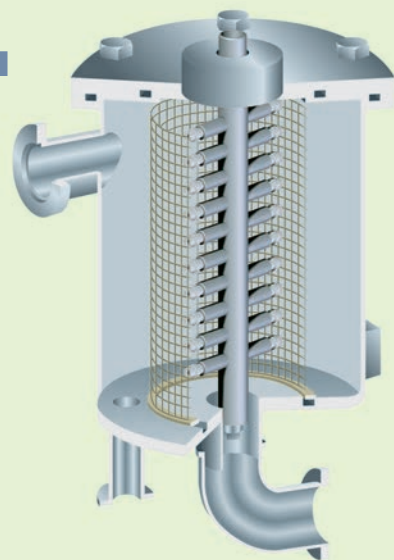
3



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

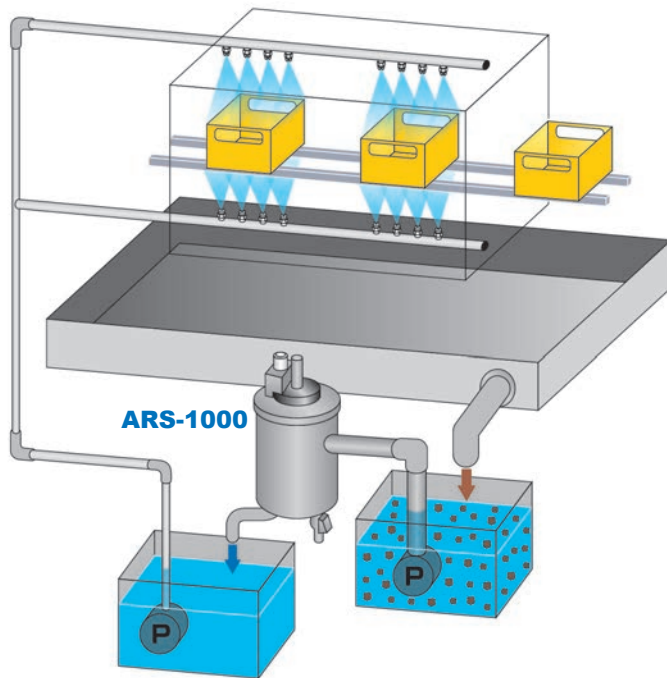


Applications in Various Industries

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



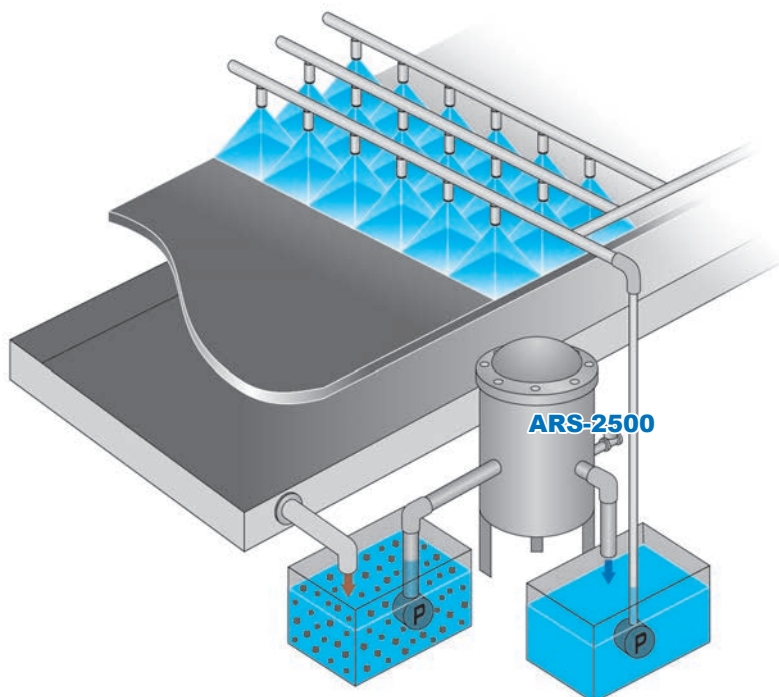
Labor cost reduced due to less frequent maintenance

