

CV-Rescue[®] Water Purification System for Emergency Preparedness

Basic Manual



What will you do during water outage due to disasters?



Crystal Valley[®]

"Crystal Valley Water Purification System" changes bath water, rain water, pool water, river water or sea water into safe potable water.

The highest level in the world

harmful substance removal ratio is 99% or more. 0.0001 micron reverse osmosis membrane used.

Disaster Response Household Water Purification System

home, office, public facilities, residents' association, neighborhood association, etc.

No worries during times of disaster. Potable water can be secured by easy setup.

Water Treatment Capability



Household wall outlet or generators



Battery Z-7 and Z-7S sold separately



Luxury Stainless Steel

Maximum water generating volume

13 L/hour
when using Z-7

104 persons/day

- Maximum water generating volume: TDS, 100ppm assuming a water temperature of 25°C (77°F)
- TDS: Total dissolved solids, similar level as salinity concentration

CV-105JT-R

[Specifications]

Size: W 255 X D 180 X H 410 (mm)

Weight: 8.3 kg (including filters when dried)

Tank Capacity: 2.7 L

Raw Water Temperature: 6 ~ 43°C

(42.8°F ~ 109.4°F)

Source of Electricity: AC 100V 50/60Hz

DC 24V [When using the battery]

Power Consumption: Approx. 21W



Individual Disaster Prevention

Full-kit

Disaster Response Full-kit Z-7

*TDS Meter that measures water quality and Simplified Water Quality 6-Point Inspection Kit enclosed

*Power source batteries make it possible to create potable water even during power failure.

[Set Details]

Storage case, battery (DC24V), AC adapter (rechargeable) for battery, USB output conversion adapter set, USB Output Cable, DC Power Cable for Crystal Valley Water Purifier, extension cable, cigar plug, folding bucket (for raw water intake), antibacterial tank for potable water (10 L), simplified pre-treatment filter, simplified water quality 6 points inspection kit, auxiliary tube for drainage, detergent liquid used for bathroom, color sample for measuring free residual chlorine, instruction manual for pack test, pack test (free residual chlorine simplified measuring equipment), TDS meter, PURELOX-S (sodium hypochlorite).



Luxury Stainless Steel

Maximum water generating volume

14 L/hour
when using Z-7

112 persons/day

- Maximum water generating volume: TDS, 100ppm in case of water temperature, 25°C (77°F)
- TDS: Total dissolved solids, similar level as salinity concentration

CV-205JT-R

[Specifications]

Size: W 307 X D 269 X H 438 (mm)

Weight: 11 kg (including filters when dried)

Tank Capacity: 7.2L

Raw Water Temperature: 6 ~ 43°C

(42.8°F ~ 109.4°F)

Source of Electricity: AC 100V 50/60Hz

DC 24V (When using the battery)

Power Consumption: Approx. 21W



solar panel set

Individual Disaster Prevention

Full-kit

Disaster Response full-kit Z-7S

Solar panels have been installed in Disaster Response full-kit Z-7.

It can be charged with solar panels.

[Set Details]

Storage case, battery (DC24V), AC adapter (rechargeable) for battery, USB output conversion adapter set, USB Output Cable, DC Power Cable for Crystal Valley Water Purifier, extension cable, cigar plug, folding bucket (for raw water intake), antibacterial tank for potable water (10 L), simplified pretreatment filter, simplified water quality 6 points inspection kit, auxiliary tube for drainage, detergent liquid used for bathroom, color sample for measuring free residual chlorine, instruction manual for pack test, pack test (free residual chlorine simplified measuring equipment), TDS meter, PURELOX-S (sodium hypochlorite), solar panel, solar panel DC output cable, Disaster Response Household Water Purification System

If your water supply is interrupted, follow the procedures mentioned below.

Operation Procedures

Please remain calm. It's easy to use!



1

Take off a nut with a wrench, and attach a tube for drainage to the "coupler".

This is to drain excess unclean water left over from filtration process.



2

Attach simplified pre-treatment filter into the coupler.

This filters out the larger impurities during the process.



Replace unit AD adaptor with water-resistant connector.



5

Put 2 drops of chlorine as disinfectant per 10 liters of purified water.

Free residual chlorine whose concentration is 0.2 mg/L or more is required for potable water under Water Supply Act.



