

Operation Manual





The Producer, has combined from the words, Human and Technology, aim at creating a new value by harmonization between human beings and technology; through technology for human beings and human respect for technology, based on our corporate philosophy - *Trust in People, Technology Push and Value Creation.*

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SAFETY

Ensure that you read and understand this handbook **BEFORE** installing/operating the equipment. Pay particular attention to the Safety Warnings.

WARNINGS

1. C600 (EWST) equipment is certified for and intended for use in potentially hazardous areas. Install and use the equipment in accordance with current local and national regulations.
2. Refer to control drawings included in this document when installing the certified components.
3. Operators should be fully aware of the actions to be taken in all possible cases the C600 (ESWT) system.
4. Do not modify or alter the construction of any of the units as essential safety and certification requirements may be invalidated.
5. Warnings indicate the threat of death or serious personal injury.
 6. Procedures should be performed by service personal specifically trained by Chiroform Ltd. to service or calibrate the C600 (ESWT) System.
 7. This equipment contains high power electrical components and should be only by personnel familiar with the circuitry and its operation. At certain locations these voltages are present **EVEN WHEN THE POWER CORD IS DISCONNECTED**.
 8. Observe the two person rule when working near high voltages. One person must remain clear of the machine and be prepared to turn it off in an emergency.
 9. High voltage generators and capacitors can retain a charge even when power is removed from the system. Avoid touching these unless you are certain the charge has been removed (shorted to ground). High energy capacitors in the system should be shorted to ground through an adequate resistance to avoid potential burn hazards.
 10. The electrode is capable of delivering high currents at high voltage. They are capable of causing severe burns, injury or death from electrical shock. Use extreme caution when working on circuits energized by or located near the probe.
 11. Exercise care when shipping high voltage generators whose terminals are exposed. The terminals should be covered with an insulating gas material. Do not pack them in such a manner that their terminals can short together.
 12. The high voltage charge stored in this capacitor is **LETHAL** and may be retained for long periods. To avoid any danger of shock, the capacitor should be shorted to ground.

CHAPTER 1. INTRODUCTION

□ THE INTENDED USE

It is instrument to use as a purpose of relaxation with what C600 uses electrohydraulic and generates a shock wave, and gives a mechanical stimulus to the interior of the body. HYDRON-QT intends for use of a professionals.

C600 is used for the purpose of treatment of following chronic pain condition.
Calcifications of tendon, Tendonitis / Desmopathy, Epicondylitis, osteoarthritis, Patellar tendon Myopathy / Metaplasia, Pseudarthrosis, Back pain, Osteoporosis, non union / Delayed-Healing

□ PURPOSE

This manual contains service information that will assist trained service personnel to isolate failures and initiate repairs on the C600 ESWT (Extracorporeal Shock Wave Therapy) system.

□ SCOPE

The information contained within this manual pertains to systems currently being manufactured. However, there is HYDRON-QT ESWT in existence and, wherever necessary, this manual contains information and procedures necessary to service this system. The menu UI (User Interface) scope is composed of a software, hardware and shock wave generator system.

□ INTENDED AUDIENCE

Persons that will benefit the most from the information in this manual are service personnel who have been trained to perform the servicing procedures contained within the manual. Reading this manual without proper training does not qualify the reader to service the C600 ESWT system.

□ HOW TO USE THIS MANUAL

SECTIONS

C600 has been divided into sections. The sections are separated by index tab dividers. Each index tab divider has a Tab a Table of Contents for that section printed on the inside to help locate information.

APPENDIX

An appendix is provided which lists specifications, tolerances, recommended tools, and test equipment.

INDEX

An index is provided at the end of the manual. The index can be used in addition to the table of contents to locate information. The index entries include the name of the section and the page number where the information is located.

WARNINGS, CAUTIONS & NOTES

The following warning, caution and note conventions are used throughout the manual to indicate where death, serious injury, or equipment damage may be incurred. It is essential to strictly follow the procedures provides in warnings and cautions.

WARNING: Warnings indicate the threat of death or serious personal injury.

CAUTION: Cautions indicate the threat of minor personal injury or equipment damage.

NOTES: Notes indicate useful information that should be taken into consideration.

SAFETY PRECAUTIONS

TRAINED SERVICE PERSONNEL

Personal injury or property damage can result from incorrectly performed service procedures. Observe all operating and safety procedures contained within this manual.

WARNING Procedures should be performed by service personal specifically trained by HNT Medical Systems, Inc. to service or calibrate the C600 (ESWT) System.

INGRESS OF WATER AND SOLUTIONS

Always unplug the AC power cable from the wall outlet before cleaning the equipment. Do not allow water, □sag, or other liquids to drip into the equipment and possibly cause short circuits, electric shocks and fire hazards.

The system must never be operated or stored in locations where conductive fluids, like water or saline solutions, might spill on the equipment unless the system is properly draped or bagged.

ELECTRICAL SHOCK

Electrical circuits inside the equipment use voltages that are capable of causing serious injury or death from electrical shock.

WARNING This equipment contains high power electrical components and should be serviced only by personnel familiar with the circuitry and its operation. At certain locations these voltages are present **EVEN WHEN THE POWER CORD IS DISCONNECTED.**

Areas where dangerous voltages exist include:

- High voltage generator (located in the C600), high voltage shock wave generator and probe tube assemblies – 18,000 ~ 22,500 volts
- Line voltage – single phase 230 VAC ± 10%
- LCD touch screen monitors (24 volt DC ± 5%)
- Electrode (located in the probe) - 0 ~ 25,000 volts

If the equipment must be serviced with the covers removed, observe the following precautions.

WARNING Observe the two person rule when working near high voltages. One person must remain clear of the machine and be prepared to turn it off in an emergency.

