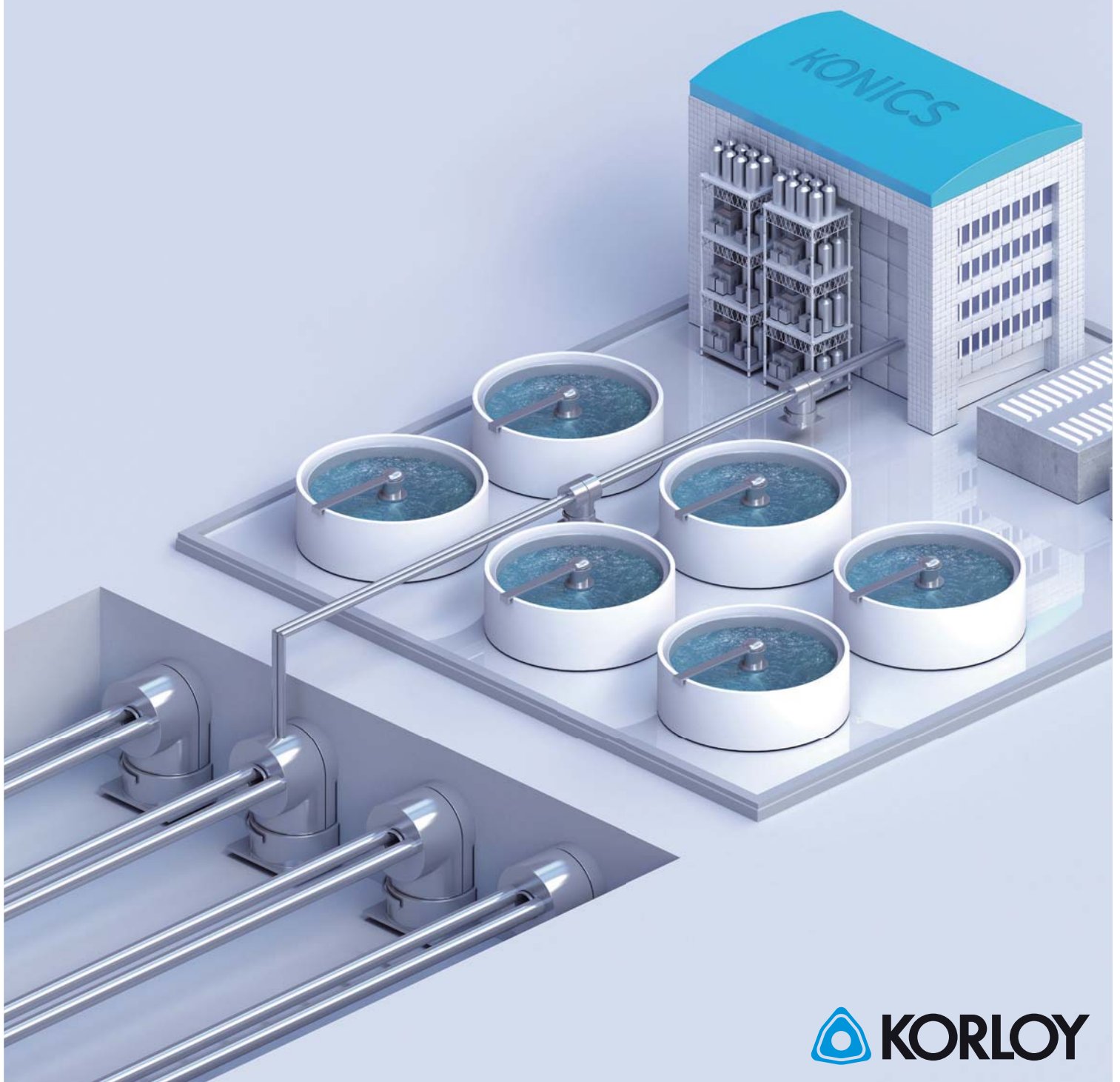


KONICS

Eco-friendly Strong Alkaline Water Production System for Processing and Washing
(KONICS - 30,60,90)



KONICS

Strong alkaline ionized water prevents the spoilage of cutting oil, can innovatively improve the working environment, reduces cutting oil additive consumption, and lowers wastewater treatment costs, making it an essential solution for the eco-friendly cutting process industry.