- 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



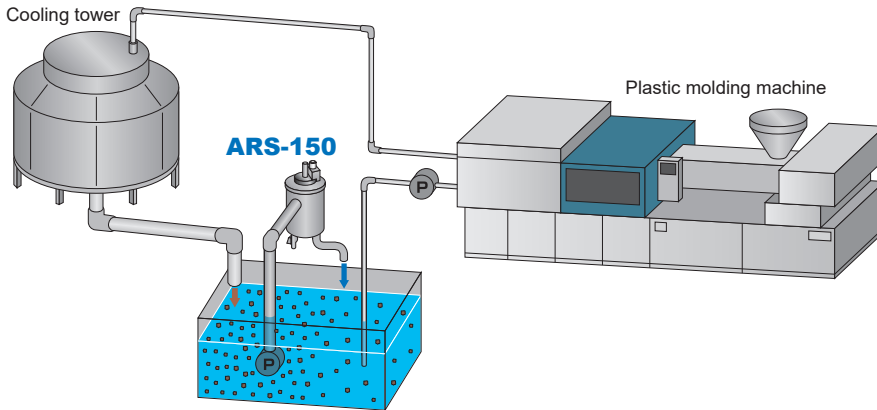
Stable production and stable operation

- 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



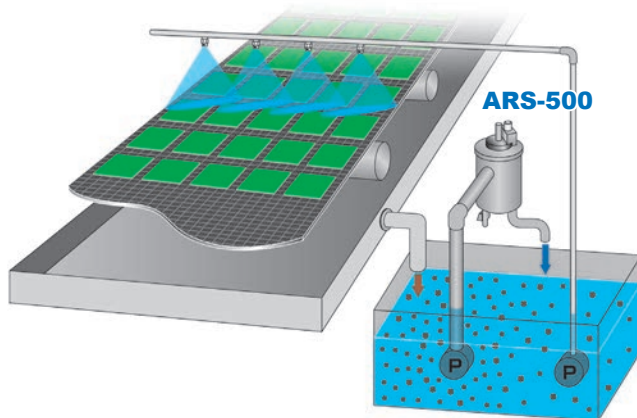
Stable operation
Minimal maintenance

- 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



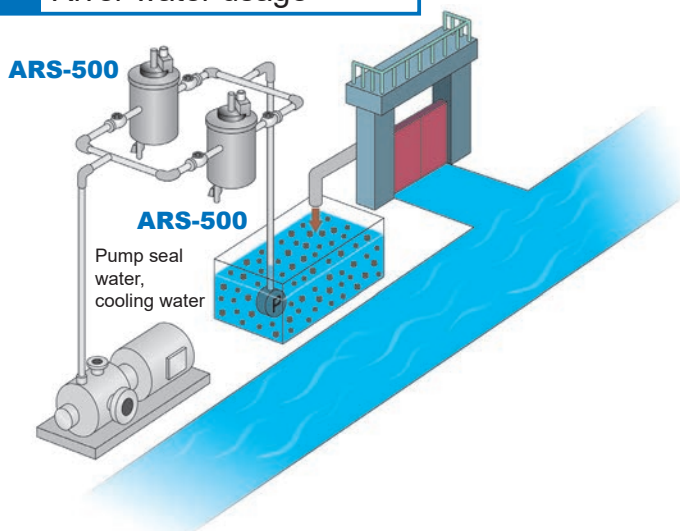
Resist removal ratio increases dramatically

