Mediclase
healing by light

Model: LS30

Superpulse

CO_2 LASER SURGICAL SYSTEM

Operation Manual

Read this manual carefully before using.

Introduction

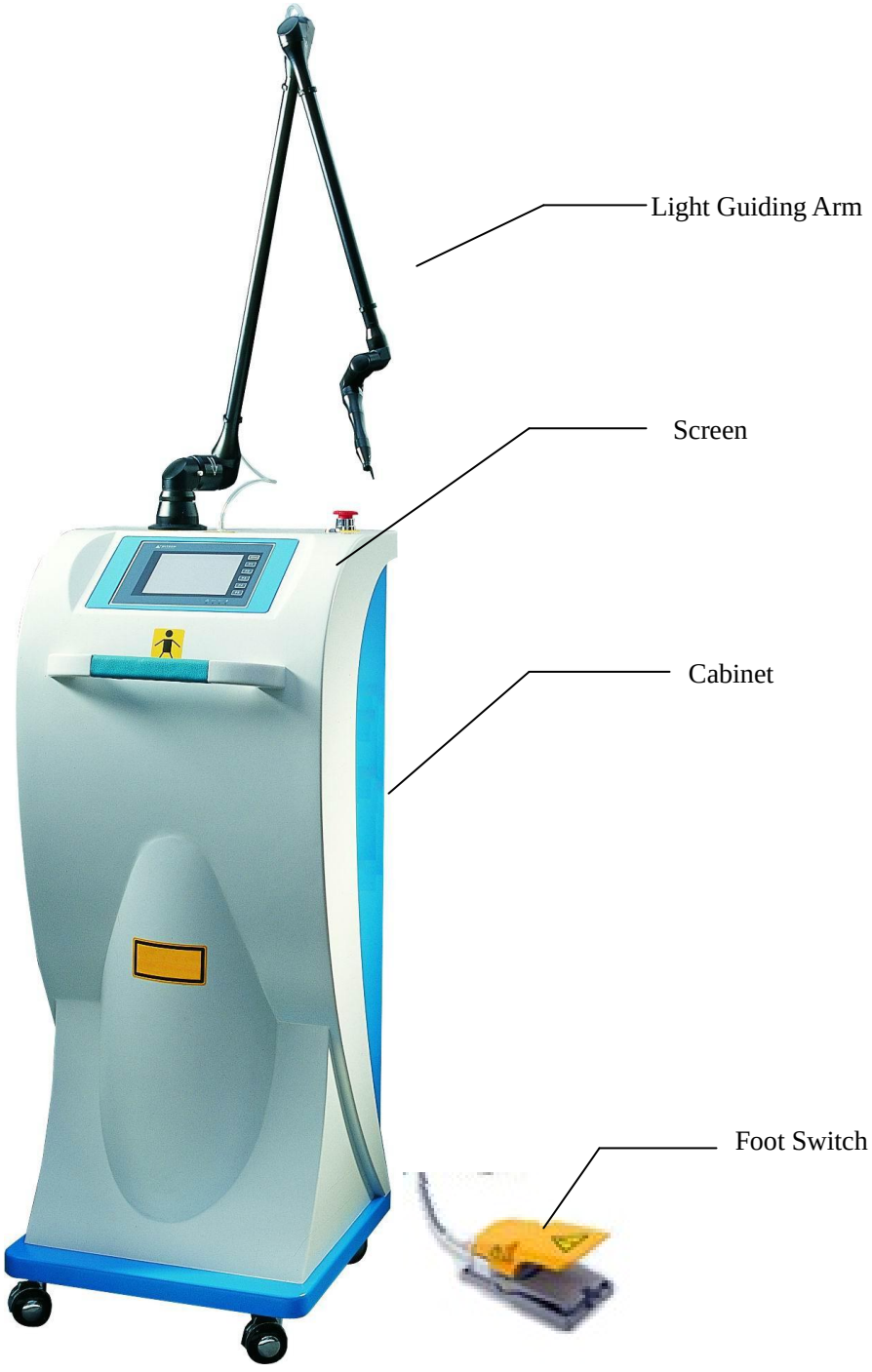
The Mediclase LS30 Laser Medical equipment is an intelligent CO_2 laser medical device manufactured by our company.