WARNING High voltage generator and capacitors can retain a charge even when power is removed from the system. Avoid touching these unless you are certain the charge has been removed (shorted to ground). High energy capacitors in the system should be shorted to ground through an adequate resistance to avoid potential burn hazards.

WARNING The electrode is capable of delivering high currents at high voltage. They are capable of causing severe burns, injury or death from electrical shock. Use extreme caution when working on circuits energized by or located near the probe.

WARNING Exercise care when shipping high voltage generators whose terminals are exposed. The terminals should be covered with an insulating gas material. Do not pack them in such a manner that their terminals can short together.

WARNING The high voltage charge stored in this capacitor is **LETHAL** and may be retained for long periods. To avoid any danger of shock, the capacitor should be shorted to ground.

SAFETY INTERLOCK

Under no circumstance should the safety interlock in the system be bypassed, jumped, or otherwise disabled.

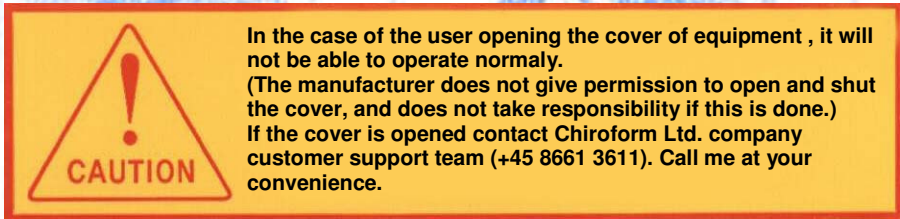
WARNING LABELS

The following warning labels may be found on the system:

Electrical
Safety
Warning

WARNING
UNIT CONTAINS INTERNAL
EXPOSED ELECTRICALLY
HAZARDOUS PARTS. DISCONNECT
POWER AND BATTERIES BEFORE
SERVICING

Cover
Safety
Warning



Dangerous
Voltage
Present



Dangerous voltages are present; use safety precautions.

Careful
Probe
Present



Voltages near probe are present; use safety precautions.

Careful
Hand
Present



Voltages near hands are present; use safety precautions.

Careful
Foot
Present



Voltages near feet are present; use safety precautions.

UNAUTHORIZED MODIFICATIONS

Unauthorized changes or modifications could have hazardous consequences. Changes or modifications must not be made unless specifically authorized by Chiroform Ltd..

Modification requests can be made by obtaining a field modification request form from Chiroform Ltd.

CHAPTER 2. WARRANTY

(This chapter is the quality surety certificate for the product.)

We warrant our goods as follows:

Please have the date of purchase written on the warranty card and keep it in a secure place as you must present the card when asking for repairs.

1. This product is manufactured under strict quality control and inspection processes.
2. If this product goes out of order under normal use by the customer, we will repair it free of charge during the warranty period.
3. Even during the warranty period, we will provide repair services for problems not covered under this warranty, with reasonable charges.
4. Please show us the warranty card when asking for repair services.
5. Please keep the warranty card securely as it will not be reissued.

Scope and duration of guarantee

All products of Chiroform Ltd. after purchasing, where normal transportation methods have been observed, regarding the breakdown which occurs from normal use condition and being the case that the product is within 1 year of purchase, do guarantee one (1) free irrigation.

In the following cases a service charge will be prescribed:

- 1) In the event of breakdown, after the quality assurance period is over.
- 2) In the event of Fire, Earthquake, breakdown due to a lightning bolt or natural disaster.
- 3) After establishing that the breakdown is due to irregular transportation of the product, or inappropriate and careless use of the product.

- In the following cases, Chiroform reserves the right to refuse irrigation services:

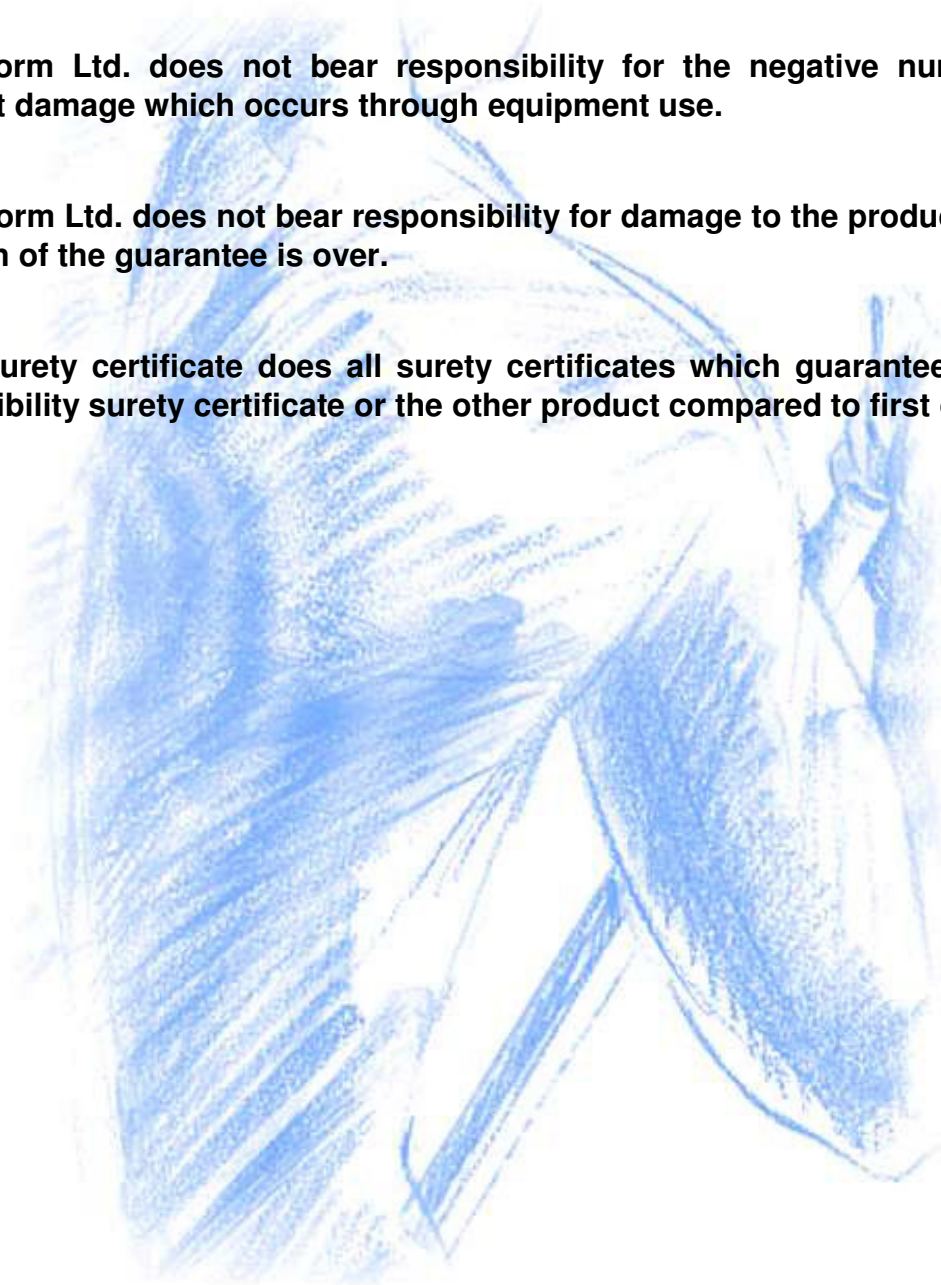
- 1) Chiroform Ltd. may refuse service when the breakdown is due to the irrigation or reorganization of the product by a person other than the designated service person in charge.
- 2) sage cases in which parts have been used which were not supplied by Chiroform Ltd.

