

RELTEC MD21

Electric Therapy Equipment

INSTRUCTION MANUAL

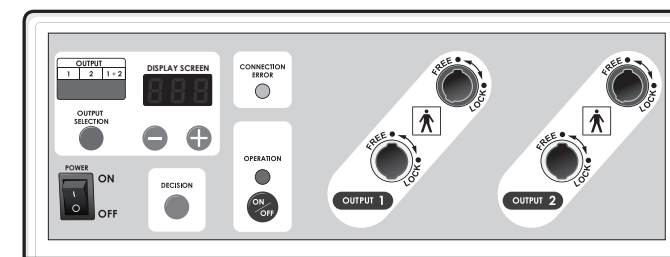


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Please fill out the following information for easy reference.

Check the product name and serial number before contacting your dealer to place an order or ask for inspection, repair, etc.

Serial Number	Date of Purchase	Dealer
		TEL () —

Manufacturer

RELTEC Medical Devices Corporation

3795-1, Kawatsu-cho, Sakaide-shi, Kagawa, 762-0025, Japan

<https://reltec.co.jp>

Please read before use

Thank you for purchasing RELTEC MD21. Be sure to read this instruction manual carefully before use and use this device appropriately. Keep this manual at hand for quick reference at any time necessary.

1. For proper use


Thank you for purchasing RELTEC MD21.


RELTEC MD21 is an electric therapy equipment which is intended to alleviate headache, stiff shoulder, insomnia and chronic constipation.

This device is for domestic use only and must not be used outside of the country for safety and legal reasons.


Be sure to read this manual carefully before use and use this device appropriately.

The following signs indicate the possibility of causing harm or physical damage to users and other persons when the device is handled incorrectly disregarding the signs.

 **Warning** This sign indicates the possibility of causing "death or serious injury" when the device is handled incorrectly disregarding the sign.

 **Caution** This sign indicates the possibility of causing "injury or physical damage" when the device is handled incorrectly disregarding the sign.

The following signs indicate prohibited actions or mandatory actions.

 **Prohibitions** This sign indicates prohibited actions.

 **Compulsory** This sign indicates mandatory actions.

Pay special attention to the following instructions before use.

Contraindications to combined use

Do not use the device in combination with any of the following electronic medical devices and mechanical organs since it may result in malfunction.

1. VHF therapy device, Microwave therapy device, the device emitting powerful electromagnetic wave like electrocauterizer, high-power magnetic line, and X-ray.
2. Life-support devices such as an artificial heart-lung machine.
3. Wearable electronic medical devices such as an electrocardiograph.
4. Life supporting electronic medical devices such as artificial heart lung.
5. Artificial middle ear, artificial inner ear, metallic artificial heart valves, etc.

Warning

1. Do not allow this device to be used alone by babies, toddlers, children and persons who are unable to express his own intention.
2. Discontinue use immediately and consult your doctor if you feel any abnormalities in your body.
3. Do not use the device when the conductive plates are wet.

4. Make sure not to touch the third parties or surrounding electric machines under a treatment. Failure to do so may result in causing electric shock. The operator should not touch the person being treated and the device at the same time.
5. Discontinue use immediately and consult your doctor if you have any of the following symptoms. The supplied velcro are made of natural rubber. In rare cases, natural rubber can cause allergic symptoms such as itchiness, skin flare, hives, swelling, fever, respiratory distress, asthma-like symptoms, reduction in blood pressure and shock.
6. Use of this device adjacent to or stacked with other device should be avoided because it could result in improper operation.
7. The power cord and conductive plate AC, BD or YD are applicable as accessories with the possibility of impacting on compliance with electromagnetic emissions and electromagnetic immunity.
8. Do not use accessories other than those (power cord, conductive plate AC, BD or YD) provided by us. This is because use of accessories other than those (power cord, conductive plate AC, BD or YD) provided by us could result in increased electromagnetic emissions or decreased electromagnetic immunity and result in improper operation.
9. A warning statement to the effect that: "WARNING: Portable RF communications device (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the RELTEC MD21, including cables specified by the manufacturer. Otherwise, degradation of the performance of this device could result."

Caution

People with the following symptoms should consult a medical doctor before use and pay attention to their physical condition.

1. Person with acute illness.
2. Person with malignant tumor.
3. Person with heart diseases. (Person with heart problems)
4. Person with high fever
Person with his body temperature of 38 °C or above (incidence of fever) .
(Person suffering from symptoms of severe acute inflammation (fatigue, chill, blood pressure fluctuation, etc.) (and person who is debilitated.)
5. Pregnant woman
Especially person in the early stage of her pregnancy, or immediately after childbirth.
6. Person who requires bed rest.
7. Person with acute (painful) diseases such as spinal fracture, sprain and muscle strain.
8. Person with sensory disturbance due to advanced peripheral circulatory disorders caused by diabetes, etc.
9. Person who is likely to get low temperature burned.
10. Person with esthesiodermia or skin abnormality (infection or wound, etc.)
11. Person with other severe illness.

1. For proper use

Caution



Do not disassemble

- Never open the case as high voltage is generated inside of the main body.
- Do not disassemble, repair, or modify the main body and accessories.
- Do not use the main body and accessories for other than intended use. It may cause injury such as electric shock or a fault.



Keep fire away

- Keep flammable materials and cigarettes away from the device.
- Keep the main body and accessories away from heaters. Failure to do so may cause a fire or a fault.



- Do not use this device in very humid and moist places such as in a bathroom. Failure to do so may cause injury such as electric shock or a fault.
- Do not wash the main body and accessories in water. If liquid enters the main body or accessories, switch off the device immediately unplug the power cord from the outlet and discontinue use.
- Do not touch with wet hands. Failure to do so may cause injury or malfunction such as electric shock.



Unplug the power cord from the outlet









- When you notice any abnormalities such as unusual odor, abnormal sound, smoke, etc., switch off the device, unplug the power cord from the outlet and discontinue use.
- When the device is dropped, pushed down, or subjected to a strong shock switch off the device immediately, unplug the power cord from the outlet and discontinue use.
*Contact your dealer if you have any of the problems mentioned above.
- While lightning is occurring, stop using the device and unplug the power cord from the outlet. In the event of a blackout, switch off the device immediately.




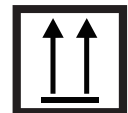






Caution

- Do not bundle the power cord.
- Do not place heavy objects such as furniture on the power cord.
- Do not pull or twist the power cord.
- Do not put the machine at the place where the power cord can not be inserted or removed.

Graphical symbols for electrical device in medical practice

	Dangerous voltage		Serial number
	Operator's manual		Model number
	Date of manufacture		BF-type applied part
	Manufacturer		Alternating Current

Graphical symbols for both transport and storage

	Fragile; Handle with care		This way up
	Stacking limit by number		Do not roll
	Keep away from sunlight		Keep away from rain
	Temperature limit		Humidity limitation

2. Efficacy and effectiveness

For relief of the following symptoms

Headache

Insomnia

Stiff shoulder

Chronic constipation

3. Configuration

*Please check that all the components listed below are provided by placing a check mark in each box.

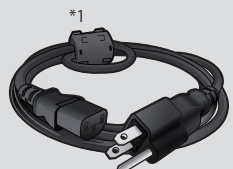


Main body (1 unit)

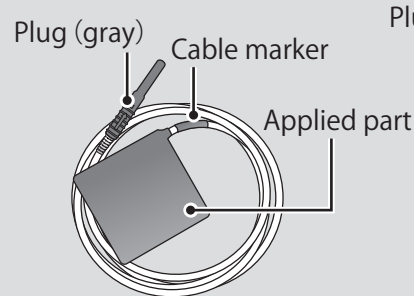


Instruction manual (1 copy)

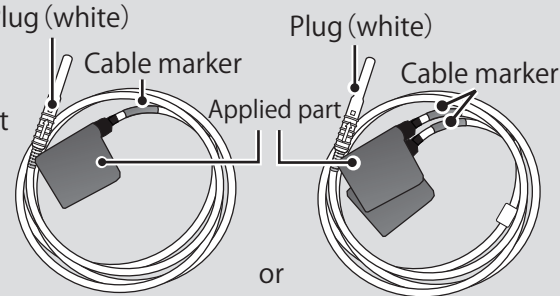
Accessories [Not covered by warranty]



Power cord (2 m / 1 pc)
*It differs for the image diagram.



Conductive plate AC (2.5m / 2 pcs)
(Cable marker : red, blue)



Conductive plate BD or YD (2.5m / 2 pcs)
(Cable marker : red, blue)



AC adapter (1.25m / 1 pc)
*1 Do not remove the ferrite core.

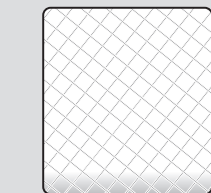
Cover (S) (4 pcs)

Cover (XS)
Conductive plate type BD (4 pcs)
type YD (8 pcs)

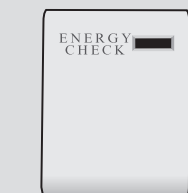
Velcro

L (Length : 120cm) 1 pc
M (Length : 80cm) 1 pc
XS (Length : 30cm)
conductive plate BD 2 pcs
conductive plate YD 4 pcs

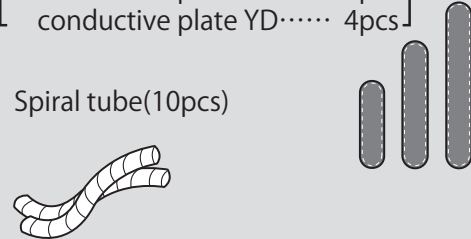
Spiral tube (10 pcs)



Insulating mat (1 pc)



ENERGY CHECK (1 pc)



*All of the accessories in the box are consumables and are not covered by warranty.

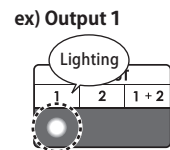
4. Name and function of each main body part

Display screen

It displays the configured treatment time.
The buzzer volume appears only when the end tone and operation tone volume are set. (See Page 24.)
When an error occurs, the error code also appears here. (See Page 29.)

Output position LED

Output position selected via the output selection button LED on



Output selection button

Select the output position.



Main power switch

○ indicates "OFF", and ■ indicates "ON".

"+" "-" button

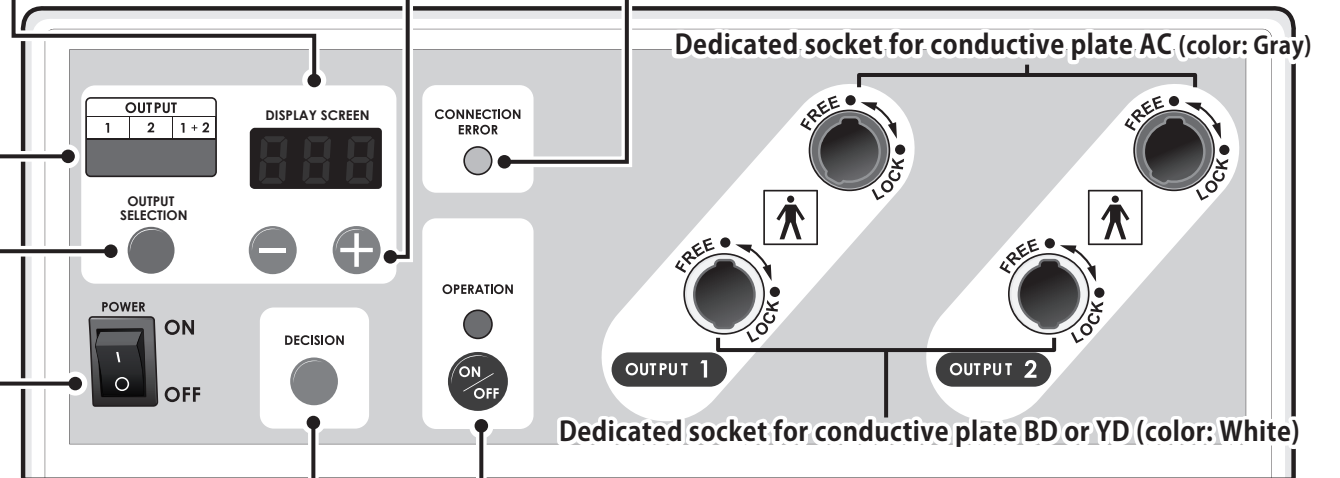
Press the button, then you can set the treatment time, the end sound volume and the operation volume. (See page 24. ~ 26.)

Poor connection (LED flashes: pink)

When the conductive plate is not properly inserted, the pink LED flashes and the buzzer makes sound.



[Front]

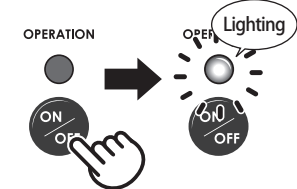


OK button

You can store in memory the treatment time set by the "+" and "-" buttons, the end tone and operation tone volume, and the output points selected by the output selection button. (See page 24. ~ 26.)

Run button (LED on)

Run in "ON/OFF" state.
The LED is on when it is running.



Rating label

Information such as serial number is written.

[Back]



AC adapter socket

Please use DC 15V.

1. Safety precautions for conductive plates

Pay attention to the following instructions and use the device properly.

● Make sure to apply the conductive plates to the body before starting treatment

If you apply the conductive plates after starting treatment, the conductive plates may be damaged and you may feel an unpleasant electric stimulation similar to static shock. Stop operating the device firstly in case of removing the conductive plates from applied parts.

● These actions may break the cable

Be careful not to apply excessive force to the conductive plate cables. The cables must not be excessively bent, pulled, twisted, or rolled up into a small bundle. In addition, do not place heavy objects on the cables. Failure to do so may shorten the life of the cables and cause a fire, electric shock, or an accident. Do not apply shock to the plugs as they may be damaged.

● Do not bend too sharply

When you apply the conductive plates to the body, be careful not to bend them too sharply by tightening them excessively. The conductive plates may be damaged if bent too much.