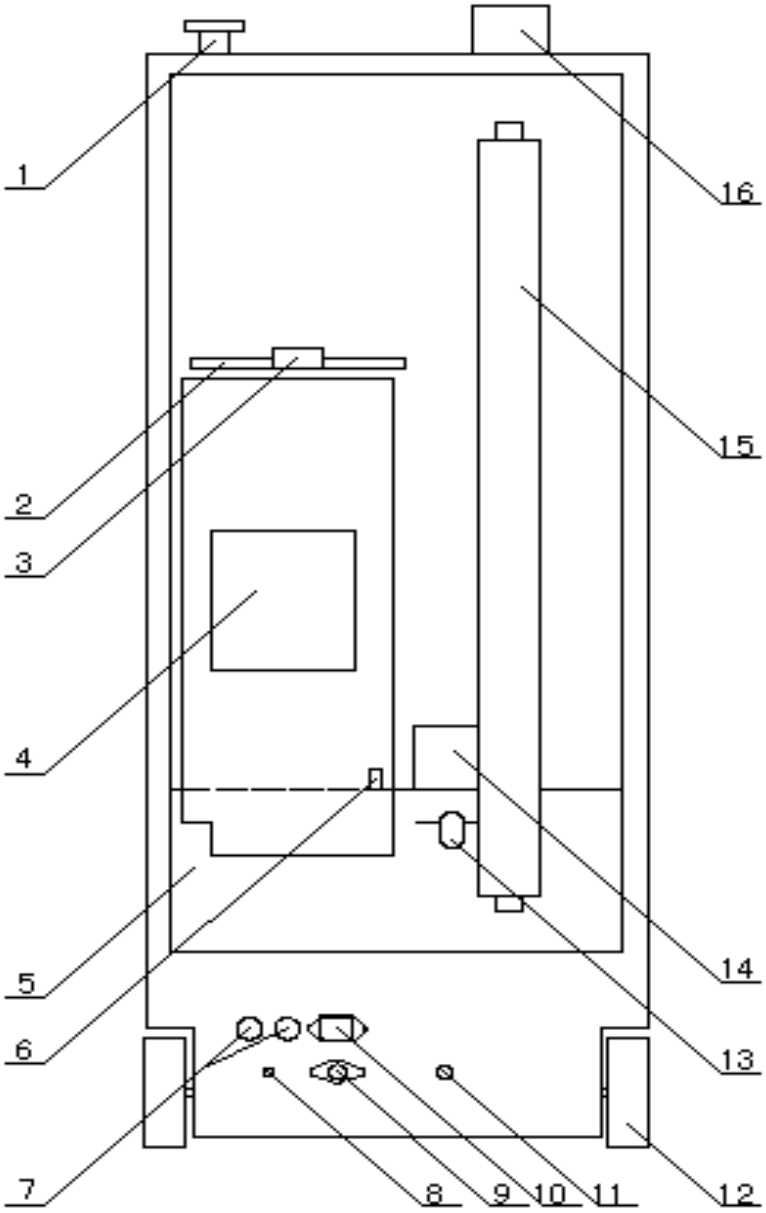
The laser apparatus is widely used in fields of gynecology, dermatology, cosmetology, surgery, and E.N.T for cutting, Vaporizing, burning, and solidifying care. Because of its flexibility and compactness, it can be used in patient room and private clinic.

Specifications

Laser Type:	10.6μm
Output Power:	≥25W
Starting Voltage:	≤25kV
Operating Voltage:	≤15kV
Operating Current:	≤25mA
Focal Flare Diameter:	≤0.4mm
Indication Beam:	Red Semiconductor Laser（650nm≤5mW）
Transmission System:	7-Articulation Joint Spring-Balanced Light Guiding Arm
Operating Mode:	Continuous
Single Pulse：	0.01s-2.95s，Step Adjustable per 0.01s
Repeated Pulse:	0.01s-2.95s，Step Adjustable per 0.01s
SP Modulation:	Frequency 1kHz
Smoke Exhausting System:	Built-in air blow
Cooling System:	Built-in circulating water cooling
Environmental temperature:	5-40℃
Relative Humidity:	≤80%
Power Supply:	AC 110V±11V；60Hz±1Hz
Dimension:	300mm×520mm×1050mm
Weight:	25kg

