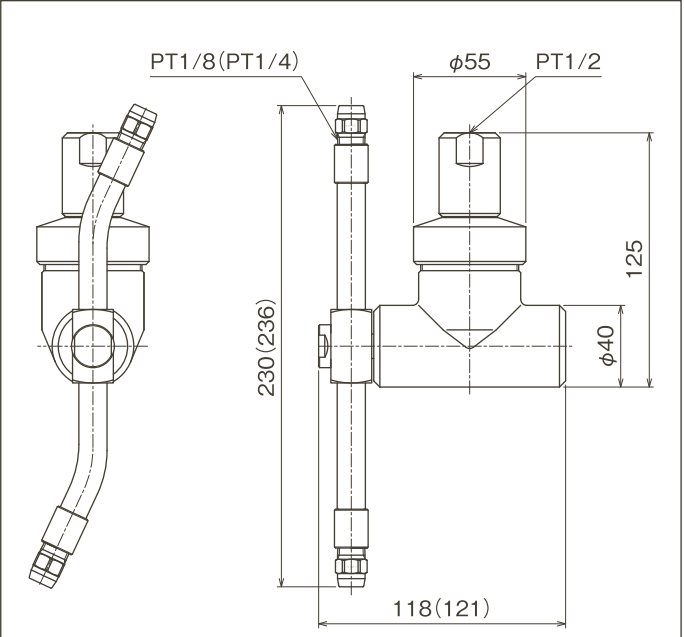


SPECIFICATIONS

Pressure specifications	Low pressure type	Medium pressure type	
Series	JA3-2L (φ★★)	JA3-2S (φ★★)	JA3-4S (φ★★)
Nozzle orifice diameter (mm)	φ3.5, φ5.4	φ1.8, φ2.4	
Number of nozzles equipped	2		4
Maximum pressure (MPa)	6	15	
Allowable temperature (°C)	4~60		
Recommended working pressure (MPa)	0.3~1.2	1~3	
Spray capacity (L/min)	24~82	12~36	24~70
Pipe connection size	1/2" female pipe thread [1/2F(PT)]		
Nozzle thread size	1/4M(PT)	1/8" male pipe thread [1/8M(PT)]	
Main materials	SUS304, Special PTFE, NBR, FKM		
Surface finish	300# buffing		
Drive system	Driven by spray reaction force		
Mass of body (kg)	1.7	1.6	1.95

Note: Specifications are subject to change without prior notice for purposes of product improvement.

DIMENSIONS JA3-2S (φ★★)



Unit: mm Figures in () are dimensions of low-pressure specification JA.

*JA3-4S is equipped with 4 nozzles. (Low-pressure type has only 2 nozzles)

HOW TO ORDER Please inquire or order for a specific nozzle using this coding system, referring to the above SPECIFICATIONS.

(Example) Low-pressure spec.: 1/2F JA 3-2L(φ3.5) S304

Pipe connection size	Series	Number of nozzles equipped	Nozzle orifice diameter	Main material
1/2F	JA 3-	2	L (φ3.5)	S304
			■φ3.5 ■φ5.4	

(Example) Medium-pressure spec.: 1/2F JA 3-2S(φ1.8) S304

Pipe connection size	Series	Number of nozzles equipped	Nozzle orifice diameter	Main material
1/2F	JA 3-	2	S (φ1.8)	S304
		■2 ■4	■φ1.8 ■φ2.4	

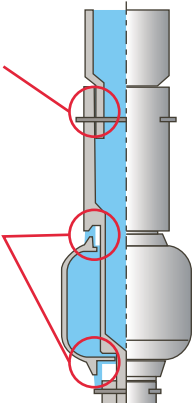
*We will be pleased to recommend the optimal nozzle orifice size if given supply pressure and supplied water amount.

Related Products Low-pressure, compact rotating cleaning nozzles - ES series -

Also available is low pressure, compact 2D rotating cleaning nozzles "ES series".