● Do not allow metal objects to contact

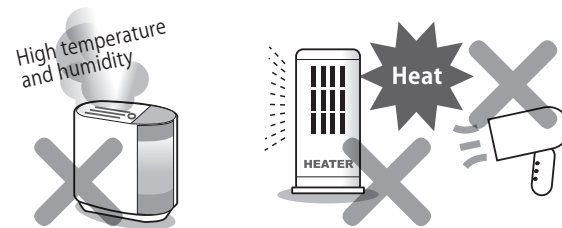
Do not allow metal objects (bed, chair, precious metal, etc.) to come in contact with the body and conductive plates during treatment.

● Watch for ointment and sweat!

When applied part of the conductive plates are wet with sweat or covered with ointment, make sure to wipe it off before use.

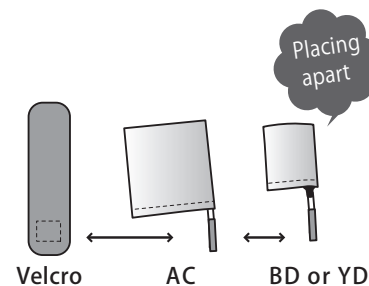
● Hot and humid conditions damage conductive plates

When a conductive plate is wet or damp with sweat, dry it completely before use. Never attempt to dry it using a hair dryer or heater as it may result in damage.



● Watch for wet conditions!

Use both sides of each conductive plate alternately. After treatment is completed, remove velcro and dry the velcro, conductive plates AC and BD or YD naturally, placing them apart. In addition, wash the provided covers frequently since ingredients such as sweat stick to them.



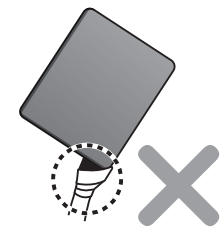
● If the plates are damaged

Even if the plates are even slightly damaged, there is a risk of injury or electric shock. Replace damaged one with new one.

● In the event of fault

If any of the conductive plates are damaged or in a fault condition, discontinue use immediately. Consult your dealer as it is dangerous to make a repair by yourself or use the device continuously.

Ex) Fixed with tapes



2. Method of treatment

Typical therapy example

Period	Single use time	If you feel temporary body sluggishness, shorten the duration of each use.	Use per day 1 to 5 times (standard)	Single use time 5 to 30 min (standard)
Day 1 - Day 3	5 to 10 min			
Day 4 - Day 7	10 to 15 min			
Day 8 ~	15 to 30 min			

- The table above shows a typical therapy example. Please select period, duration, and frequency of treatment depending on your health condition.
- When you use the device for the first time, start with a short-time treatment (approximately 5 minutes). Have your body get accustomed to it gradually as you receive the treatment repetitively.
- Do not use the device continuously. Have at least one hour between the end of the last treatment and the start of the next treatment.
- Excessive use may cause temporary sluggishness. Adjust treatment time depending on your age, health condition and physical condition.
- Children and persons who have a weak constitution are recommended to select treatment time (e.g. limit treatment time to within 20 minutes) when necessary depending on their age, body strength and weight.
- Follow your doctor's advice, if any.
- Use both sides of each conductive plate alternately.
- Make sure to stop treatment before letting another person to use the device or putting the conductive plates on other parts of the body in the middle of treatment.
- When you feel any abnormalities in your body, stop using the device immediately and follow your doctor's advice.
- When you use the device that has been in storage for over a month, start with a short-time treatment (approximately 5 minutes) just like the first treatment. Have your body get accustomed to it gradually as you receive the treatment repetitively.

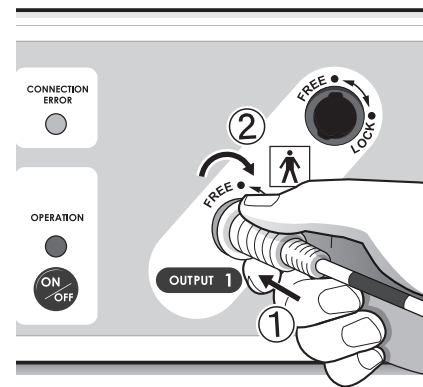
3. How to connect conductive plates AC and BD or YD

Please make sure to insert the plug into the main unit, holding down the main unit so that it will not slip out of place.

Conductive plate BD or YD [Color: White]

Hold the conductive plate BD or YD plug (white) with the arrow ↑ facing up and insert it all the way into the socket (white) straight and firmly. Then turn the plug 90 degrees to the right.

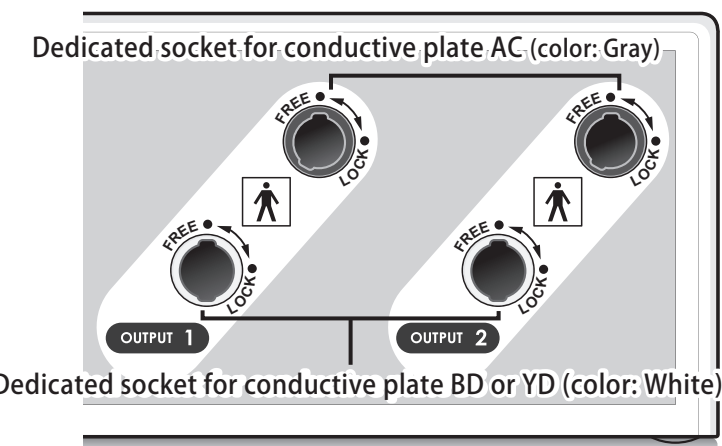
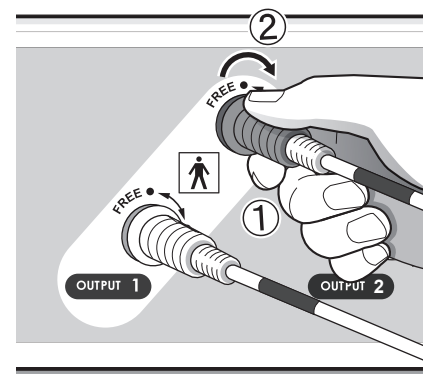
(Conductive plate BD or YD can be inserted with the arrow ↑ facing downward.)



Make sure the cable markers are of the same color.

Conductive plate AC [Color: Gray]

Hold the conductive plate AC plug (gray) with the arrow ↑ facing up and insert it all the way into the socket (gray) straight and firmly. Then turn the plug 90 degrees to the right.

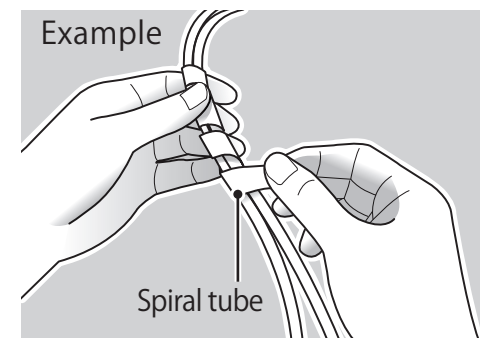


Caution

- Make sure to turn the plug 90 degrees to the right. Otherwise, the plug cannot be firmly fixed and it may fall from the socket.
- Please match the colors of the plug and socket when you insert. Inserting the plug into incorrect socket may result in damage or inability to pull out the plug.

4. How to wrap with spiral tubes

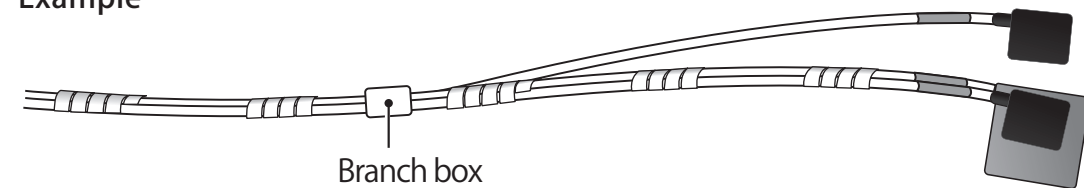
Wrap the conductive plate cables with the provided spiral tubes in spots.



In case of YD plate

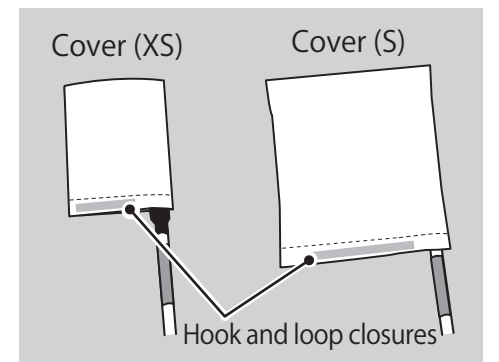
Spiral tube : 10pcs (Red / Blue 5 each)

Example



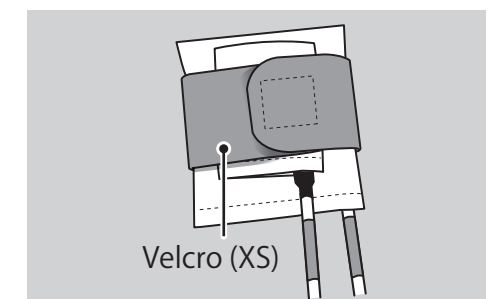
5. How to fit a cover

Fit a provided cover. Open the hook and loop closure on one side of the cover and insert the conductive plate in it. Then close the hook and loop closure.



6. How to use velcro

Have a provided velcro at hand for applying conductive plates to the body. The velcro are available in different lengths (L, M and XS). They have hook and loop closures for flexibility and fixation that make conductive plates easier to be put on the body.



7. How to connect power cord and AC adapter

To prevent the power cord outlet from falling off, the outlet is made harder.

Connect the power cord's connector to the AC adapter's socket, and insert the AC adapter's plug into the AC adapter socket of the main unit.



Prohibitions

Make sure not to remove the ferrite core being equipped power cord and AC adapter.

Failure to do so may result in having a negative impact on the other machines.

Our company shall not be liable for any damage resulting from misuse such as removing the ferrite core.



Caution

Make sure to use the power cord only equipped with protective earth to avoid the dangerous of electric shock.

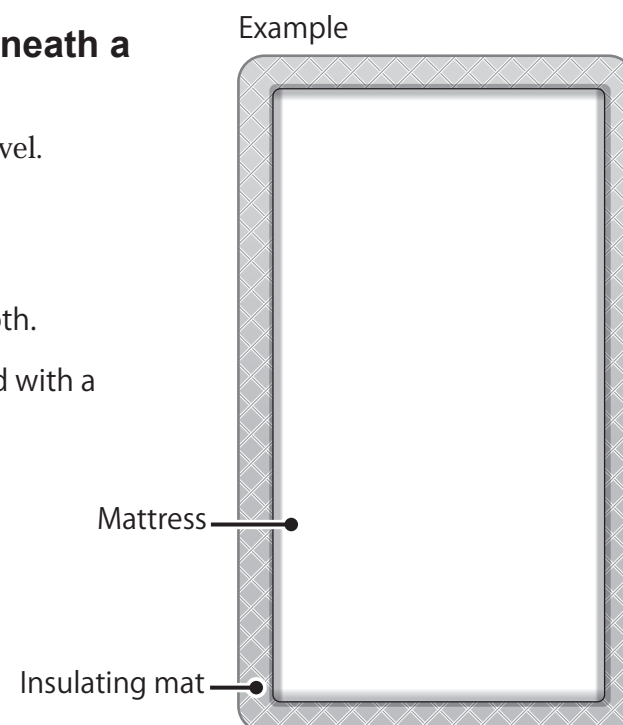
8. Placing insulating mat

Place the insulating mat on or beneath a mattress, or on a therapy bed.

Adjust the room temperature to a desired level.

How to care

- Wipe the insulation mat with a dry, soft cloth.
- If dirt persists, wipe with a cloth dampened with a neutral detergent.
- Let it dry well in the shade.



Caution



Prohibitions

- Keep the main body and accessories away from a container of liquid such as a vase or an aquarium. If liquid enters the device, it may cause a fire or a breakdown.
- Do not put the device on an inclined surface or in an unstable location where it is subjected to shock or frequent vibrations.
- Do not place the device in a hot place where there is a heater nearby or where it is exposed to direct sunlight.
- Do not put the device in a place where dust, salt, sulfur etc. may cause adverse effects.
- Do not use the device in a place close to MRI generating strong electromagnetic field, shortwave therapy device, and high frequency scalpel. Do not put the device in a place where it is exposed to magnetism or direct irradiation from a microwave therapy device which generates electromagnetic waves.
- Keep the device away from other electrical appliances.
- Do not place anything on top of the device.
- Do not use the device with wet hands as it may cause electric shock or a breakdown.
- Do not use the device in conjunction with other therapy device and electrical appliances such as an electric blanket, an electric footwarmer and so on.
- Do not use the device in combination with a mattress made of conductive substances such as metallic fibers.
- Do not insert a metal rod, etc. into the sockets for conductive plates.
- Do not cause the damage on the cable during in use or in storage.

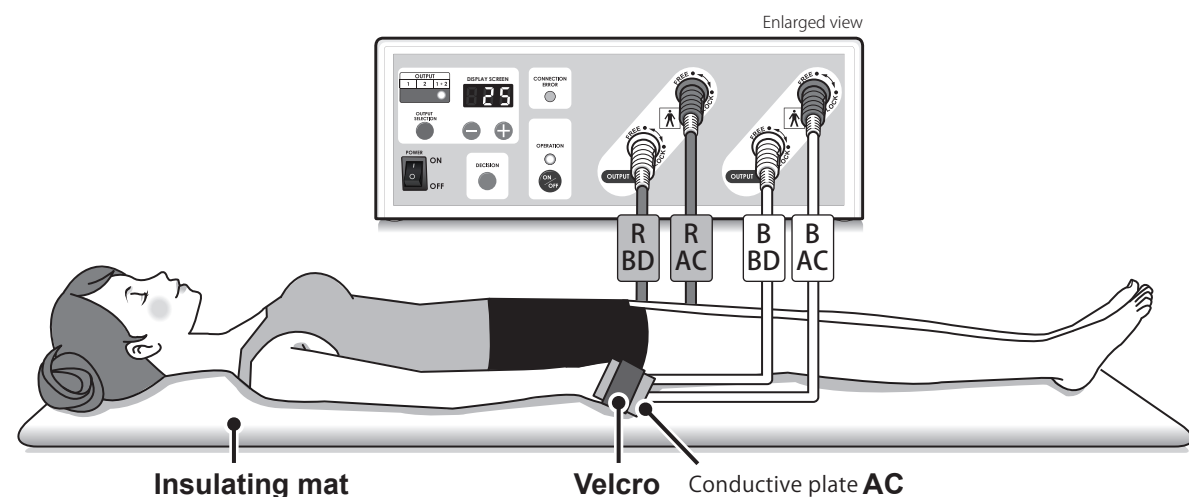
How to apply (Type BD)

*Before starting treatment, appropriately apply conductive plates AC and BD to the body using the provided velcro.