Structure





1—Emergency Button 2—Power control Board 3—Door Switch
4—High Voltage Plug 5—Water Tank 6—Water In
7—Fuse Box 8—Screw 9—Foot Switch Plug
10—Power Plug 11—Water Out 12—Wheels
13—Water Watching Window 14—Water Pressure Switch
15—Laser Tube 16—Light Guiding Arm Base

Installation and Adjustable

Preparation for Using

When opening up the packing case, first you should examine the outer-shell of the unit and be sure there is no obvious collision damage. You should also make sure that there is no dropout between structural parts and connecting lines and all the equipped spare parts are complete.

Laser Guiding Arm:

CO_2 laser guiding arm is composed of debugging tube, laser guiding arm, focusing probe, focus-out probe, expanding beam unit and nose clip connecting base. The connecting base is fixed on the laser output end of the unit. Generally speaking, this system can only be used when the laser-guiding arm is connected and locked tightly to the connecting base.

CO_2 Laser Output Beam core Adjustment:

Firstly, take off the laser-guiding arm and equip the debugging tube on the connecting base. Secondly adjust CO_2 Laser device to make CO_2 laser beam aim at the core of the debugging tube and make sure the beam goes through the debugging tube coaxially. Thirdly, switch on and select the lowest power, and inspect the position of the flare of the debugging tube end by a piece of pergamyn. Fourthly, adjust laser device repeatedly until the CO_2 Laser beam go into from the core of the debugging tube beginning, and go out from the core of the ending. At last, take off the debugging device, put on the laser-guiding arm and lock it tightly.

The process of indication adjustment of isotopic light route is the same as above. Adjusting till the focusing flare of the red semiconductor laser coincides with that of CO_2 Laser.

Select lower power after switching on. Inspect the output condition of the laser

by a piece of pergamyn at the flat surface of the output end of the laser-guiding arm. If there are double points and double lines, CO_2 Laser device or semiconductor laser device should be adjusted accurately and carefully following the above mentioned methods

Use focusing probe to do cutting operation in general. When conducting ablation over larger areas, defocus the probe in order to control the size of the flare.

Warning!

*Do not point the laser output beam to eyes or other healthy skins directly in any case.

*Avoid aiming the laser beam at smooth reflection surface, such as stainless steel, mirror surface etc. in order not to hurt eyes or skin by the reflection of laser beam.

*If the unit is cleaned by alcohol, the laser irradiation only can be used after the alcohol becomes dry. The laser beam should avoid irradiating inflammable and explosive material.

*In order to make the viewing fields of the operated part clear and avoid focusing lens of the bit being polluted, smoke-extracting facility should be equipped when operating.

*Suggest the operators wear laser-eye shield with corresponding wavelength when operating.

*High-voltage power exists inside the apparatus so that unspecialized technician is not allowed to open up the cabinet in order to avoid danger of electric shock.

*If unusual noise and smell is noticed when the apparatus is working, the apparatus must be stopped for inspection immediately. Power should be cut off before inspection.

*The apparatus assembles glass laser tube inside. So pay attention not to vibrate or cause the unit to fall during transport.

*Only wheel the system over smooth flooring

Preparation for Using

1. Opening up the rear door of the cabinet, find the injection tube of the water coolant tank, and then fill clean distilled deionized water until the water reaches the red line indicated on the tank window. Starting the Power Switch without water in the tank is forbidden, or the circulating water pump will be damaged.

2. Make sure the power voltage coincides with the voltage required by the unit.

3. Insert the two ends of the power line into the power input socket and power socket separately. (The power socket must have a good earth); connect the earth nail on the under bed of the outer-shell with ground firmly.

4. Insert the plug of the foot switch connecting line into the socket on the back of the unit. Push the notch till the connection is reliable.

