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Congratulations! You are the owner of the finest tanning equipment on the market. Be assured that the Quantum 851 by **puretan** is manufactured with care using the best materials, components and craftsmanship possible.

In order to receive maximum benefit from your Quantum 851 sun system please read and understand this manual thoroughly.

## The sun

The sun is the source of all energy on earth. It provides us with light which enables us to see and make plants grow. It emits infrared rays which we experience as warmth. A third form of solar energy is less noticeable, but equally important for our well being; ultraviolet radiation. This electromagnetic radiation is divided into three bands:

long wave (uv-a)	400-321 nm
medium wave (uv-b)	320-261 nm
short wave (uv-c)	260-180 nm

Radiation in the short wave band provides a strong germicidal effect and lamps emitting uv-c are used for air and liquid disinfection. Though the sun emits uv-c, it is filtered out by the earth's ozone layer and therefore does not reach the earth. You will find no uv-c radiation emitted by your Quantum 851 sun system. **puretan** tanning products use only ultraviolet radiation from the uv-b and uv-a regions for the cosmetic tanning process.

## The process of tanning

The immediate tanning that occurs with exposure to ultraviolet radiation of wavelengths longer than 300 nm and extending into the visible blue region is the darkening of existing melanin. This melanin is formed in the skin under the influence of uv-b. This melanin moves through the cells at the surface of the skin, and there changes into pigment. The tan produced in this way is called "indirect tanning". Tanning under uv-b starts slowly, but the overall time to get a deep tan is shorter than with uv-a. With uv-b the skin goes through a stage of reddening called "sunburn" or erythema. Uv-a causes direct tanning. Direct tanning starts immediately but takes longer to obtain an attractive tan. The lamps in your Quantum 851 use a combination of uv-b and uv-a in the exact proportions, based upon recommended exposure time, to give your skin the attractive, bronze tone you desire in a short period of time.

## Protecting the eyes

Ultraviolet radiation in the uv-b and uv-a regions may cause eye damage. **puretan** therefore provides protective eyewear with each piece of tanning equipment and recommends their use during each tanning session. Use protective eyewear type Interexco Gironde 12, 3831 AB LEUDSEN, Cat. No. 5653/1S color green, or other quality, certified eyewear whenever the product is energized.

## Exposure time and schedules

Control of exposure times is provided by means of a timer incorporated in the equipment. The maximum recommended exposure time of a tanning session is 10 minutes. **Turn the knob clockwise and set pointer to desired length of time. To terminate session turn the knob counter-clockwise until the unit shuts off.** During this time the use of the protective eyewear provided with your system is recommended. Following the recommended exposure times at the end of this section should produce results within one to four sessions.

## Caution

The length of exposure in new equipment or in equipment recently refitted with new lamps should be reduced by 20% to limit the possibility of erythema. This reduction should remain in effect for a minimum of 50 hours from the time of installation.

## Minimum use distances

The recommended exposure position for the Quantum 851 is standing in the center of the tanning platform, facing any direction with the door closed. The minimum use distance may be no less than 1.5" from the acrylic surface. **WARNING:** The use of other positions as well as exposure at less than minimum use distance may result in overexposure and is therefore not recommended.

Exposure times for lamp types: **Puretan FR73 Spectralarium VHO/R+, VHO/RF+ or CosmoLux VHR**

WEEK	1	1	1	2	2	2	3	3	3	4	4	4
SESSIONS	1	2	3	1	2	3	1	2	3	1	2	3
MIN. PER DAY	3	3	3	5	5	5	8	8	8	10	10	10

A spacing of 48 hours between exposures the first two weeks and a spacing of 24 hours between sequential exposures is recommended. It may take 1 to 4 exposures before the expected results appear.

## **Cleaning the tanning platform and acrylic surface**

After each session is completed, spray the tanning platform and acrylic surface with **puretan** disinfectant anti-fungal cleanser made specially for tanning products. Do not use conventional cleaners containing alcohol, ammonia or astringents. Do not wipe acrylic surfaces with a dry cloth as the static charge formed will attract dust.

### **Caution**

**Always terminate power to the system before servicing or cleaning.** Do not use excessive amounts of water, abrasive cleaners, or cleaners with warning labels regarding reactions to contact with the skin. Do not use products containing alcohol, ammonia or astringents.

### **Repairs and recommended replacement parts**

**puretan, inc.** or your **puretan** distributor is capable of providing prompt and up to the minute service recommendations should your equipment require exceptional maintenance.

### **Recommended parts replacements**

It is recommended that parts such as timers, protective eyewear and lamps be replaced with factory supplied parts obtainable through **puretan International Inc.**, 14848 Venture Dr., Dallas, Texas, 75234 (1-800-338-8267) or your **puretan** distributor or dealer.

Only factory approved parts when installed as instructed insure continued compliance with and CSA/NRTL standards.