- 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

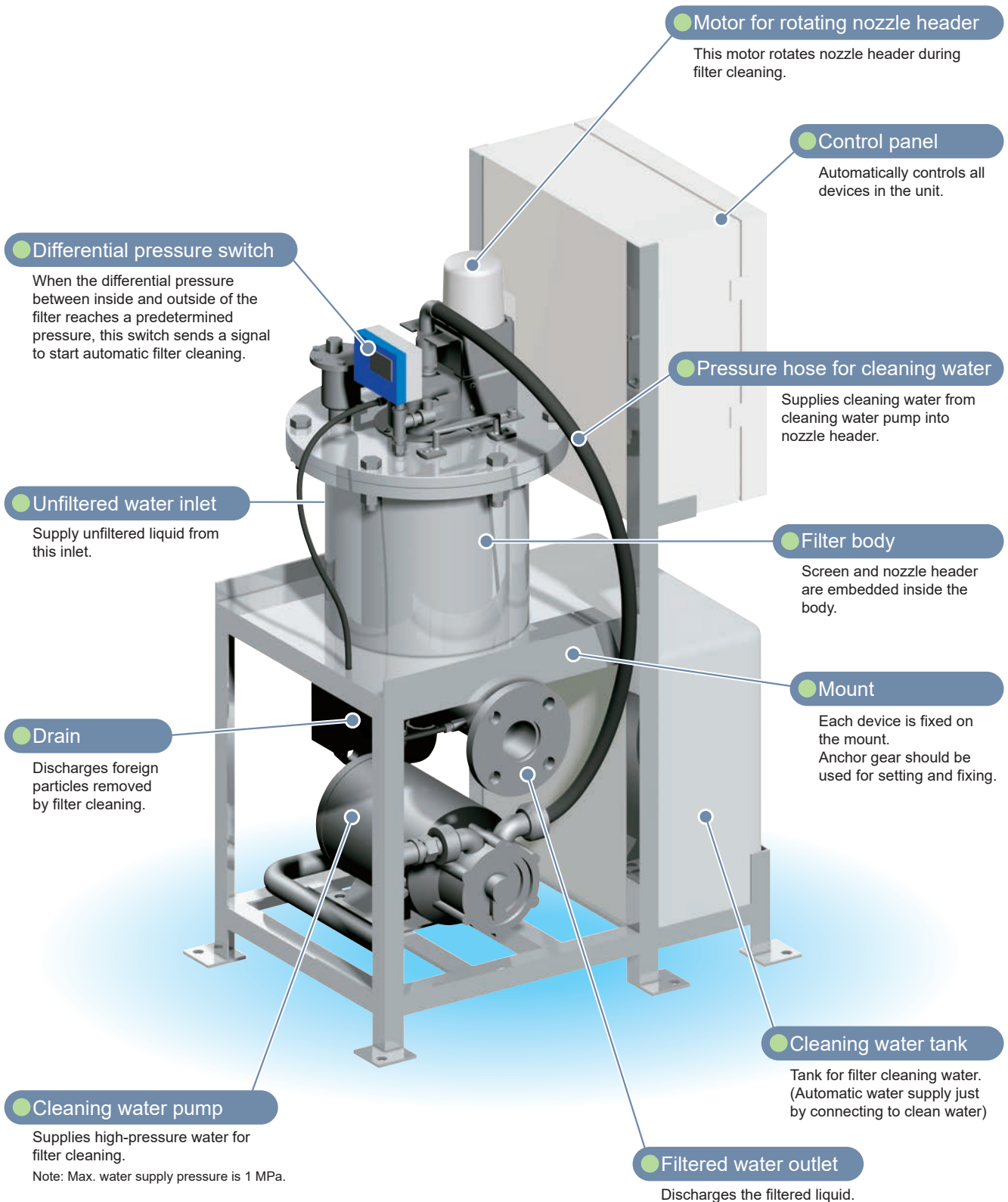
- Liquid: River water
- Foreign particles: Algae, sand, etc.
- Screen mesh size: #60 (240 μm)
- Type of screen: Metal wire

Note:

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

Part Names and Functions

(Example: ARS-500)



Please select from the options below to achieve the optimum filtration performance for the ARS Filter. Product code is shown 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 Mesh Size Code

See p. 13 "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 System Configuration Options

There are several options for system layouts. See page 11–12 for details.