5. Insert the key into the switch hole of the control board, and turn the key 90 degree in the direction of right-hand, and in the meantime, the power is on and the circulating water pump and the cooling fan inside the unit are turned on.

6. Turn off the power after several minutes' test run.

Operation Instruction

I. Operating Medical Cure:

A: Elemental Operation

A1、Turn the key of POWER SWITCH in the direction of right-hand, the computer automatically inspects the unit simultaneously. If it works regularly, the Figure 1 will be shown:

Figure 1

A2、Touch the screen, when hear a signal, the Figure 2 will be shown.

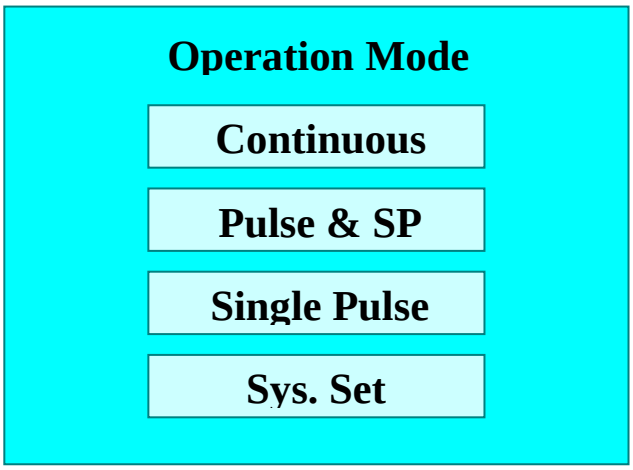


Figure 2

A3、You can select among Continuous, Pulse and Single Pulse. The System Set has been done by the manufacturer already.

A4、：If you select Continuous, Figure 3 will be shown

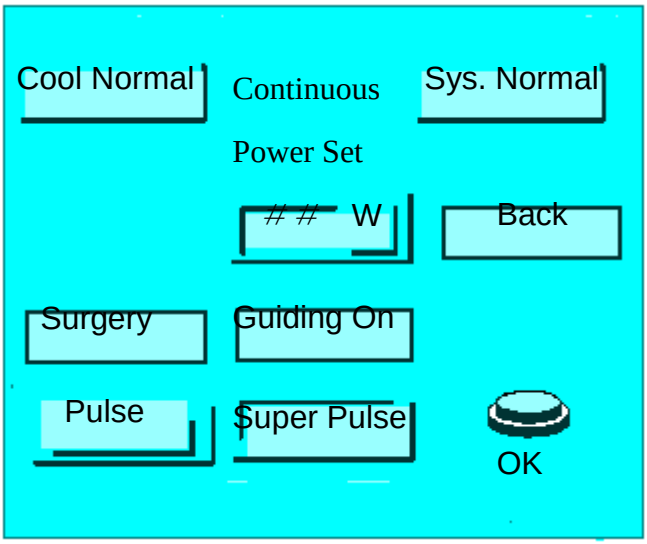


Figure 3

A5、Power Set: Touch ＃＃W in Figure 3, When hear a signal, the figure key-board will be shown on the screen.

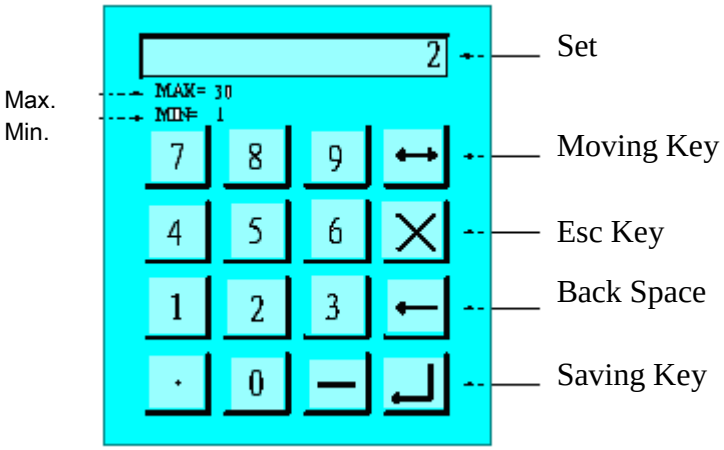


Figure 4

A6、Touch the keys, set the parameters according to the requirement(between the limits), then touch the Saving Key, the set value will be saved and come into the Continuous Mode. If the Escape Key be touched, the set would be invalidity and come into Continuous Mode.