4

Turn the power switch on the battery to "on" to begin purification.

Turn on the faucet of Water Purifier so that purified water comes out.



3

Fill a bucket with raw water to be filtered as shown.

Immerse the coupler completely in raw water.

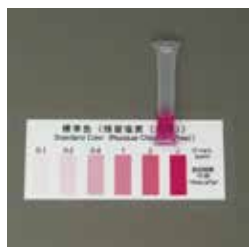


6

Safe and palatable water is easily available even during water outage.

Be sure to check the concentration before drinking using Chlorine Checker (Pack Test).

Supplementary Instructions



Chlorine Concentration Check

Chlorine concentration of 0.2 mg/L or more is set forth in Water Supply Act. Please check using the enclosed Chlorine Checker.



Battery Charging

Fully recharge the battery using the enclosed charger once every six months.



Cigar lighter can also be used

Battery can be recharged using a car cigarette lighter during a power failure or power supply cut-off.

Suitcase type Disaster Response Water Purification System

Voluntary organizations for disaster prevention, condominiums block association boards, residents' associations, offices, evacuation areas, etc.

Superior portability and virtually any power source can be used.

Water Treatment Capability



Available
AC 100V
Household wall outlet or generators



Available
DC 12V
Battery and



Chlorine concentration of 0.2 mg/L or more is set forth in Water Supply Act. Check with the enclosed Pack Test.

Maximum water generating volume
51 L/hour
when using rain water
400 persons/day

- Maximum water generating volume: TDS, 100ppm assuming a water temperature of 25°C (77°F)
- TDS: Total dissolved solids, similar level as salinity concentration

CVR-T41J

Suitcase type Disaster Response Water Purification System

[Specifications]

Size: W 465 X D 290 X H 665 (mm)

Weight: Approx. 25 kg (including filters when dried)

Maximum water generating volume: 1,224L/day

Raw Water Temperature: 6 ~ 43°C (42.8°F ~ 109.4°F)

Source of Electricity: AC 100V 50/60 Hz DC 12V

(When using the battery)

Power Consumption: Approx. 85W

AC 100V DC12V: a cigarette lighter socket is usable.

An inverter is used for DC 12V cigarette lighter.

Because it features a safety circuit on the power source, the device automatically shuts off during power surges or fluctuations, and is reset by one touch button.

[Enclosed accessories: DC 12V Cigar Lighter Plug Inverter, Cigar Lighter Plug Alligator Clip Attachment]



High-shock Resistant ABS Resin Body

High-shock resistant body protects important equipment in the severe conditions that accompany disasters, as well as cargo transport to isolated disaster-stricken areas by helicopter.

Designed to be fail-safe, even when dropped on accident, or bumped against something or other impacts.



Multiple units can be stacked together - the unit is designed to prevent the collapse of cargo piles during transportation.

Transportation of multiple units is possible depending on the population and status in disaster-stricken area.

Limited space can be used effectively as it's possible to pile up the device.



The device can be easily moved from storage to the source of water in the event of natural disasters where regular water sources may be cut off and water trucks stranded. Small generators and automotive batteries (DC 12V) can be used as power sources.

This device can be used under any circumstances since all items necessary for setup are housed in the carrying case.

User-friendly - One switch operation. Functions include automatic cleaning filters and an alarm monitor for safe potable water. "Monitor for safe potable water using a micro computer" installed allows the user to view whether the water is drinkable or not. However, hypochlorite may need to be added.

Our patent pending process of coagulating impurities in the water ensures rapid flocculation (clumping particles together) which allows for prompt removal of water discoloration.

Rain water, bath water and salt water (salt content: 2000 ppm) become clean and safe water.



Roll Away

The case is equipped with casters, and can be easily moved by rolling it away with enclosed belt attached.



Hand-Held

Vertical and horizontal handles are attached, so the unit can be carried, even over rough surfaces.



Shoulder

Carry it over shoulder with enclosed belt attached.

