



DigiSavior

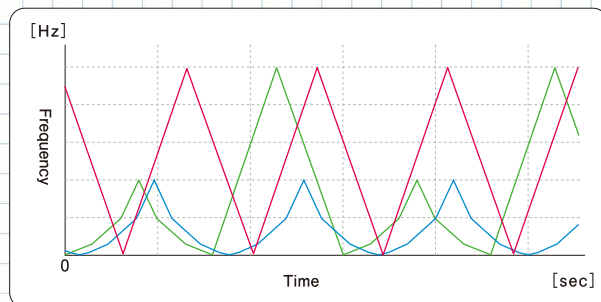
Digitally controlled scale and slime remover/inhibitor



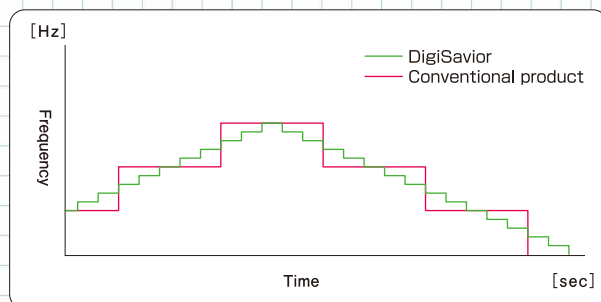
A magnetic field coil created just by wrapping the cable around the contaminated pipeline generates a dynamic magnetic field.

The electromagnetic field generated by DigiSavior's magnetic field coil is highly effective at removing scale deposits in pipelines or equipment, and at inhibiting deposits from forming. A groundbreaking digital control system enables variable-frequency modulation control to generate a dynamic magnetic field.

■ Digital control enables variable modulation system.

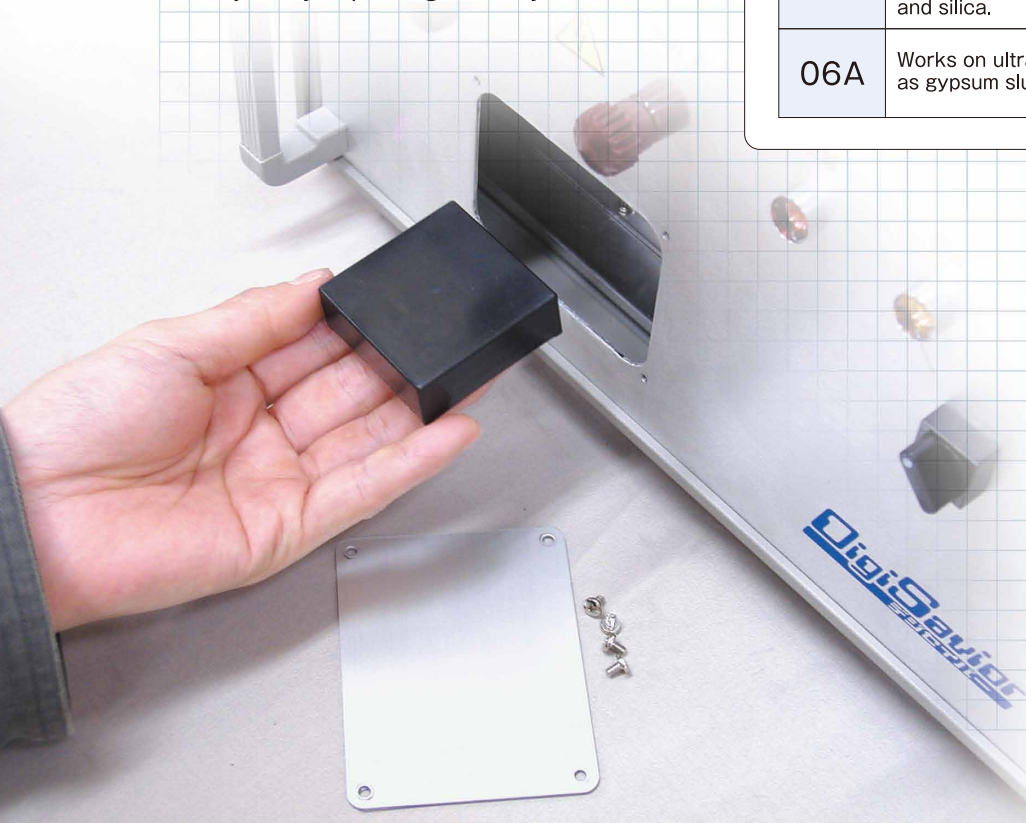


■ Digital control enables more finely subdivided frequency oscillation control.