1. Typical application (Hands) OUTPUT 1 + 2

Headache, Stiff shoulder, Insomnia and Chronic constipation

Apply conductive plates AC to the back of the hands, BD to the palms.



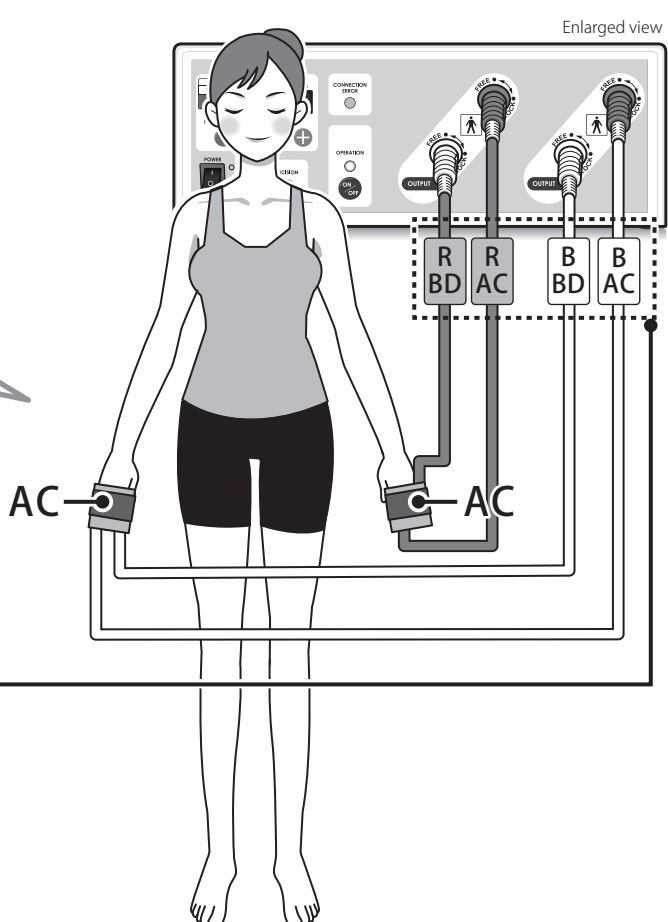
How to apply to hand

Apply to the finger tips

Apply conductive plates AC and BD so as not to come in contact with each other. The conductive plate AC can be applied to the palm, and BD to the back of the hand.

Red,Blue cable marker

A set of conductive plates with Red or Blue cable markers can be inserted into the sockets either on the right or left side. Make sure that the cable markers of conductive plates AC and BD for each set are of the same color.



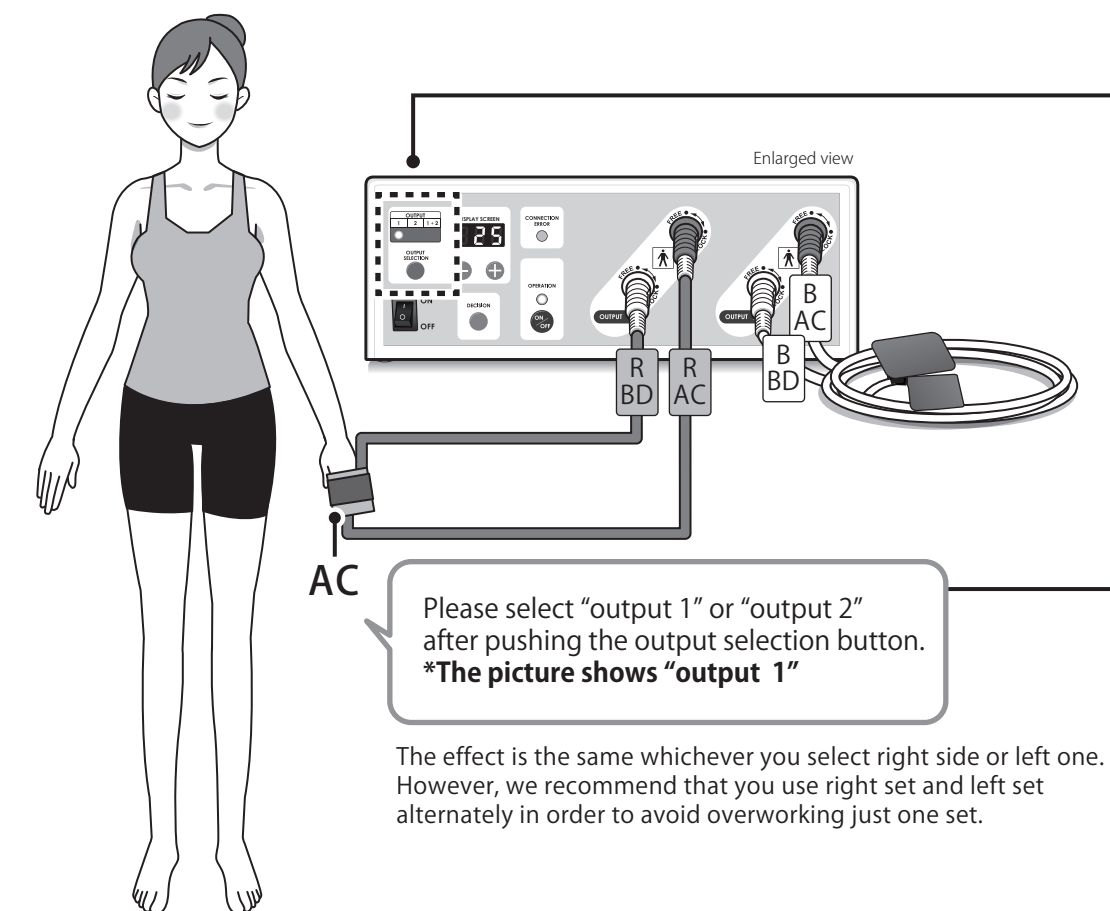
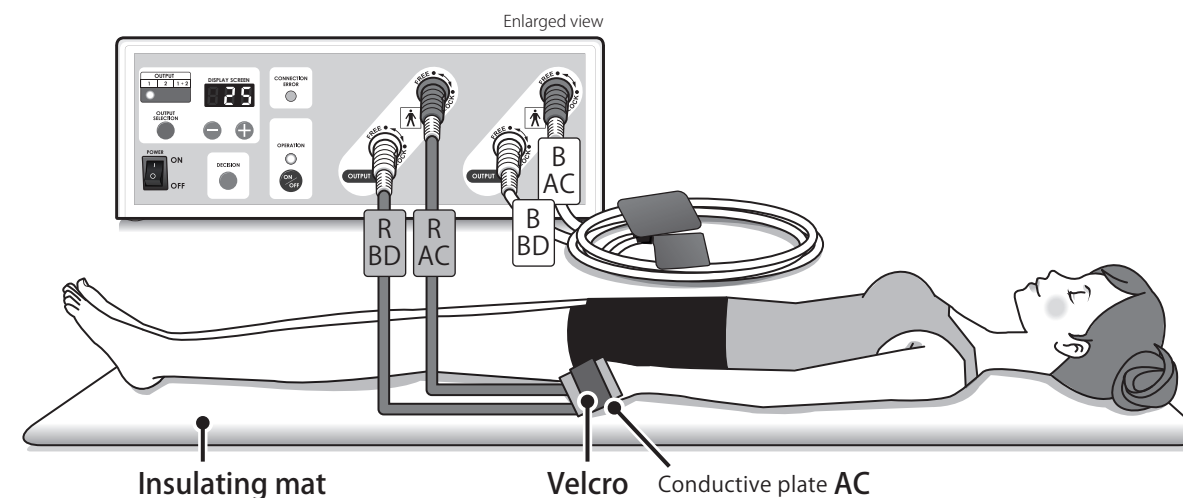
- Make sure to lie down while receiving treatment.
 - Please make sure to have at least an hour between the end of the last session and the start of the next session.
 - Conductive plates can be applied to either the right or left hand, however, make sure the cable markers of the conductive plates applied to the hand and foot on each side must be of the same color.
- R AC R BD R AC→ Red cable marker AC B AC B BD B AC→ Blue cable marker AC
R AC R BD R BD→ Red cable marker BD B AC B BD B BD→ Blue cable marker BD

The illustrations above are for illustrative purposes and the shapes, color, etc. may be different from the real ones.

2. How to use monopole (Hand) OUTPUT 1 or OUTPUT 2

Headache, Stiff shoulder, Insomnia and Chronic constipation

Apply conductive plate AC to the back of one hand, BD to the palm.



Please select "output 1" or "output 2" after pushing the output selection button. *The picture shows "output 1"

The effect is the same whichever you select right side or left one. However, we recommend that you use right set and left set alternately in order to avoid overworking just one set.

- Make sure to lie down while receiving treatment.
 - Please make sure to have at least an hour between the end of the last session and the start of the next session.
 - Conductive plates can be applied to either the right or left hand, however, make sure the cable markers of the conductive plates applied to the hand and foot on each side must be of the same color.
- R AC R BD R AC→ Red cable marker AC B AC B BD B AC→ Blue cable marker AC
R AC R BD R BD→ Red cable marker BD B AC B BD B BD→ Blue cable marker BD

The illustrations above are for illustrative purposes and the shapes, color, etc. may be different from the real ones.

Introduction
Before use
How to apply Type BD
How to use
ENERGY CHECK
Care and storage
Troubleshooting
Specifications
Other information

How to apply (Type BD)

*Before starting treatment, appropriately apply conductive plates AC and BD to the body using the provided velcro.

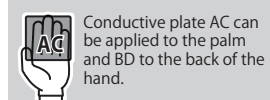
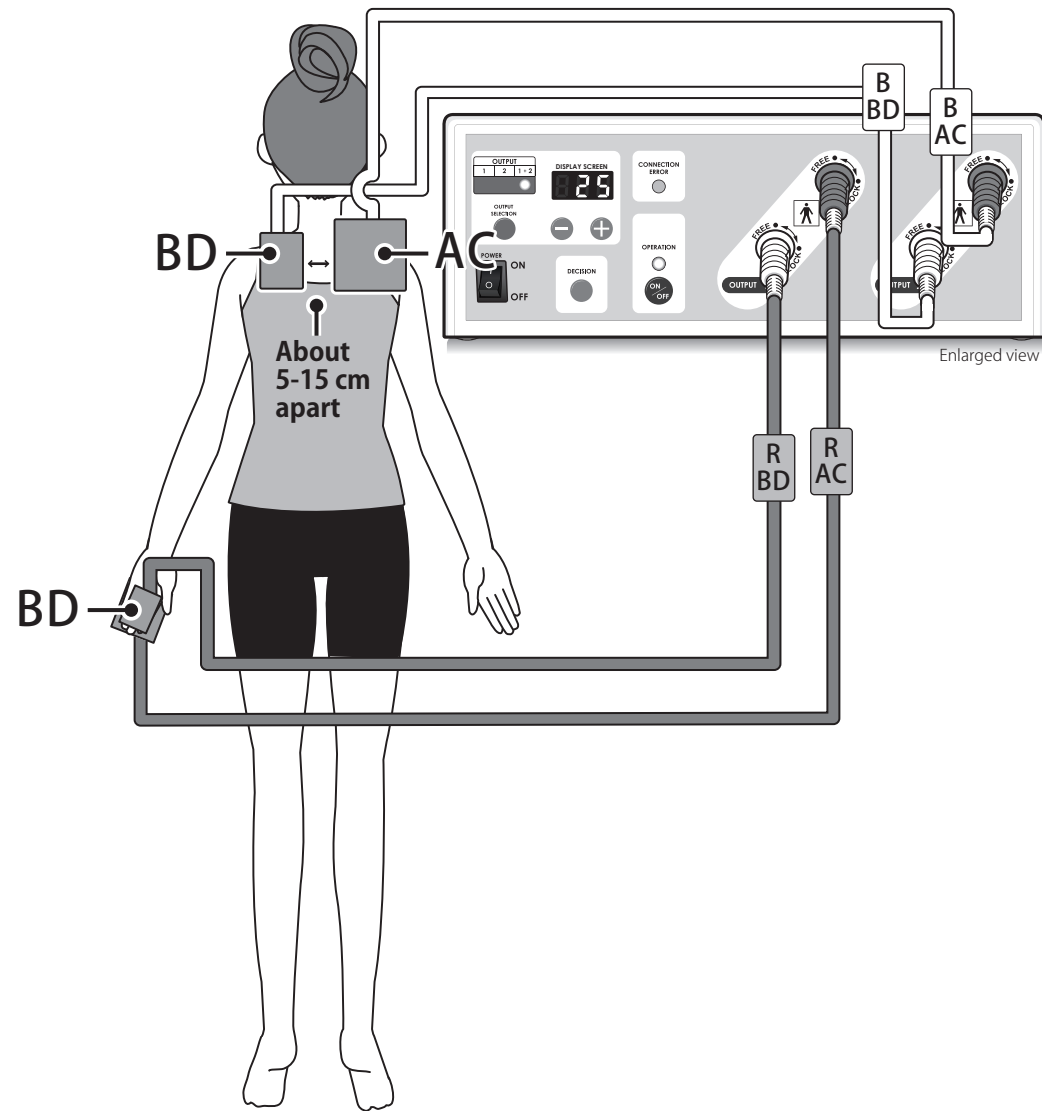
3. Application for intended efficacy or effectiveness

Application for headache and insomnia

Hands (page 14) or Back of the neck, hand

● Back of the neck, hand

Apply conductive plate AC to the base of the neck on the back and conductive plate BD by the side, placing them about 5 to 15 cm apart so as not to come in contact with one another. (Fix the conductive plates making use of the body weight.)
Apply another conductive plate AC to the back of the left hand, conductive plate BD to the palm of the left hand.
Make sure to lie down while receiving treatment.



