

# If you have any concerns about industrial cleaning...

## Stop using organic solvent

- \*The requirements for replacement from customers are getting strict.
- \*Restrictions such as ISO14001, RoHS, PRTR, VOC, etc.

## Boosting cleaning quality

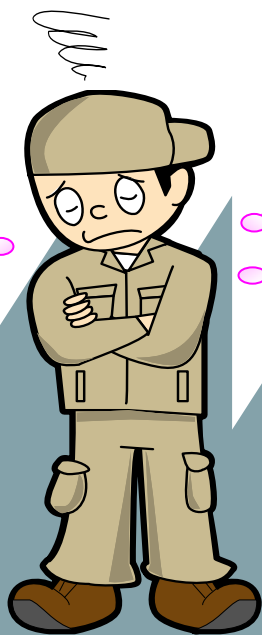
- \*The cleanser stays on the products, causing quality problems at the later process.
- \*Damages on work materials due to chemicals.

## Large space unavailable

- \*Smaller place is preferred for cleaning between processes.
- \*Productivity increase per unit area.

## Lower costs on cleaning

- \*Only little cleaning expenses received from customers.
- \*Sharp increase in the price of cleaning chemicals



*We offer you the most suitable model!*

You have your own equipment currently in use

**YES · NO**



The equipment is new and water-system

**YES · NO**

Cleaning a large quantity of works in the same shape

**YES · NO**

Continuous loading/cleaning

**YES · NO**

Precision cleaning

**YES · NO**

### TIWS-IW series

Ion water generating apparatus



By simply connecting this, the existing washing equipment instantly changes to ion water washing system. Demineralizer equipped.

### TIWS-CV series

Conveyor-type Ion water cleaning equipment



Suitable for cleaning press parts continuously and for inline between processes.

### TIWS-LB series

Line badge-type Ion water cleaning equipment



Carrying the basket that has work inside. Shower and ultrasound allow precise cleaning.

### TIWS-HN series

Hand badge-type Ion water cleaning equipment



Recommended for customers who clean various types/small quantity of products. Broad utility in time and settings.

### TIWS-BD series

Badge-type Ion water cleaning equipment



All-in-one, equipped with ion water generating apparatus. Best as an entry model.

# Ionized-water cleaning system is a perfect solution.

Industrial cleaning with electrolytic ion water is Takahashi-Metal-Industries's patent technology. PAT No.4009385 No.4025903 No.4403227

Environment responsive

High quality

Compact

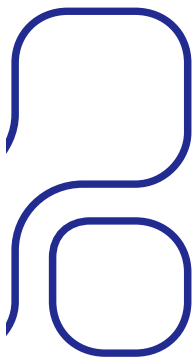
Low cost

This cleaning system is equipped with an ion water generating apparatus, and automatically applies electrolysis to water and generates alkali ion water to be used for cleanser, by simply supplying tap water. No chemicals is used at all! Therefore, the cleaning liquid has high tendency to separate to oil and water, achieving zero-emission by closed-systematization.

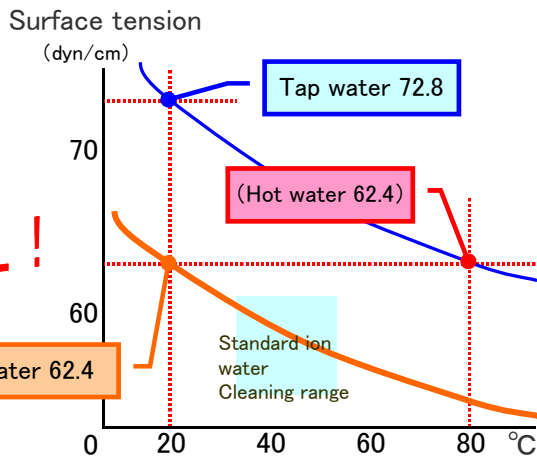
Since no cleanser is used, all cleanser is perfectly rinsed, boosting the quality in the later process, as well as lowering the risk of contaminating surrounding environment. Compact design is also possible.