- [CV] Controls unfiltered water supply by interlocking it with inlet solenoid valve.
- [CP] Controls unfiltered water supply by interlocking it with unfiltered water supply pump.
- [CC] Controls unfiltered water supply by interlocking it with both inlet solenoid valve and unfiltered water supply pump.
- [CW] Using two ARS Filters in parallel, either ARS Filter runs alternately by switching unfiltered water supply with three-way valve.

5 Frequency

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

6 Specific Identification Number

An 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

F

150K

CC

60

E001

1 Filtration Capacity

- 150
- 500
- 1000
- 2500

2 Lid Options*

- D
- F

3 Types and Code of Screen

- 300K ■ 100W
- 150K ■ 150W
- 100K ■ 300W
- 60K ■ 500W
- 35K

(300K is only for ARS-150)

4 System Configuration

- CV
- CP
- CC
- CW

5 Frequency

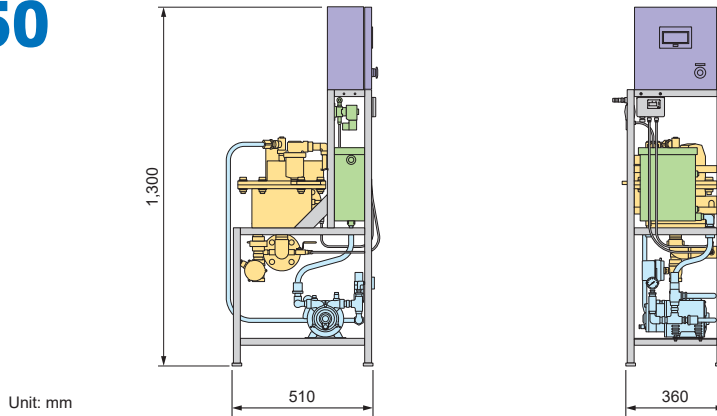
- 50
- 60

6 Specific Identification Number

*D (clamp lid) is available only for ARS-500.

Specifications

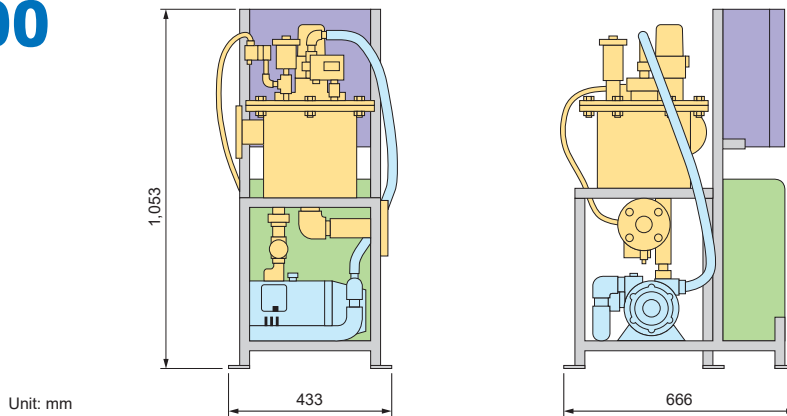
ARS-150



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 a 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 a 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