- Conductive plate AC can be applied to the palm and BD to the back of the hand.
- Make sure to lie down while receiving treatment.
- Conductive plates can be applied to either the right or left hand, however, make sure the cable markers of the conductive plates applied to the hand and foot on each side must be of the same color.

- Please make sure to have at least an hour between the end of the last session and the start of the next session.

R AC → Red cable marker AC B AC → Blue cable marker AC
R BD → Red cable marker BD B BD → Blue cable marker BD

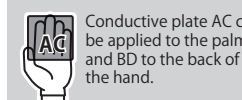
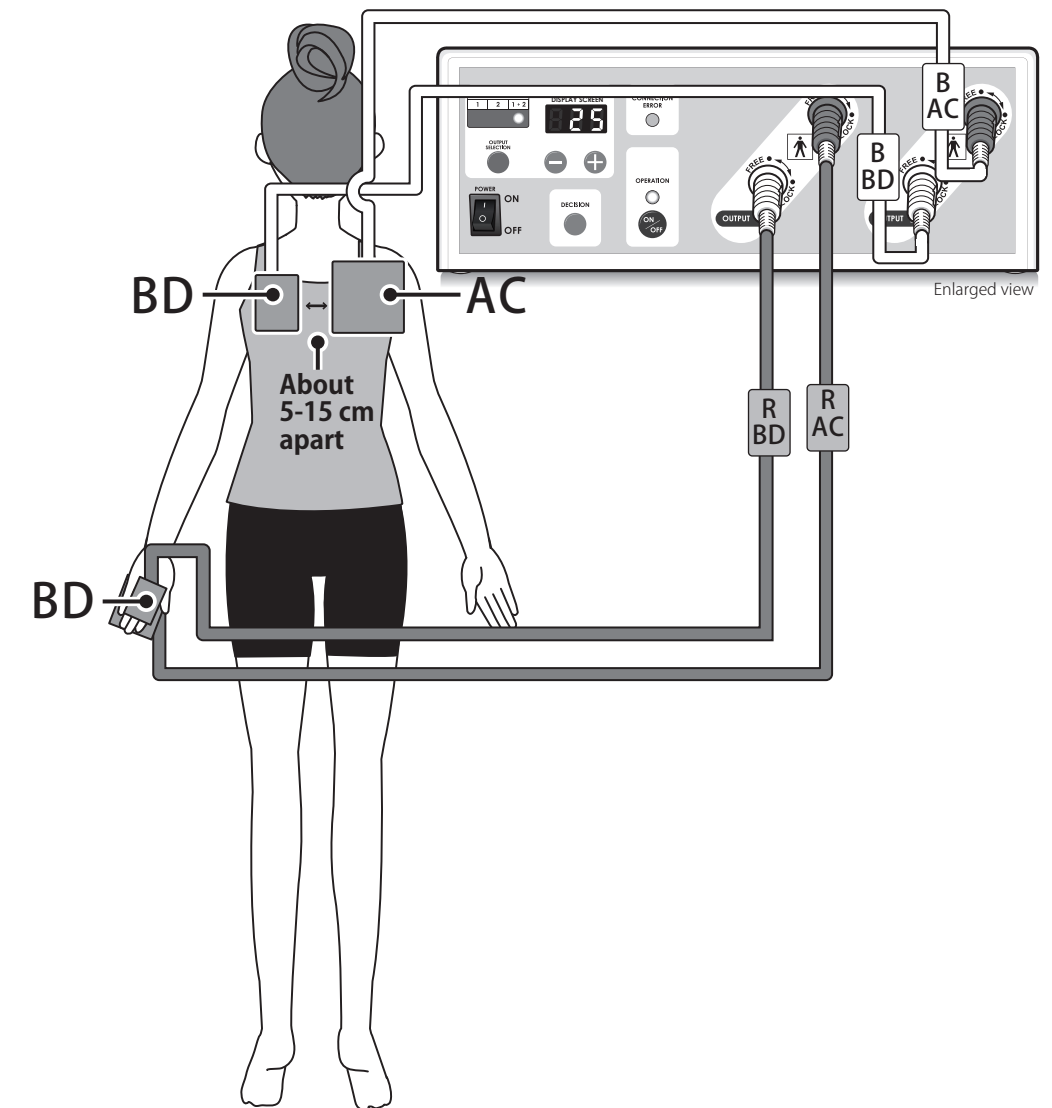
The illustrations above are for illustrative purposes and the shapes, color, etc. may be different from the real ones.

Application for stiff shoulder

Hands (page 14) or Shoulders, hand

● Shoulders, hand

Apply conductive plate AC to the area affected by stiff shoulder and conductive plate BD by the side, placing them about 5 to 15 cm apart so as not to come in contact with one another. (Fix the conductive plates making use of the body weight.)
Apply another conductive plate AC to the back of the left hand and conductive plate BD to the palm of the left hand.
Make sure to lie down while receiving treatment.



- Conductive plate AC can be applied to the palm and BD to the back of the hand.
- Make sure to lie down while receiving treatment.
- Conductive plates can be applied to either the right or left hand, however, make sure the cable markers of the conductive plates applied to the hand and foot on each side must be of the same color.

- Please make sure to have at least an hour between the end of the last session and the start of the next session.

R AC → Red cable marker AC B AC → Blue cable marker AC
R BD → Red cable marker BD B BD → Blue cable marker BD

The illustrations above are for illustrative purposes and the shapes, color, etc. may be different from the real ones.

How to apply (Type BD)

* Before starting treatment, appropriately apply conductive plates AC and BD to the body using the provided velcro.

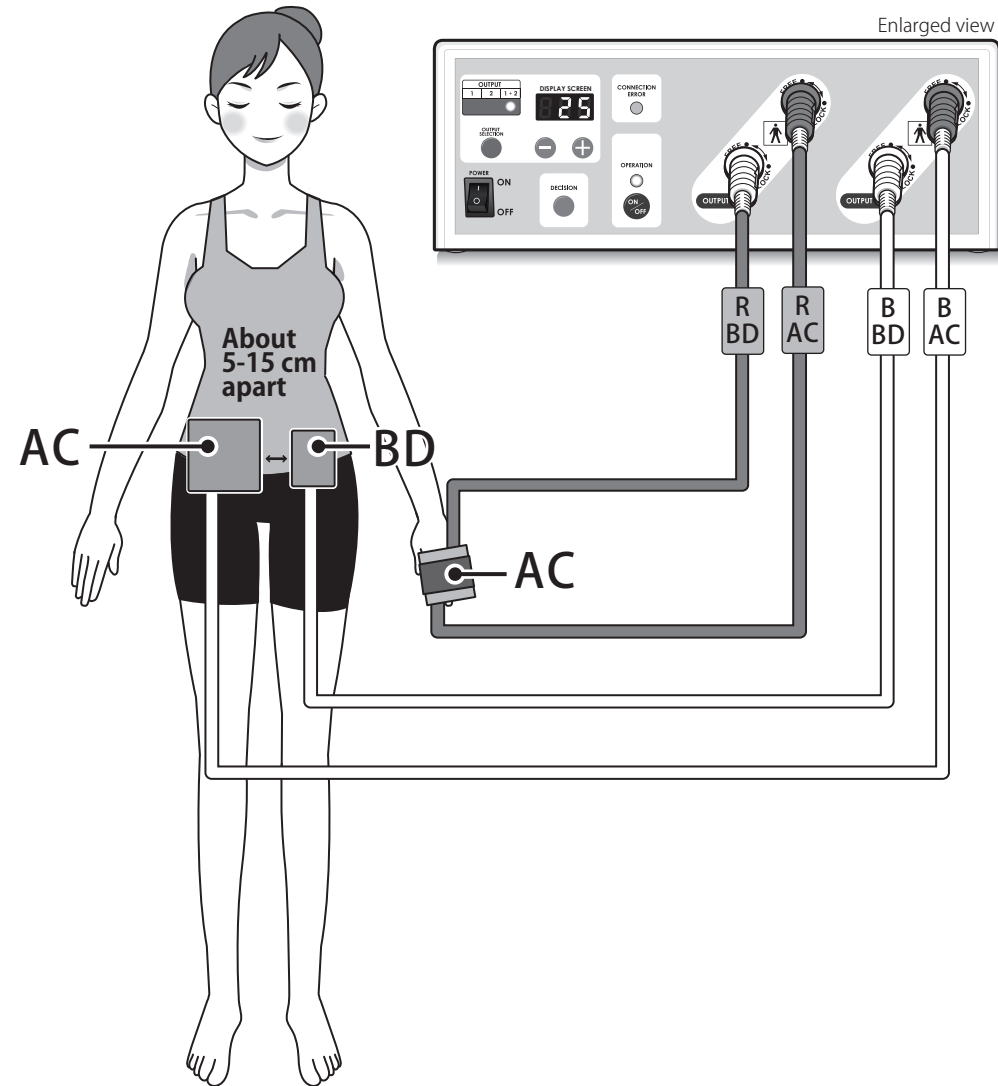
3. Application for intended efficacy or effectiveness

For chronic constipation

Hands (page 14) or Lower abdomen, hand

Lower abdomen and hand

Apply conductive plate AC to the lower abdomen and conductive plate BD by the side, placing them about 5 to 15 cm apart so as not to come in contact with one another.
(Fix the conductive plates with a provided velcro.)
Apply another conductive plate AC to the back of the left hand and conductive plate BD to the palm of the left hand.
Make sure to lie down while receiving treatment.



- Conductive plate AC can be applied to the palm and BD to the back of the hand.
 - Make sure to lie down while receiving treatment.
 - Conductive plates can be applied to either the right or left hand, however, make sure the cable markers of the conductive plates applied to the hand and foot on each side must be of the same color.
 - Please make sure to have at least an hour between the end of the last session and the start of the next session.
- R AC R BD R AC → Red cable marker AC B AC B BD B AC → Blue cable marker AC
R AC R BD R BD → Red cable marker BD B AC B BD B BD → Blue cable marker BD

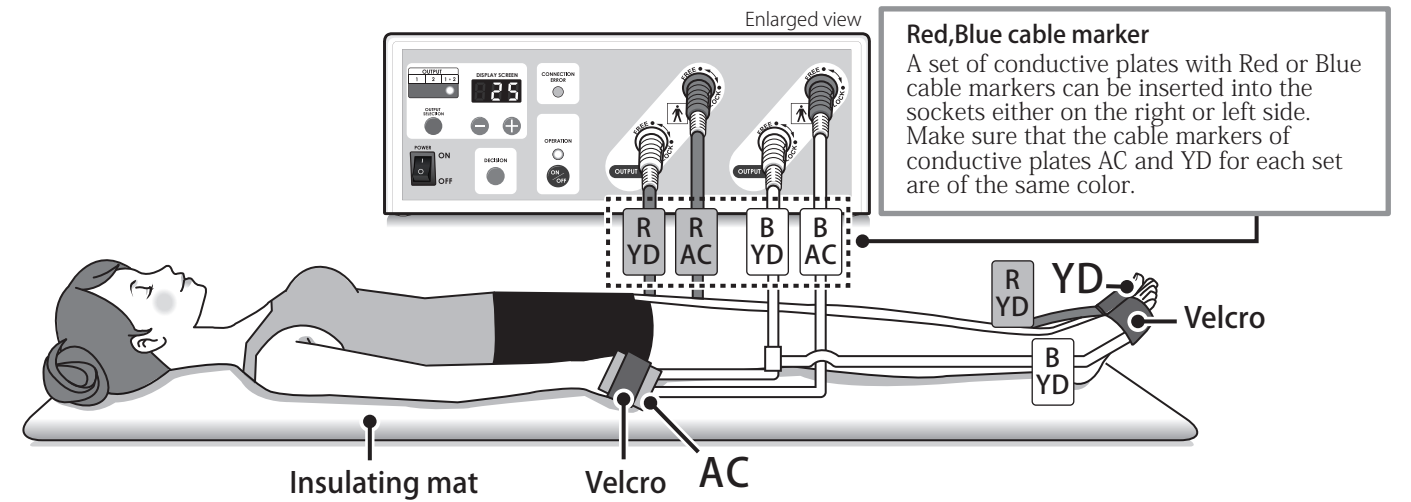
How to apply (Type YD)

* Before starting treatment, appropriately apply conductive plates AC and YD to the body using the provided velcro.

1. Typical application (Hands and feet) OUTPUT 1 + 2

Headache, Stiff shoulder, Insomnia and Chronic constipation

Conductive plates AC on the dorsum of the hand, YD on the palm and YD on the soles of both feet.



