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USER MANUAL
For Surgical Lamp
REFTECH Series Ceiling Type

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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, uninstall 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:

REFTECH5050 (Ceiling type with two 50cm centimeter domes)

REFTECH5000 (Ceiling type with 50cm centimeter domes)

REFTECH6060 (Ceiling type with two 60cm centimeter domes)

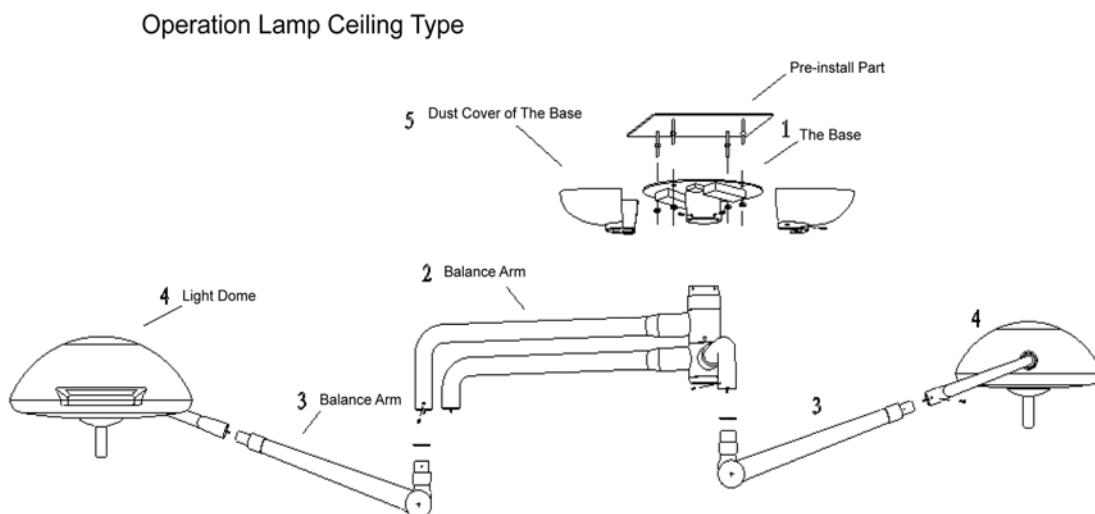
REFTECH6000 (Ceiling type with 60cm centimeter domes)

REFTECH6050 (Ceiling type with 50cm,60cm centimeter domes each)

Installation: (See the diagram)

1. Adjust the balance of the base and fix it on the pre-install parts (fix with anchors are prohibited) (See diagram 1)
2. Fix the rotation arm onto the base with 4 sets of screws. Link the wires on the front of the rotation arm to the power supply. (Red to positive; Blue to Negative; Green to ground) (See diagram 2)
3. Set the decorative gasket on the top of the balance arm and link with the rotation arm. Then fix it by 2 sets of M5*6 screws on the out side of the rotation arm. (See diagram 3).
4. Insert the bend of the domes into the balance arm and fix the screws. (See diagram 4)
5. Check the diagram, access the external wire with junction box and lead to relative wires. (red to fire wire; blue to zero; yellow green to ground). Power wire must be fixed on the ceiling by clamp and it should be close to the ceiling.
6. Cast the dust cover and fix with screw. (See diagram 5)



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 mm². And it



should be connected with a fixed master switch which control the two lines in the meantime, (the switch must be accordance with the request of IEC328; The direction movement of the parts of switch should be in accordance with the request of IEC447 and the symbols should be matched with IEC60601-1.)

7. 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 “” to switch on the lamp, click the button to adjust the luminance. After the operation, click “” again to switch off the lamp, then power off the master switch.
2. Rotate the focusing handle for focusing and position adjustment, the handle can be put off for sterilization. The focusing handle is for operators only, other is prohibited for touch the handle for the consideration of purification. (Click the button on the beneath of the focusing handle to put it off.)
3. Once the light on the control panel shining, please change the bulb after the surgery for the preparation of the next one. Please remember switch off the main power and ensure the bulb become cool before change the bulbs. Please read the instruction manual on the box of the bulb how to handle to bulb. (Bulb model: OSRAM HLX64640 24V 150W)
4. When the fuse broken, please switch of the main power and shut down the base together with the electrical box first. (please choose the relative item of the fuse indicate on the label.)
5. Once the OT Lamp can not be located, please repeat the **Installation No. 7**.
6. Recommendation: Clean the OT Lamp with wet fabric out of liquid, then sterilized with Formaldehyde or ozone fumigation agent and irradiate with UV. Put the focusing handle into Glutaraldehyde or 134°C steam to sterilize it for 20 minutes. (Prevent the handle from extrusion during the sterilization.) Please follow the instruction of medical instruments sterilization of your regional requirement.

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
Rotation Arm Can't be located well	1. Never check the balance of the fix board. 2. The stiffness of the pre-install parts is not enough 3. Loose screws of the brake	1. Check the balance of the base by Level. 2. Consolidate the pre-install parts 3. Adjust the screws
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	REFTECH6060	REFTECH6050	REFTECH6000	REFTECH5050	REFTECH5000
Central Luminance	130000Lx≤Ec≤160000Lx (60cm Domes) 80000Lx≤Ec≤140000Lx (50cm Domes)				
Spot Diameter	d ₁₀ : ≥130mm; d ₅₀ : ≥70mm				

Focusing Depth	$\geq 800\text{mm}$	
Shadowless effective of 60cm domes	Shadowless rate with single baffle: $\geq 25\%$ Shadowless rate with double baffles: $\geq 30\%$ Shadowless rate in deep cavity of the body: $\geq 90\%$ Shadowless reate with single baffle in deep cavity: $\geq 20\%$ Shaowless reate with double baffles in deep cavity: $\geq 30\%$	
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: ≥ 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+200VA(Double Domes)/ 200VA (Single Domes)	
Net Weight	88Kg	51Kg
Safety Level	I	
Sterilization	Follow the manual	
Fuse	RT1-30 T4AL 250V (in network)	
Loading Capacity of the Ceiling	More than 500kgs	