

Magnetic Flux, Vibrations and Thermal Therapy Unit

HOT MAGNER®

HM-202/204

Instruction Manual

Thank you very much for purchasing the HOT MAGNER. The HOT MAGNER HM-202/204 were developed based on valuable advice of a number of physicians and is designed for use by clinical physicians. Kindly read this manual before you start using the equipment so that you will be able to obtain the maximum performance without trouble.

Heat, magnetic force and micro-vibration are provided from the same electrode pack.

Before starting

Check if all the listed standard accessories are packed in the case.

HOT MAGNER, HM-202/204, are the therapy units, which make use of Magnetic Flux, Vibration and Heat for the treatment of chronic diseases such as Shoulder Stiff, Lumbago, Bronchitis etc..

Features

◆ **Magner Pack generates vibrations**

Pleasant micro-vibrations are provided by the same Magner Pack which adopts the alternating magnetic field.

◆ **The Magner Pack can warm up the deep internal organ**

Differing from the conventional heat pack heating only the shallow skin surface, the HOT MAGNER warms up the deep internal organ and its effect lasts long.

◆ **Easy to use**

The HOT MAGNER can apply over clothing for treatment and is a patient-friendly instrument, providing a comfortable feeling.

◆ **Minimum running cost**

Power consumption is only 100W/h, about one fifth or one tenth of ordinary heating units.

◆ **Trouble-free and reliable**

Since it includes no heat-generating hardware, such as nichrome wire, there is no possibility of broken wire.

◆ **Easy handling**

The Magner Pack weighs 1.3kg, the most well-balanced and appropriate for handling. No need of fastening the pack.

Description of the controls

LOAD MONITOR

Shows Super Magner Pack's temperature state.
While rising temperature=All lights are on.
While keeping the temperature=Depending on the electricity amount, the number of lights varies.

DIGITAL DISPLAY (TIMER)

Shows preset treatment time when you are not using the appliance.
Shows the remaining time during treatment.
Shows Error Number when an error has occurred.

TEMP Lamp

Indicates the preset temperature.

MODE Lamp

Indicates the preset mode.

UP Key

Set the treatment time.
When you press the key once, the time increases one minute.

DOWN Key

Set the treatment time.
When you press the key once, the time decreases one minute.

TEMP Key

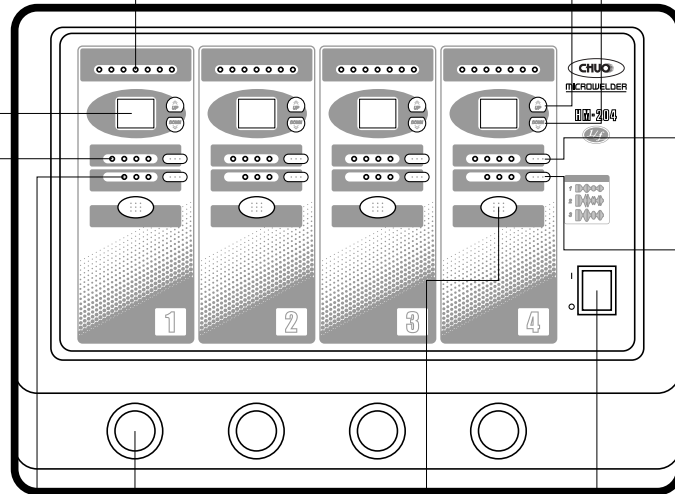
Set the treatment temperature.

MODE Key

Set the vibration type of Super Magner Pack.

POWER switch

The built-in lamp lights up when depressing the power switch on.



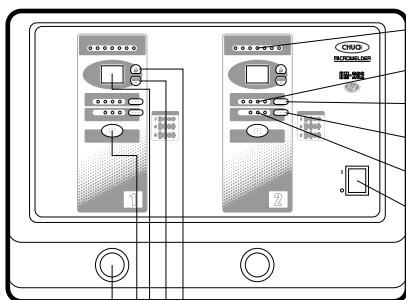
HM-204

OUTPUT port

Receives the metal plug of the Magner Pack.

START/STOP Button

Start treatment by pressing the button.
Stop the treatment when you press the button during treatment.