How to apply to hand

Apply to the finger tips

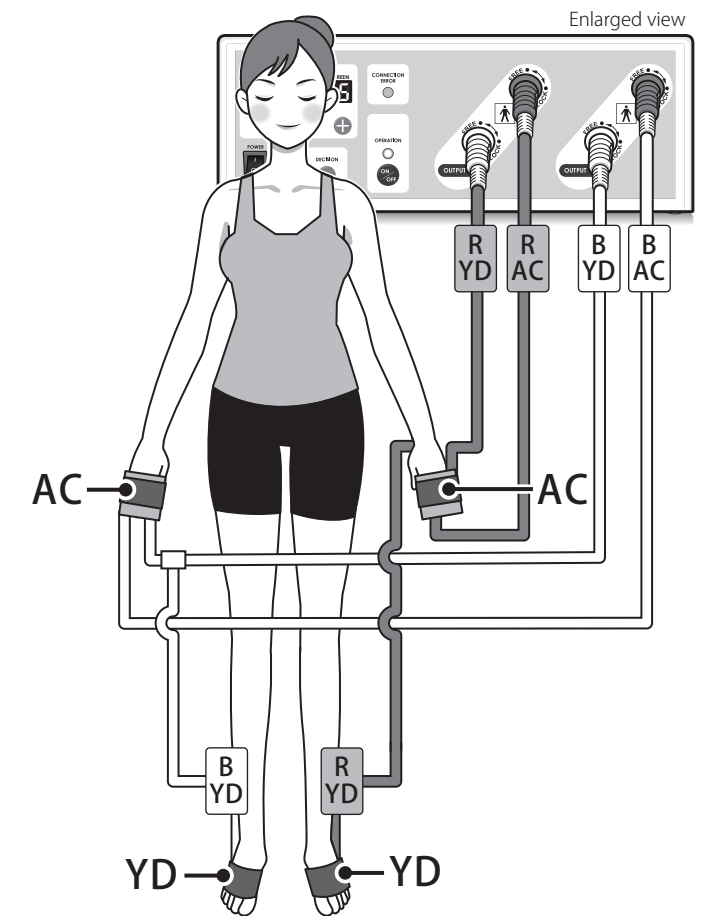
Conductive plate AC
 Velcro
 Conductive plate YD
 Cable marker

Apply conductive plates AC and YD so as not to come in contact with each other. The conductive plate AC can be applied to the palm, and YD to the back of the hand.

How to apply to foot

Velcro
 Conductive plate YD
 Cable marker

Conductive plate YD can be applied to either the sole or instep of the foot, whichever fits better.



- Conductive plate AC can be applied to the palm and YD to the back of the hand.
 - Conductive plates YD can be applied to either the soles or insteps, whichever fit better.
 - Make sure to lie down while receiving treatment.
 - Conductive plates can be applied to either the right or left hand, however, make sure the cable markers of the conductive plates applied to the hand and foot on each side must be of the same color.
 - Please make sure to have at least an hour between the end of the last session and the start of the next session.
- R AC R YD R AC → Red cable marker AC R YD R YD → Red cable marker YD
B AC B YD B AC → Blue cable marker AC B YD B YD → Blue cable marker YD

The illustrations above are for illustrative purposes and the shapes, color, etc. may be different from the real ones.

The illustrations above are for illustrative purposes and the shapes, color, etc. may be different from the real ones.

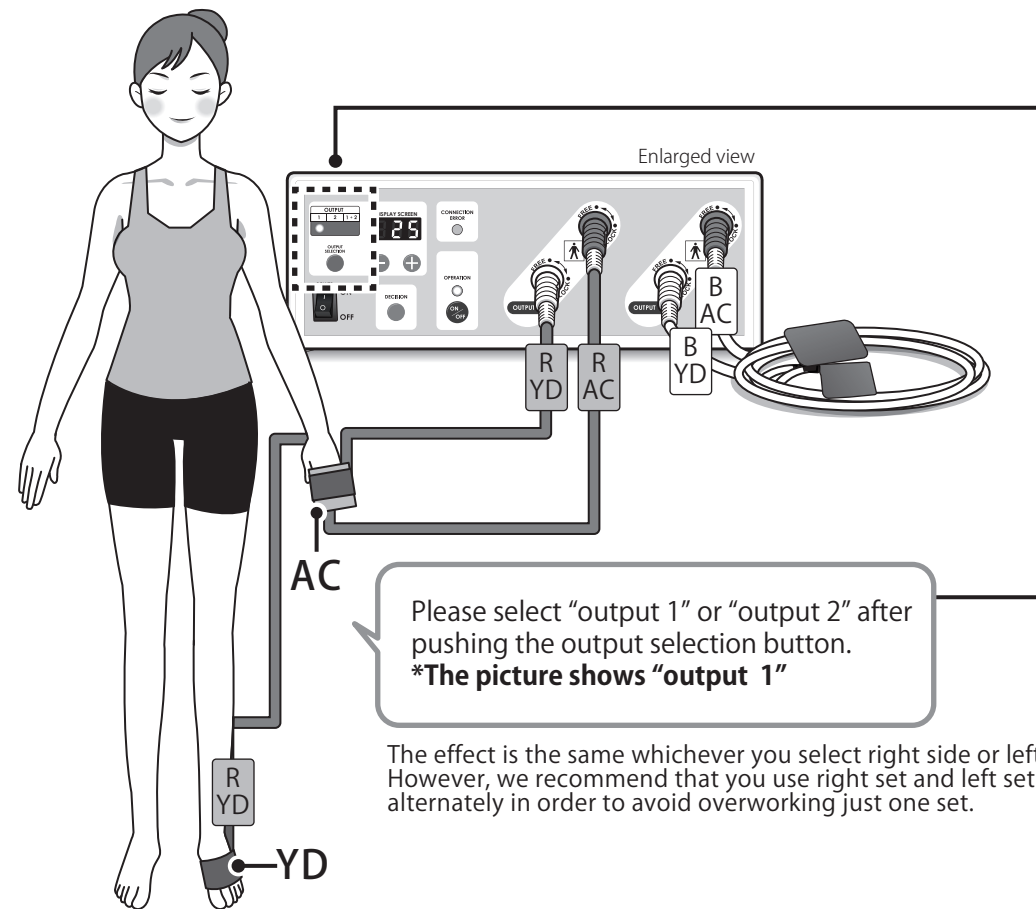
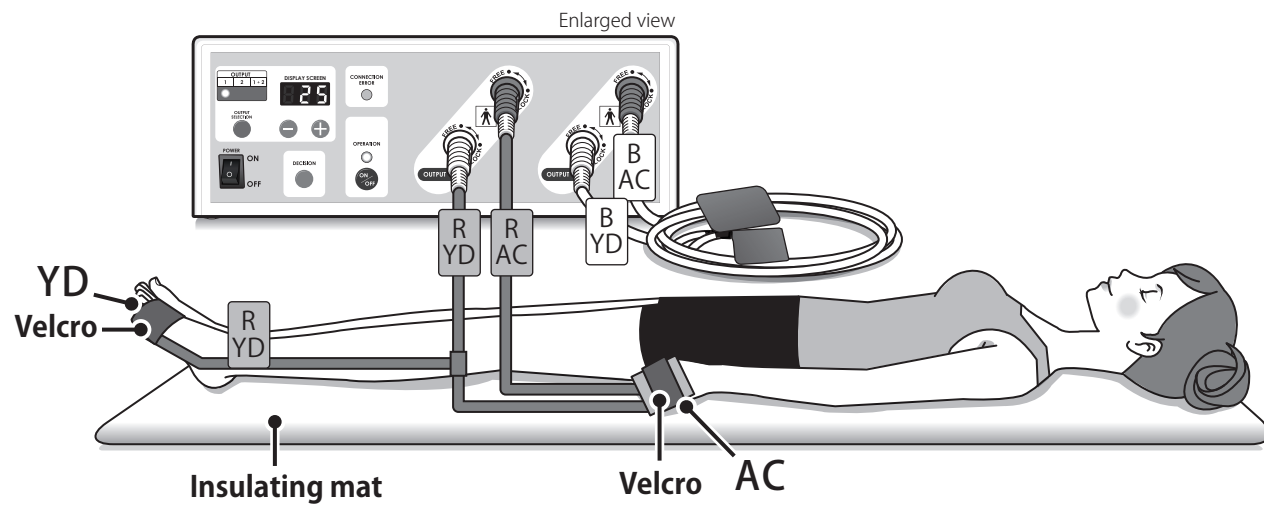
How to apply (Type YD)

* Before starting treatment, appropriately apply conductive plates AC and YD to the body using the provided velcro.

2. How to use monopole (Hand and foot) OUTPUT 1 or OUTPUT 2

Headache, Stiff shoulder, Insomnia and Chronic constipation

Conductive plate AC on the dorsum of the hand, YD on the palm and YD on the sole of foot.



Conductive plate AC can be applied to the palm and YD to the back of the hand.

Conductive plates YD can be applied to either the soles or insteps, whichever fit better.

- Make sure to lie down while receiving treatment.
- Conductive plates can be applied to either the right or left hand, however, make sure the cable markers of the conductive plates applied to the hand and foot on each side must be of the same color.
- Please make sure to have at least an hour between the end of the last session and the start of the next session.

		R AC→ Red cable marker AC
		B AC→ Blue cable marker AC
		R YD→ Red cable marker YD
		B YD→ Blue cable marker YD

The illustrations above are for illustrative purposes and the shapes, color, etc. may be different from the real ones.

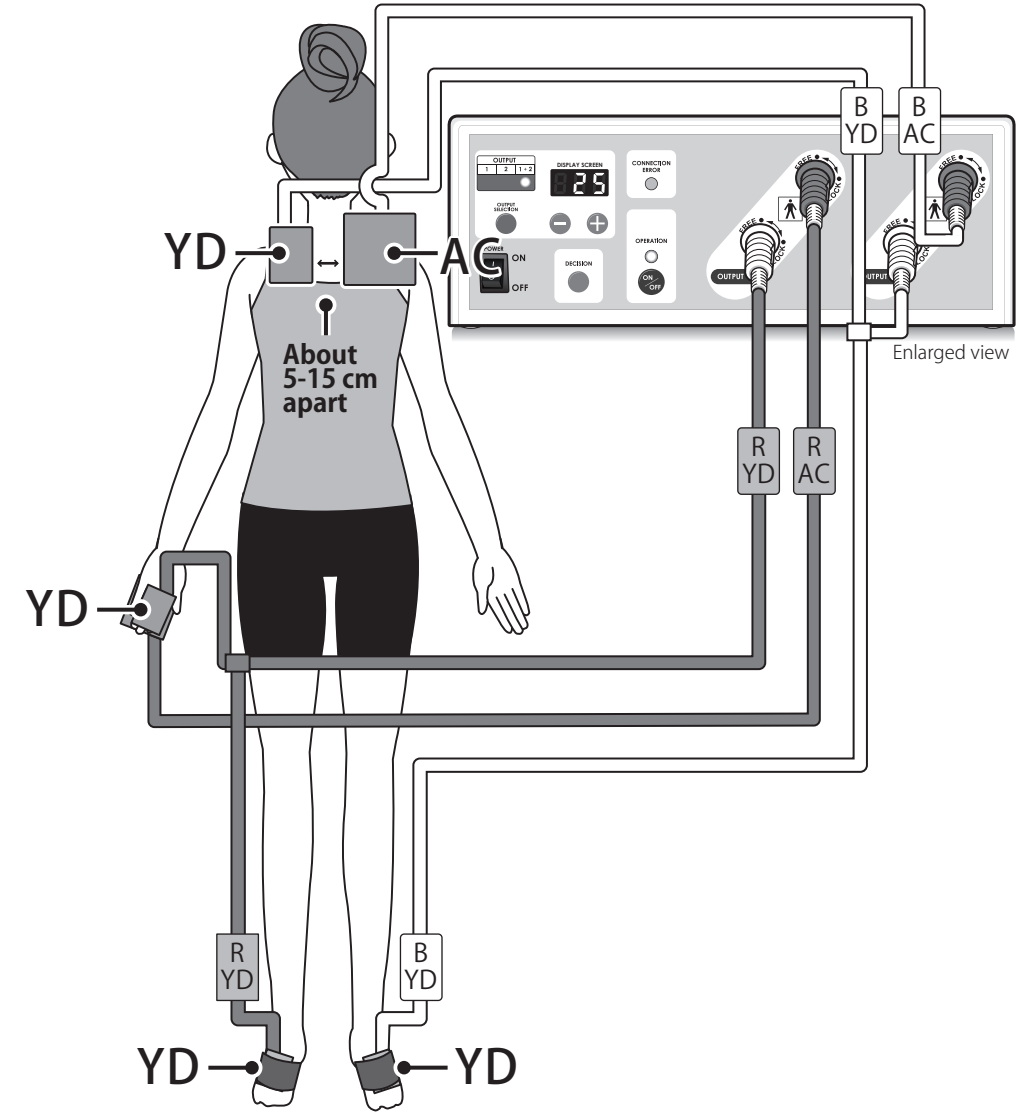
3. Application for intended efficacy or effectiveness

Application for headache and insomnia

Hands and feet (page 19) or Back of the neck, hand and feet

• Back of the neck, hand and feet

Apply conductive plate AC to the base of the neck on the back and conductive plate YD by the side, placing them about 5 to 15 cm apart so as not to come in contact with one another. (Fix the conductive plates making use of the body weight.)
 Apply another conductive plate AC to the back of the left hand, conductive plate YD to the palm of the left hand, and conductive plates YD to the soles.
 Make sure to lie down while receiving treatment.



Conductive plate AC can be applied to the palm and YD to the back of the hand.

Conductive plates YD can be applied to either the soles or insteps, whichever fit better.

- Make sure to lie down while receiving treatment.
- Conductive plates can be applied to either the right or left hand, however, make sure the cable markers of the conductive plates applied to the hand and foot on each side must be of the same color.
- Please make sure to have at least an hour between the end of the last session and the start of the next session.

		R AC→ Red cable marker AC
		B AC→ Blue cable marker AC
		R YD→ Red cable marker YD
		B YD→ Blue cable marker YD

The illustrations above are for illustrative purposes and the shapes, color, etc. may be different from the real ones.

How to apply (Type YD)

* Before starting treatment, appropriately apply conductive plates AC and YD to the body using the provided velcro.