### **Warning**

The Quantum 851 is designed for use by only one person at a time. Therefore, one pair of protective eyewear is provided.

## Assembly and Operation

Your Quantum 851 will be delivered in four containers. The superstructure is in the large wooden crate and the doors are in a smaller wooden crate. The fan assembly is in a cardboard box on top of a separate carton containing the power cart.

Carefully remove the superstructure from the large wooden crate. Stand the unit upright on a solid, **level** surface in its final position.

Remove the front bolt on the right door bracket on the top of the superstructure (see figure 1) and loosen the rear bolt. Locate the right door panel and place the hinge "pin" (see figure 2) in the bottom of the door in the hinge bushing on the tanning platform. While an assistant holds the panel, align the hole in the bracket over the hinge "pin" in the top of the door. Reinstall and tighten front bolt and then tighten rear bolt. Repeat the exercise on the left door panel.

The fan blade for the cooling system is shipped separately to reduce shipping damage. The fan blade assembly can only be mounted one way for proper operation. The side with fan blade supports is the bottom side or the side closest to the motor. First, install hub to the bottom side. Insert bolts from opposite side to attach hub. Make sure bolts are well secured. Slide fan blade assembly onto motor shaft with hub end first.

Apply a small dab of Lok-Tite<sup>7</sup>, provided in the box, to the two set screws that lock the hub on to the motor shaft. Make sure the set screws are positioned over the two flat planed areas of the shaft and lower fan assembly, allowing 1"-1.5" of clearance above the fan motor assembly. Once the fan blade assembly has been located into position, tighten the set screws making sure there is no movement of the fan blade assembly at the hub.

**NOTE: Once you have applied Lok-Tite<sup>7</sup> to the set screws, you should complete installation of the fan blade assembly before the compound dries.**

Locate the cable on the top of right door panel and insert the connector into the receptacle on the top, right side of the unit. There are guides on both the connector and receptacle to ensure they are connected correctly. **Do not force this connection.** When the connection is made, slide the sleeve nut over the threads on the receptacle and hand tighten **carefully...do not force.** The nuts will turn easily when properly aligned. Repeat the exercise on the left door panel.

Roll the power cart behind the unit. Locate the cables on the rear of the back panel of the unit and insert the connectors into the receptacles on the end of the power cart. **Note that the connectors and receptacles are lettered, and it is very important that the numbers coincide before testing the unit.** There are guides on both components to ensure they are connected correctly. **Do not force this connection.** When the connections are made, slide the sleeve nuts over the threads on the receptacles and hand tighten **carefully...do not force.** The nuts will turn easily when properly aligned.

The power cord from the power cart is to be "hard wired" to a **dedicated single phase 70 amp circuit. The optimum operating voltage is 228. Voltage of 218 is the extreme acceptable low and voltage of 230 the extreme acceptable high. Voltage output above or below this range will cause ineffective operation, and or damage to the sun system.** Make sure the unit is level and the black and red wires from the remote control\* cord are connected with a wire nut. Your Quantum 851 is now ready to test by turning the timer knob on the air deflector on the ceiling of the unit clockwise.

## **Optional Dressing Room Assembly**

The optional dressing room assembly will be in the large wooden crate with the superstructure. After you have assembled the tanning unit as described above. Remove the acrylic shield of the superstructure as described in "Removing The Acrylic Shield" on page 7, and remove the first two lamps on each side. Carefully position the dressing room assembly in front of the unit with the door panels in the closed position. Remove the four 1/4"-20 screws and nuts (two on each side flange) and line up the clearance holes in the superstructure with the clearance holes in the dressing room assembly. Insert the four screws through the holes in the dressing room flanges and the superstructure. Secure the screws with the nuts provided and reinstall the lamps and acrylic shield.

\*Remote control instructions are on page 8.

## Maintenance

It is recommended that every three (3) months due to heat expansion and contraction, wire connections are tested in the power cart. **Terminate power to the system** and remove the side panels. Gently pull on wires at connections on ballasts, capacitors, terminal strips, relay and timer with a "needle nose" pliers. Test and tighten any loose connection screws with a small screwdriver.

### Removing Acrylic Shield

**Terminate power to the system.** To remove the acrylic shields for cleaning or lamp and starter replacement, follow these easy steps. Remove the upper acrylic retaining bracket by loosening thumb screws. Push the shield upwards behind the top air vent strip until the lower edge clears the "lip" on the bottom of the panel. Grasp the lower edge of the shield and pull down until the top edge of the shield clears the air vent strip and then out until the shield is free and may be grasped at the sides for removal. Installation is reverse of removal.

