

***LANCER*** | BEER SYSTEMS

# R6000S Superchiller

## Installation, Operation & Service Manual



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# 1. Introduction

Thank you for purchasing this quality Lancer product. All Lancer products are constructed using the highest quality materials and components. They are designed to the highest possible standards, therefore offering our customers endless hours of optimum performance.

# 2. The Company

Lancer is a wholly owned subsidiary of Lancer Corporation, a world leader in the supply of Beverage Dispensing Equipment based in San Antonio, Texas. Lancer has manufacturing bases and distribution networks in 97 countries. Lancer is in turn ultimately owned by Hoshizaki Electric Co Ltd of Nagoya, Japan. Hoshizaki is a global leader in food service equipment.

Lancer's head office and manufacturing base is located in Adelaide (SA), with branch offices and warehousing facilities in Sydney (NSW), Melbourne (VIC), Brisbane (QLD), Perth (WA) and Auckland (New Zealand).

# 3. Our Products

Lancer specialises in the design, engineering, manufacture, and marketing of beverage dispensing and Heat Recovery equipment in three core categories:

## **Soft Drink Equipment**

Mechanically cooled and ice cooled soft drink dispensers, frozen beverage dispensers, dispensing valves, carbonators and an extensive line of beverage dispensing parts and accessories.

## **Beer Equipment**

Lancer manufactures and markets beer dispensing and chilling equipment, and related accessories. Products include founts, chillers, Chillerplates, drip trays, taps, handles, beer line cleaning equipment and an extensive line of beverage dispensing parts and accessories.

## **Heat Recovery Equipment**

Lancer manufactures a range of Heat Recovery systems designed to provide our customers with free hot water.

# 4. Product Details

The Lancer Remote R6000S chiller is a remote refrigerated unit designed to circulate Glycol or water to chill the product, as well as maintain the product temperature through the python, chiller plates and founts.

The Lancer Remote Glycol chiller utilise a glycol/water bath with an immersed copper coil evaporator, which chills the glycol/water mixture to a preset temperature.

Designed and manufactured in Australia to the most stringent quality standards.

## 4.1 Product Features

The Lancer Remote system chiller is supplied with the following features as standard:

- Cabinet constructed from long life, corrosion resistant 304 grade stainless steel
- Rotationally moulded polypropylene plastic inner tank offering long life and corrosion resistance
- The tank is insulated with environmentally responsible, water blown non-CFC polyurethane insulation
- Air tight design of the inner tank. Condensation is kept to a minimum to prevent dilution of the glycol solution
- Adjustable stainless steel legs to allow easy cleaning under the unit once installed
- Operates using environmentally responsible refrigerants
- Offers low installation, operating and maintenance costs due to single phase (240V 50Hz) 10 amp power requirement to operate both the refrigeration and pump(s)
- IP56 electrical connections
- CE Mark

## 4.2 Specifications

### Dimensions

Width	735 mm
Depth	400 mm
Height	730 mm

### Weight

Shipping	62 kg
Empty	54 kg
Operating	122 kg

**Refrigerant** R22, R134a, R404A

**Evaporator Capacity** 2.4Kw  
@ 23°F (-5°C) SST

**Power Supply** Single Phase, 240 VAC, 50 Hz, 10 Amps  
Nominal current draw - 0.5 Amp

**NOTE** - THIS UNIT REQUIRES CONNECTION TO A SUITABLE REFRIGERATION SYSTEM. CARE MUST BE TAKEN WHEN PERFORMING BRAZING OPERATIONS AND HANDLING REFRIGERANT GASES.

## 5. Installation

### 5.1 Receiving

Each unit is completely tested and thoroughly inspected before shipment. At time of shipment, the carrier accepts the unit and any claim for damage must be made with the carrier. Upon receiving units from the delivery carrier, carefully inspect carton for visible indication of damage. If damage exists, have carrier note it on bill of loading and file a claim with the carrier.