LOAD MONITOR

TEMP Lamp

TEMP Key

MODE Key

MODE Lamp

POWER Switch

HM-202

UP Key

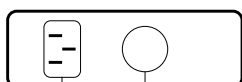
DOWN Key

DIGITAL DISPLAY

START/STOP Button

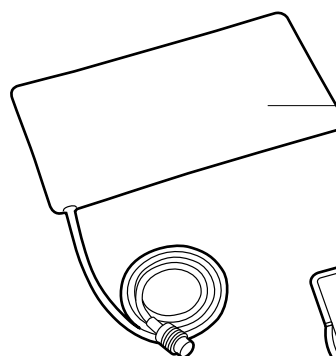
OUTPUT Port

Rear Panel

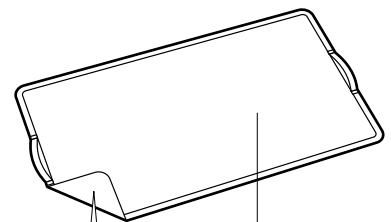


BZ/Buzzer to indicate the end of operation.

Connector for the power cable.

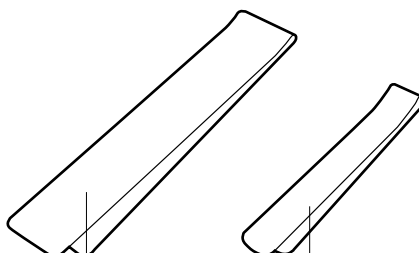


Super Magner Pack with cover (as shipping)



Tender material

Pack Cover

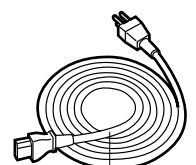


Magic belt (L)

Magic belt(S)



Magnetic detector



Power cable

Operation procedures

Before Starting.

1 Connecting power cable.

Connecting the power cable to the connector located at the rear panel of the main unit.

2 Connecting Super Magner Pack.

Insert the metal plug of the Super Magner Pack cable to the output jack (output port) of the main unit.

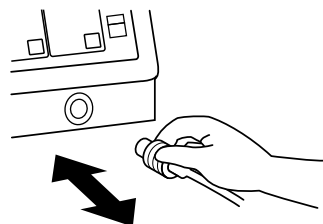
3 Switching the power switch on.

After microprocessor self test and short pipe tone, TIMER Display, TEMP/MODE Lamp and Monitor indicate the preset value.

4 Overheat prevention circuit.

Internal Overheat Prevention Circuit starts working when you switch the power switch on. The temperature is controlled and Super Magner Pack is preheated and kept warm at about 30°C.

- Super Magner Pack generates a weak magnetic wave and vibration.
- In winter, allow preheating time (about 10 min.) before using.

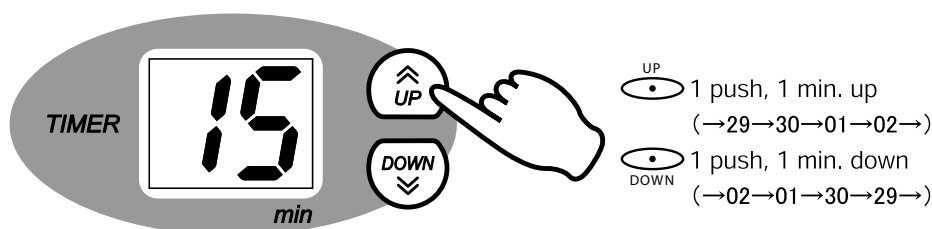


Treatment Time Setting.

Set the time using UP/DOWN Key.

When you press the key once, the time increases/decreases one minute. Setting time 1-30 min.

- The press time cannot be changed during treatment.



⚠ CAUTION

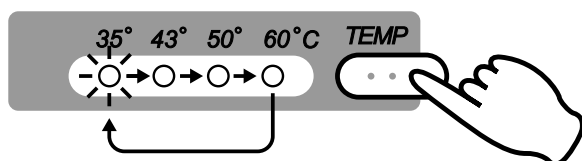
Do not treat a patient over the maximum treatment time of 30 minutes to avoid low temperature burns.

Temperature Setting.

Set the temperature using TEMP Key.

Temperature can be set in four steps: 35, 43, 50 and 60°C. TEMP Lamp indicates the set temperature.

- Auto-regulation function keeps the set temperature.