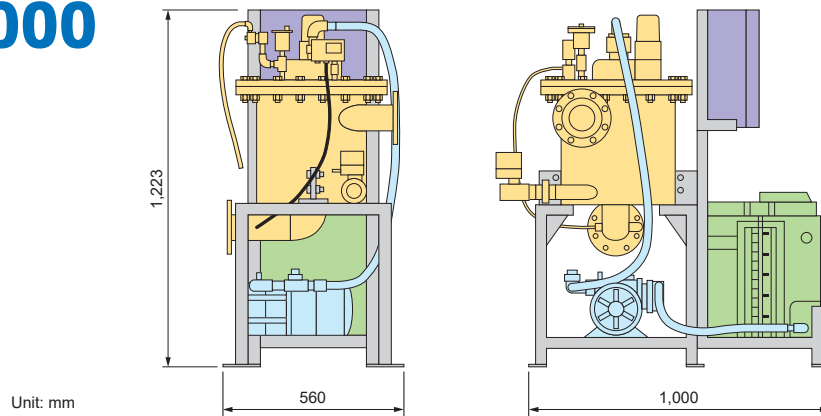
ARS-500



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

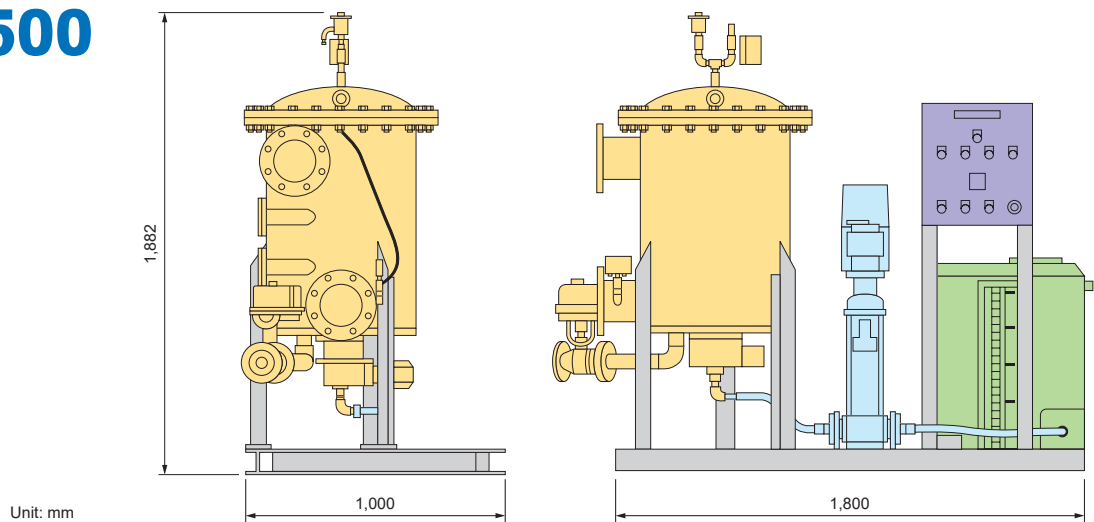
ARS-1000



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

System Configuration Options

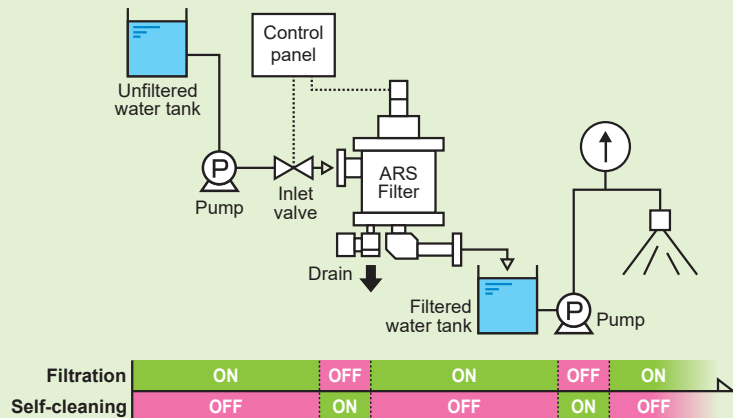
There are four system configuration options: CV, CP, CC and CW. Choose the optimal system layout based on use environment and requirement.