### 5.2 Unpacking

Carefully unpack the Superchiller™ from the shipping carton.

### 5.3 Installation

Select a suitable location as close to dispense taps as possible. If within one metre, the optional agitator font chiller pump is not essential but is preferred, especially if flooded fonts or chilled riser lines are used.

If the distance between the Superchiller™ and the dispense point is between one and five metres, with a rise in elevation (head) no more than three metres the optional agitator/font chilling pump and insulated Beer Python should be used. For distances with an elevation rise (head) between three and ten metres larger pumps are available.

All glycol/water recirculating lines must be insulated with a minimum of 19mm insulex.

The selected location should also be as close to a properly grounded (earthed) electrical outlet as possible.

### 5.4 Connecting the Beer Lines and Python

Connect beer supply lines from kegs to Superchiller™ product coil connections, using barbed fittings and 'o' clamps supplied.

Connect beer lines or python to outlets of Superchiller™ product coil connections. If glycol/water recirculation lines are used for python or font chilling connect one side to the outlet tube of the agitator/font chiller recirculation pump. Insert the glycol/water recirculation return into the Superchiller™ tank.

### 5.5 Connecting to Refrigeration System

As with all installations, good refrigeration practice is necessary to ensure reliability and satisfactory performance of the Hoshizaki Lancer Everest™ system chiller.

- All units have a holding charge of Nitrogen / R134a mixture.
- Ensure the solenoids are active prior to evacuation. Failure to do so may result in poor evacuation of the refrigeration system and possible system failure.
- Particular care should be taken to prevent oxidation during brazing, by using dry nitrogen and to ensure that a thorough evacuation of the system is carried out prior to gas charging.

- We recommend that isolating valves be fitted to the refrigerant pipes adjacent to the unit and that the refrigeration be connected to a dedicated and correctly sized condensing unit.
- Fully insulate suction line.

**NOTE: REMEMBER ONE OF THE MAIN FACTORS AFFECTING EQUIPMENT RELIABILITY AND COMPRESSOR SERVICE LIFE IS CONTAMINATION.**

## 5.6 Plumbing the Overflow

Some overflow will occur from glycol/water bath during normal operation. Overflow outlet should be plumbed to a suitable tundish or drain. If neither are available, a container may be used. This container should be emptied regularly.

## 5.7 Filling the Waterbath – (A) Icebank

Fill the waterbath tank until water runs out overflow. Water conditioner to inhibit algae and microbe growth may be used if it does not alter the freezing point of the bath.