- ES-[type P] series is highly sanitary, having no threads in the flow passage, thus no grooves to collect contaminants.
- Spraying liquid flows from the gaps between the connecting adaptor and nozzle body and keeps the nozzle surface clean. (Common to both ES [type P] and [type N])



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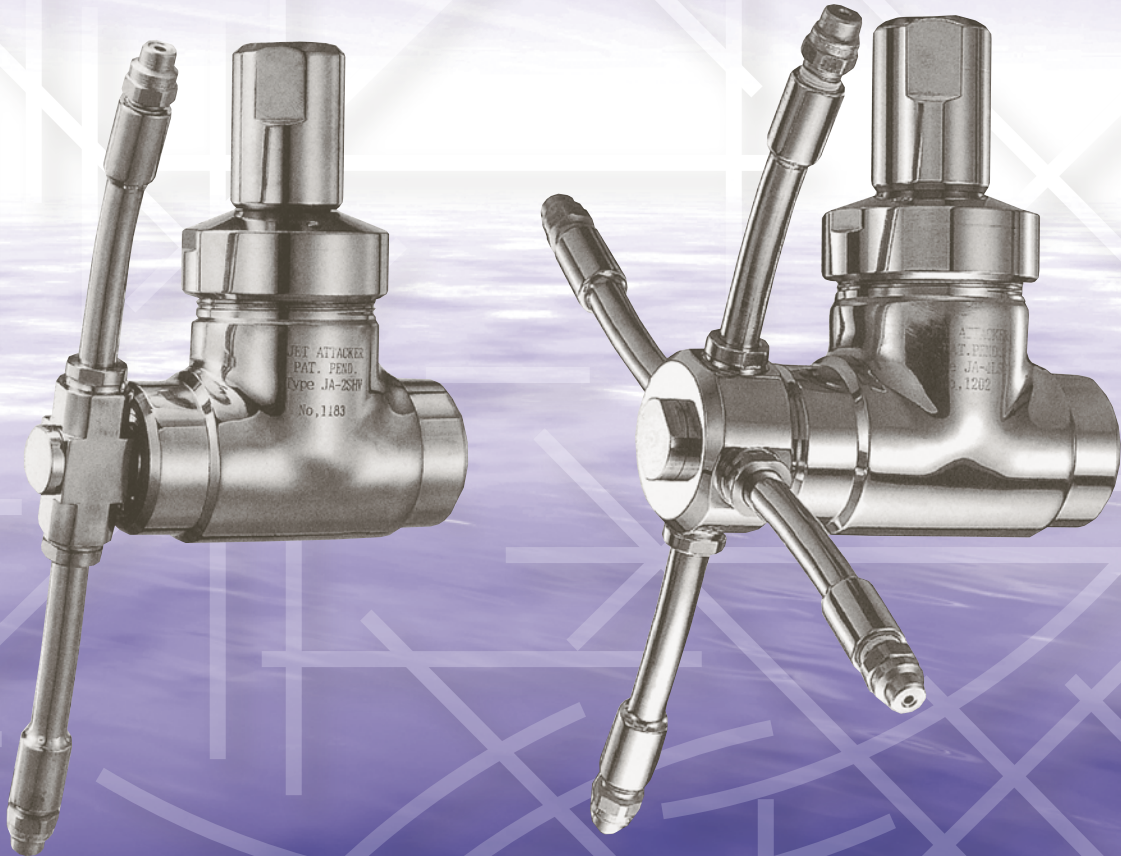
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Tank cleaner with spray-driven self-rotation

Rotating Nozzles for 3-Dimensional Cleaning

JET ATTACKER
JA3-S type
JA3-L type



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FEATURES of JA series

Automatic cleaning

- Just install JA in a tank and supply water, JA starts cleaning the inside of the tank.

Simple structure, Compact design

- Simple structure, without turbine or reduction gears.
- Stable cleaning performance.
- Compact and lightweight, max. diameter (arm length) is 240mm. Weighs less than 2kg.

2 ranges of cleaning pressures

- Available in low-pressure specification (cleaning with spray flow at 0.3-1.2MPa pressures) or medium-pressure specification (1-3MPa).