Necessary facts to know when requesting irrigation.

- 1) When the breakdown occurs, use of the product must be discontinued. The corresponding contents of the instruction manual should be consulted one more time before a request is confirmed.

2) Before requesting an irrigation, disconnect the power from the product. You will need to know the model name, product serial number, product purchase date and the position of the service center before contacting us. Main office service center Tel: +45 8661 3611.

- Against a surface defect do not become the returned goods and exchange.**
- Chiroform Ltd. does not bear responsibility for the negative numbers and indirect damage which occurs through equipment use.**
- Chiroform Ltd. does not bear responsibility for damage to the product once the duration of the guarantee is over.**
- This surety certificate does all surety certificates which guarantee the detail compatibility surety certificate or the other product compared to first of all.**



CHAPTER 3. OVERVIEW

(This chapter briefly outlines the complete contents of the manual.)

3.1. General Overview

1) Extracorporeal shock wave therapy principals

Principals of the extracorporeal shock wave therapy are, the operation communicates a high voltage instantaneously to the electrode, caused as the water inside it meets the electric spark which occurs from between the electrodes.

By this spark the energy which is created appears in shock wave form and the shock wave which is created is reflected by a geometric objection to the location (focus) where it gathers. This energy has a high energy from the focus location. It uses this shock wave to obtain a remedial value.

-It is an electric hydraulic power type, and also a spark-gap power type.

-The quality of material used for the reflector is stainless.

-The energy which occurs from shock wave is reflected in the reflector and it collects an accurate focus..

2) Electric regularity

(1) Input electric power source: Single phase 230 VAC

(2) Frequency : 50/60 Hz

(3) Consumption power : less than 170VA

3) The protection type against an electric shock and protection degree: (1 class instrument, B type instrument)

4) Using environment condition

CAUTION

When using this instrument avoid following the place

- The place that direct rays
- The place that a lit of dust and high humidity
- The place that badly ventilated
- Place with corrosion danger avoids
- The place that has chemical material and gas
- The place that high vibration

(Next page continue...)

- Keep the temperature and humidity for the normal running.
- Possible Storage Temp.,Humidity Range: 0 □40°C , 20 □ 80%RH
- Possible Usage Temp.,Humidity Range: 0 □40°C , 20 □80%RH
- Best Preferred Temp.,Humidity Range: 0 □40°C , 20 □80%RH

3.2 C600 Characteristics

The application of the electric hydraulic power method using the shock wave occurrence method results in an excellent effect. This product's remedial value is high, although produced by a product of small size, and it is very convenient to use and in surgical operations.

Additionally, the shock wave energy is very high. Consequently, used in conjunction with surgical operation it shows a superior remedial value. The relative efficiency and reliability are very high. Also the parts supply an occurrence of stable energy.

1) COMPACT DESIGN

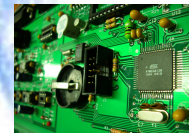
The product does not use a diagnosis system. It is composed of a system with only a shock wave occurrence system which diminishes its size sharply.



2) Shock wave occurrence system has excellent efficiency.

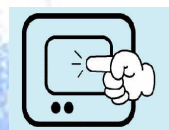
The shock wave occurrence system is the portion which controls the energy and the occurrence of shock waves. In the C600 shock wave occurrence system the occurrence duration of the shock wave is very short; it has the same class of energy preparation as maximum shock wave energy.

It is possible to configure the system from a dry condition and the weight of the equipment is very light. Consequently, the diminished weight and bulk greatly improve the equipment bias characteristics and mobility.



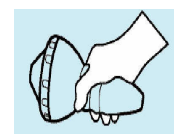
3) LCD Monitor with Screen

The C600 is equipped with a display utilizing a top-notch LCD monitor as well as a touch screen input device. The color LCD display enables users to easily check the status of the device, which is designed to display varied screens by functions. The touch screen greatly decreases the number of input devices for operating each system which improves the reliance and endurance, and enables immediate operation to facilitate communication between the user and system.