A7、Touch Guiding on, it will become Guiding off, it means the Guiding Light is on; then touch Guiding off, it will become Guiding on, it means the Guiding Light is off.

A8、The Pulse function can be added in all three modes. If you need to add the Super

Pulse during operation, please touch Super Pulse, when the Super Pulse blinks, the Super Pulse function is ready. Touch Super Pulse again or Pulse, Super Pulse stops to blink, this function can be canceled.

A3、A4、A5、A6、A7、A8 can be repeated when surgery.

B. Select Operation Mode:

B1、Continuous: see A2.

1、See A5、A6、A7、A8。

2、After the above mentioned all be done, touch OK and switch foot switch, the surgery can be begin.

B2、Pulse: see A2.

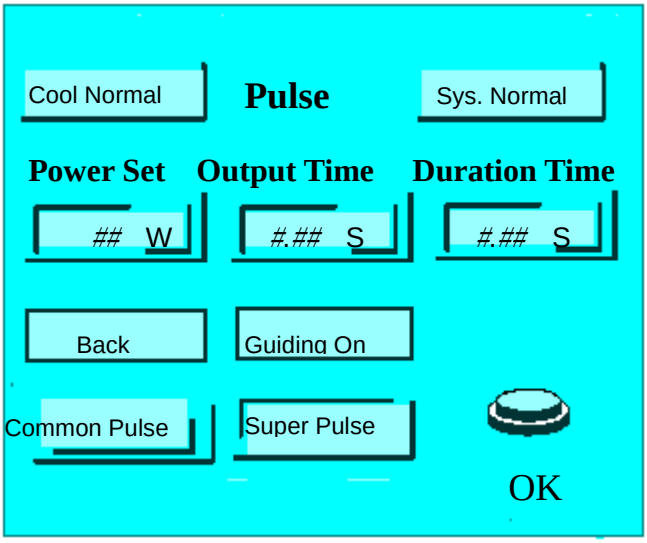


Figure 5

1、Power set: see A5 and A6 to do the power set.

2、Output time set: touch the ＃＃ S below output time, when heard signal, the figure key-board will be shown on the screen (same with Figure 4). Then you can set the time according to A6.

3、Duration time set: touch＃＃ S below duration time, when heard signal, the figure key-board will be shown on the screen (same with Figure 4). Then you can set the time according to A6.

4、Use Guiding Light please see A7, use Super Pulse please see A8.

5、When all be done, touch OK, and switch foot switch, the surgery can be done.

B3、Single pulse: See A2.

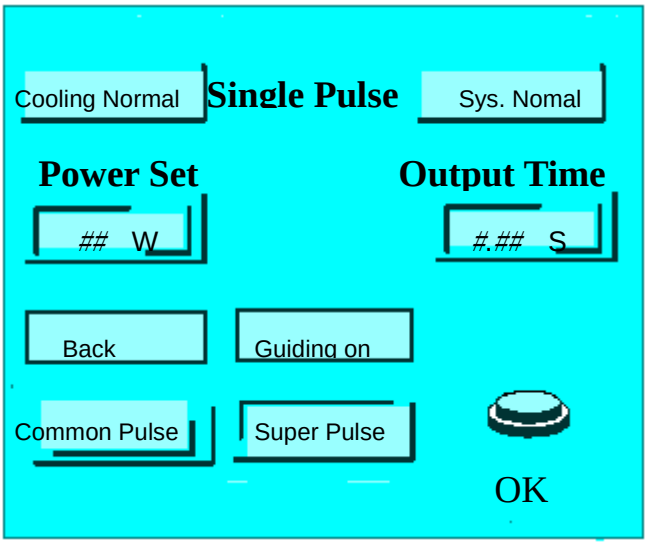


Figure 6

1、Power set: see A5、A6

2、Output time set: touch the ＃＃ S below output time, when heard signal, the figure key-board will be shown on the screen (same with Figure 6). Then you can set the time according to A6.