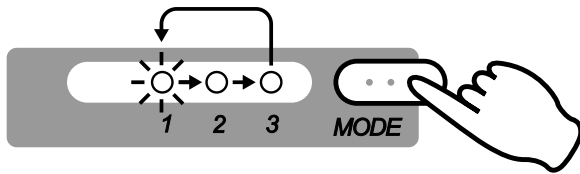
⚠ CAUTION

- Please note that the Super Magner Pack dose not cool down even if you set the lower temperature after a treatment in higher temperature.
- Be careful to select a proper temperature for the individual patient.
- The greatest care must be taken to avoid a burn when operating at 60°C.

Mode Setting.

Set the mode using MODE Key.

MODE Lamp indicates the selected mode.



MODE

- 1 Repeats gentle movement with a small vibration.
- 2 Repeats intermittent movement with a big vibration.
- 3 Repeats continuous movement with a big vibration.

Starting treatment.

1 Apply the Super Magner Pack to the affected part.

Super Magner Pack can be applied over clothing.

- Do not use the HOT MAGNER near shortwave or microwave therapy unit.

How to apply the Super Magner Pack



2 Press the START/STOP Button.

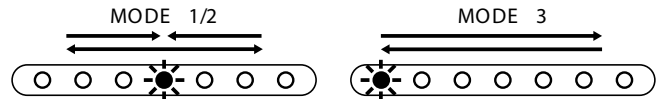
Magnetic flux, vibrations and heat of preset temperature are generated on Super Magner Pack.

Digital Display shows the remaining of treatment time.

If the Super Magner Pack doesn't reach 20°C in 4 minutes after starting treatment, the overheat prevention circuit stops the appliance and gives error message E0. Please preheat the appliance for 10 minutes before operation in winter.

About LOAD MONITOR.

- All LEDs light up until the Super Magner Pack reaches the preset temperature.
 - After reaching the preset temperature, some LEDs blink depending on the power output.
- ※ The LEDs blink from center to side in Mode 1/2. They blink from left to right in Mode 3.



Lights	Temperature	Vibrations	Magnetic flux
All LEDs	climbing	continuous	pulse
Continuous change	hold	intermittent	pulse

End of treatment.

At the end of treatment, the buzzer beeps and the Digital Display shows 00. Thereafter the Display returns to the preset time.

To stop operation during treatment.

Press the START/STOP Button. Once you do this, the buzzer beeps and the Digital Display shows 00. Thereafter the Display returns to the preset time.

Operation procedures

About Super Magner Pack.

CAUTIONS:

When you apply the Super Magner Pack.

- Do not apply the Super Magner Pack directly to the skin without using Pack Cover or towels.
- Straighten the cable before using.

Pack Cover with belt.

A belt is attached to Pack Cover and easier to adjust/fix the Super Magner Pack. When you use the Pack Cover, the contact between the Super Magner Pack and the skin gets closer. Please take extra care to avoid low-temperature burns.

You can check it with the Magnetic Detector.

When you put the Magnetic Detector to close to the Super Magner Pack, the magnet in the case vibrates.

- Cables don't generate heat or oscilate.

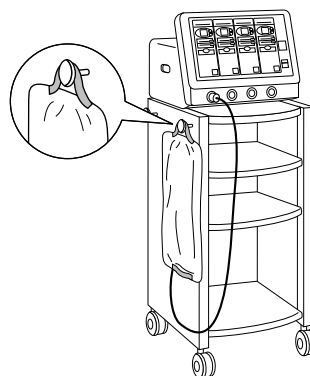
⚠ CAUTION

- When the patient lies on the Super Magner Pack, it may cause low-temperature burns. Take extra care to set temperature.
- Super Magner Pack has bigger vibration than ordinary thermal pack. Please use Mode 1 depending on the treated area.
- The greatest care must be taken to avoid a burn when operating at 60°C.

Hanging knobs of the wagon (Option).

You can attach the knobs on the left side or the right side of the wagon.

Please use them to hang the Pack Cover.



Safety aspects.

The Super Magner Pack has an overheat prevention circuit to prevent an abnormal temperature increase and avoid fire or burns. It stops the power output and gives an error sound and error code in the following cases:

1. Thermal sensor does not work because of broken wire or shortage.
2. The coil connection wire is broken.
3. The actual temperature goes 10°C higher than the set temperature.

Once an error occurred, an error sound beeps 5 times and Error Number blinks on the Digital Display until recovery procedure is taken.

To recover to the original state.

- Press START/STOP Button of the corresponding channel, or
- Switch off the Power Switch once, switch on again. The channel is activated again when the Super Magner Pack is connected.
- If the same error occurs after recovery again, stop using the appliance and contact the dealer/manufacturer.