4) Powerful Shock Wave Probe

The shock wave occurrence portion of the design uses high technical mechanism. It also uses the newest methods of construction to produce a core system. The shock wave generator converts the energy which is supplied from the shock wave occurrence system to the system which works intensively in the treatment region,. This makes it a system which causes a direct effect of remedial value. The shock wave generator is designed with a general system with a different hand-piece type, the size is small and the shock wave focus length is short.



CHAPTER 4. PRODUCT CONFIGURATION

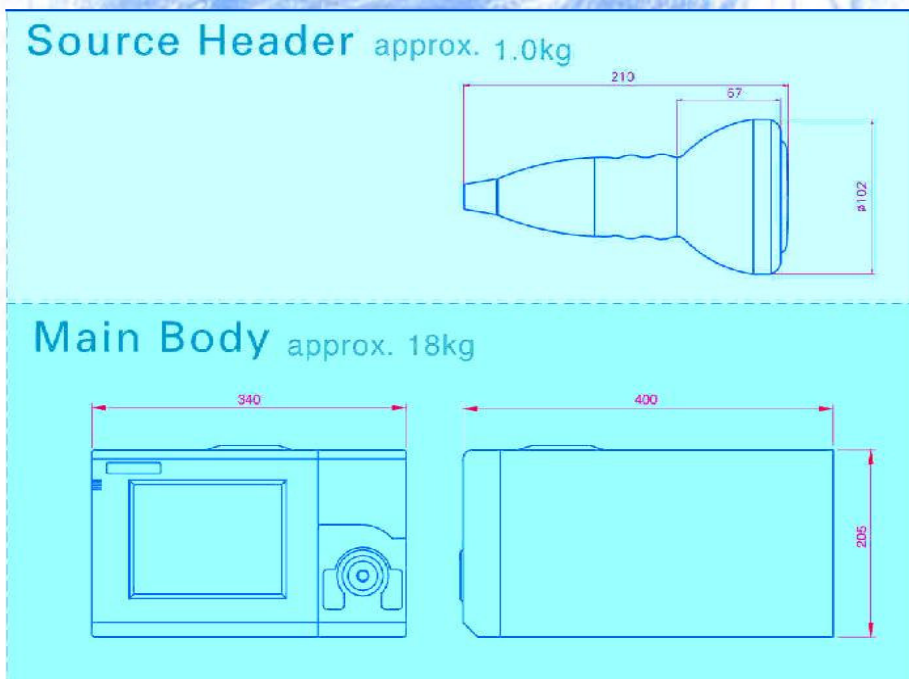
(This chapter explains the product configuration.)

4.1. Main body

1) Main body









2) Size






4.2. Shock Wave Source Header & Filled Membrane

According with the treatment region and depth, a different composition of membrane can be used. In accordance with the treatment region depth quality, the membrane used in the shock wave probe changes.

Name	Front view	Side view	Application depth
Membrane 1			0 – 15 mm
Membrane 2			10 – 25 mm
HY-S (Basic source probe)			25 – 40 mm

4.3. Accessories

NAME	PICTURE	Description
ELECTRODE		The electrode where the shock wave occurs should be exchanged after 40,000 uses.
Power Source Cable		Should be used when connecting the power to the equipment
Foot S/W		Is used by foot to control the shock wave level

4.4 LABEL

6) MODEL LABEL

Extracorporeal Shock Wave Therapy
HYDRON-QT

HnT MEDICAL
 Human & Technology



Constant Focus: 30 mm ± 10% (HY-S)
 Depth of penetration: 80 mm (HY-S)
 Frequency of shock impulse: selectable
 from 0,1 Hz to 6 Hz


Line voltage: Single phase 230 V ± 10%
 50/60 Hz, 170 VA


Power consumption: max. 170 VA

Weight: 18kg

Dimensions: 340 mm × 400 mm × 205 mm

 (Manufacturing Date)  SN

 Please read the operator manual carefully before use.

 Manufactured for Chiroform Ltd.

EC REP BCF TECHNOLOGY Ltd.
 3 Rutherford Square, Brucefield Industry Park,
 Livingston, Scotland, UK, EH54 9BU
 TEL. +44 (0) 1506 460023

2) CERTIFICATION

CERTIFICATION
E.S.W.T. (C600)
CHIROFORM Ltd

CHAPTER 5. USER WARNINGS

(This chapter explains warnings that can occur during product use.)

5.1. Safety Regulations

□ The equipment safety regulations are for the system as designed.

□ CAUTION

Shock wave probe disjuncting and electrode exchange are forbidden when power is connected.
 Can dilute more than fixed quantity while shock wave passes establishment.
 Observe and desire to fill filling so that there may not be a bubble in shock wave header at equipment use.
 When shock wave header is detached, do not generate shock wave.
 Do not use shock wave eye or lungs.
 User confirms treatment position as often as possible for suitable treatment.

- 1) Electric leakage and rots are a hazard. Confirm that water and other liquids are prevented from permeating the machine.
- 2) When cleaning the machine, first always ensure the electric power to the main body of the machine is switched off.

□ WARNING

When equipment must be moved, first confirm the following points are observed.
 - Did you switch off the electric power to the equipment?
 - Was the electrical cable connected to the outside?
 - Was the system fixed in position outside?
 - Is the wheel locking canceled?
 Shock wave can cause absurd heart motion.
 Desire to consult with specialist in case use beside available region to user description.

5.2. Electric safety subjects

□ Before using the system, inspect the points summarized below carefully.

- 1) Confirm that power system standard specification voltage (AC 230V) is appropriately authorized.
- 2) Confirm that all connection terminals (voltage line, control switch) are appropriate for the system and are connected.
- 3) Confirm that the entire system has a ground connection.
 (In cases where there is not a ground connection, noise may occur.)