CV

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

Note:

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

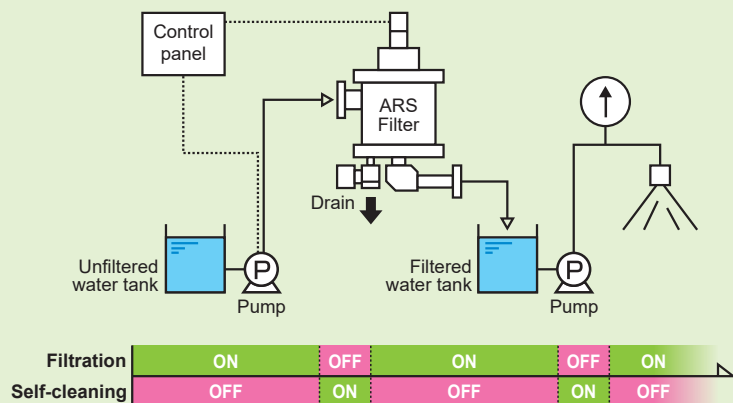


CP

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

Note:

- Pumps for unfiltered/filtered water are not included in the unit.

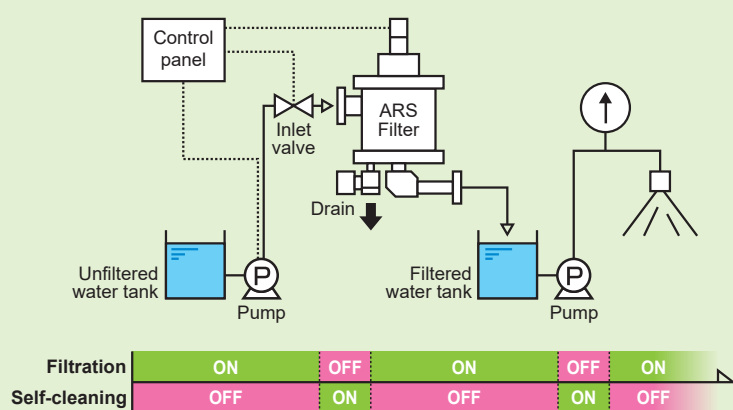


CC

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

Note:

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

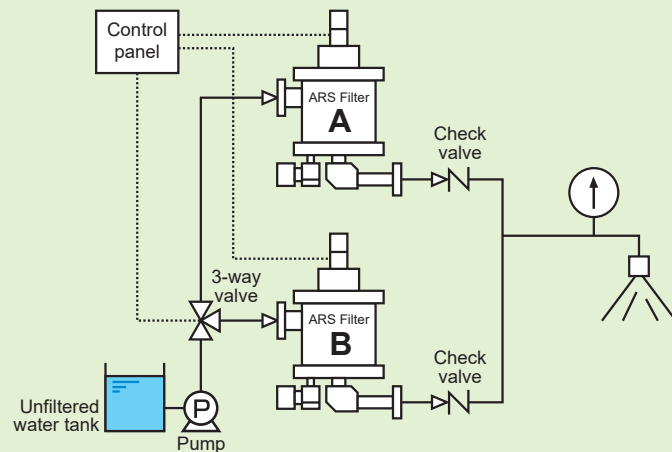


Note: The above figures are for illustration only, and actual wiring and routes are different.

CW

Controls unfiltered water supply by interlocking it with a three-way solenoid valve to switch the flow channel. By using two ARS Filters in parallel, the ARS Filters run alternately to constantly supply filtered water and do maintenance without stopping filtration.

- Note:
- Please contact us for the model ARS-150.
 - Pumps for unfiltered/filtered water are not included in the unit.
 - Inlet solenoid valve is an extra-cost option.