※ **Strong alkaline water**(加電水): Ionized water produced by electrolyzing water with electricity, used as cutting oil in machining after mixing with additives.



Patent Application Number : 10-2023-0168139

Continuous Automatic Production Control System for Strong Alkaline Water



Patent Application Number : 10-2023-0182015

Strong Alkaline Ionized Water Generator with Self-Cleaner Function



Issues in Machining Processes



- Cutting oil, which is inevitably used in machining, has harmful effects on the natural environment and human health.
- Foreign substances such as oils like machine operating oil and rust prevention oil, fine chips, and sludge continuously entering the cutting oil, further accelerating its spoilage.
- The risk of bacterial infection increases due to cutting oil spoilage. Particularly, the foul odor emanating from spoiled cutting oil during summer poses a significant risk to the respiratory and mental health for workers.
- Spoiled cutting oil is typically replaced about twice a year, which incurs significant wastewater (waste oil) treatment costs. In addition, the generation of wastewater results in significant additive loss.

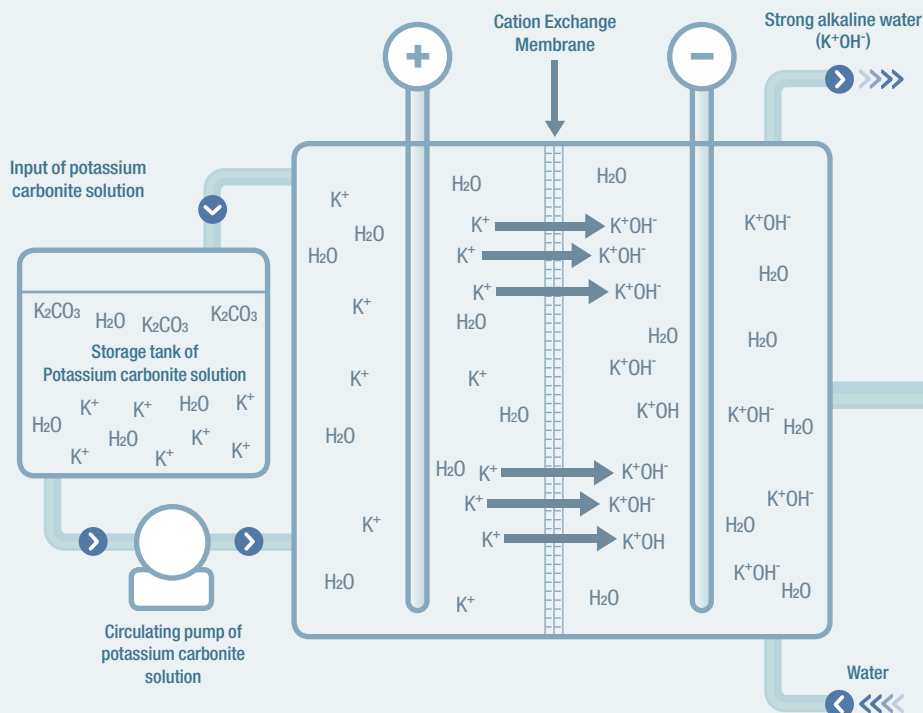


Strong Alkaline Water Manufacturing Process