□ CAUTION

- (1) Basically, the system has been designed by electromagnetic disruption protection. But the transformer, Generator, Broadcasting station transmission line, Distance it lets from the other line and it establishes.
- (2) The equipment lets from all elements of different equipment or the machine 1.5m distance above and it is good to use.
- (3) All specialty usage or equipment and appendages must be the correct tool, with an electromagnetic compatibility standard.
- (4) The immunity characteristic is low from electromagnetic field and the organizations which are not suitably to fall and from equipment minimum 3m above in order to establish. Use an independent power source and ensure complete ground connection.

CHAPTER 6. SPECIFICATIONS

(This chapter explains specifications of C600)

6.1. Specifications (MODEL: C600.)

ITEM	NAME	PRODUCT DESCRIPTION	SPEC	Q'ty	unit	Remark
Main-body	Shock wave generator	The system which supplies an impulse high voltage in the shock wave probe.	Frequency : 0.1 – 6 Hz Input : 230VAC Generator : Electro-hydraulic (Spark Gap Type) Output : 18 – 22.5KV	1	SET	
	system control	The system for equipment control	regular : 230VAC Control type : MICRO PROCESS Step : 10 step Frequency : 01.- 6 Hz	1	SET	
	power supply	power supply device in control system and local control system	Input : 230V 50/60Hz output : +5V, +12V, -12V, +24V, 2 CH Type :SMPS	1	EA	
	display	User LCD touch pad control system	Type : LCD DISPLAY (256 COLOR) size : 7.7' Resolution : 640 x 480 Precision : 2 mm C P U : 32bit RISC 200MHz Power : 24V DC ± 5% Brightness : 200 cd/□	1	EA	
Source probe	Membrane-1	Discharges the high voltage of impulse from underwater; and the shock wave Focusing system which occurs.	Focal distance : 5.0 mm therapy area : 0 – 15mm	1	SET	
	Membrane-2		focal distance : 15.0 mm therapy area : 10- 25mm	1	SET	
	HY-S		focal distance : 30.0 mm diameter : 88.0 mm therapy area : 25 – 40mm	1	SET	

ITEM	NAME	PRODUCT DESCRIPTION	SPEC	Q'ty	unit	remark
Accessories	Electrode Exchange Handle	Electrode Exchange Handle	Material : MC NYLON	1	EA	
	Foot Switch	A system which controls the shock wave with a foot switch.	Rating : 40VDC/50mA Operation : 1 N Waterproof : IP 4 Operation : AUTO	1	EA	
	Manual	Operator manual & Service manual	C600 English Manual Version 1.2	1	EA	
Consumption goods	Electrode	The high voltage discharge electrode seal for a shock wave occurrence	Life span : 20,000 puls (level 6) Protection: rubber o-ring Voltage : 0 – 25KV Type : single body type Fixing type : screw type Surface : Ag	10	EA	
	Membrane	The distilled water hand guard which is inserted inside the shock wave probe (applied HY-S)	Material: avirulent silicon Composition : 1 probe type	1	EA	

6.2. HYDRON-QT SYSTEM SPECIFICATION.

- 1) Operating voltage: AC 230V 50/60Hz
- 2) Power consumption: Max. 170VA
- 3) Protection type: Class 2
- 4) Grounding spec: Level 3
- 5) Application scope: Calcifications of tendon, Tendonitis/ Desmopathy, Osteoarthritis, Myopathy / Metaplasia, Pseudarthrosis, Back pain, Osteoporosis, Non union/ Delayed-Healing
- 6) Total weight: 18 Kg (Main body), 1Kg (shock wave probe)
- 7) Electric stability: Class b

6.3. Technical Specifications

Dimensions (body):	340 x 400 x 205 (mm)	
Dimensions (probe):	110 x 195 (mm)	
Adjustable focus pressure P+:	20 ~ 55 Mpa	
Energy flux density	0.05 ~ 0.20 mJ/□	
Frequency:	0.1 ~ 6 Hz	
Focal size:	about 10.0 x 22 (mm)	
Energy application:	10 steps	
Configuration:	mobile, portable unit	
Standards, test symbols:	IEC 60601-1	
Directive for medical products:	class II b	
Therapy probe:	type	penetration
	MEMBRANE -1	0 – 15 mm
	MEMBRANE -2	10 – 25 mm
	HY-S	25 – 40 mm
Probe aperture angle:	94°	
Contact gel:	All commercially available products may be used.	

CHAPTER 7. THINGS TO CONFIRM BEFORE EQUIPMENT USE.

(This chapter explain things that must be confirmed before using equipment.)

7.1. Power Source Confirmation

- 6) The product uses AC 230V/60Hz at standard voltage.
Confirm whether electricity concert plug is connected.

7.2. Shock wave probe confirmation

- 1) Confirm the shock wave probe has been affixed properly.
- 2) Confirm that the electrodes have been affixed where necessary.
- 3) Confirm that the distilled water has been filled to full capacity.
(Where the distilled water has not been filled to full, shock wave energy will not be strong enough.)
- 4) Check for membrane damage, which is caused by external shock.