3、Use Guiding Light please see A7, use Super Pulse please see A8.

4、When all be done, touch OK, and switch foot switch, the surgery can be done.

II. Irradiation Medical Cure

Elementary Operation

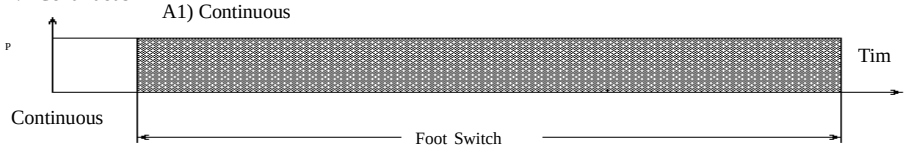
1. Put the Irradiation head on the light Guiding arm.
2. Referring to the continuous function of b1 in B: touch Surgery, it will become Irradiation., select needed power volume according to different condition. After inspection, select the proper laser-expanding end to aim at the sick part in a suitable distance. Then press OK button till the lamp is lighted and the laser can be input for irradiation medical cure.

* Notice: The foot switch is useless when irradiation!

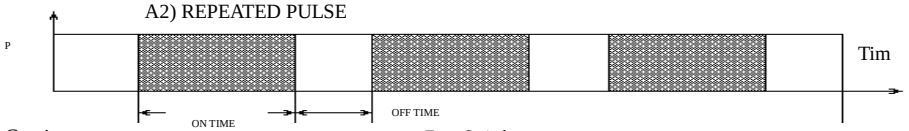
Diagram of laser operating condition

I. Continuous

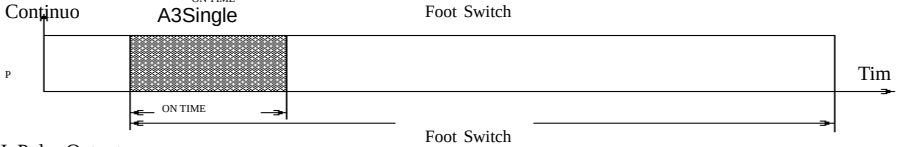