■ Digital control enables use for wider range of scale and slime components just by replacing memory cassette.

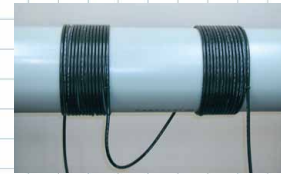
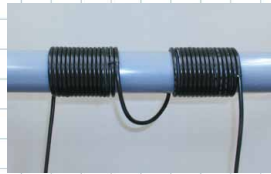
01A	Works on scale compounds containing components such as iron rust, calcium and silica.
06A	Works on ultrahigh-hardness liquids such as gypsum slurry and limewater.



DIGISAVIOR STRENGTH

Ample power

■ Variable-size connection supports small- to large-bore pipelines (up to 600mm in diameter).



■ A single DigiSavior unit can handle two 400mm pipelines of up to 3 meters in length.



DIGISAVIOR STRENGTH

Features for worry-free operation

● Overcurrent prevention

● Error self-check function

● Operation light output terminal (same as power supply voltage)

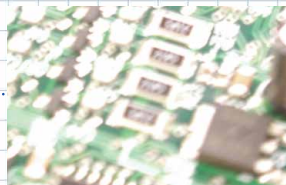
● Stop light output terminal (same as power supply voltage)

● Easy maintenance

(The cooling fan is the only consumable part.)

● Dustproof/rainproof case (option)

(With operation light/error stop light)



Use on milk of lime supply line

●Upstream from DigiSavior

Deposits have already accumulated in the line.



The deposits have been removed, exposing the line's inner surface. A clearly visible area of removed deposits was found extending into the line.



●Downstream from DigiSavior

Only DigiSavior works on ultrahigh-hardness liquid pipelines.

Usage objective To ensure a stable supply of milk of lime for use in an industrial process.

Before installation The line became blocked roughly every two months, at which point it was always shut down and pig-cleaned.

Installation timing DigiSavior was installed for the first month after the supply line was cleaned.

User testimonial



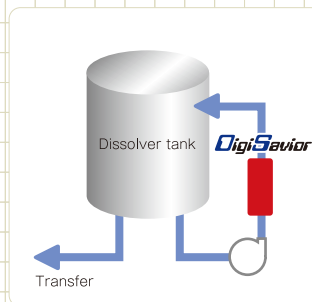
"We tried a lot of products before DigiSavior (including some of the same type), but never got the same type of significant improvement as we got with DigiSavior. We no longer need to shut down operation and clean the pipeline. We've attained a very high total cost benefit from using DigiSavior, so I would recommend it to other departments."

Use on strong-alkali green liquor circulation line in recovery boiler

Usage objective To prevent green liquor circulation line blockage and scale deposits in the tank.

Before installation

The boiler was shut down every four months to remove deposits when the flow rate dropped. Deposits were rock-hard and the work was very difficult. The strong-alkali nature of the deposits also made the work dangerous.



●Before using DigiSavior (after rinsing)



The 400mm diameter line has effectively shrunk to less than 100mm.



●After using DigiSavior (after rinsing)



No scale deposits are visible in the line.

User testimonial



"The difference in the amount of scale build-up has been amazing. We've been able to significantly cut down on periodic boiler maintenance while reducing other scale-related problems, resulting in greatly reduced costs. We've decided to use DigiSavior on multiple lines of the same type."

Use on absorption chiller cooling tower

● Two months after installation (cooling fins)

Silica scale deposits have dropped off in clumps and become stuck between the fins.



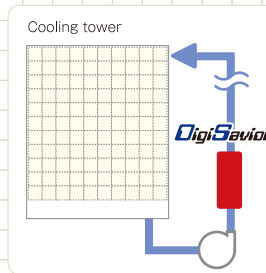
The surface has become discolored.

Usage objective

To ensure stable absorption chiller operation by preventing the formation of silica, calcium or alga deposits without chemicals.

Before installation

Scale inhibitors and algicides were used but the silica deposits were particularly resistant to chemicals.



DigiSavior's amazing rustproofing capability

One month
Rustproofing
One month after placing identical test samples in lines with and without DigiSavior

Line without DigiSavior Line with DigiSavior

● Three months after installation (cooling fins)

The deposits have been removed, and the stuck clumps of scale are also gone. New scale has also not been deposited.



Algae have also been removed along with the scale.