7.3. Membrane cohesion

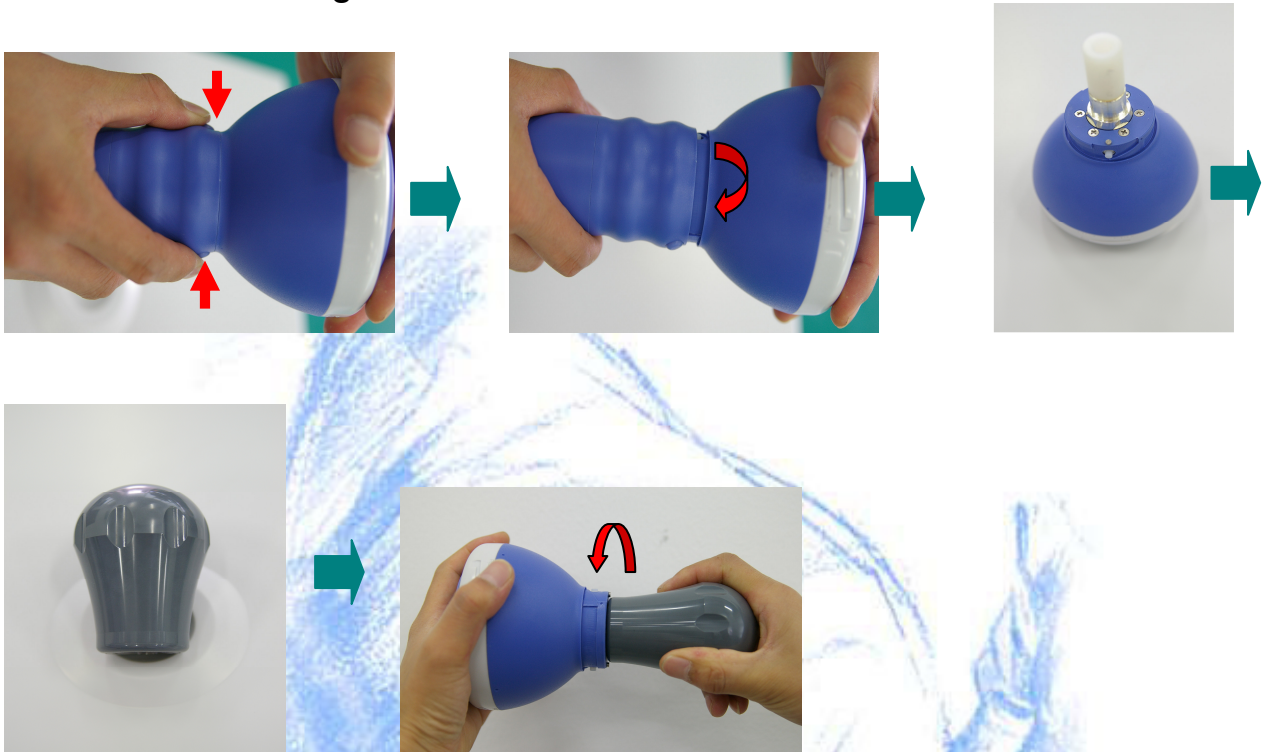
Membrane cohesion method

(Membrane 1-type and membrane 2-type have identical cohesion methods.)



- (1) Paste the ultrasonic wave GEL in the whole of the basic probe.
- (2) Fix the center of membrane in probe portion of the probe.
- (3) Fix membrane in place by using membrane cover.

7.4. Electrode exchange



- 1) Press head handlebar quantity side's Unlock switch together.
- 2) return head furtively when catch probe handlebar.
- 3) Separate head in probe.
- 4) Prepare electrode separatory handlebar.
- 5) Insert handlebar to electrode and turn for watch opposite direction and scam

❑ CAUTION

Electrode life span : 40,000 puls(When use only Energy level 6 and exchange the distilled water after 10000 puls)

❑ WARNING

During an electrode exchange, ensure that the power is switched off.
Can become dangerous if do not lock perfectly at electrode replace.

□ WARNING

If power is switched on, it is dangerous to separate the probe and the handle.
Do not insert hand or this material inside probe at electrode replace.

7.5. Distilled water exchange



- 1) After crisis, fix the probe in the palm of the hand.
(It is necessary to maintain the bottom plane surface for bubble occurrence suppression)
- 2) Distilled water preparation. (100% Distilled water to be used)
- 3) Fill the distilled water until the thread end of the source probe.

□ CAUTION

Please, After use electrode 10,000 puls, exchange distilled water)

7.6. Membrane basic probe (HY-S type membrane)

The membrane follows the treatment region; it shifts and it can be used repetitively, but it must be exchanged when damaged or saturated from the outside.

The life of the product without being exchanged is long. But, if external damage and saturation of the product occurs, it must be exchanged.

For inquiries regarding the exchange of the membrane, contact the probe office customer support team (+45 8661 3611).

□ WARNING

When exchanging the distilled water, 100% distilled water must be used. If a different liquid is used, there is a possibility of affecting the efficiency of the discharge and shock wave of the product.

CHAPTER 8. THING TO CONFIRM BEFORE OPERATION

(This chapter explains what must be confirmed before operation.)

8.1. Cautions to observe before operation

(Only the basic facts to be confirmed before operating are explained here. The functions which are necessary for actual surgical operations are explained in detail in Chapter 9.)

- 1) Did you fill with distilled water?
- 2) Is all air expelled from inside membrane?
- 3) Is the electrode inserted correctly?
- 4) Is the probe threaded correctly?

8.2. Treatment positioning

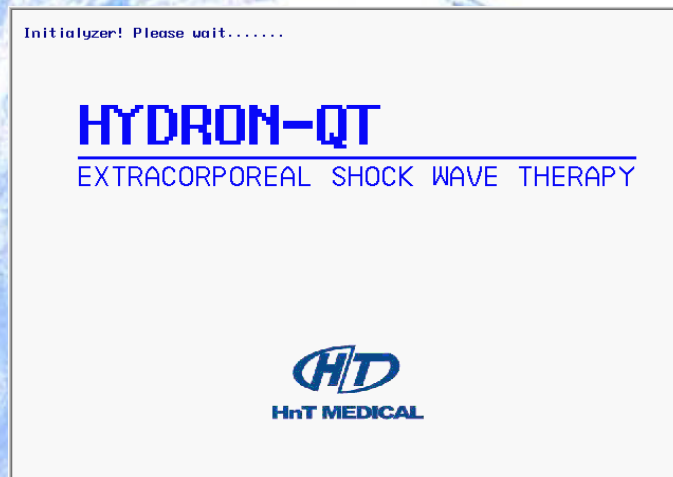
To use a shock wave and before operating the X-RAY SYSTEM or ultrasonic waves and, to use to search for the locations of lesion accurately; it is important to concept.
(For some types of lesion, the X-RAY SYSTEM and ultrasonic wave equipment is not needed.)