Another advantage is, automatically supplying ion water that is same amount as the water vaped sustains the cleaning ability. This saves cleanser wiping on a regular basis, resulting in a significant cost reduction. In addition, heat-pump type exhaust heat recycling machine makes it possible to achieve a dramatic reduction in power consumption. No chemical is used for electrolysis by using the technique unique to Takahashi Metal Industries Co.,Ltd.. One of the main characteristics is a high-reducing (corrosion-resistance) character because of electrolysis with high voltage. The surface tension of the

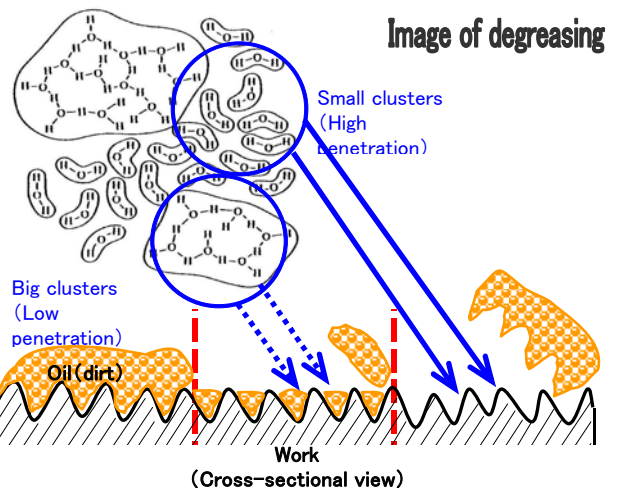
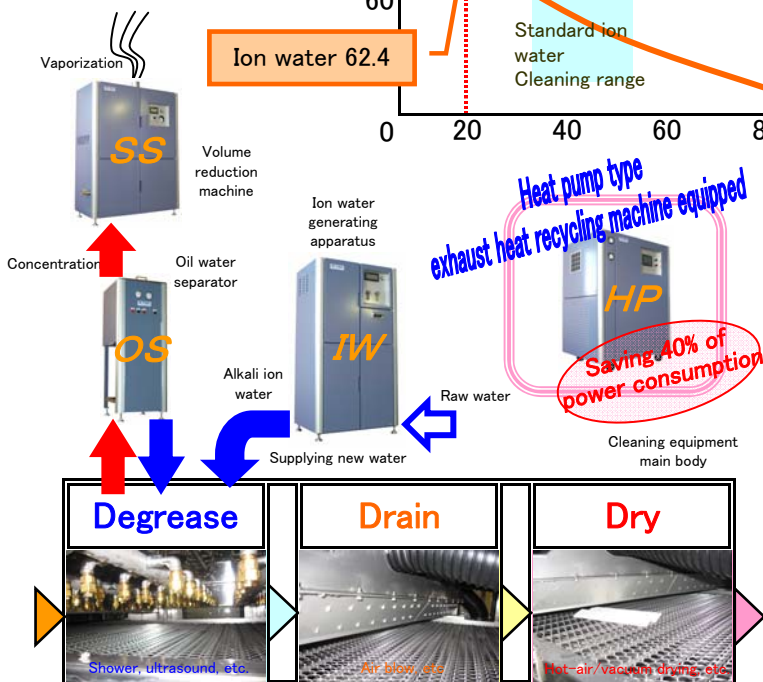
ion water which was applied to electrolysis is equivalent at normal temperature (20°C) to hot regular water (80°C), showing the low value. In addition, using approximately 40°C of water adds heat energy and forms stronger degreasing cleanser. The ion water with lowered surface tension has clusters smaller than the regular water, which brings high cleaning performance in removing dirt efficiently with a synergy effect of physical energy such as shower and ultrasound.



**TIWS**  
TAKAHASHI IONIZED-WATER SYSTEM



**FLOW MODEL !**



# IW

## Ionized water generating apparatus

By simply supplying raw water, electrolysis is automatically applied to generate ion water continuously. Any built environment should be acceptable, as raw water control function is included as standard equipment



Model	<b>TIWS-IW03</b>	<b>TIWS-IW06</b>
Water generated	2-3L/Min.	5-6L/Min.
pH	8.5~11.0	
Size	W750 × D510 × H1400mm	
Weight	175kg	190kg
Power	Three-phase 200V 50/60Hz 15A	Three-phase 200V 50/60Hz 20A
Power consumption	850 (1350) W	1350 (2350) W
Others	Raw water filter (10 μm), demineralizer equipped	

# DI

## Deionizer

Reducing impurities (ion, particles, etc.) in raw water to less than 1/10. The water can be used for rinsing or electrolyzation. Highly recommended for precision cleaning.



Model	<b>TIWS-DI03</b>
Amount of water generated	3L/Min.
Quality of the water generated	Heat conduction: Less than 1/10 compared with raw water
Size	W550 × D510 × H1400mm
Weight	65kg
Power	Three-phase 200V 50/60Hz 10A
Power consumption	1.1kW
Others	RO(Reverse Osmosis) membrane method

# OS

## Oil water separator

Oil water separator filter (coalescer) changes mineral oil or synthetic oil contained in cleaning liquid to rough particles for flotation separation, then collects completely with skimmer.