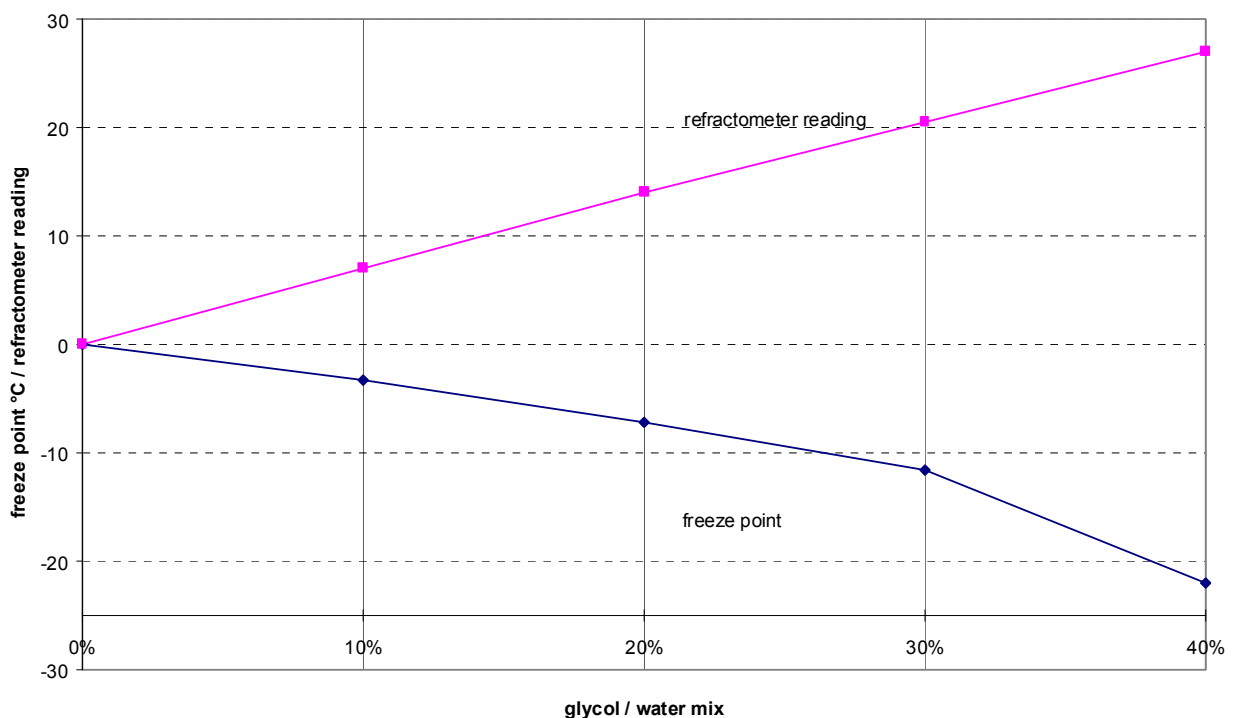
**NOTE: DO NOT USE WATER SUPPLIED FROM NEWLY INSTALLED CARBON FILTER AS ICEBANK CONTROL OPERATION MAY BE ADVERSLY AFFECTED.**


## 5.8 Filling the Waterbath – (B) Glycol Chiller Operation

If the Superchiller™ is to be used to chill glycol, the normal icebank control is replaced with a thermostat (this should be specified at time of ordering). The installation procedure for glycol chiller option is as for icebank operation except:


A 30% glycol/water mixture is required. Put required amount of glycol in tank and fill with water until the glycol/water solution comes out of the overflow.

**Relative freeze points and refractometer readings for propylene glycol / water mix**




	<b>CAUTION</b>	<b>OPERATING THE SUPERCHILLER™ AT TEMPERATURES BELOW - 2.5°C MAY CAUSE SOME LOW ALCOHOL BEERS TO FREEZE.</b>
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## 5.9 Connecting to Electrical Power Supply

	<b>WARNING</b>	<b>This unit must be properly electrically grounded (earthed) to avoid possible fatal electrical shock or serious injury to the operator. The power cord is provided with a three pin grounded plug. If a three-hole grounded electrical outlet is not available, use an approved method to ground the unit.</b>
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- Check the Superchiller™ serial number plate for the correct electrical supply requirements. Use the Superchiller™ only on the power supply specified on the serial plate.
- Connect power supply cord to properly grounded outlet. Switch on power supply. The agitator motor/front chilling pump thermostat (where used) and solenoid valve should operate.


	<b>WARNING</b>	<b>DO NOT TURN OFF POWER SUPPLY TO REFRIGERATION SYSTEM OR SUPERCHILLER™ UNIT UNLESS SERVICING. POWER SUPPLY TO SYSTEM MUST BE MAINTAINED AT ALL TIMES FOR PROPER OPERATION.</b>
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## 5.10 Charging the Refrigeration System and Start up

Open the hand valve on the suction side of the Superchiller™ evaporator.

Charge the refrigeration system with the appropriate refrigerant gas and ensure the system is operating correctly.

The superheat setting of the TX valve is factory set. Should this valve need adjusting do so ¼ turn at a time waiting 10 minutes between adjustments. The unit is functioning correctly when the frost line is just visible at the insulation that goes to the hand valve.