3. Application for intended efficacy or effectiveness

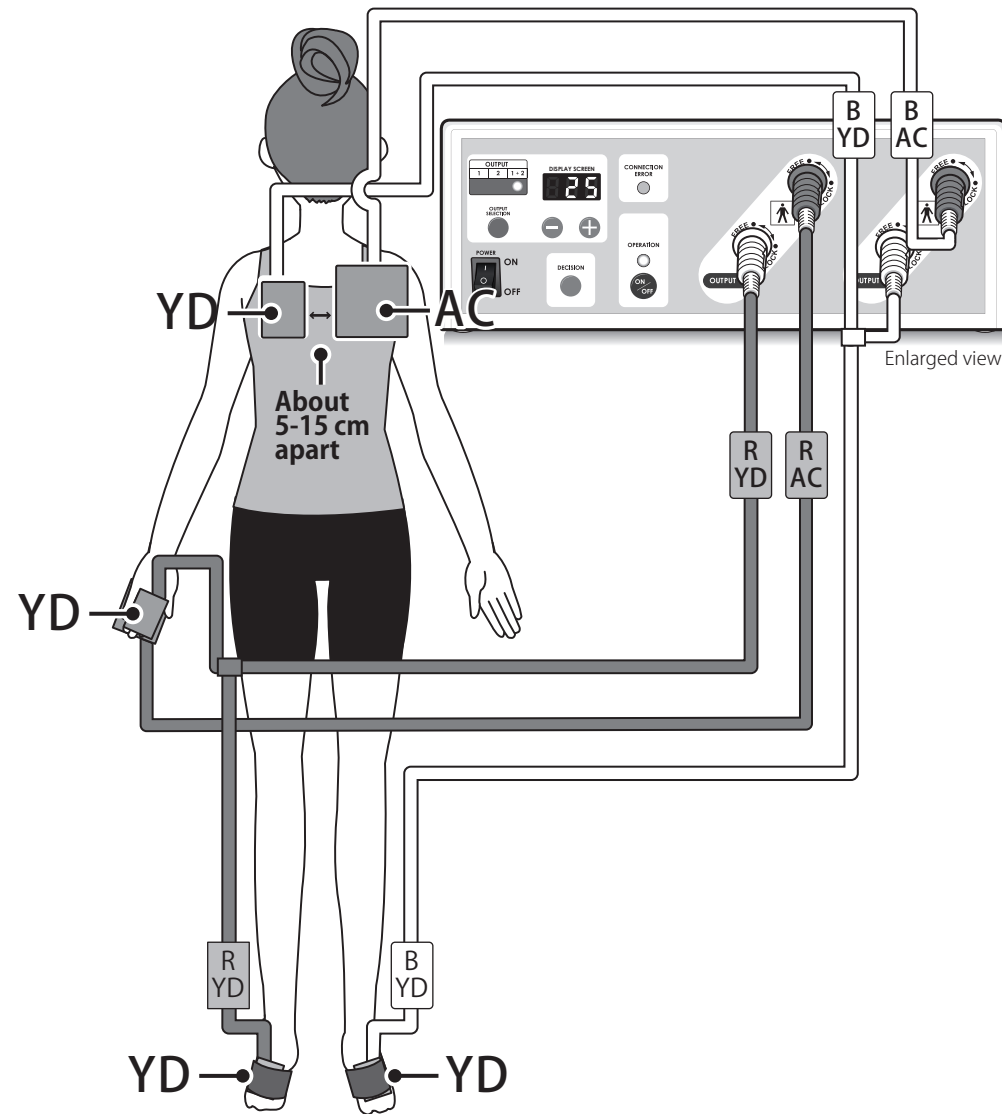
Application for stiff shoulder

Hands and feet (page 19)

or Shoulders, hand and feet

Shoulders, hand and feet

Apply conductive plate AC to the area affected by stiff shoulder and conductive plate YD by the side, placing them about 5 to 15 cm apart so as not to come in contact with one another. (Fix the conductive plates making use of the body weight.)
Apply another conductive plate AC to the back of the left hand and conductive plates YD to the palm of the left hand and the soles.
Make sure to lie down while receiving treatment.



Conductive plate AC can be applied to the palm and YD to the back of the hand.



Conductive plates YD can be applied to either the soles or insteps, whichever fit better.

- Make sure to lie down while receiving treatment.
- Conductive plates can be applied to either the right or left hand, however, make sure the cable markers of the conductive plates applied to the hand and foot on each side must be of the same color.
- Please make sure to have at least an hour between the end of the last session and the start of the next session.

R AC → Red cable marker AC
R YD → Red cable marker YD
B AC → Blue cable marker AC
B YD → Blue cable marker YD

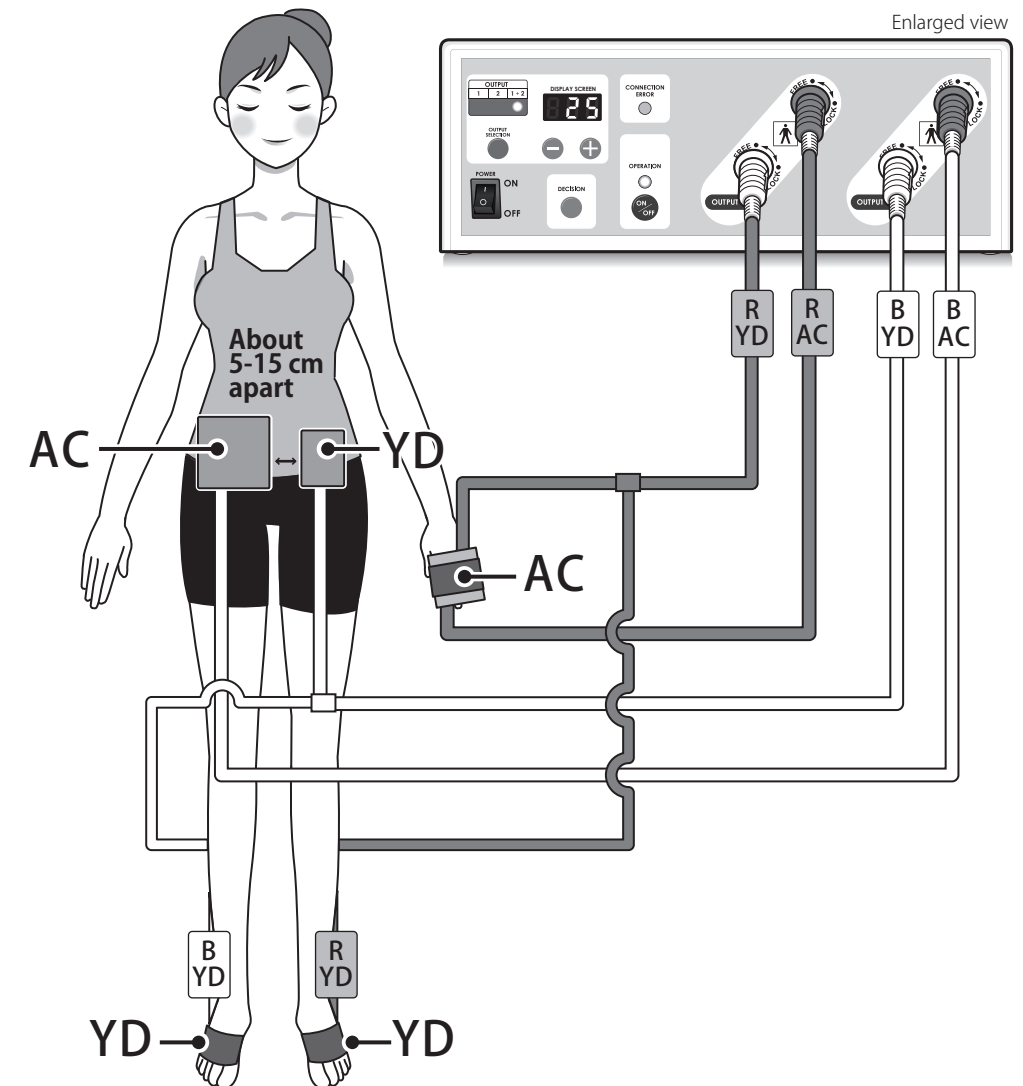
For chronic constipation

Hands and feet (page 19)

or Lower abdomen, hand and feet

Lower abdomen, hand and feet

Apply conductive plate AC to the lower abdomen and conductive plate YD by the side, placing them about 5 to 15 cm apart so as not to come in contact with one another. (Fix the conductive plates with a provided velcro.)
Apply another conductive plate AC to the back of the left hand and conductive plates YD to the palm of the left hand and the soles.
Make sure to lie down while receiving treatment.



Conductive plate AC can be applied to the palm and YD to the back of the hand.



Conductive plates YD can be applied to either the soles or insteps, whichever fit better.

- Make sure to lie down while receiving treatment.
- Conductive plates can be applied to either the right or left hand, however, make sure the cable markers of the conductive plates applied to the hand and foot on each side must be of the same color.
- Please make sure to have at least an hour between the end of the last session and the start of the next session.

R AC → Red cable marker AC
R YD → Red cable marker YD
B AC → Blue cable marker AC
B YD → Blue cable marker YD

The illustrations above are for illustrative purposes and the shapes, color, etc. may be different from the real ones.

The illustrations above are for illustrative purposes and the shapes, color, etc. may be different from the real ones.

How to operate

[Initial setting] Set the end tone and operation tone volume

1) Press and hold the OK button while the power is off to turn on the main power switch. The set up volume is shown in the display ("b-2" is set by default.) Keep the Apply button held down until the volume is shown. (If the button is released too early, the volume may not appear.)

2) You can increase the volume by pressing the "+" button and decrease it by pressing the "-" button. The volume has 4 levels.

3) Press the OK button to save the set volume.

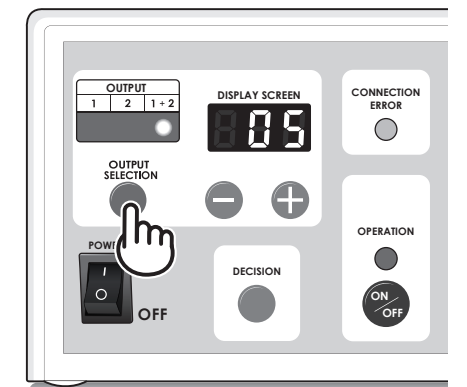
1 Turn on the power supply

Connect the conductive plates and press the main power switch provided on the front of the main unit to turn it "ON". After all LEDs are lit and the display lights up "---", the in-memory output points and treatment time are shown.

Caution
Be careful that voltage gets unstable and this may erase the in-memory data if the power supply is fast switched between "ON" and "OFF" repetitively.

2 Selection of output position

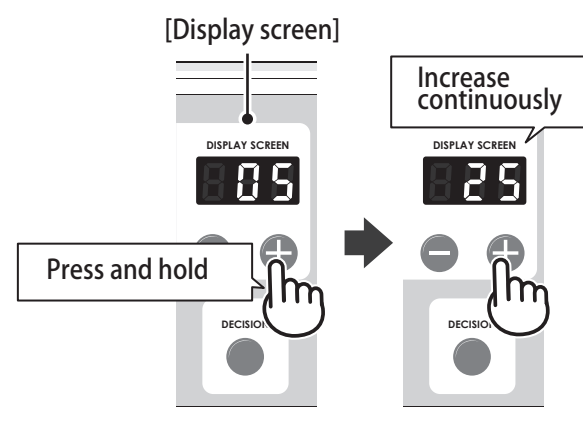
Press the output selection button to select the number of output position. Each time when you press the button, it will be switched in the order of "Output 1" → "Output 2" → "Output 1+2". The LED at the selected output position will be on.



How to operate (Continued)

3 Set treatment time

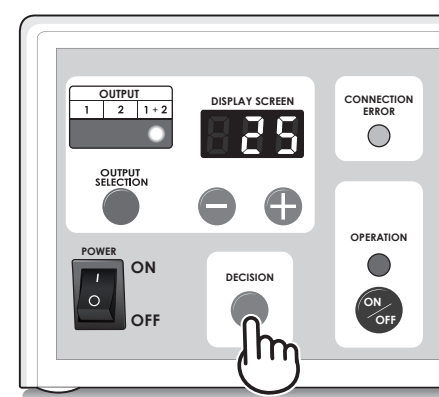
Press the + or - button to set the treatment time. The value can be set to 1-99 minutes. It cannot be set to 0 minutes. Press and hold the button to continuously increase or decrease the value. The treatment time is displayed on the display screen.



4 Memorize the configuration

Press the decision button and memorize the configured output position and the treatment time.

Notice
It can run when you do not press the OK button. However, **the configured output position and treatment time will be not saved at the next treatment.**



[Example: Time is set to 25 minutes.]

5 Start a treatment

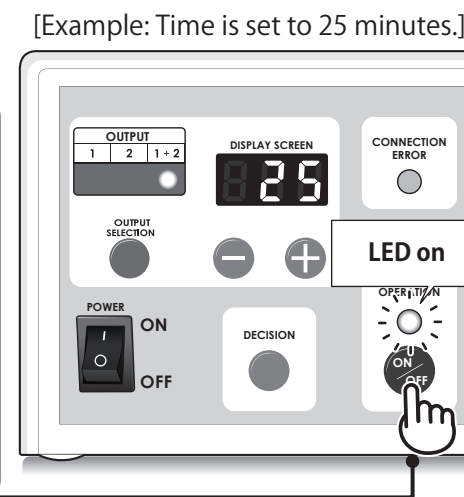
Press the Run button, and the LED above the button will be on and the device begins to work. The treatment time displayed on the display screen will count down. When it is running, you can press the Run button to stop the treatment.

※ If you start treatment based on the configured output position, treatment time, and buzzer volume, it will start treatment when you just press the Run button the next time.

※ To stop treatment during operation

- Press the Run button to stop the treatment.