Model	<b>TIWS-OS20</b>
Amount of water circulated	20L/Min.
Size	W450 × D510 × H1450mm
Weight	85kg
Power	Three-phase 200V 50/60Hz 30A
Power consumption	0.4kW
Others	Coalescer method
	Standard equipment: Pressure gauge for belt skimmer, pre-filter, and coalescer

# SS

## Volume reduction machine

An evaporative concentration method completely separates and collects soluble oil. New ion water in the same amount of water vaporized is supplied to the tank to sustain the cleaning ability.



Model	<b>TIWS-SS10</b>	<b>TIWS-SS20</b>
Amount of water vaporized	10L/Hr	20L/Hr
Size	W1100 × D510 × H1400mm	
Weight	120kg	120kg
Power	Three-phase 200V50/60Hz 75A	Three-phase 200V50/60Hz 100A
Power consumption	12.4kw	20.4kw
Temperature setting	50~80°C	
Others	Evaporation by heating	

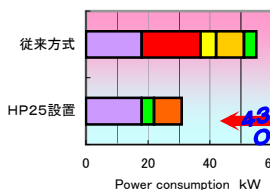
# HP

## Heat pump type exhaust heat recycling machine

Efficiently recovering the heat from warm exhaust emitted from cleaning machine in a heat pump method, and recycling it for heating cleaning liquid! This utilizes the heat without losing it.



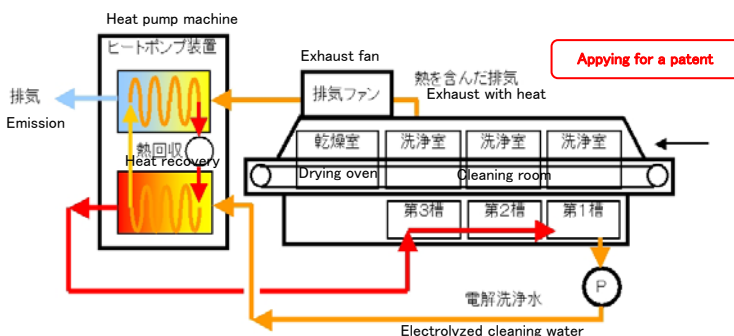
Model	<b>TIWS-HP25</b>
Heat recovery	25kW
Recovered from	Exhaust heat from cleaning machine, etc. (20-50°C)
Size	W1100 × D850 × H1400mm
Weight	280kg
Power	Three-phase 200V 50/60Hz 60A
Power consumption	7.2kW
Others	Amount of water circulated: 150-200L/Min. Heating max. 55°C



- ポンプ・ファン
- 第1洗浄タンク
- 第2洗浄タンク
- すすぎタンク
- 乾燥ヒーター
- ヒートポンプ

Annual running cost  
▲1,000,000-1,500,000 yen

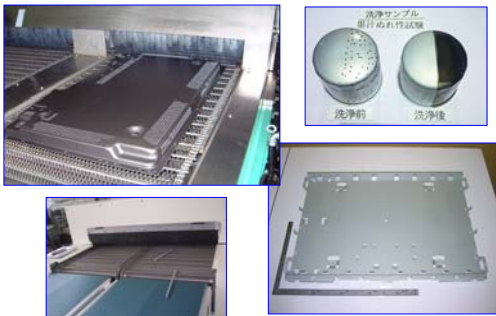
Annual CO<sub>2</sub> emissions  
▲50,000kg





## CV SERIES

Conveyor type



Model	<b>TIWS-CV04</b>	<b>TIWS-CV06</b>
Conveyor width	450mm (WorkH100mm)	600mm (WorkH100mm)
Conveyor speed	2~3m/Min.	3~4m/Min.
Capacity	□200mm Work 10-15/Min.	□400mm Work 7-10/Min.
Washing method	Shower⇒Shower	Shower⇒Shower⇒Shower
Size	W7400 × D1650 × H2200	W9700 × D1800 × H2200
IW	1L/Min generated	2-3L/Min. generated
IW tank	300L	
OS	MAX10L/Min. circulated	MAX20L/Min. circulated
SS	10L/Hr vaped	
Power	Three-phase 200V 50/60Hz A	Three-phase 200V 50/60Hz 488A
Electric capacity	84kw	143kw
Power consumption	68kw	114kw