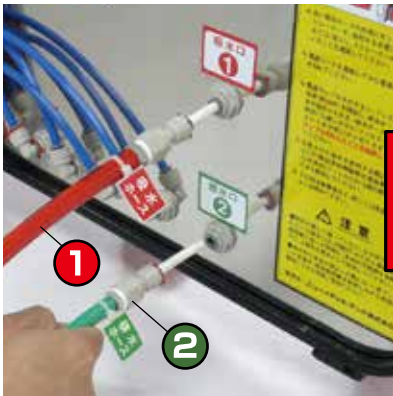


Hang

It's possible to hang using the handles, which can easily withstand the load.

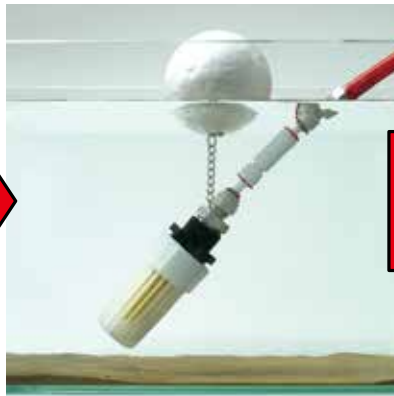
Water purification system is housed in a suitcase. Shock-resistant, superior transportability and easy operation.

Operation Procedures It's easy to operate and usable under unfavorable conditions with AC/DC power supply.



Connect enclosed suction and discharge hoses

Insert suction hose into (1) (red) and discharge hose into (2) (green) fully respectively.



Put strainer in raw water.

Siphon the raw water from the upper part of the receptacle using enclosed float ball.



Plug it in, turn it on.

Three kinds of power sources, AC 100V, DC 12V and cigarette lighter can be used.

*Inverter is used for DC 12V/Cigarette Lighter.



Put 2 drops of chlorine as disinfectant per 10 liters of purified water.

Free residual chlorine whose concentration is 0.2 mg/L or more is required for potable water under Water Supply Act.



Attach the faucet of water purifier to antibacterial tank for potable water.

Verify whether green lamp indicating it's drinkable lights up.



Water purification process will begin after system is checked and filter is cleaned.

When blue lamp indicating water is purified lights up, potable water comes out of a faucet.



Safe and palatable water is readily available even during water outage.

Be sure to check the concentration before drinking using Chlorine Checker (Pack Test).

Supplementary Instructions

Chlorine Concentration Check

Free residual chlorine concentration of 0.2 mg/L or more is set forth in Water Supply Act. Please check using the enclosed Chlorine Checker (Pack Test).

Precipitate muddy water using turbid water flocculants.

If raw water is turbid, stir it using a flocculating rabble. After a while, muddy water precipitates, and clear supernatant appears in upper portion. Please purify the clear supernatant.

Motor Type Disaster Response Purification System

evacuation areas, public facilities, remote islands, commercial buildings, condominiums, etc.

Sea water becomes potable water with low power consumption of 660W.

Water Treatment Capability



CVR-M155J

Monitor for safe potable water enclosed.

Maximum water generating volume
156 L/hour
In case of fresh water
1248 persons/day

Maximum water generating volume
54 L/hour
In case of sea water
432 persons/day

- Maximum water generating volume: TDS, 100 ppm in case of water temperature, 25°C (77°F)
- TDS: Total dissolved solids, similar level as salinity concentration

Motor Type Disaster Response Purification System

[Specifications]
Size: W 950 X D 420 X H 640 (mm) (including faucet: 690)
Weight: Approx. 77 kg (accessories excluded)
Raw Water Temperature: 6 ~ 43°C (42.8°F ~ 109.4°F)
Source of Electricity: AC 100V 50/60 Hz
Power Consumption: Approx. 660W

The World's First! Breakthrough Product that is energy-saving and environmentally-symbiotic can be powered by solar units. Sea water, rain water, pond water, river water and salt water become potable water. This unit has been made smaller and more compact, making it easy to carry at time of disasters. A monitor for safe and potable water using a microcomputer ensures safe use. Hypochlorite Adding Device enclosed. Filter blockage can be visually confirmed by use of the transparent pre-treatment filter case. The design allows users to purify water easily.



Castor attachment makes it possible to move it with one hand.



Power supply is secured by solar panels.

Engine-type Disaster Response Water Purification System

evacuation areas, public facilities, remote islands, commercial buildings, condominiums, etc.

Sea water becomes potable water using gasoline fuel. No power supply is needed.

Water Treatment Capability



CVR-E210J

Monitor for safe potable water enclosed.