User testimonial



"After installing DigiSavior, we saw a major improvement in a very short period of time. The environmental impact of the chemicals we'd been using was reduced to zero, along with a cost of over \$30,000 a year. We're going to use DigiSavior on our other absorption chiller lines also."

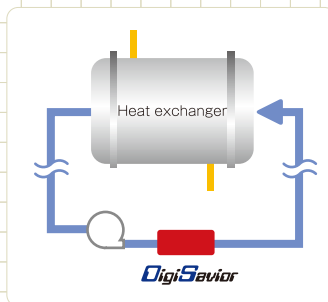
Use to combat slime

Usage objective

To reduce and inhibit slime formation in a heat exchanger.

Before installation

Slime caused drops in the circulation water flow rate, which tended to reduce heat exchanger efficiency. Every six months, operation was shut down to perform high-pressure cleaning.



● Without DigiSavior



Slime and rust are visible on the entire surface.

Three months later

● With DigiSavior



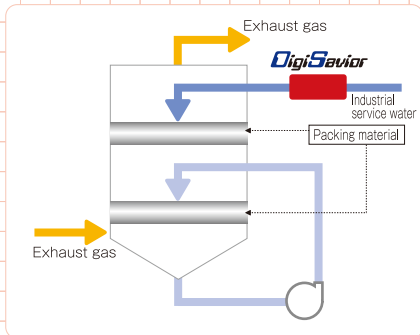
The slime has been removed, which is also helping to reduce the rust.

User testimonial



"Slime damage had a large impact on heat management and also affected product quality. Installing DigiSavior has allowed us to manufacture at a more stable temperature, which has enabled more stable product quality and cost savings. We're going to install DigiSavior at other locations also."

Use on exhaust gas scrubber



Usage objective

To prevent scale deposits in an exhaust gas scrubber, enabling a longer maintenance cycle and use of less supply water.

Before installation

The packing material became blocked by scale roughly every month. The maintenance cycle had been extended by increasing the amount of supply water used to 7.5 times the normal amount. Similar types of descaling equipment were tested and found to be ineffective.

Inside of packed tower

Previous state before using DigiSavior (4.5 months after replacing packing material)



A significant amount of scale has deposited.



Two months after installation

* DigiSavior was installed one month after packing material replacement.



The amount of scale on both the packing material and fire grate is the same as just after packing material replacement.



User testimonial



"The benefits of installing DigiSavior have exceeded our expectations. We've found that DigiSavior not only prevents scale, it has also actually removed scale deposits from the tower and line. Next, we're going to use DigiSavior on our cooling water line."

■ Comparison of different descaling methods

Method	1 Chemicals	2 Permanent magnets	3 Treatments	4 Ceramics	5 Electrodes	6 Magnetic field coils	7 DigiSavior
Water quality adaptability	△	×	×	×	△	△	○
Ultrahigh-hardness liquid compatibility	×	×	×	×	×	×	○
Effectiveness	△	△	×	×	×	○	○
Line size adaptability	○	×	△	×	×	△	○
Installation work ease	△	△	○	×	×	○	○
Maintenance ease	△	○	△	×	×	○	○
Maintenance cost	×	○	×	△	×	○	○
Cost-effectiveness	△	×	△	×	×	△	○

■ Chemicals

Chemicals are the most common method of combating scale, but reportedly have little effect on silica deposits. Users struggle to find ways of cutting costs as the cost of the chemicals adds up. The environmental impact of the chemicals is another consideration, and regulations are starting to be imposed.

■ Permanent magnets

Since permanent magnets exert a constant magnetic force, this method has frequently been reported to be ineffective when the magnets do not work well with a particular fluid. Externally mounted devices are easy to install but the line must be able to support their large weight, while devices that connect to the line require line alteration work. And since permanent magnet devices exert a strong magnetic force, they could potentially cause adverse health effects or interfere with pacemakers or other medical devices.

■ Treatments

Treatments are preparations dropped into a cooling tower or storage tank, that gradually dissolve to release chemicals or metal ions into the water. Treatments prevent bacterial growth, but their limited effectiveness requires use in large quantities and results in surprising amounts of materials consumed. Mounting costs are another drawback of this method, since the ion materials are expensive consumable components and there are labor costs incurred for packing the preparations.

■ Ceramics

Scale or slime can somehow become deposited on the key ceramic components used in this method. The contaminated ceramic must be cleaned, but the parts are heavy and the work is reportedly difficult. Devices that connect to the line require line alteration work. Ceramics reportedly improve the taste of drinking water, but there are many difficulties in using them for industrial processes.