Model	<b>TIWS-CV09</b>	<b>TIWS-CV14</b>
Conveyor width	900mm (WorkH100mm)	1400mm (WorkH100mm)
Conveyor speed	3~4m/Min.	5~6m/Min.
Capacity	□700mm Work4-5/Min.	□800mm Work6-7/Min.
Washing method	Shower⇒Shower⇒Shower	
Size	W9700 × D2100 × H2200	W15500 × D2800 × H2200
IW	2~3L/Min. generated	
IW tank	300L	
OS	MAX20L/Min. circulated	
SS	20L/Hr vaped	
Power	Three-phase 200V 50/60Hz 638A	Three-phase 200V 50/60Hz 750A
Electric capacity	158kw	220kw
Power consumption	133kw	176kw

## LB SERIES

Line badge type



Model	<b>TIWS-LB052</b>	<b>TIWS-LB053</b>
Basket	W500 × D300 × H50mm	
Work weight	5kg	
Cycle time	2.5 Min. (Variable)	
Washing method	Shower/Ultrasound⇒Ultrasound	Shower/Ultrasound⇒Ultrasound⇒Ultrasound
Size	W6200 × D2500 × H2200	W7500 × D2500 × H2200
IW	2~3L/Min. generated	
IW tank	200L	
OS	MAX20L/Min. Circulated	
SS	10L/Hr vaped	20L/Hr vaped
Power	Three-phase 200V 50/60Hz	
Electric capacity	62kw	85kw
Power consumption	40kw	50kw

Model	<b>TIWS-LB102</b>	<b>TIWS-LB103</b>
Basket	W400 × D200 × H100mm	
Work weight	10kg	
Cycle time	2.5Min. (Variable)	
Washing method	Shower/Ultrasound⇒Ultrasound	Shower/Ultrasound⇒Ultrasound⇒Ultrasound
Size	W6200 × D2500 × H2200	W7500 × D2500 × H2200
IW	2~3L/Min. generated	
IW tank	200L	
OS	MAX20L/Min. circulated	
SS	10L/Hr vaped	20L/Hr vaped
Power	Three-phase 200V 50/60Hz	
Electric capacity	63kw	87kw
Power consumption	40kw	53kw

## HN SERIES

Hand badge type



Model	<b>TIWS-HN05</b>	<b>TIWS-HN07</b>
Basket	φ 500 × H280mm	φ 700 × H280mm
Work weight	50kg	60kg
Cycle time	Any setting	
Washing method	Shower⇒Ultrasound⇒Ultrasound	
Size	W4500 × D2000 × H2200	W5500 × D2600 × H2200
IW	1L/Min. generated	
IW tank	200L	
OS	MAX10L/Min. circulated	
SS	10L/Hr vaped	
Power	Three-phase 200V 50/60Hz 250A	
Electric capacity	63kw	66kw
Power consumption	50kw	53kw

Model	<b>TIWS-HN10</b>
Basket	φ 1000 × H330mm
Work weight	70kg
Cycle time	Any setting
Washing method	Shower⇒Ultrasound⇒Ultrasound
Size	W7300 × D3100 × H2200
IW	1L/Min. generated
IW tank	200L
OS	MAX20L/Min. circulated
SS	20L/Hr vaped
Power	Three-phase 200V 50/60Hz 300A
Electric capacity	80kw
Power consumption	64kw

## BD SERIES

Badge type



Model	<b>TIWS-BD05</b>	<b>TIWS-BD07</b>
Basket	φ 500 × H280mm	φ 700 × H280mm
Work weight	50kg	60kg
Cycle time	Any setting	
Washing method	Shower	
Size	W1100 × D2000 × H2200	W1200 × D2600 × H2100
Weight	300kg	400kg
IW	1L/Min. generated	
Washing tank	150L	200L
Spray pump	1MPa × 50L/Min.	1MPa × 70L/Min.
Power	Three-phase 200V 50/60Hz 50A	Three-phase 200V 50/60Hz 57A
Electric capacity	14kw	17kw
Power consumption	10kw	12kw

Model	<b>TIWS-BD05T2</b>	<b>TIWS-BD10</b>
Basket	φ 500 × H300mm	φ 1000 × H330mm
Work weight	50kg	70kg
Cycle time	Any setting	
Washing method	Shower	
Size	W680 × D1450 × H1900	W1500 × D3000 × H2200
Weight	250kg	500kg
IW	1L/Min. generated	
Washing tank	130L	300L
Spray pump	0.5MPa × 80L/Min.	1MPa × 100L/Min.
Power	Three-phase 200V 50/60Hz 50A	Three-phase 200V 50/60Hz 65A
Electric capacity	14kw	20kw
Power consumption	10kw	14kw

※BD05T2: Oil skimmer, exhaust fan supplied