No external power needed

- Because rotation is driven solely by the spray reaction force, installation is easy and equipment costs can be cut.

No "waste" water

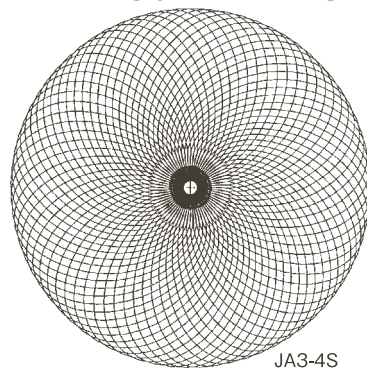
- All supplied water is used as driving force and cleaning water. Minimal energy loss.

Easy nozzle replacement

- If they become worn or damaged, nozzles can be replaced easily by screwing them.

CLEANING PATTERN

Cleaning pattern image



3-dimensional precision cleaning is possible as both the body and arm rotate separately.
More concentrated cleaning is achieved with the JA3-4S type, which has 4 nozzles.
*The JA3-4S type with 4 nozzles only available as medium-pressure type.

MAIN APPLICATIONS AND EXAMPLE USES

【Food industry】

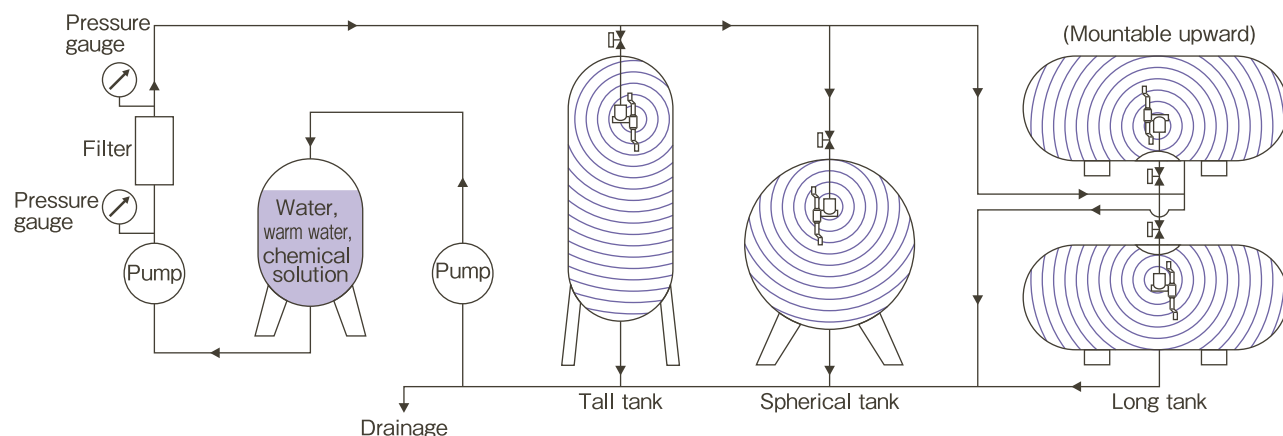
Brew tanks, fermentation tanks, distillation tanks, storage tanks, transport containers, and various other tanks

【Chemical/pharmaceutical industry】

Fermentation tanks, storage tanks, reaction tanks, transfer containers, mixing tanks, chemical tanks

【Other industries】

Paper making, spinning, oil refinery, ocean vessels, ironmaking, and more



APPEARANCE

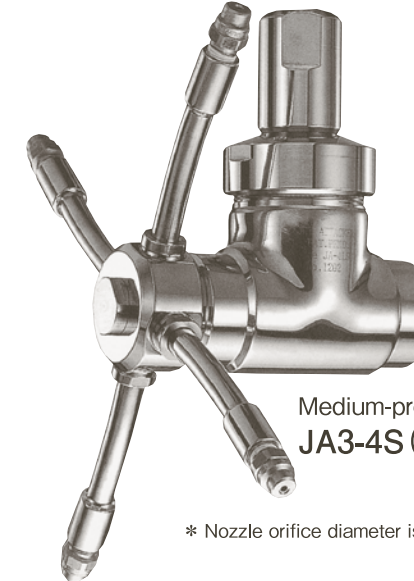
【JA with 2 nozzles】



Medium-pressure specification: **JA3-2S (φ★★)**
Low-pressure specification: **JA3-2L (φ★★)**

* Nozzle orifice diameter is specified in place of ★★.

