

Date: May, 2009

**USER MANUAL**  
**For Surgical Lamp**  
**REFTECH Series Mobile Type**

**Bowin Medical Co.,Ltd**

**R. 2105, No. 1619 Dalian Road,  
Shanghai, 200086,China**

**Tel: +8621-65038590**

**Fax: +8621-65038586**

**[www.bowin-med.com](http://www.bowin-med.com)**



## Caution

The surgical lamp has strictly requirement during the installation, please check the relative clause of the manual carefully.

1. Don't scratch and knock the glass of the lampshade.
2. Please shutdown the power and wait until the bulb being cool to avoid the accident of scald when you change the bulbs.
3. As the inner temperature of some parts of the domes will above 75°C, the lamp choose Fluorine plastic high temperature wire which shall resist the temperature above 200°C
4. Please note: if the endothermic glass of the domes broken, uninstal or two domes irradiation into the same area, the temperature rise is possible to exceed the standard. The user should take care about this.
5. Please usually check the fastener of the suspension system of the surgical lamp to prevent any kind of accident happen.
6. For the security reason, please do not dismantling or modify the surgical lamp without the permission of our manufacturer.
7. The usual life of the surgical lamp is ten years, please do not exceed such recommendation.

## Symbols Explanation:



ON/OFF



MAIN BULB BROKEN



LUMINATION ADJUSTMENT (UP)



BACK-UP BULB BROKEN



LUMINATION ADJUSTMENT(DOWN)



LUMINATION INDICATION BAR

The surgical lamp REFTECH Series is shadowless which meet the request of illumination by most hospitals, clinics.

The domes part is for illumination; the balance arm is for hang the domes and control the

balance of movement and location of the domes. And the electrical control part is for control the luminance of the light, bulb replacement and bulb broken alarming.

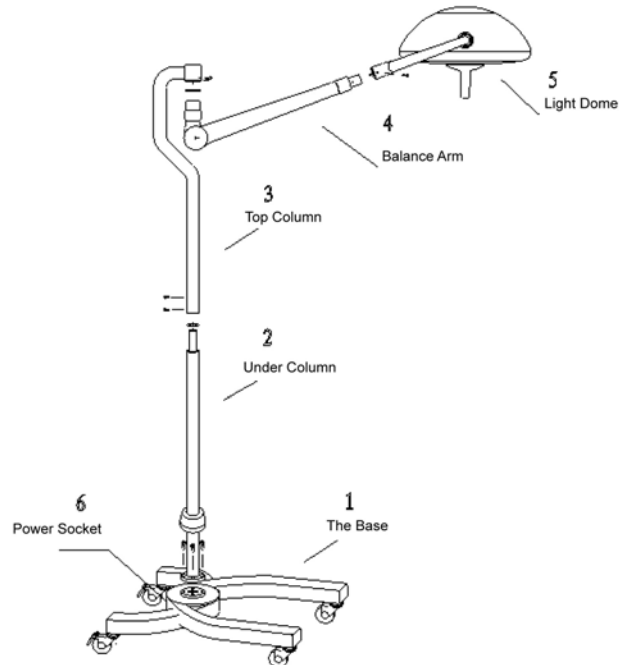
### Model:

**REFTECH6000M** (Mobile type with 60cm centimeter domes)

**REFTECH5000M** (Mobile type with 50cm centimeter domes)

### Installation: (See the diagram)

1. Fix the brake on the balance lock of the base and take the wire through the inferior column. Fix the inferior column with 4 sets of screws and put on the decorative cover. (fix with anchors are prohibited) (See diagram 1)
2. Set the decorative gasket on the inferior column. Peel the wire 10mm each(in red,blue,green) which are on the lateral of the column. Link the same color on with connection cap and fix with 2 sets of screws. (See diagram 2)
3. Put the decorative gasket on the bottom of balance arm. Lift it up balanced and interlink the top of the top column, then fix with 2 sets of screws. (See diagram 3)。
4. Insert the bend of the domes into the balance arm and fix the screws. (See diagram 4)
5. Set and adjust the power line well. (See diagram 6)。




Operation Lamp Mobile Type

**Note:** External power line should meet the request of IEC60245-1 with either ordinary wear rubber sheathed flexible cable or ordinary PVC sheathed flexible cord, the diameter will be 1.0 mm<sup>2</sup>.