⚠ CAUTION

- Adjust the temperature level according to the individual patient and the part to be treated.
- 30 minutes is the maximum treatment time. The patient may get low-temperature burns or feel extremely tired after prolonged treatment.
- Do not apply the HOT MAGNER to acute inflammations and suppurative diseases.
- Take extra care of set temperature and position of apply

Super Magner Pack when you treat hypersensitive skin.

- Super Magner Pack has bigger vibration and louder sound than ordinary thermal unit electrode, to give more massage sensation. Select Mode 1 (gentle vibration) depending on the treatment area or patient.

- Ultra-short wave unit or microwave unit etc. has strong electromagnetic interferences to the appliance. Do not use the appliance near Ultra-short wave unit or microwave unit etc.

Optional Accessories

- Super Magner Pack : MS(Standard), LS(Lower Limb), OS(Abdomen & Waist), ES(Shoulder & Knee), WS(Paired)

Specifications

Model	HM-202	HM-204
Power Source	AC220V 50/60Hz	
Classification	Protection Class I Type B	
	MDD class II a	
	the applied part Type B	
	EMC Group 1 Class B	
Power Consumption	320VA	640VA
Temperature Control	35, 43, 50, 60°C (temp. control unit built-in)	
Micro-Vibration Times per second	Ripple:71 Random Wave:127 Big Wave:64(each±5)	
Condition: Temperature Humidity	Operation	Storage
	10~40°C	-10~40°C
	30~90%	10~90%
Dimensions	440W × 300D × 320H(mm)	
Weight	17.0kg	19.0kg
Wagon(Optional)	HM-24W(20kg)	

Design and specifications subject to change without advance notice.

Accessories	HM-202	HM-204
Super Magner Pack	MS 2	MS, OS 2each
Pack Cover	MS 2	MS, OS 1each
Magic Belt	S 2	S 2, L 2
Power Cable	1	1
Magnetic detector	1	1
Instruction Manual	1	1

Troubleshooting

Troubles	Cause		Treatment
No Power supply	The power cable is not connected correctly.		Connect it firmly.
	The power switch is not on.		Turn the switch on.
No LEDs are off even though power supply is all right.	Mechanical problem.		Please contact the distributor.
No heat generation/ vibration.	The power is on but LEDs of one certain channel are off.		Please contact the distributor.
	The timer is not on.		Set the timer.
	The timer is on and the number shown on the timer display decreases but there are no heat/ vibration.		Please contact the distributor.
The unit stops operation during treatment (Error message)	The unit stops operation without any error message.		Please contact the distributor.
	E1	Coil connection cable is broken or trouble in overheat prevention circuit.	If it happens again after the Pack cools down, change the Pack with a new one.
		Pack cord is piled up.	Disconnect the pack.
	E2	Thermal sensor shortage.	If it happens again after the Pack cools down, change the Pack with a new one.
		Temperature is 10°C higher than the set temperature (60°C)	
	E4	Thermal sensor cable is broken.	If it happens again, change the Pack with a new one.
		No pack is connected.	Connect the Pack.
	E5	No pack is connected.	Connect the pack.
	E8	Temperature is 10°C higher than the set temperature (35,43,50°C)	Wait till the Pack cools down or use other Pack.
	ER	Appliance has been started after changing to 35°C,43°C,50°C after E2.	
	E0	The Pack doesn't reach 20°C within 4 minutes after starting.	If it happens again, change the Pack with a new one. If it still happens, please contact us or the distributor.
The pack is overheated	Temperature setting is not proper.		Always set a proper temperature.
	The Pack is under influence of the other Pack.		Keep the Packs apart.
	The Pack is directly applied to the skin.		Use the Pack Cover or towel.
If the trouble still occurs even after Treatment, stop using the appliance, please contact the distributor with information of the following:		1. Puroduct Name HOT MAGNER 2. Model No. (ex.) HM-204 3. Product No. (ex.) No.12010001 4. Purchasing date 5. Distributor 6. Trouble	
		The above information is written on our warranty card and label on the rear panel of the appliance.	

For its safe use

Contraindications, Cautions.