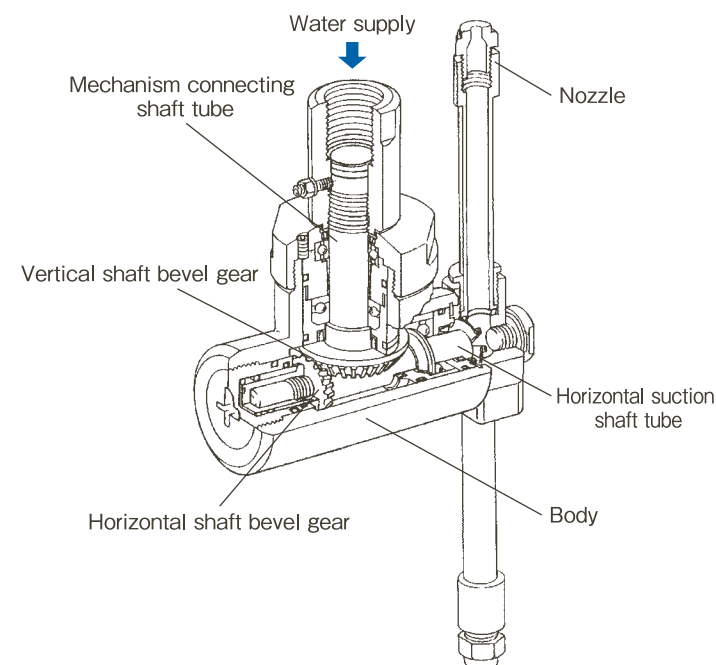
【JA with 4 nozzles】



Medium-pressure specification: **JA3-4S (φ★★)**

* Nozzle orifice diameter is specified in place of ★★.

STRUCTURE AND DRIVE

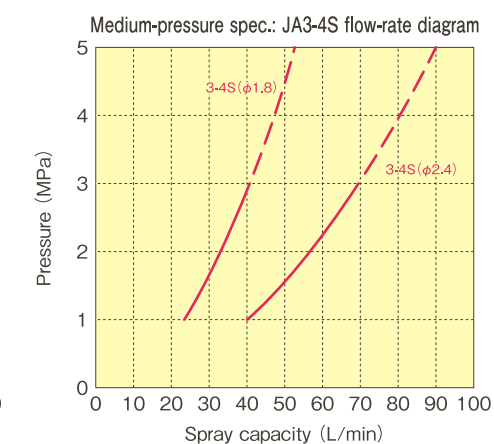
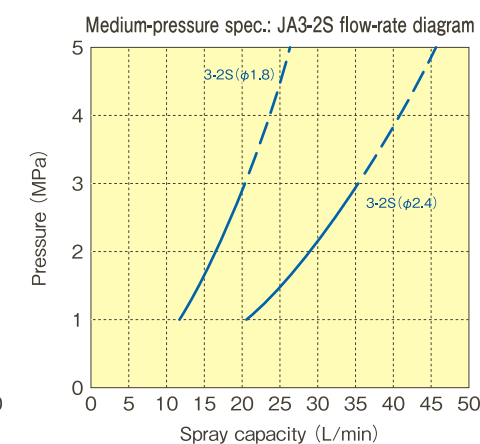
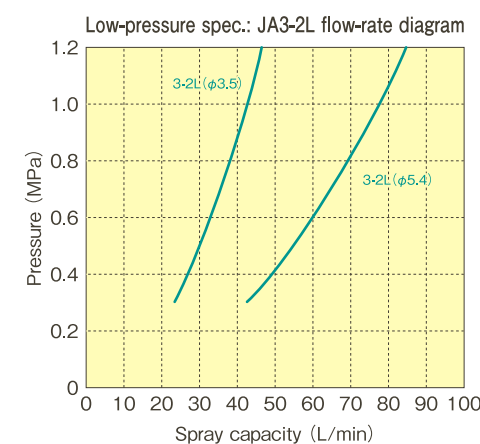