A1) Continuous



A2) REPEATED PULSE

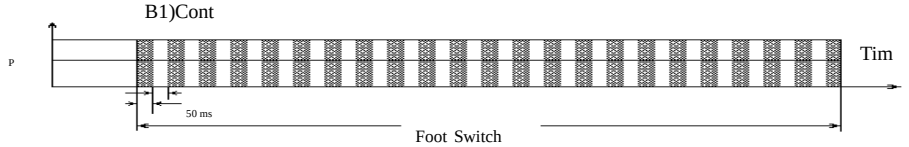


Continuo A3Single Foot Switch



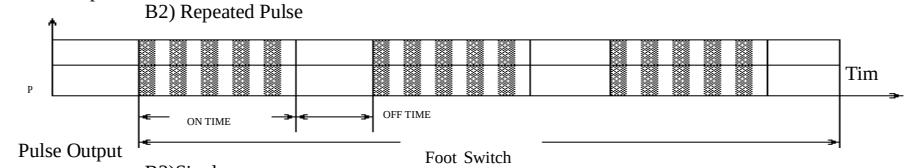
II. Pulse Output

B1)Cont



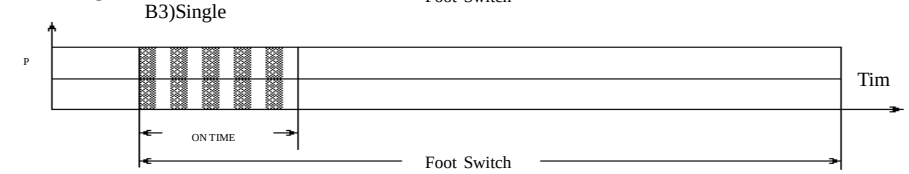
Pulse Output

B2) Repeated Pulse



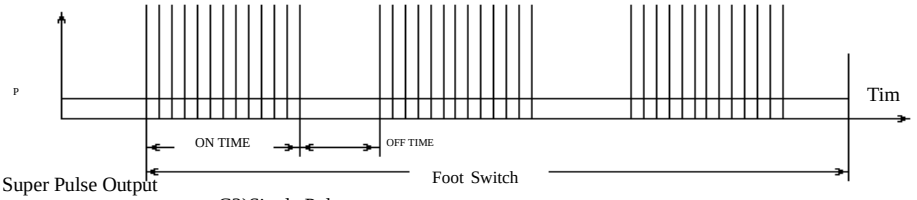
Pulse Output

B3)Single



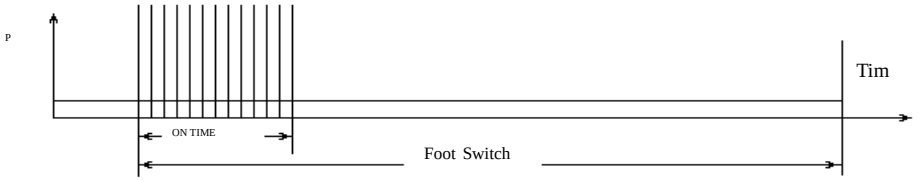
III. Super Pulse Output C1)Continuous

Super Pulse Output C2)Pulse Laser

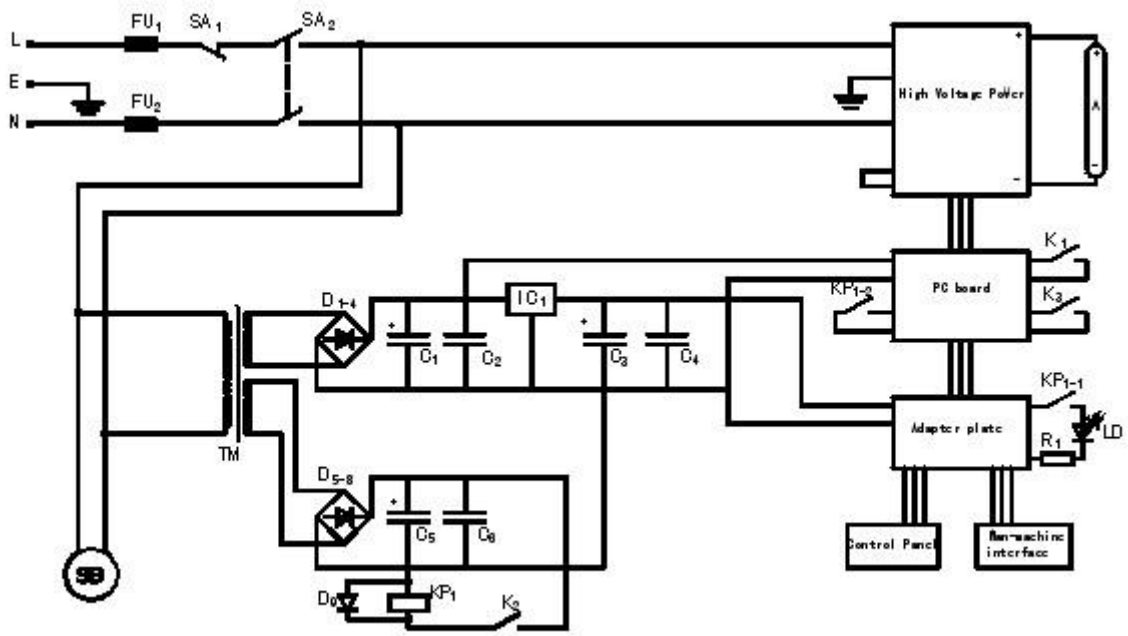


Super Pulse Output

C3)Single Pulse



Circuit Drawing



Packing List

No.	Name	Quantity	Unit	Note
1	Cabinet	1	set	
2	7-Articulation Joint Spring-Balanced Light Guiding Arm	1	set	2 kinds of heads
3	Power Wire	1	piece	
4	Foot Switch	1	piece	
5	Key for Power Supply	2	piece	
6	Fuse (3A)	4	piece	
7	Water Hose	1	piece	
8	Asbest	1	piece	
9	User’s Manual	1	set	