⚠ **WARNING!**

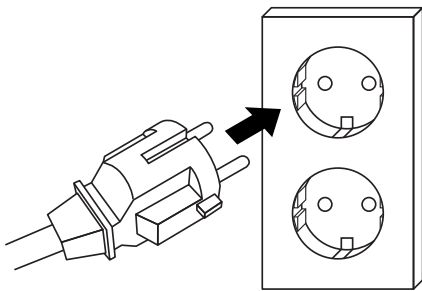
- Do not apply the HOT MAGNER to acute inflammations and suppurative diseases.
- Contraindications; NEVER apply the appliance to the following patients:
 - Patients with implanted electronic devices (pacemakers!).
 - Patients with implanted metallic devices such as artificial joints.

⚠ **CAUTIONS**

Patients with following symptoms may only be treated after seeking medical advice:

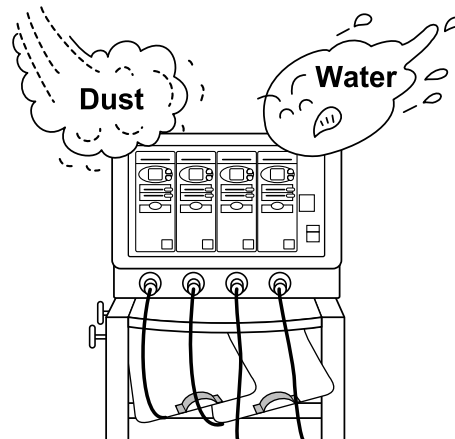
1. Acute disease
2. Malignant tumor
3. Pregnancy
4. Skin sensitivity disorders/Bad skin conditions
5. Infant or the one who cannot indicate his intention
6. Heart disorder
7. fever
8. Patient under other treatment

WARNING!



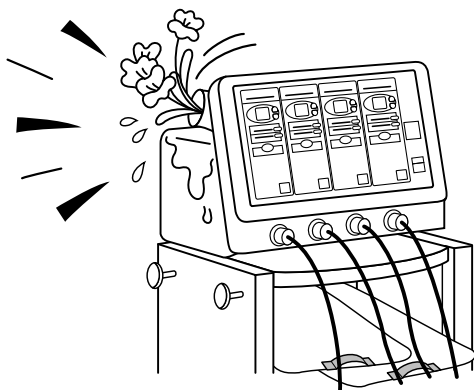
Confirm that grounding has been made correctly.

WARNING!



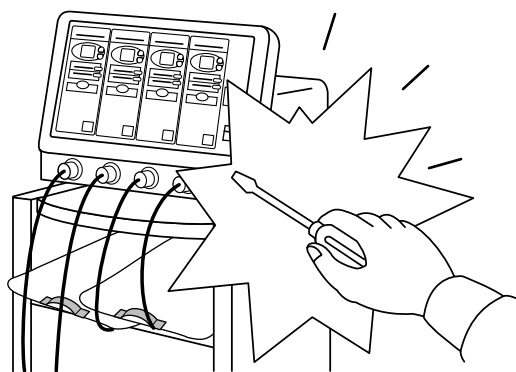
Avoid to set up the appliance at places subject to undue humidity, temperature, dust, splash of water, or places exposed to direct sunlight.

WARNING!



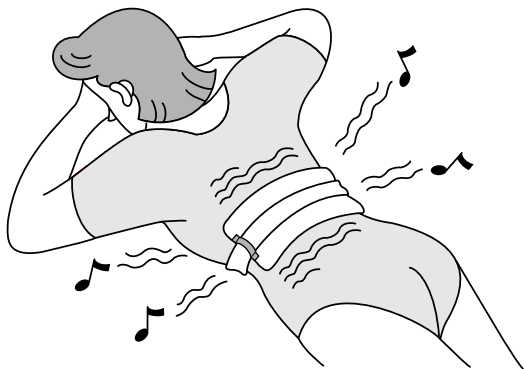
Do not spill any liquid or drop foreign substances into the appliance. It may cause accident, fire, electric shock or mechanical trouble.

WARNING!

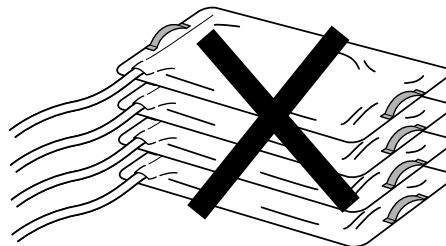


Do not modify the instrument.

! Cautions



Super Magner Pack has bigger vibration than ordinary thermal unit pack, to give more massage sensation.



Do not layer the Super Magner Packs while thermal circuit is working because they may be overheated.