【Drive principle】

- Supply water
- Water is sprayed from nozzles
- Arm rotates by spraying reaction force
- Horizontal suction shaft tube rotates
- Mechanism connecting shaft tube rotates by bevel gears of vertical and horizontal shafts
- Body rotates

SPRAY CAPACITY

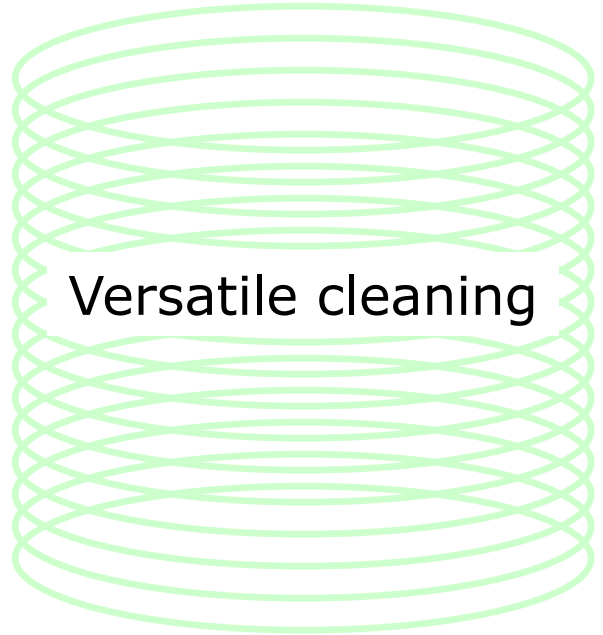
Spraying pressure and flow rate should be set according to your application and purpose.
Available in [JA with 2 nozzles] type or [JA with 4 nozzles] type, each in 2 kinds of nozzle orifice diameters.
Medium-pressure specification JA is recommended for use at 1MPa - 3MPa.
At water pressures higher than this range, rotation speeds become too high and spray gets scattered about.



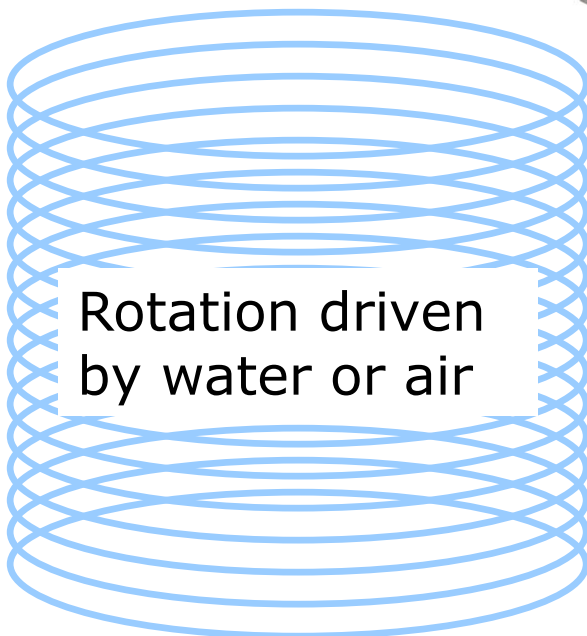
Tank cleaner with spray-driven self-rotation

Rotating Nozzles for 2-Dimensional Cleaning

JET ATTACKER
JA-2 type



Versatile cleaning



Rotation driven
by water or air



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JA-2 type FEATURES

No external power needed

- Because rotation is driven solely by the spray reaction force, installation is easy and equipment costs can be cut.

Simple structure

- Simple structure, without turbine or reduction gears.
- Stable cleaning performance.

Nozzle selectable

- You can select suitable nozzles depending on your purpose and application; solid stream jets for powerful cleaning, flat spray nozzles with wide spray coverage, and more. Nozzle mounts are available in two arms, or four arms for more concentrated cleaning. If nozzles become worn or damaged, they can be replaced easily.