CHAPTER 9. SCREEN STRUCTURE AND OPERATION

(This chapter explains the touch screen structure and function.)

9.1. Screen structure



- 1) The power switch to turn ON is located on the product reverse side.
- 2) Initial execution screen: After the electricity power is turned on, the system setup will take 3-4 sec before the initial screen appears. After installation is completed automatically, the menu screen will appear.



- 3) Initial menu screen: From the first screen, it will convert to the menu: SHOCK WAVE, PROBE, HELP







Each mode function explained.





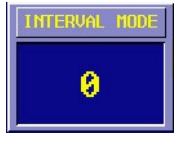


	<p>Shock wave set-up</p>	<p>The MODE which enters the screen to operate the set-up of a shock wave.</p>
	<p>Help screen</p>	<p>The MODE which moves towardenters the help screen for a problem solving.</p>

4) Shock wave mode: When operating, it is the mode which is used to control the shock wave.



Function explanation of each screen

	<p>Menu mode</p>	<p>The button which returns to the Main menu screen</p>
	<p>Shock wave step level up</p>	<p>The button to raise a shock wave energy level one phase</p>
	<p>Shock wave step level down</p>	<p>The button which lowers a shock wave energy level one phase</p>
	<p>Manual mode</p>	<p>Shock wave occurrence; the button which selects the mode in which the user can use manual operation.</p>

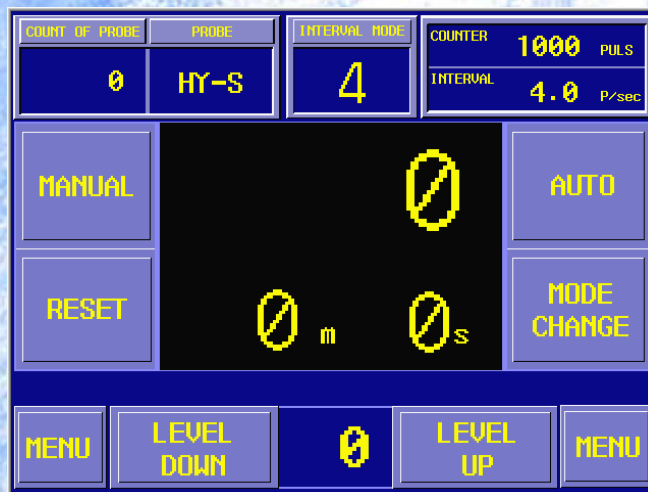
	Auto mode	Shock wave occurrence; the button which selects the mode in which the user can use automatic operation
	Mode change	Interval time changed of shock wave occurrence
	Initialization	The button for initiating a surgical operation progress. Operates frequency and amount of total time initially.
	Probe counter	The electrode life time number indication being used.
	Mode interval number sign	The current selection mode interval number sign.
	COUNTER	The current shock wave number of times indication
	INTERVAL	Shock wave occurrence time interval indication (Number of times/ 1sec).

9.2. Operation procedure

- 1) Shock wave occurrence mode :



- From the menu screen press
- Next, the below screen will appear.



- These buttons control the shock wave level.

- Set the Total occurrence for number of times of shock wave.
When the total occurrence number of shock waves is set it should appear in the counter box

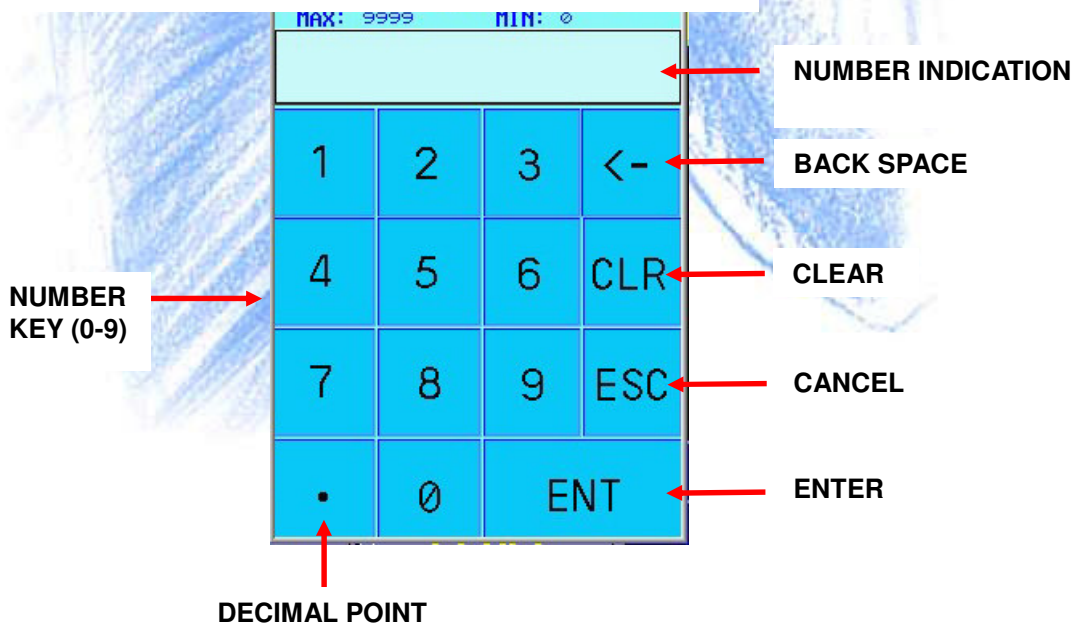


(shown below).

When the number in this section is pressed, the set window will float above the other screen. Use this higher number pad to set the number of times required, press the ENT key and the number is set.
(To modify->CLR / cancel-> ESC. It is possible to set numbers between 1-9999)



Reference Keypad use method



- Setting of occurrence interval (hour) of shock wave



Press the button to select a shock wave mode.