↓ During operation



6 End a treatment

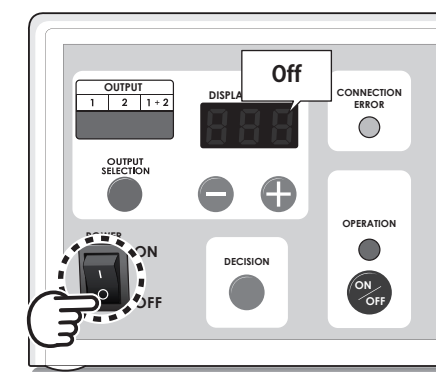
At the end of the treatment, it will buzz and stop running. The treatment time initially set will be displayed.

Run state
The treatment time is counted down

Non-Run state
No countdown is displayed.

7 Precautions after use

Please turn off the power switch on the front of the unit after use.

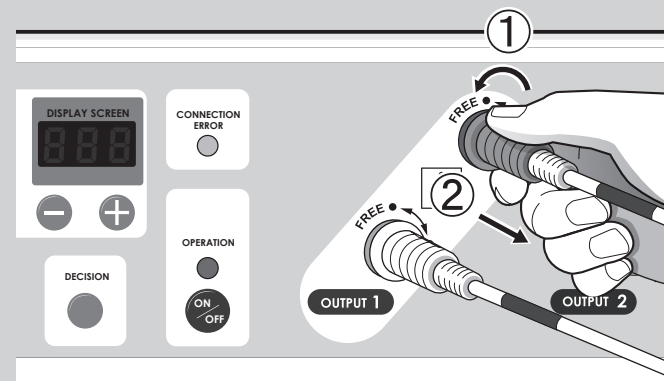
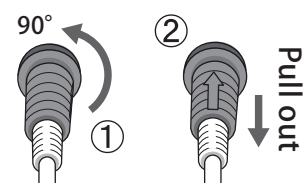


Remove the conductive plates AC and BD or YD in reverse order.

Please make sure to remove the plug from the main unit, holding down the main unit so that it will not slip out of place.

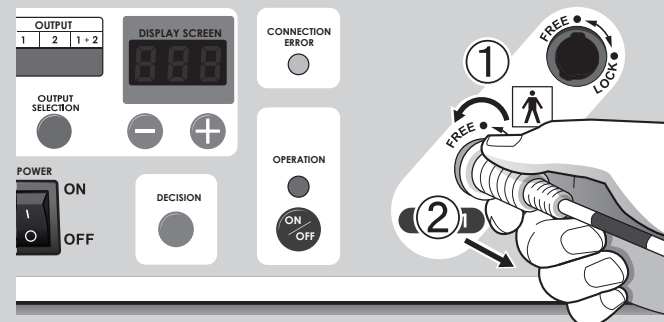
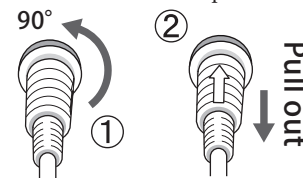
Conductive plate AC (color: Gray)

Rotate the conductive plate AC plug 90° to the left and pull it out.



Conductive plate BD or YD (color: White)

Rotate the conductive plate BD or YD plug 90° to the left and pull it out.



Notice

Please keep the accessories clean and place them in a place with less moisture to ensure normal use for the next time.

- After the treatment is completed, remove the velcro and dry it naturally in the state where the conductive plates AC and BD or YD are separated.
- The attached protective cover will be exposed to sweat and other materials, so wash it carefully.

Before moving the unit, remove the AC adapter, power cord and conductive plates from the unit. In addition, hold the unit with both hands to prevent it from falling down.

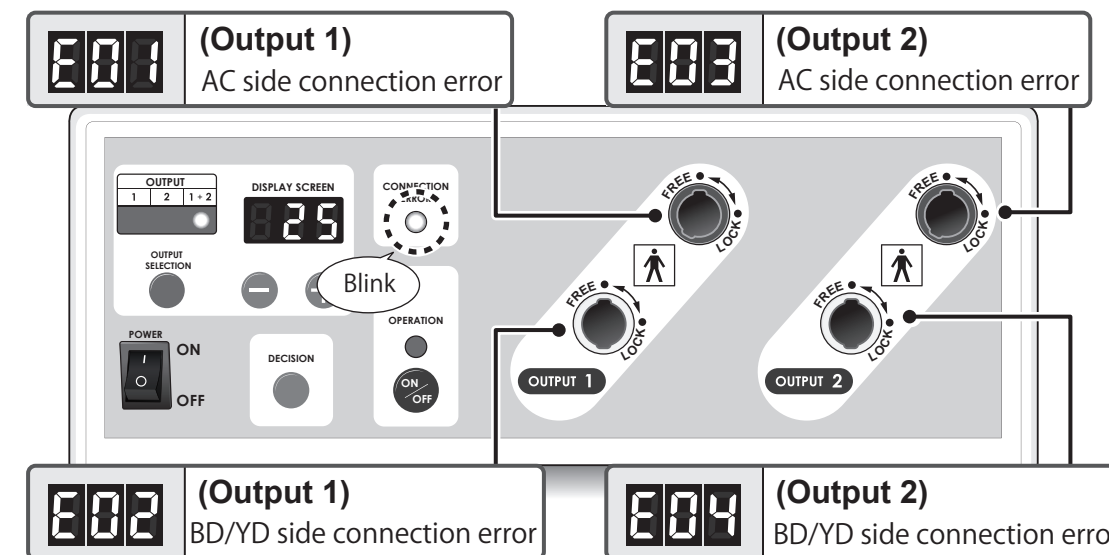
If you accidentally drop the unit, be sure to contact the dealer where you purchased it for inspection.

- Otherwise, even if the appearance and operation are normal, there may be malfunctions and accidents in the future.

Fault display

If it runs when the conductive plate is not properly connected or when the plug is disconnected during operation, it will stop running and start to buzz continuously, and the pink LED indicating poor connection will flash.

An error code is displayed on the display screen.



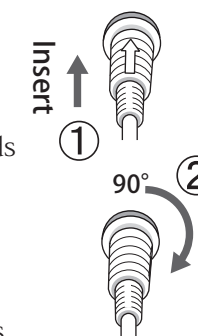
Please insert the conductive plate properly.

Please identify the position of poor connection based on the error code and insert the plug properly.

When multiple points have an insertion error, clearing the error that corresponds to the currently shown error code lets the system show the error code for other point of erroneous insertion.

When the error is rectified, the poor connection LED will turn off and the error will be cleared.

If an error occurs during operation, and you press the Run button again, it starts from the time when the treatment is stopped.



ENERGY CHECK

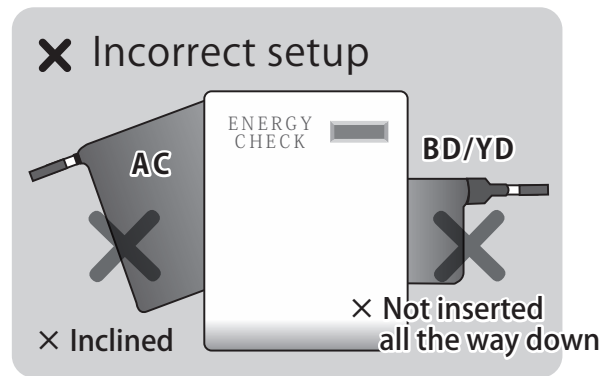
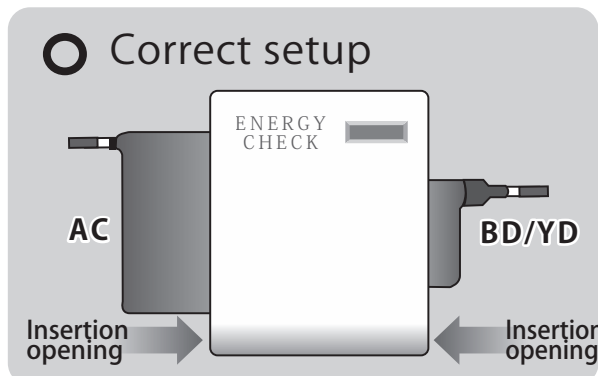
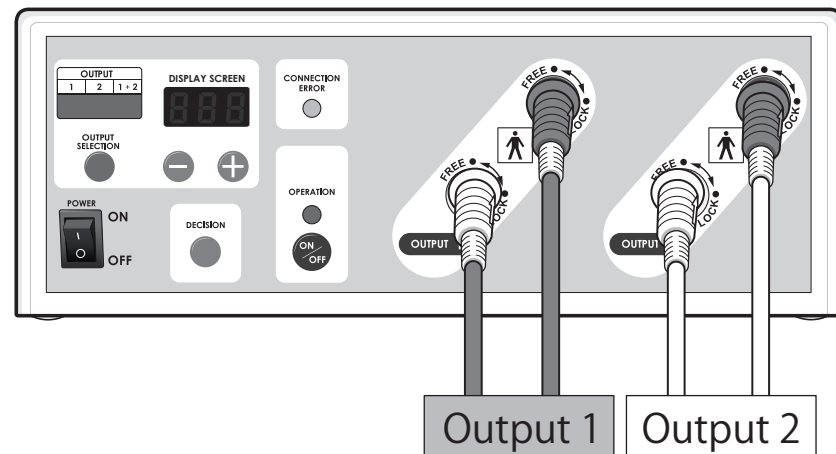
Intended use

ENERGY CHECK is a testing device intended to be used before using RELTEC MD21

(ENERGY CHECK is intended to check conductivity of the conductive plate cables and output from the main body. It is not intended to check the degree of consumption or deterioration of the conductive plates. Loudness of the sound emit from the conductive plates cannot be used as a criterion for output check as it varies depending on the environment, etc.)

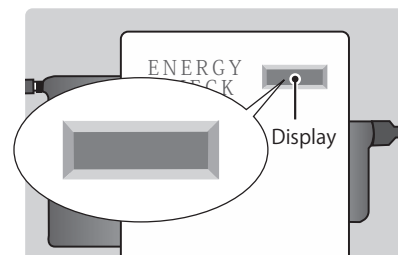
How to use ENERGY CHECK

- 1 Place the ENERGY CHECK on a level surface and insert the uncovered conductive plates AC, BD or YD into their respective slots as far as they go. Be sure to perform a check of each set of output1 and output2 plates.



- 2 Check that there is no sign on the display after the conductive plates are inserted all the way down.

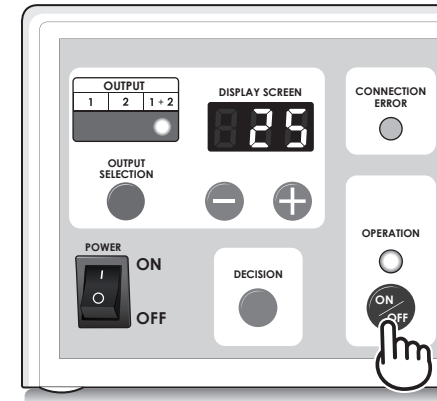
The display may show a sign before turning on RELTEC MD21 if the conductive plates are charged with electric potential. In that case, wait until the sign disappears, and then check again. In addition, the display does not show "OK" sign when tested many times in a row and potential difference is saturated. Wait for a while and recheck.



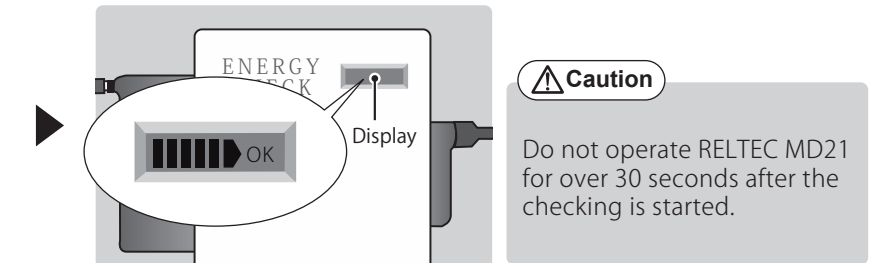
- 3 Turn on RELTEC MD21. "OK" sign appears if there is no abnormality.

Be sure not to touch conductive plates AC and BD or YD while checking. You may select any of the treatment time settings.

[Example: Time is set to 25 minutes.]

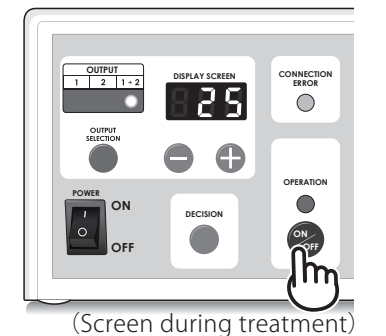


- → There is no problem if the sign appears even just for a moment.
- × → No response
Contact your dealer.
- × → A blurry sign
Go back to the first step and check again.

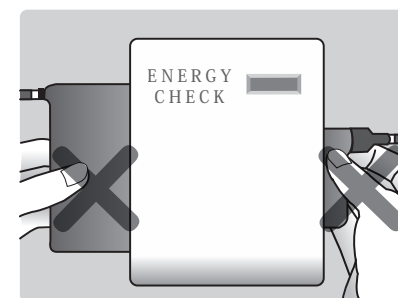


- 4 Touch the operation key and stop operation. Pull out conductive plates AC and BD or YD from the insertion openings.

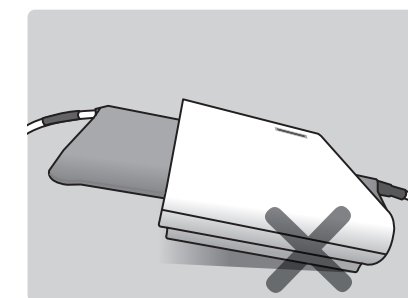
If "OK" sign does not appear on the display of ENERGY CHECK, discontinue use and contact your dealer.