Appropriate arm length

- Standard length is 200 mm or 300 mm, and other length according with target area is available on request.

No "waste" water

- All supplied water is used as driving force and cleaning water. Minimal energy loss.

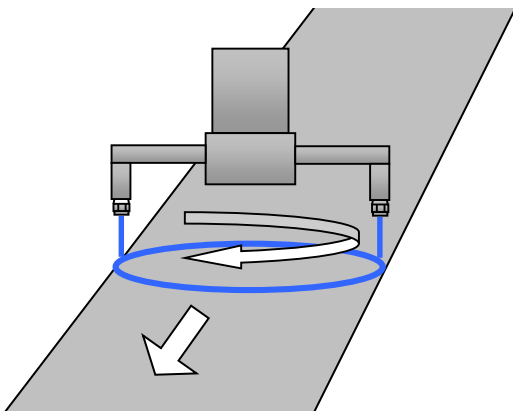
Various applications

- By creating a new arm configuration, many cleaning objectives such as spot cleaning or 3D cleaning can be achieved.

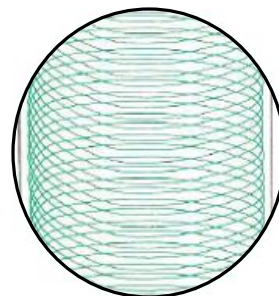
Air-driven use also possible

- Rotation is driven not only water, but also air.
Ideal for blow-off drying, air blowing especially for complex applications.

CLEANING PATTERN EXAMPLE



Cleaning pattern of JA2-4 type with powerful solid stream jet nozzles
(Patterns differ by line speeds)



By rotating solid stream jet nozzles with high cleaning force, powerful cleaning over a large area is achieved to remove tough dirt.

JA-2 type APPEARANCE & SPRAY PATTERNS

Arm selection

■ 4-arm type



Four arms make more precise cleaning possible.

■ 2-arm type



Available spray nozzles

■ Solid Stream Jet

Most powerful spray impact to remove tough stains (dirt).



【Spray pattern】



【Spray distribution】

■ Flat spray pattern

JA-2 type + flat spray nozzle provides circular cleaning.
Spray angle range: 15°-115°.
Mountain-shaped distribution or even spray distribution is available.

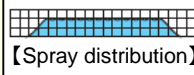


【Spray pattern】



【Spray distribution】

【Spray pattern】



【Spray distribution】

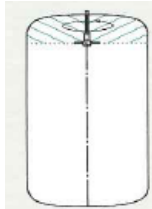
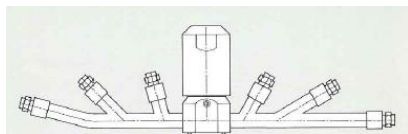
■ Cone spray pattern

Full cone or hollow cone spray, suitable for dispersal spraying.

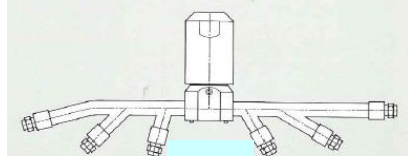


JA-2 type VERSATILE TANK CLEANING

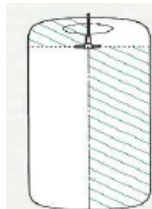
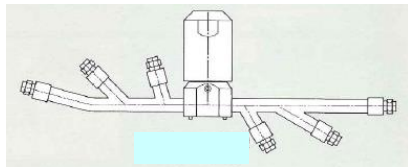
■ Cleans only upper part of tank



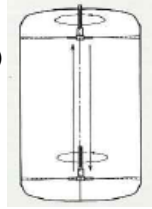
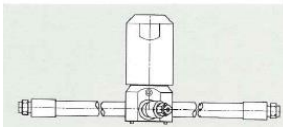
■ Cleans only lower part of tank