	<b>WARNING</b>	<b>Over adjusting the TX valve will cause flood back which could damage the refrigeration equipment.</b>
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## 5.11 Start up

Allow sufficient time for the icebank to build between 5/8 - ¾" thickness. The time for the complete icebank to build will depend on the refrigeration system, but is typically 1-3 hours. Once the icebank has reached the required thickness the icebank control will close the liquid line solenoid valve on the Superchiller™ and the remote condensing unit will begin to pump down the pressure in evaporator coil of the Superchiller™. The pressure control on the condensing unit should be set to cut out soon after the liquid line solenoid closes.

**Note:** Avoid short cycling of compressor by setting appropriate differential on pressure control.

## 6. Settings and Maintenance

### 6.1 Periodic Maintenance

Your R6000S series remote chiller has been designed for years of trouble free operation.

The following preventative maintenance measures are listed to ensure that the unit is operating at peak efficiency and performance.

#### 6.1.1 Daily or as required

Drain overflow vessel if overflow is not plumbed to a drain.

#### 6.1.2 Weekly

Clean and sanitise beer lines with a brewery approved detergent, according to manufacturers directions.

#### 6.1.3 Every 12 months

- Disconnect the unit from the power.
- Drain waterbath and flush with warm water to remove ice.
- Inspect evaporator and product coils for scale or other deposits that could inhibit heat transfer. Clean as required.
- Inspect agitator blade for deposits or wear.
- Inspect font chiller pump (if used) for blockage or build up.
- Refill waterbath and reconnect power.

**Note: For glycol operation, check glycol/water concentration once every month. Top up as necessary to maintain desired concentration.**