Maximum water generating volume
208 L/hour
In case of fresh water
1664 persons/day

Maximum water generating volume
83 L/hour
In case of sea water
664 persons/day

- Maximum water generating volume: TDS, 100 ppm in case of water temperature, 25°C (77°F)
- TDS: Total dissolved solids, similar level as salinity concentration

Engine-type Disaster Response Water Purification System

[Specifications]
Size: W 950 X D 420 X H 640 (mm) (including faucet 690)
Weight: Approx. 64 kg (accessories excluded)
Raw Water Temperature: 6 ~ 43°C (42.8°F ~ 109.4°F)
Power: Regular Gasoline, four-stroke engine adopted

Can be utilized even in locations where no power source is available. Sea water, rain water, pond water, river water and salt water become potable water. This unit has been made smaller and more compact, making it easy to carry at time of disasters. A monitor for safe and potable water using a microcomputer ensures safe use. Hypochlorite Adding Device enclosed. Filter blockage can be visually confirmed by use of the transparent pre-treatment filter case. The design allows users to purify water easily.



Castor attachment makes it possible to move it with one hand.

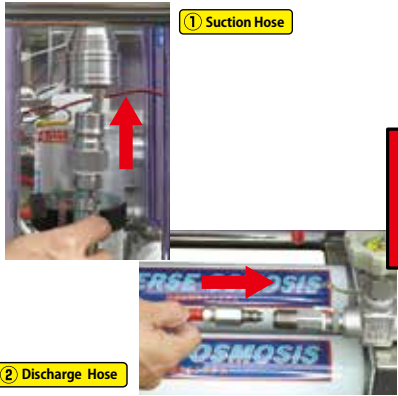


It operates on regular gasoline.

Even sea water can be purified in large quantities.

Applications include but not limited to: Use of rain water, disaster measures, salt damage, groundwater pollution, BCP (Business Continuity Planning), CSR (Corporate Social Responsibility), GSR (Global Social Responsibility), CCP (Community Continuity Plan), etc.

Operation Procedures Purified water is safe to drink as chlorine injection function is incorporated.



Attach enclosed suction and discharge hoses.
Insert suction hose (1) and discharge hose (2) fully until it clicks.



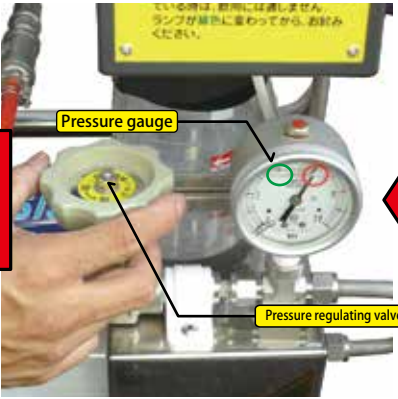
Put strainer in raw water.
Siphon the raw water from the upper part of the receptacle or body of water using enclosed float ball.



Turn on operation switch or start up the engine to begin suction.
Verify whether water comes strongly out of hose.



Turn the dial for automatic chlorine injection to adjust chlorine concentration.
Please adjust while verifying with enclosed chlorine concentration checker.



Turn the pressure regulating valve and set at the mark you need.
Be sure to set at the mark ○ of 6.0 Mpa for sea water, and 4.0 Mpa for fresh water.

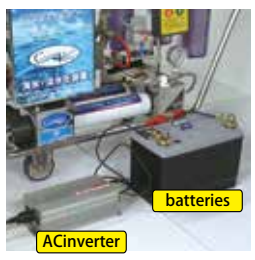


Turn on the monitor switch to verify safe and potable water.
Verify if it's purified after buzzer beeps and system check completes.



When green lamp lights up, potable water is ready.
Mine Marine Filter makes palatable mineral water.

Supplementary Instructions



Can be powered by car battery.
Used with an inverter (sold separately), the unit can be powered by automotive batteries (CVR-M155J).



Chlorine concentration check
Free residual chlorine concentration of 0.2 mg/L or more is set forth in Water Supply Act. Please check using the enclosed Chlorine Checker.



Filter replacement during purification
Pre-treatment filter can be easily changed even when it operates during purification.



Crystal Valley
Reverse Osmosis Membrane
Water Purification System

Crystal Valley is water purification system that was spun off from "Open Laboratory" called JAXA.