Placing the Super Magner Pack directly on the treatment site may cause low-temperature burns. Please use an pack cover or towel.



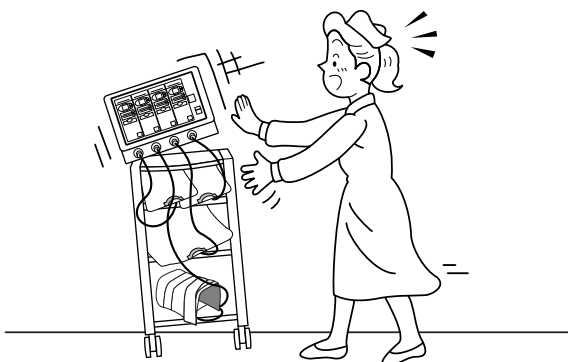
The maximum treatment time is 30 minutes. The patient may feel fatigued after prolonged treatment.



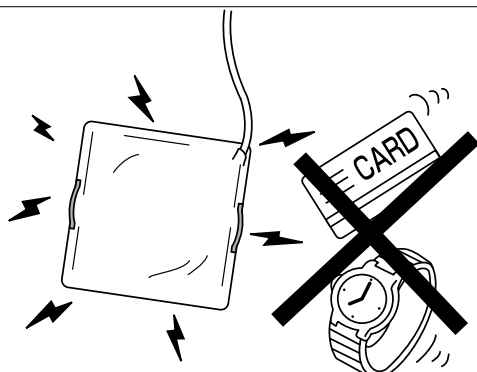
Please do not carry the Super Magner Pack by the connecting cable. this may result in trouble.



Confirm before operation that the plugs are firmly connected.



Be careful when you move the appliance and the Super Magner Packs and never give a big shock.



Please do not leave watches or magnetic credit cards around the Super Magner Pack as they are subject to the magnetic influence.

The instrument must be operated by skilled staff only.

WARNING!

Power cable.

Do not bent the cable by force or put a heavy substance onto it. Do not use a flawed cable to prevent fire or electric shock. Unplug the the appliance from the wall outlet after using. To disconnect a cable, pull it out by the plug. Never pull the cable itself.

When abnormalities or troubles are found out.

Do not manipulate the instrument when malfunctions should occur. Hand the instrument to an authorized specialist with adequate comments for his proper follow-up.

Observe following cautions for installation.

- (1) Set up the appliance at a place free from a splash of water.
- (2) Avoid to set up the appliance at places in the environment subject to undue humidity, temperature, dust, air containing salt or sulfur, or places exposed to direct sunlight.
- (3) Set up at flat stable places free from inclination, vibration and shock.
- (4) Not to set up the appliance at storage places of chemicals and pharmaceuticals, or at places subject to gas generation.
- (5) Observe the ratings of frequency, voltage and amperage (or consumption) of power.

Before operation.

- (1) Check switches, dials and their settings, and confirm that the instrument functions properly.
- (2) Check that all cables are correctly and safely connected.
- (3) Take extra care when using the appliance concurrently with other equipment as it may cause wrong diagnosis or danger.
- (4) Insert the plug of the Super Magner Pack to the OUTPUT terminal of the main unit thoroughly and check whether the Pack works normally or not when the corresponding channel of the main unit starts working.

During operation

- (1) Please do not pull the Super Magner Pack cable. Hold the Super Magner Pack itself to move.
- (2) Avoid to use the appliance to the patient who wears metal accessories.
- (3) Do not put on watches, bank cards or other accessories subject to a magnetic influence.
- (4) Use a cover or towel when applying the electrode directly to the skin.
- (5) Observe not to exceed the designated time and dose for treatment.
- (6) Always monitor the appliance and patient for safety.
- (7) When malfunctions or abnormalities should occur, cease therapeutic operation while confirming patient's safety or take other proper actions.
- (8) Observe the patient not to come in direct contact with the appliance.
- (9) The greatest care must be taken to avoid a burn when operating at the highest temperature (60°C).

After operation.