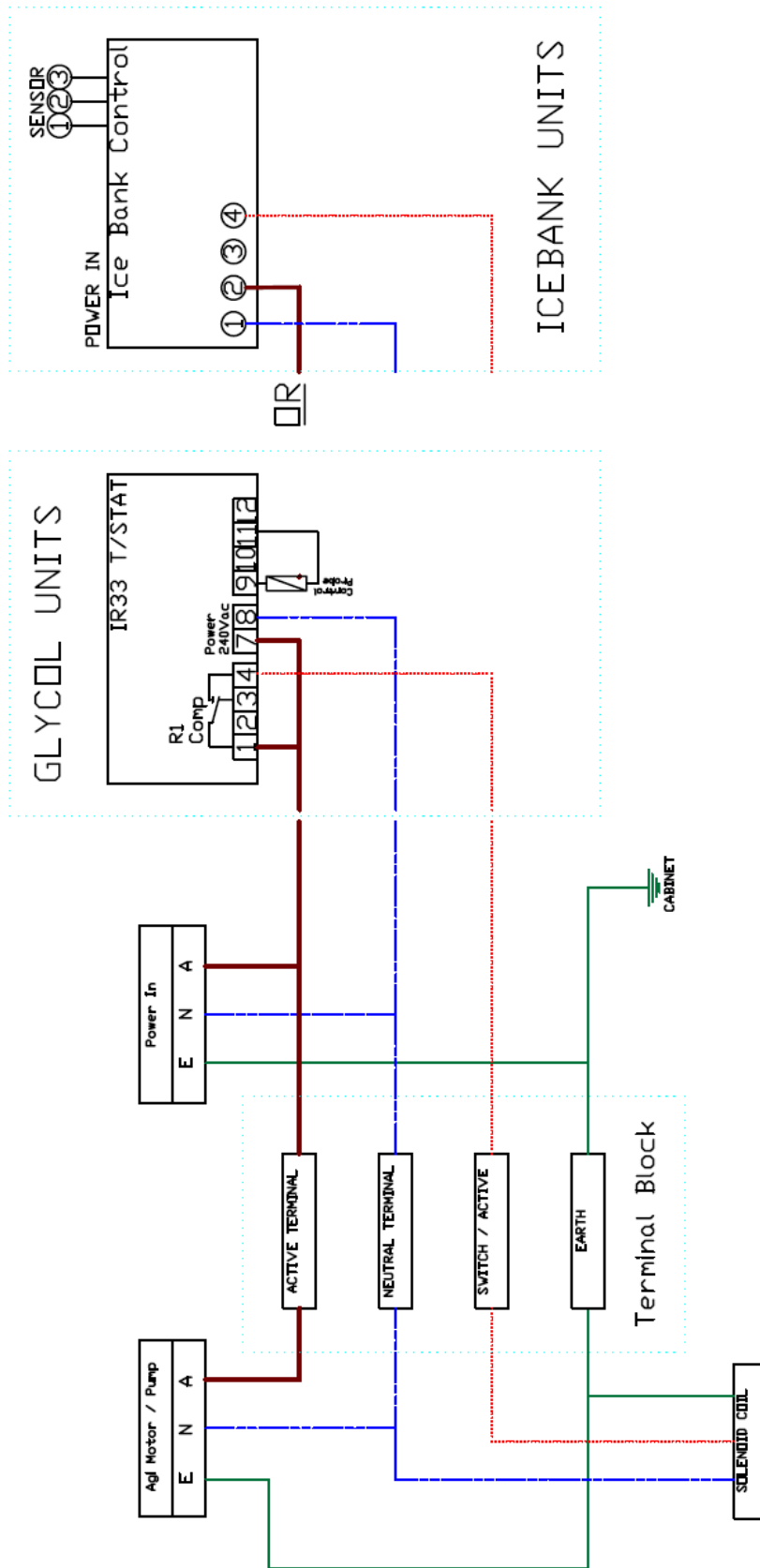
## 6.2 Trouble Shooting

TROUBLE	CAUSE	REMEDY
<b>Beer is warm.</b>	<p>No power to remote condensing unit.</p> <p>Refrigerant leak.</p> <p>Faulty icebank/thermostat control or probe</p> <p>Agitation problem.</p> <p>Suction line hand valve closed.</p> <p>Liquid line solenoid not opening.</p> <p>TX valve not feeding refrigerant.</p> <p>Condensing unit LP control setting too high or faulty.</p>	<p>Check power supply.</p> <p>Check chiller and other components in system. Repair leak and recharge.</p> <p>Replace control and probe.</p> <p>Check motor is running. Check blade is still O.K. Check motor lead connection.</p> <p>Open hand valve.</p> <p>Check if coil energizing. Check that icebank control is operating. Replace coil or icebank control.</p> <p>Replace orifice cartridge or TX valve.</p> <p>Reset LP control or replace. Cut in pressure to equal -4°C evaporator temperature.</p>
<b>No product flowing.</b>	<p>Excessive icebank freezing coils. (Icebank units)</p> <p>Beer connection in keg room faulty or not connected properly.</p> <p>Out of gas.</p> <p>Incorrect setting or faulty Thermostat.</p>	<p>Check position of icebank control probe. Faulty icebank control (contacts remain shut), replace if necessary. Liquid line solenoid not closing, replace.</p> <p>Replace or refit.</p> <p>Check gas supply and regulator.</p> <p>Reset or replace thermostat.</p>
<b>First beer poured off seems frothy and warm.</b>	<p>Ensure all restrictor lines are insulated or submerged in icebank water. Use of chilled riser lines will provide colder casual drinks and further reduce beer wastage.</p>	<p>Check and repair.</p>

## 7. Parts List

<b>Parts No.</b>	<b>Description</b>
87000051	Solenoid EVR6 3/8" Solder
83000101	Solenoid Coil Danfoss
83256958	Icebank Control E37-1201 Ranco
83260421	Sensor Icebank Control Ranco
83643267	Thermostat IR33SOER00 Carel
83000091	Probe NTC015HP00 Carel
80281406	Agitator Motor
87000005	Blade Agitator
87000064	R22 TX Valve (ORIFICE #1 – 87000037)
87000062	R134a TX Valve (ORIFICE #2 – 87000038)
87000063	R404a TX Valve (ORIFICE #1 – 87000037)
78282052	Pump Assy SPC 17 Totton W/Hose
78636093	Pump and Agitator ASSY SPK 2-11 1/2" Barb

### 7.1 Electrical Diagram



## 8. Certificate of Warranty

It is the policy of Hoshizaki Lancer to provide to its current customers, warranty for all equipment supplied and installation work performed within a specified period.