JAXA is an independent administrative corporation, Japan Aerospace eXploration Agency



Disaster Response Compact Water Purifier certified by The Ministry of Defense: Water Purification Capability No. 1



Our Crystal Valley Water Purifier was selected in 2014 from a nationwide safe water project, sponsored by the Ministry of Defense and entitled "Some water is unfit to drink, even though we want to," and awarded a rating of "Removal Capability/Functionality No. 1" among compact water purifiers.

Disaster Response Water Purifier certified by CMA (Crisis Management Association)



Crystal Valley Water Purifier has been certified by Crisis Management Association as "Compliant Devices related to the People Protection and Disaster Prevention" since the product is useful for unexpected problems and superior in cost effectiveness when it comes to stockpiling emergency supplies.



CMA (Crisis Management Association) is a public interest incorporated association set up mainly for "Implementing Support Services during Disasters or Providing Knowledge of Crisis Management to People and Development of Responsiveness."

Principal Award History

- 2001 The first Osaka Frontier Prize, Business Foundation Encouragement Section, First Prize
- 2002 The first Suita city special company prize
- 2003 The Act for the Promotion of Creative Activities by Small and Medium-Size Enterprises, The Law for Facilitating the Creation of New Business No. 1222 certification
- 2005 The Act for the Promotion of Creative Activities by Small and Medium-Size Enterprises, The Law for Facilitating the Creation of New Business No. 1069-18 certification
- 2005 Osaka prefecture foreign patent application patent subsidy, NI No. 1486 certification
- 2005 The New Technology Development Foundation (Subsidy for New Technology Development) S-No. 455 certification
- 2006 Osaka Prefecture Venture Business Support System certification
- 2006 Osaka Industrial Research Association, 56th Award for Achievement in Technology
- 2007 The Ministry of Economy, Trade and Industry, The 2nd monodzukuri Nippon Grand Award, First Prize
- 2015 Winning an all-around title at Safe Water Project hosted by the Ministry of Defense

Rain water, river water, lake water and sea water become potable water!

Proprietary special filter removes carcinogens such as nitrite nitrogen, boron, bromine, radioactive substances, agrichemicals, etc. that cannot be removed by hollow fiber, active carbon filter or other RO filters.

Special active carbon filter
foul smell and taste, mold smell, chlorinous odor, residual chlorine, phenols, etc. (CV-105JT-R•CV-205JT-R•CVR-T41J)

Special fine particles filtration filter
muddiness, algae, rust, water mold, bacteria, cryptosporidium, etc.

Special reverse osmosis membrane filter
virus, nitrate nitrogen, nitrite nitrogen, dioxin, arsenic, asbestos, aluminum, environmental endocrine disrupter, agrichemical, pathogenic bacteria, lead, tetrachloroethylene, trihalomethane, formaldehyde, etc.

Mine Marine Filter special active carbon+mineral added
After maximum purification of water, alkaline ionizes natural corals creating mineral water that is readily absorbed into the body.

Safe Potable Water Monitor

- The units are originally equipped with a simplified chlorine checker (pack test) for easy quality check.
- T41J, M155J and E210J constantly monitor water quality during purification by a microcomputer.

Hypochlorite Adding System

- T41J is originally equipped with a hypochlorite adding kit.
- M155J and E210J are originally equipped with automatic hypochlorite proportional injection devices.

Free residual chlorine concentration of 0.2 mg/L or more is set forth in Water Supply Act when water contaminated with pathogenic organism is purified during disasters.



For Solar Unit

Energy saving, environmentally conscious product



Crystal Valley water purification system can operate by solar units, small generators or batteries because it is capable of operating with very low power consumption. CVR-M155J in particular has realized world's first low power consumption of 660W/h as a seawater desalination plant. Household Water Purifier can operate even by lithium batteries with low power consumption of 11W/h.

CV-Rescue Periodic inspection maintenance is necessary to use CV Rescue product at time of disasters. T41J (once a year recommended), M155J (once a year) and E210J (twice a year)

Periodic maintenance will be performed by the supplier, purchasing store management or regular maintenance authorized dealer of our company. Please sign maintenance contract (for a fee) if you would like the maintenance.

製造元



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Protect the future of the earth and the area

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