### Lamp Replacement

**Disconnect power cord from wall receptacle.** Carefully remove the acrylic shield as described above. The lamps are now exposed for replacement or cleaning. Before the removal of a lamp, please make the following observation of the lamp holders. The lampholders on the top of the panels have spring loaded telescopic sockets, and the lampholders on the bottom are stationary. To remove a lamp, carefully hold the lamp with both hands, and press upward toward the spring loaded lampholder. When the spring loaded socket recedes and the tip on the bottom end of the lamp clears the stationary lampholder, pull out and remove.

### Starter Replacement

The starters are located below the row of stationary lampholders on the bottom of the panels. To remove a starter from its holder, carefully twist counterclockwise until the "click" is felt and remove. To reinstall, insert the connectors into the largest opening on the holder, and twist clockwise until locked in place.

## Remote Control Operation

A low voltage remote control system has been installed in your Quantum 851. On the power cart, next to the power cord is a "pigtail" with the black and white wires (in the future the wires will be the same color) connected and secured with a wire nut connector. This is the switch leg for any remote control device you wish to operate your sun system. It is necessary that sixteen (16) gauge two conductor cable connect your remote control monitor to your Quantum 851. The most common application is speaker wire. Attach the wires to the applicable terminals depending upon the remote monitor you are using. Be sure your connections are tight and secure all connections with wire nuts.

**WARNING - Incorrect connections will cause permanent damage to the internal components of the electrical system. This will not be the responsibility of puretan, or its vendors.**



## Trouble Shooting

Sunsystem will not operate:

1. Is power cord connected to supply source?
2. Are the black and red wires of the remote control cable connected?
3. Is timer in operational position?
4. Is circuit breaker "on"? Is there proper line voltage to the system?
5. Are cables properly connected to receptacles "A", "B", "C" and "D" on power cart?
6. Are cables from the door panels properly connected to receptacles on top of unit?
7. If "yes" to all of the above, call **puretan, Intl., Inc.** technical support.

Lamp(s) not working: **Terminate power to the system**, and remove the acrylic shield as previously discussed.

1. Remove unlit lamp(s) and replace with a lamp which is lighting. Test by activating the system. If lamp lights, discard the defective lamp and replace with a new one. If not, go on to #2.
2. Remove starter for unlit lamp. Replace with a new starter, or a starter next to a lamp which is lighting. Test by activating system. If lamp lights, discard defective starter and replace with a new one. If lamp still will not light, go on to #3.
3. Check connections to lampholders and starter holders for loose wires by pulling on each connection where inserted. Also check for burned ends or physical damage. If no loose wires or damage is detected, go on to #4.
4. Disconnect cable "A" from the power cart if the problem is in the right door panel, cable "B" if problem is in the right side of the back panel, cable "C" if the problem is in the left side of the back panel and cable "D" if the problem is in the left door panel. Examine the connector "pins" at end of cable. If damaged, consult **puretan, inc.** technical support. If "pins" appear to be undamaged, go on to #5.

**5. Terminate power to the system.** Remove small screws and panels from the sides of the power cart. Note that the ballasts are numbered 1-51. As you stand in front of the tanning system, lamp number 1 is at the far left in the left door panel, and continue in order, from left to right, ending with number 51 at the far right of the right door panel. One at a time check corresponding ballast connections of non-lighting lamps by gently pulling on wire where it inserts into plastic connector. If any wires are loose, push into connector and test.

**6. Terminate power to the system.** Check the connections at the capacitors by pulling back the rubber boot and making sure all connectors are tight and secure. If no loose wires are detected, install a "jumper" wire between the two connections on the capacitor cap and retest. If the lamp lights, replace the capacitor. Make certain to connect the wires to exactly the same terminals. If the lamp still does not light, **remove the jumper wire** and go on to #7.

**7. Terminate power to the system.** One at a time replace corresponding ballast of non-lighting lamps. Start by inserting a small screwdriver in the slot directly above the wire, push down and simultaneously pull wire out of connector. Remove the two hold down screws at either end of ballast and replace. To reconnect wires, gently push into appropriate corresponding position in ballast connector. Test the system. If lamp(s) still will not light, consult **puretan, Intl., Inc.** technical support.

Sun system will not terminate operation:

1. Remove the wire nut connector and separate the black and red wires on the remote control cable on rear of right power base. If system discontinues operation, go to #2. If system continues to operate, **terminate power to the system.** Remove the panels from the power cart and replace the relay by first removing the retainer screws. Change connectors at each terminal separately and install directly to replacement relay's corresponding terminals. It is important to reconnect the connectors to exactly the same terminals. Re-install relay and test. If sun system still operates improperly, consult **puretan, Intl., Inc.** technical support.

2. **Terminate power to the system.** Locate timer in the ceiling of the unit and replace by first removing the plastic knob and two retaining screws. Pull connectors from each terminal separately and install directly to replacement timer's corresponding terminals. It is important to reconnect the connectors to exactly the same terminals. Re-install timer and test. If sun system still operates improperly, consult **puretan, Intl., Inc.** technical support.