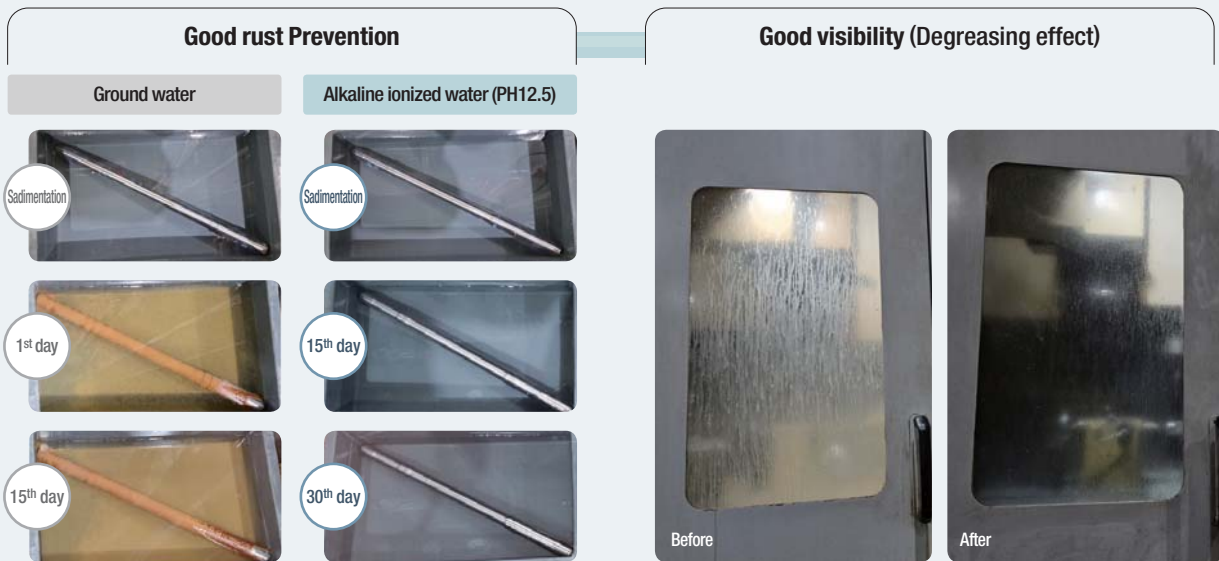
Effects of Strong Alkaline Water

- By utilizing potassium carbonate, a Class 1 food additive, as the electrolyte solution, no acidic water is produced.
- As a patented strong alkaline water generator, it can produce 30L/60L/90L of strong alkaline ionized water per hour.
- Hourly production capacity can be maximized according to customer usage by expanding the electrolytic cell.



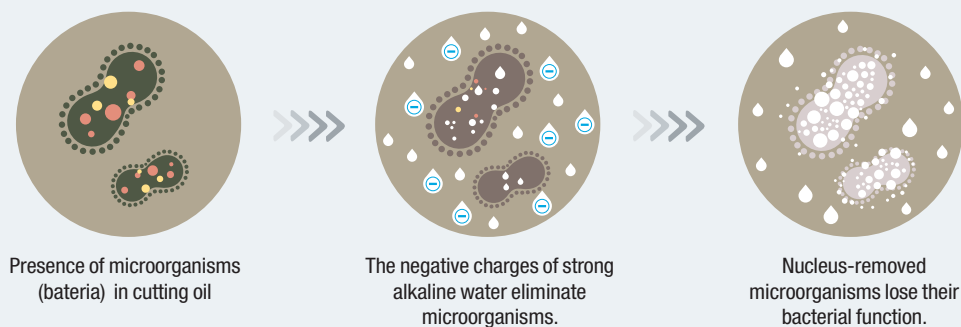
Features of strong Alkaline Water

- **Cleaning Effect:** superior cleaning power due to stronger penetration ability than regular water.
- **Degreasing Effect:** Excellent at removing contaminants through saponification that dissolves grease and protein decomposition.
- **Sterilization Effect:** Microorganisms multiply within the PH range of 4 to 10, but their growth is suppressed in a strong alkaline environment.
- **Odor Removal Effect:** Removes odors by preventing the oxidation of organic matter.
- **Eco-friendly:** Harmless to the human body and environmentally friendly as it does not contain surfactants, etc.
- **Cooling Effect:** Provides a good cooling effect due to better penetration ability as its particles are smaller than water particles.