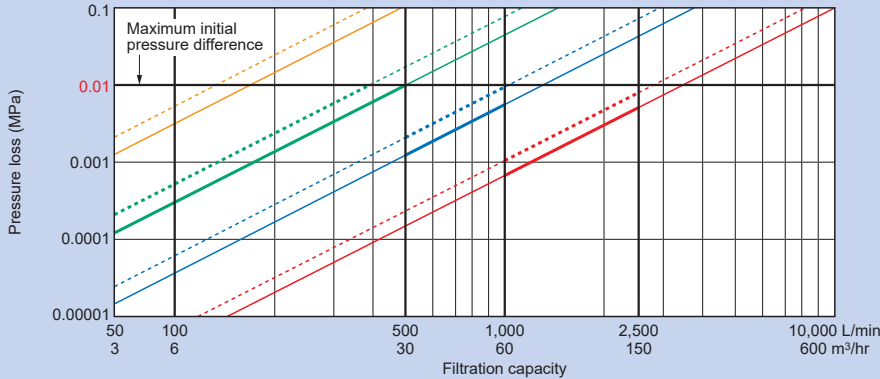
ARS Filter A	Filtration	ON	OFF	ON	OFF
	Self-cleaning	OFF	ON	OFF	ON
ARS Filter B	Filtration	OFF	ON	OFF	ON
	Self-cleaning	OFF	OFF	ON	OFF

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



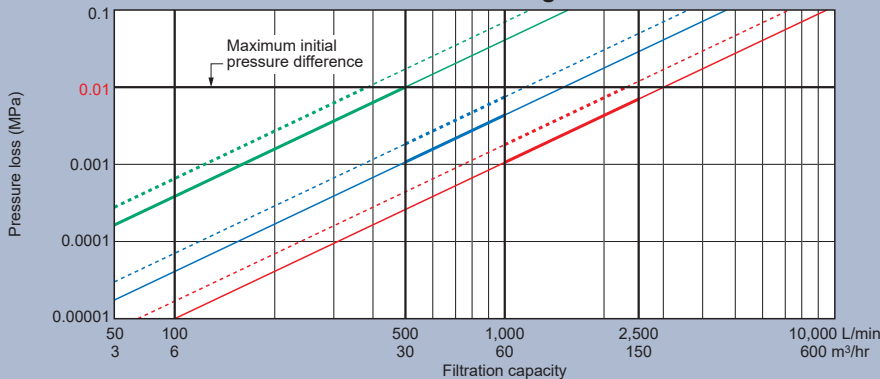
Flow Rate and Initial Pressure Loss

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	8.5	12.3	18.8	23.5
	ARS-500	—	22.9	17.8	18.0	27.9				
	ARS-1000	—	21.6	16.8	17.0	26.4				
	ARS-2500	—	22.9	17.8	18.0	27.9				
Weight (kg)	ARS-150	0.7					—			
	ARS-500	1.9					4.0			
	ARS-1000	5.0					10.5			
	ARS-2500	15.0					23.0			

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.	NBR, etc.
4	Rotation seal	1 pc.	PE+SUS*
5	O-ring for nozzle header	1 pc.	FKM

Note: The material of O-ring may be changed depending on use conditions.

*Stainless steel

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.



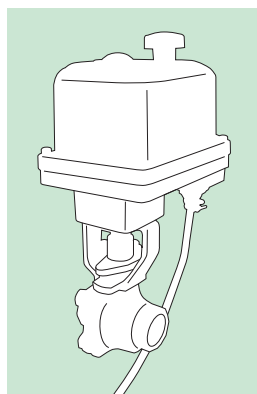
Solenoid valve, Check valve

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

Solenoid valve

Use for automatic control of unfiltered water supply.

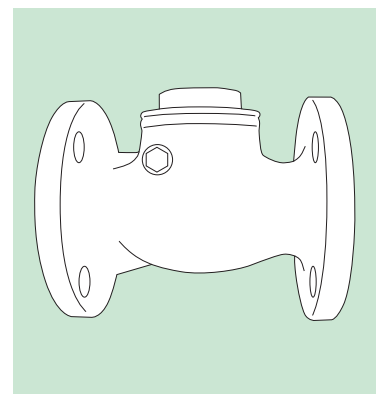
In the system configuration of CV, CC, and CW, this is interlocked with control panel for automatic control. (See page 11–12.)



Check valve

Non-return valve to prevent backflow.

For the system configuration of CW (see page 12), it is necessary to empty the inside of the filter while self-cleaning. This valve prevents filtered water from flowing back into the filter.





“The Fog Engineers”

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MS
CM014



JMAQA-2490

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