■ Electrodes

Installing electrodes requires line alteration work. The electrodes are consumable parts, so this method incurs separate costs for buying expensive electrodes and for replacement work. There have reportedly been cases of electrolytic corrosion from contact between different types of metal.

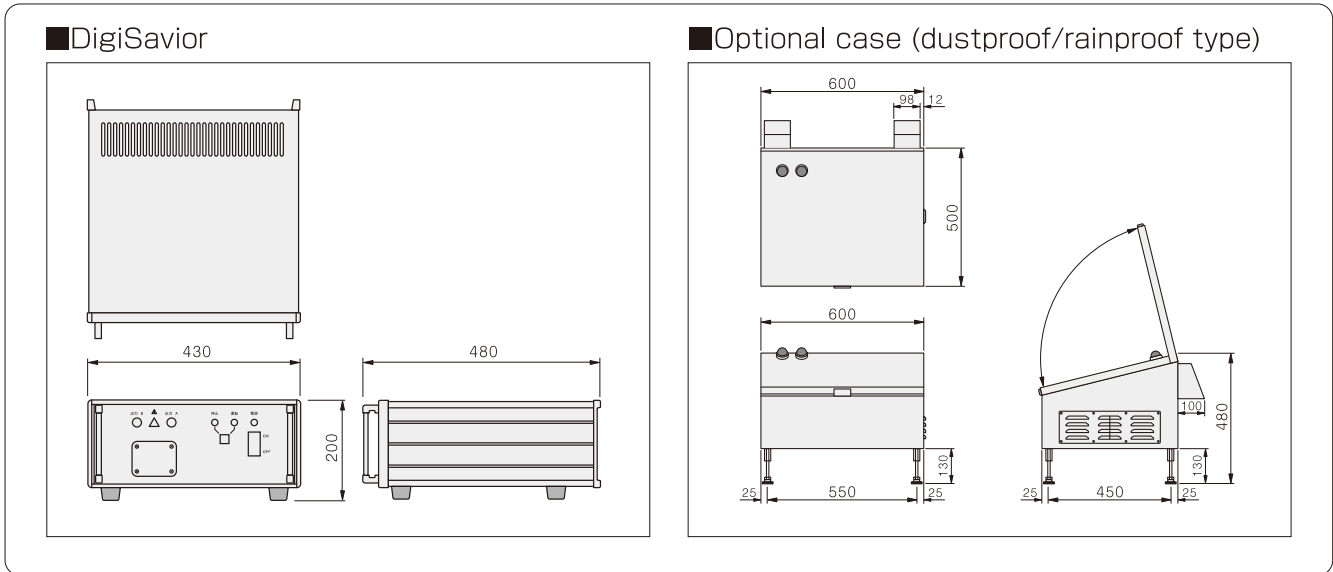
■ Magnetic field coils

Magnetic field coils use the same method as DigiSavior, but are reportedly underpowered. Models for large-bore pipelines can be very expensive, while other models only support a single pipeline diameter and cannot be moved to lines of other diameters.



DigiSavior's groundbreaking digital control system gives it ample power to generate dynamic magnetic fields. DigiSavior combines a high level of effectiveness with operation ease unrivaled by any conventional descaling device. Beatrix's proprietary cutting-edge technology and manufacturing expertise have made it possible to provide DigiSavior for a lower cost than competitor devices, while its cost-effectiveness is attracting a lot of interest.

● Main dimensions



● Specifications

Product name	DigiSavior	
Supported pipeline diameter range	25 to 600 mm	
Fluid temperature range	0 to 100°C	
Electrical characteristics	Power supply	90 to 265 V, 50/60 Hz
	Power consumption	300 VA
Safety mechanisms	Overcurrent prevention	
	Error self-check function	
External output terminals	Operation check	Same as power supply voltage
	Error stop	Same as power supply voltage
Standard accessories	Magnetic field coil cable	
	Insulok cable ties	
	Crimp terminals	
	Insulating caps	
Option	Dustproof/rainproof case (With operation light/error stop light)	



SAFETY CAUTION

To ensure correct operation, be sure to read the operating instructions carefully before use.

Made in Japan : DigiSavior is an authentically Japanese-made scale and slime remover/inhibitor developed by Beatrix engineers. It enables worry-free use worldwide with its solid build quality, high durability and global power standard compatibility that supports even unstable power supplies.

* Actual product colors vary slightly from the colors shown in this catalog due to photographic printing limitations.

* Specifications and other product features may be changed without prior notice for product improvement or other reasons.



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