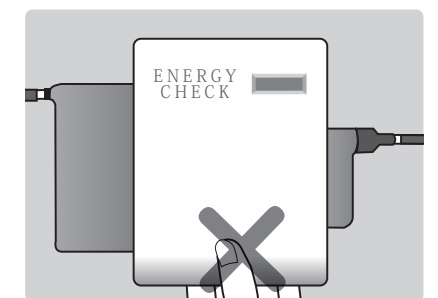
Pay attention to the following instructions



× Do not touch the conductive plates with hands



× Do not put ENERGY CHECK on an unstable surface



- Caution**
- Keep it away from infants and children.
 - Do not use it in a place where it may be exposed to water, such as in a bathroom.
 - Do not drop it from a high place or give it a strong shock.
 - Do not modify or disassemble.
 - Do not use it for other than intended use.
 - Do not put it in a hot and humid place, or in a place where it is exposed to direct sunlight.
- ※ENERGY CHECK is not covered by warranty.

1. Replacement of consumables (Not covered by warranty)

- The conductive plate is consumable.
- Replacement of consumables on a regular basis is recommended to maintain the efficacy and effectiveness.
- If you use a broken or damaged conductive plate BD or YD, you may receive an electric shock, so we recommend that you inspect the conductive plate BD or YD every 1 to 2 years.
- When the AC adapter or any of the conductive plates is damaged, discontinue use as it is dangerous to use it continuously. Replace damaged one with new one.
- A conductive plate which has been used for many years may cause burns, electric shock or fire due to cable breakage, etc.

2. How to store the device

- Keep the body unit and accessories clean, wash covers, etc. and then store them in a dry place in order so that they work properly when used next time.
- When the device is used after an extended period of no use, connect the conductive plates to the main unit and confirm, by using the ENERGY CHECK, that the power switch and operation buttons operate correctly and safely
- When you use the device after a long period of storage, contact your dealer and have it inspected.
- Please keep the product away from dust and insects.
- Please keep the product away from fire or heat source.
- Do not store the products in precarious places.
- Do not expose the product to direct sunlight.
- Please keep the product out of reach of child.
- Please remove dust between outlet and power cord plug.

3. How to dispose of or transfer the device

- If you wish to dispose of or transfer the device, contact your dealer for safety and legal reasons.

If you think something is wrong

Fault	Check	Measures
The unit is not energized after the power switch is turned on. The display screen area is off.	Is the power cord and the AC adapter connected correctly?	Insert the plug of the AC adapter into the special socket on the back of the unit.
		Insert the power cord's connector into the AC adapter's socket.
		Plug the power cord into the socket (100-240VAC).
An error is displayed.	Is the plug of the conductive plate properly connected to the socket?	Insert the plug of the conductive plate into the special socket. (P10)
The operation tone does not sound when the button is pressed.	Is "b-0" not set up for the buzzer volume?	Set the buzzer volume between "b-1" and "b-3". (P24)
The end tone does not sound at the end of treatment.	Is "b-0" not set up for the buzzer volume?	Set the buzzer volume between "b-1" and "b-3". (P24)
"OK" message does not appear when checking the conductive plates with ENERGY CHECK.	Was the output parts "OUTPUT 1" or "OUTPUT 2"?	Set the output parts "OITPUT1+2" and then check the output with ENERGY CHECK again.
	Do your hands come in contact with the conductive plates?	Keep your hands off the conductive plates after the conductive plates are inserted into ENERGY CHECK.
	Didn't you overlook the message as it is displayed only for a moment?	Check it again. There is no problem if the message appears even for a moment.
	Is the RELTEC MD21 operating?	If not, touch the operation button.
	Is ENERGY CHECK put on a flat surface? Are the conductive plates inserted into the insertion openings horizontally?	Put ENERGY CHECK on a flat surface and insert the conductive plates into the insertion openings properly. Then check again.
	Did you check many times in a row?	Check again after a short while.

Specifications

*Please note that the product specifications and appearance may be subject to change for reasons such as improvement, etc. without prior notice.

General name	Electric therapy equipment
Brand Name	RELTEC MD21
Model	MD21
External dimensions	300(W) × 110(H) × 280(D)(mm)
Mains voltage	100-240 V ~
Rated frequency	50-60 Hz
Power consumption	50VA
Weight	Approx. 2.2Kg (main body)
Treatment time	Manual setting (1 to 99 minutes)
Output voltage	DC-5500±500 V
Essential Performance	The essential performance of this product is "output voltage DC-5500V ± 500V". If the essential performance is lost or deteriorated due to electromagnetic interference, the display may flash or become malfunction. In this case, turn off the power of the device and stop the treatment.
Output pole	Available options: monopole mode, dipole mode
Safety features	<ul style="list-style-type: none"> The device automatically stops when a conductive plate plug is disconnected. The device automatically stops when a conductive plate plug is not properly inserted. The device automatically stops when the main body is installed improperly.

Electric shock protection classification	Class I
Degree of electric shock protection	BF-type applied part
Degree of protection	IPX0
Operation mode	Consecutive operation

Usage /Storage environment	operating temperature	10~39°C
	operating humidity	30~85%RH (no condensation))
	transport and storage temperature	0~50°C
	transport and storage humidity	10~90%RH (no condensation)

Accessories	Type BD	Type YD
	Conductive plate AC (2.5m) 2 pcs	Conductive plate AC (2.5m) 2 pcs
Conductive plate BD (2.5m) 2 pcs	Conductive plate YD (2.5m) 2 pcs	
Cover (S) 4 pcs	Cover (S) 4 pcs	
Cover (XS) 4 pcs	Cover (XS) 8 pcs	
Velcro XS (30-cm length) 2 pcs	Velcro XS (30-cm length) 4 pcs	
Velcro M (80-cm length) 1 pc	Velcro M (80-cm length) 1 pc	
Velcro L (120-cm length) 1 pc	Velcro L (120-cm length) 1 pc	
AC adapter (1.25m) 1 pc	AC adapter (1.25m) 1 pc	
Power cord (2 m) 1 pc	Power cord (2 m) 1 pc	
Instruction manual 1 copy	Instruction manual 1 copy	
Insulating mat (90 cm × 190 cm) 1 pc	Insulating mat (90 cm × 190 cm) 1 pc	
ENERGY CHECK 1 pc	ENERGY CHECK 1 pc	
Spiral tube 10pc	Spiral tube 10pc	

User Profile

Operator	Doctor, Nurse, Physiotherapist Occupational therapist	Patient	
Gender	Men and Women	Gender	≥ 3 years old
Age	≥ 20 years old	Weight	≥ 10 kg
Professional Competence	Medical License, Nurse's License, Physiotherapy certificate, Occupational therapist certificate	Part of the body applied to	Limb, Shoulder, Back of head, Abdomen
Use Frequency	30 minutes/time several times/ day	Location of Use	Professional healthcare facility environment
Linguistic	Japanese		
Knowledge	At least 11 years old – 5 years intensive reading experience(school)		

Electromagnetic emissions

The RELTEC MD21 is intended for use in the electromagnetic environment specified below. The customer or the user of the RELTEC MD21 should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment-guidance
RF missions CISPR11	Group1	The RELTEC MD21 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic device.
RF emissions CISPR11	Class A	The RELTEC MD21 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	N/A	NOTE: The EMISSIONS characteristics of this device make it suitable for use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential environment (for which CISPR 11 class B is normally required) this device might not offer adequate protection to radio -frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the device.
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Electromagnetic immunity

The RELTEC MD21 is intended for use in the electromagnetic environment specified below. The customer or the user of the RELTEC MD21 should assure that it is used in such an environment.

Immunity test	Test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	contact: ±8kV air: ±2, 4, 8, 15kV	contact: ±8kV air: ±2, 4, 8, 15kV	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC61000-4-4	power supply lines: ±2kV Repeated frequency 100kHz	power supply lines: ±2kV Repeated frequency 100kHz	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC61000-4-5	Between line and line ±0.5kV and ±1kV Between line and ground ±0.5kV, ±1kV and ±2kV	Between line and line ±0.5kV and ±1kV Between line and ground ±0.5kV, ±1kV and ±2kV	Mains power quality should be that of a typical commercial or hospital environment.
Power frequency magnetic field IEC61000-4-8	30A/m (50 or 60Hz)	30A/m (50Hz)	If image distortion occurs, it may be necessary to position RELTEC MD21 further from sources of power frequency magnetic fields or to install magnetic shielding. The power frequency magnetic field should be measured in the intended installation location to assure that it is sufficiently low.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC61000-4-11	0%UT: for 0.5 cycle 0°, 45°, 90°, 135°, 180°, 225°, 270° or 315° 0%UT: 1 cycle or 70%UT: 25/30 cycle single phase 0°	0%UT: for 0.5 cycle 0°, 45°, 90°, 135°, 180°, 225°, 270° or 315° 0%UT: 1 cycle or 70% UT: 25/30 cycle single phase 0°	Mains power quality should be that of a typical commercial or hospital environment. If the user of the RELTEC MD21 requires continued operation during power mains interruptions, it is recommended that the RELTEC MD21 be powered from an uninterruptible power supply or a battery.

Specifications

Recommended separation distances between portable and mobile RF communications device and the RELTEC MD21 - for device and system that are not life-supporting.

The RELTEC MD21 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the RELTEC MD21 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications device (transmitters) and the RELTEC MD21 as recommended below, according to the maximum output power of the communications device.

RF Test specification of exterior port immunity to radio communication device

Frequency (MHz)	Band ^{a)} (MHz)	Communication service ^{a)}	Modulation ^{b)}	Maximum power (w)	Separation distance (m)	Immunity test level (V/m)
385	380~390	TETRA 400	Pulse modulation ^{b)} 18Hz	1.8	0.3	27
450	430~470	GMRS460 FRS460	Frequency modulation ^{b)} ±5kHz Deviation 1kHz sine wave	2	0.3	28
710	704~787	LTE Band 13,17	Pulse modulation ^{b)} 217Hz	0.2	0.3	9
745						
780						
810	800~960	GSM800/900 TETRA800 iDEN820 CDMA850 LTE Band 5	Pulse modulation ^{b)} 18Hz	2	0.3	28
870						
930						
1500						
1500	1475.9~ 1510.9	LTE Band 11,22	Pulse modulation ^{b)} 217Hz	0.25	0.3	10
1720	1700~1990	GSM1800 CDMA1900 GSM1900 DECT LTE Band 1,3,4,25 UMTS	Pulse modulation ^{b)} 217Hz	2	0.3	28
1845						
1970						
2450						
2450	2400~2570	Bluetooth WLAN 802.11 b/g/n RFID 2450 LTE Band 7	Pulse modulation ^{b)} 217Hz	2	0.3	28
3500	3400~ 3560	LTE Band 42	Pulse modulation ^{b)} 217Hz	0.2	0.3	9
5240	5100~5800	WLAN 802.11 a/n	Pulse modulation ^{b)} 217Hz	0.2	0.3	9
5500						
5785						

a) Include only uplink line frequency in some services

b) Carrier is modulated by duty ratio 50%

c) 50% pulse modulation in 18Hz may be used instead of frequency modulation.

This does not show the actual modulation, but can be considered as a worst situation.

Electromagnetic immunity- for device and system that are not life-supporting

The RELTEC MD21 is intended for use in the electromagnetic environment specified below. The customer or the user of the RELTEC MD21 should assure that it is used in such an environment.

Immunity test	Test level	Compliance level	Electromagnetic environment – guidance
Conducted RF IEC 61000-4-6	3V/m 150kHz~ 80MHz	3V/m 150kHz~ 80MHz	Portable and mobile RF communications device should be used no closer to any part of the RELTEC MD21, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Immunity test level $E = \left(\frac{6}{d} \right) \sqrt{P}$
	6V/m ISM Band during 150kHz~80MHz	6V/m ISM Band during 150kHz~80MHz	
Radiated RF IEC 61000-4-3	3V/m 80MHz z ~ 2.7GHz z	3V/m 80MHz z ~ 2.7GHz z	Where P is the maximum output rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres(m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of device marked with the following symbol.



Other information

After-sales service and service life

- **If you think something is wrong**

Before asking for repair, please refer to "If you think something is wrong" on page 33.

In case the problem still remains, discontinue use and disconnect the power cord. Then contact your dealer.

- **The service life of this device is seven years.**

RELTEC MD21 maintenance list

Please maintain your device in accordance with the following table for proper and safe use as well as maintenance of the efficacy and effectiveness.
If you find any abnormalities, discontinue use and unplug the power cord. Then contact your dealer.

	Check items	What to check	Solution
Monthly Check	Cleaning of body unit	<ul style="list-style-type: none"> • The exterior must not have cracking, breakage, etc. 	Contact your dealer if your device has any of the symptoms shown in the left.
	Power cord AC adapter	<ul style="list-style-type: none"> • Is the power cord and the AC adapter broken? • Is there a cut in the power cord and the AC adapter? 	Contact your dealer if your device has any of the symptoms shown in the left.
		<ul style="list-style-type: none"> • Is there dust between the outlet and the power cord plug? 	Unplug the power cord and remove dust.
Weekly Check	Conductive plates	<ul style="list-style-type: none"> • The conductive plates are not wet or damp, and are completely dry. 	Remove the velcro after treatment, and let the velcro and conductive plates dry naturally, placing them apart.
		<ul style="list-style-type: none"> • Is there any breakage, cut, or deformation in the conductive plates (applied parts) and the conductive plate cables? 	Contact your dealer if your device has any of the symptoms shown in the left.
		<ul style="list-style-type: none"> • Do you feel a shock similar to an electric shock during treatment? 	
Daily Check	Covers and velcro	<ul style="list-style-type: none"> • Are the covers and velcro kept clean? 	Wash them frequently as ingredients such as sweat, etc. stick to them.
	Check with ENERGY CHECK	<ul style="list-style-type: none"> • Refer to page 30 and 31 	Contact your dealer if the "OK" sign does not appear on the display of ENERGY CHECK.

- ① Before cleaning, hold the power cord plug and disconnect it from the outlet as it may cause electric shock.
- ② Wipe with a dried soft cloth and never use benzine or thinner for cleaning.
- ③ Wet or damp conductive plates must be dried naturally. Do not dry them with a hair dryer or a heater.
- ④ Do not touch conductive plates with wet hands.

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