MODE	MODE explanation
MODE 1	The shock wave occurs 1 time per second.
MODE 2	The shock wave occurs 2 times per second.
MODE 3	The shock wave occurs 3 times per second.
MODE 4	The shock wave occurs 4 times per second.
MODE 5	The shock wave occurs 5 times per second.
MODE 6	The shock wave occurs 6 times per second.
MODE 0	The user can set the number of times of shock wave occurrence.

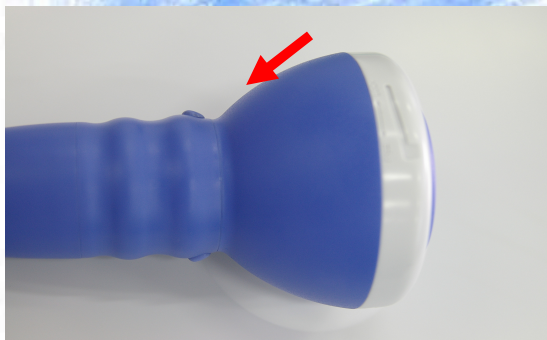


- Press this button and the shock wave occurs 1 time,



- Press this button and the shock wave follows at the rate set by the user and occurs with automatic movement.

It breaks out shock wave as using a foot switch or probe handle switch.



While pressing the switch which is by the probe handle, shock waves will occur.



When the arrow-marked sections are stepped on, shock waves will occur.

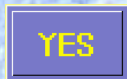


□ When giving medical treatment, press this button to change the MODE.

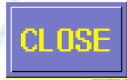
□ After electrode exchange the user must re-initialize the number of times which the electrode currently in position is used.



To re-initialize the number of times the electrode has been used press this button, and the screen below will appear.



When re-setting to initial state, press **YES**. To cancel the action, press **CLOSE**.



After setting the number to its initial state, select **CLOSE** to exit the screen.

9.3. Treatment procedure

- 1) After the preparation for a shock wave occurrence is finished,
- 2) The location for a surgical operation:
In shock wave surgical operation it is more important what is treated than to search accurately for the treatment region. Consequently, for the location of the treatment region and probe focus location, use the X-RAY and ultrasonic wave equipment to give an indication.
- 3) Mark the location of the treatment region.
- 4) Paste ultrasonic gel in the treatment region.
- 5) Start of Shock wave occurrence.(AUTO/MANUAL)
- 6) Set position, treatment region and center of shock wave probe
- 7) Follow with properly conducted operation in the treatment region.



9.4. Treatment parameter table for disorder

1) Treatment parameter table for the HYDRON-QT SYSTEM.

Indication of disorder	Shock Wave Probe	Shock wave (number of puls)	Shock wave occurrence interval (Hz)	Average treatment number of times	Average energy (Level)
Calcified Tendinitis (Shoulder)	HY-S + Membrane1	1,000 – 1,200–	3-4	2-3	8-10
Tendonitis / Desmopathy	HY-S + Membrane1 or Membrane2	1,000	1-4	2-3	4-8
Epicondylitis	HY-S + Membrane1	1,000 – 1,200–	2-3	1-2	4-6
Myopathy / Metaplasia	Only HY-S, HY-S + Membrane1 or Membrane2	1,000-1,200	3-4	2-3	6-8
Patellar tendon	HY-S + Membrane2	1,000 – 1,200–	3-4	1-2	6-8
Back pain	HY-S + Membrane2	500-1,000	1-2	1-2	4-6
Plantar Fasciitis	HY-S + Membrane2	1,000	4	1-2	6-8
Osteoporosis non union / Delayed-Healing	HY-S	1,500	2-4	2-3	8-10
Pseudarthrosis	Only HY-S, HY-S + Membrane1 or Membrane2	1,500	2-4	2-3	8-10

- Each setting value is the standard data for a surgical operation. Depending on the condition and nature of a disease, adherence to the set value could be changed.

- Usually Treatment interval is 1 weeks.

CHAPTER 10. MAINTENANCE

(This chapter explains the procedures for maintenance.)

10.1 General overview

- 1) A yearly periodical inspection for reliability or the revival of equipment is recommended for all equipment.
- 2) The periodical inspection should be conducted by a technical expert certified for inspecting the product.

10.2 Cleaning

- 1) After treating, if the equipment is stained, clean the equipment.
- 2) Before wiping the main body, first switch POWER OFF and pull out the plug.
- 3) For the main body use a soft towel to clean. In order not to cause a defect in the equipment, do not inflict unreasonable force.

WARNING!

After operating, in order to prevent secondary infection, disinfect the surface of the membrane cleanly, using alcohol.

CHAPTER 11. TROUBLE & DISPOSAL

(This chapter explains the procedures in the event of breakdown and for disposal of equipment.)

11.1 ERROR MESSAGE

Error number	Message contents	Occurrence cause	Disposal method
Error 2	Disconnection the head	This error occurs when the equipment is operated while the probe and handle are separated.	After combining with the shock wave probe, insert HEAD in original location.
Error 3	EQUIPMENT COVER OPEN ERROR	The error which occurs when the cover of equipment becomes OPEN.	Only the manufacture company is able to manage this error. Contact manufacture company.

WARNING!

When using this equipment, if you do not respond to essential education or warnings with immediacy, any accidents which may occur are not the responsibility of the probe office.

WARNING!

Opening the cover of the equipment exposes very dangerous high voltage.. This is not allowed by the manufacturing company. When equipment cover is open, it is very dangerous.

WARNING!

The irrigation of this equipment must be repaired by the technical experts of the manufacturing company. If repaired by untrained personnel the equipment so repaired invalidates the warranty and can be dangerous. The individual who repairs the equipment invalidates the warranty, and any accidents which occur are not the responsibility of the probe office.

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