■ Cleans whole area of tank

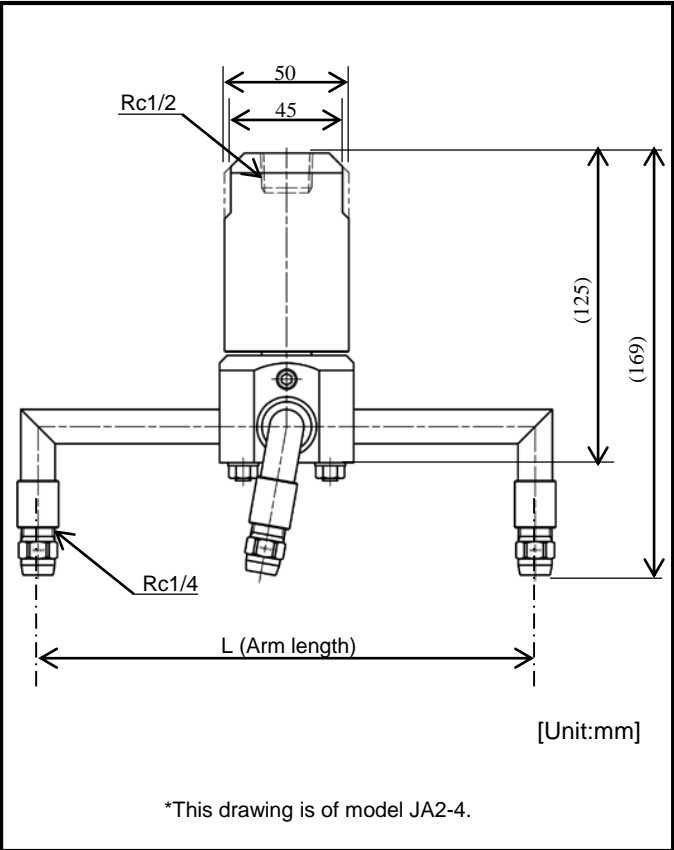


■ Cleans whole area of tank (used with lifting and lowering device)



JA-2 type SPECIFICATIONS & DIMENSIONS

Models	JA2-2 (φ★★)	JA2-4 (φ★★)
Nozzle orifice diameter (*1)	φ2.5, φ3.5, or φ5.4 mm	
Number of nozzles equipped	2	4
Max. pressure	10.0 MPa	
Allowable temperature	4–60°C	
Recommended working pressure	0.3–2.0 MPa	
Spray capacity (*2)	14–53 L/min	28–98 L/min
Pipe connection size	Rc1/2 [1/2F(PT)]	
Nozzle thread size	Rc1/4 [1/4F(PT)]	
Main materials	Stainless steel 304 (O-ring, seal, etc.: PTFE, NBR, FKM)	
Arm length (*3)	200 mm or 300mm	
Drive system	Driven by spray reaction force	
Mass	1.9 kg	2.0 kg



Nozzle orifice diameter is specified in place of ★★.
*1) When equipped with solid stream jet nozzles. *2) When equipped with solid stream jet nozzles and sprayed at pressures of 0.3 MPa.
*3) Arm length is available from 200 mm to 1,500 mm. Contact us for a longer length.
Please contact us if you need special surface finishing such as buffing or electrochemical polishing.

(Reference)
■ Spray capacity of JA-2 equipped with solid stream jet nozzles

	Product code	Spray capacity (L/min)		
		0.3MPa	0.7MPa	1.0MPa
2-arm	JA2-2 (φ 2.5)	14	22	26
	JA2-2 (φ 3.5)	27	41	49
	JA2-2 (φ 5.4)	53	81	97
4-arm	JA2-4 (φ 2.5)	28	43	51
	JA2-4 (φ 3.5)	52	79	95
	JA2-4 (φ 5.4)	98	150	180

HOW TO ORDER

Ex.) 1/2FJA2-2(φ 2.5)S304(L=200) JA with solid stream jet nozzles and arms of standard length

1/2F JA2- 2 (φ 2.5) S304 (L=200)

Number of arms
■ 2
■ 4

Nozzle orifice diameter
■ 2.5
■ 3.5
■ 5.4

Arm length
■ 200
■ 300
■ At request (up to 1500 mm)

An inquiry drawing form is available for your consideration. Please feel free to contact us.

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