### **Parts And Equipment**

Hoshizaki Lancer provides a warranty period of twelve (12) months from the date of original invoice for all manufactured parts and the associated labour. Repair or replacement of defective parts will be at the sole discretion of Hoshizaki Lancer.

Changeover parts will be invoiced to the customer at the customers normal purchase cost and upon return of the warranty item and validation of the claim, the invoice will be credited.

### **Installations**

Hoshizaki Lancer provides a warranty period of twelve (12) months from the date of final invoice for workmanship after the completion of any installation work, provided the parts and labour are completed by Hoshizaki Lancer or its sub-contractor. All claims for warranty are to be made on the Hoshizaki Lancer branch that undertook the installation.

### **Labour**

Hoshizaki Lancer will not normally cover any labour costs associated with a Parts & Equipment warranty claim. Subject to the approval of the Divisional Sales Manager, Hoshizaki Lancer may choose to reimburse the customer for some or all labour costs associated with a warranty claim. Any claim for labour costs must be authorized by Hoshizaki Lancer prior to the work being undertaken

### **Exclusions**

Hoshizaki Lancer will not accept any liability or cost associated with any consequential losses (such as loss of syrup or beer), loss of profit or damage to property as a result of faulty product.

Warranty shall not apply:

- a. If in the opinion of Hoshizaki Lancer, the equipment has been used in a situation the equipment has not been designed for;
- b. If in the opinion of Hoshizaki Lancer, the equipment has been subject to abuse, negligence or accident;
- c. If connected to improper, inadequate or faulty power, water or drainage service or operated using incorrect, insufficient or contaminated lubricants, coolants, refrigerants or additives;
- d. Where the product is installed, maintained or operated otherwise than in accordance with the instructions supplied by Hoshizaki Lancer;
- e. Where the product has been damaged by foreign objects;
- f. Where the product has been serviced, repaired, altered or moved otherwise than by Hoshizaki Lancer or its nominees or using other than Hoshizaki Lancer approved replacement parts.

# 9. Manufacturer's Checklist

- Refrigerant decal supplied.
- Leak check all refrigeration components with the leak detector.
- Is TX valve correct to specification.
- Correct orifice tag is applied to TX valve.
- TX valve sensing bulb is secured tightly and in correct position, TX valve capillary not rubbing on anything.
- Air tape around TX bulb.
- Turn on unit, place icebank sensor in water; Solenoid coil energises. Agitator motor continues to run.
- Probe checked for sensor tightness.
- Probe control sensor in correct position.
- Check wiring to ensure no internal insulation is exposed.
- All refrigeration tube work straight and not rubbing on other components.
- Installation kit supplied.
- Superchiller decals in correct position.
- Serial number plate correctly positioned.
- Tank area clean.
- No sharp edges on body panels.
- Supply manual.
- All screws and legs secure.
- Supply and fill in appropriate details on warranty validation card.
- Liquid line drier and "good practice" label attached.
- Photocopy checklist and file. Supply original to unit.

Electrically Tested By: .....

Inspection Number: .....

<input type="checkbox"/>	Electrical Continuity
<input type="checkbox"/>	Earth Continuity
<input type="checkbox"/>	Insulation

Checked by: .....

Date: .....

Model No: .....

Serial No: .....

Warranty Validation Card No: .....

Work Order No:.....