- (1) Follow the designated procedures to set the switches and dials to their respective home positions, and then switch the power off.
- (2) Do not apply undue force to the cables when dismantling. Hold the connector of the Super Magner Pack and pull it from the main unit straightly and slowly when disconnecting (Referring illustration). see page 3
- (3) Storage.
 - a.Store the appliance at a place, free from a splash of water.
 - b.Avoid to store the appliance at places in the environment subject to undue humidity, temperature, dust, air containing salt or sulfur, or places exposed to direct sunbeam.
 - c.Store the appliance at flat stable places free from inclination, vibration and shock.
 - d.Not to install the appliance at storage places of chemicals and pharmaceuticals, or at places subject to gas generation.
- (4) Use cloth with neutral detergent to clean the main unit and the Super Maguber Pack so that they can be used instantly.

Conduct periodic appliance checking according to technology file.

 - It is unnecessary to sterilize the parts because no part is directly in contact to the skin of the treatment site.

Maintenance

- (1) Recommend to conduct periodical appliance checking.
- (2) Confirm that the appliance functions properly and safely before start using after a long time of non-use.

Others

Please follow instructions of the manual for proper operations.

- For disposal at the end of the lifetime of the equipment, please follow the local law/regulation and contact your distributor for detailed information.

Guidance and manufacturer's declaration - electromagnetic emissions


The HM-202/204 is intended for use in the electromagnetic environment specified below. The customer or the user of the HM-202/204 should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The HM-202/204 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 equipment.
RF emissions CISPR 11	Class B	The HM-202/204 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	Class B	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer's declaration - electromagnetic immunity			
The HM-202/204 is intended for use in the electromagnetic environment specified below. The customer or the user of the HM-202/204 should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact / ±8 kV air No loss of performance	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 IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV power No loss of performance Not applicable	Mains power quality should be that of a typical commercial or hospital environment. All the pad cables are less than 3 m
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	Not applicable	Requirements remain unchanged from previous.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5 % UT (>95 % dip in UT) for 0,5 cycle 40 % UT (60 % dip in UT) for 5 cycles 70 % UT (30 % dip in UT) for 25 cycles <5 % UT (>95 % dip in UT) for 5 sec.	UT - 100%(0.5 period) No loss of performance UT - 60%(5 periods) No loss of performance UT - 30% (25 periods) No loss of performance UT - 100% (5 sec) No loss of performance	Mains power quality should be that of a typical commercial or hospital environment. If the user of the HM-202/204 requires continued operation during power mains interruptions, it is recommended that the HM-202/204 be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m 50Hz/60Hz	Not applicable	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE UT is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacturer's declaration - electromagnetic immunity

The HM-202/204 is intended for use in the electromagnetic environment specified below. The customer or the user of the HM-202/204 should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment guidance
Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3 Vrms 150 kHz to 80 MHz 3 V/m 80 MHz to 2.5 GHz	3.15V 150 kHz ~ 80 MHz 3.7 V/m 80MHz ~ 1 GHz 3.7 V/m 1GHz ~ 2.5 GHz	<p>Portable and mobile RF communications equipment should be used no closer to any part of the HM-202/204, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance</p> <p>$d = 1.1 \sqrt{P}$ 150kHz ~ 80 MHz</p> <p>$d = 0.95 \sqrt{P}$ 80 MHz ~ 1 GHz</p> <p>$d = 1.9 \sqrt{P}$ 1 GHz ~ 2.5 GHz</p> <p>Where P is the maximum output power 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, ^a should be less than the compliance level in each frequency range.^b Interference may occur in the vicinity of equipment marked with the following symbol:</p> 

NOTE 1 At 80 MHz to 1 GHz, the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

- a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the HM-202/204 is used exceeds the applicable RF compliance level above, the HM-202/204 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary such as reorienting or relocating the HM-202/204.
- b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than [V1] V/m.

Recommended separation distances between portable and mobile RF communications equipment and the HM-202/204

The HM-202/204 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the HM-202/204 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the HM-202/204 as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter	Separation distance according to frequency of transmitter m		
	150 kHz ~ 80 MHz $d = 1.1 \sqrt{P}$	80 MHz ~ 1 GHz $d = 0.95 \sqrt{P}$	1 GHz ~ 2.5 GHz $d = 1.9 \sqrt{P}$
0,01	0.11	0.095	0.19
0,1	0.35	0.30	0.60
1	1.1	0.95	1.9
10	3.5	3.0	6.0
100	11	9.5	19

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 1 GHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

The address of legal manufacturer: **CHUO MEDICAL SYSTEM CO.,LTD.**

1-9-32 Nakasuji, Takarazuka-shi

Hyogo 665-0874, Japan

FAX:+81-797-88-1313

URL:<http://www.chuoms.co.jp>

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