6. Choose the relative Allen Wrench to adjust the screws of the brake and the balance arm until the balance arm with the domes can be located in any points of the area and feel flexible.

### Operation:

1. Connect the plug and the indication light on the control panel on. Click “

### After Sale Service:

1. **REFTECH Series** OT Lamp can be used for 10 years and the warranty will be 18 months after the B/L date. The following situations are out of our warranty include: **Improper Use; Illegal Modification; Damage caused by dismantling.**
2. Disposables such as bulb, fuse, focusing handle are all out of the range of warranty.
3. We offer forever service and technical consults, we will offer the service manual if necessary.

### Maintains:

The user should check the OT Lamp each three months for the follow: **Fastener; Back-up Bulb; If the domes can be located balanced.** If any problem exist, please check the manual and if the problems still unsolved, please contact us.

### Environmental protection:

Erase the OT Lamp at the end of its life, please accord to the treatment of general lighting.

### Fault analysis and solution:

Phenomanon	Analysis	Solution
The indication on the control panels useless	1.Plug off 2.Fuse burned	1.Plug on 2.Change the Fuse
Lamp doesn't work (Indication on the panel flick)	1.Both bulbs burned 2.Bad Electrical 3.Panel Fault	1.replace blubs 2.Check the 24V output to the bulb with multimeter 3.replace the control panel
OT Lamp flick disordered	1.Bad brush or wire point 2.High frequency equipments in the same network such as ESU.	1.Check the 24V output to the bulb with multimeter 2.Erase the effective equipments
Arm and domes can't be located well	1.Loose screws of the brake 2.Fatigue spring of the arm	1.adjust the screws 2.adjust the spring

**Normal environment for USE:**

Power	220V 50Hz/110V 60Hz
Temperture	+10~+30℃
Humidity	≤75%
Atmospheric Pressure	700~1060hpa
The Lamp can't be used in the environment of follow: 1. The combination of Combustible Anesthesia and Air 2. The combination of Oxygen and Nitrous Oxide	
Transportation and storage condition: Temperture: -40~+55℃    Relative Humidity: ≤93% Atmospheric Pressure: 500~1060hpa	

**Main Specification:**

Model	REFTECH6000M	REFTECH5000M
Central Luminance	130000Lx≤Ec≤160000Lx	80000Lx≤Ec≤140000Lx
Spot Diameter	d <sub>10</sub> : ≥130mm; d <sub>50</sub> : ≥70mm	
Focusing Depth	≥800mm	
Shadowless effective of 60cm domes	Shadowless rate with single baffle: ≥25% Shadowless rate with double baffles: ≥30% Shadowless rate in deep cavity of the body: ≥90% Shaowless reate with single baffle in deep cavity: ≥20% Shaowless reate with double baffles in deep cavity: ≥30%	

Shadowless effective of 50cm domes	Shadowless rate with single baffle: $\geq 10\%$ Shadowless rate with double baffles: $\geq 30\%$ Shadowless rate in deep cavity of the body: $\geq 90\%$ Shaowless reate with single baffle in deep cavity: $\geq 10\%$ Shaowless reate with double baffles in deep cavity: $\geq 30\%$	
Ra	Ra: $\geq 94$	
Color Temp	4300K+250K	
Total Irradiance	Ee: $\leq 1000\text{W}/\text{m}^2$ Ee/ Ec $\leq 6\text{mW}/\text{m}^2$	
Recourse	150W/24V	
Power Consumption	200VA	
Net Weight	88Kg	51Kg
Safety Level	I	
Sterilization	Follow the manual	
Fuse	RT1-30 T4AL 250V (in network)	