Expected Effects of Strong Alkaline Water

- **Spoilage Prevention:** Inhibits bacterial growth using strong alkaline water → Increases cutting oil lifespan (more than double).
- **Improved Visibility:** Excellent degreasing effect removes grease inside machine tools.
- **Extended Cutting Tool Life:** Superior penetration increases tool life during machining.
- **Corrosion Inhibition:** Prevents metal surface corrosion due to the reducing action of strong alkalinity.
- **Eco-friendliness:** Harmless to workers as it does not contain harmful substances (surfactants, etc.).
- **Additive Savings:** Excellent oil-water separability means that mainly water evaporates when cutting oil evaporates, reducing the need for additive replenishment.



Odor Removal → **Leading a pleasant working environment.**
 Sterilization of bacteria and germs → **Improving safety of cutting oil for human contact.**



Product Specifications

Category	Item	Etc.
Structure	Main Unit + RO Pure Water System + Potassium Carbonate Solution Supply Unit + Concentration Adjustment Unit + Intermediate Tank + strong alkaline water Storage Tank (2-ton capacity)	Strong alkaline water Transfer Pump (Separate) Transfers strong alkaline water from the Storage Tank to Machine Tools.
Model-specific capacity (L/h)	KONICS-30 : 30 KONICS-60 : 60 KONICS-90 : 90	Based on PH 2.5
Size (mm)	Strong alkaline water Tank	1400 × 1500 × 1900 (Width x Depth x Height)
	Strong alkaline water Tank	Ø 1325 × 1800 (Diameter x Height)
Electrical specification	Single phase 220V	-
consumable items	RO Filter (Replace simultaneously with electrolytic cell) Potassium Carbonate (500L/1Kg) Micro Filter	Once / 2 Years 1 Bag = 25Kg (Generates 12,500L of CW) 1μ (Replace as needed) 5μ (Replace as needed)



Parts

Designation	Details
KONICS-1MICRO-FT	1 Micron Filter (Single Item)
KONICS-5MICRO-FT	5 Micron Filter (Single Item)
KONICS-K2C03-25	Potassium Carbonate (Single Item)
KONICS-RO4040-FT	RO Filter (Single Item)
KONICS-ECELL30	30L/h Electrolytic Cell (single Item)



Cost Saving Cases

Category	Before using strong alkaline water	After using strong alkaline water	Etc.
Additive Usage (ℓ)	2,760	800	-
Additive Cost (KRW)	16,366,000	3,400,000 (-80%)	-
Wastewater Treatment Cost (KRW)	32 ton=8,000,000	6 ton=1,500,000 (-80%)	250,000 (KRW/ton)
Total (KRW)	24,366,000	4,900,000 (-80%)	-
Amount Saved (KRW)	19,466,000 [Total maintenance cost reduced by 80% compared to before using strong alkaline water]		



Installation cases



[Cor. H in Dae-gu]



[Cor. I in Ah-san]



[Cor. C in Gim-hae]

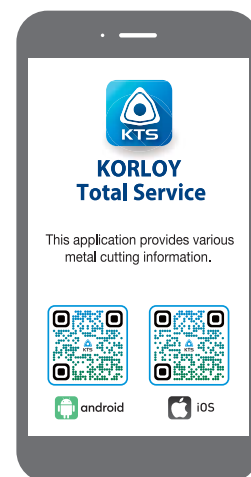
For Sfe Use

- Strong alkaline ionized water is composed only of food additives, making it harmless to the human body, but it should not be used as drinking water.
- Please frequently replace the pre-filter (micro filter) to prevent foreign substances from accumulating inside the electrolytic cell.
- Always relieve internal pressure before replacing filters.
- The electrolytic cell and RO filter must be replaced by a qualified professional. Please contact KORLOY. (Risk of malfunction)



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