LANCER | BEER SYSTEMS

Everest Glycol System Chiller

Installation, Operation & Service Manual

Table of contents

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 Hoshizaki Lancer Everest system chiller is a remote refrigerated unit designed to circulate Glycol to chill the product, as well as maintain the product temperature through the python, chiller plates and founts.

The Hoshizaki Lancer Everest Glycol chiller utilises a water/glycol bath with an immersed brazed plate heat exchanger, which chills the water/glycol mixture to a preset temperature. Water/glycol circulation is by way of two semi submersible pumps.

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

4.1 Product Features

The Hoshizaki Lancer Everest 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, keeping condensation to a minimum to eliminate dilution of the glycol solution

- Adjustable stainless steel legs to allow easy cleaning under the unit once installed

- Semi-submersible, single phase pumps

- Operates using environmentally responsible R404a refrigerant as standard

- Offers low installation, operating and maintenance costs due to single phase (240V 50Hz) power requirement to operate both the refrigeration and pump(s)

- IP56 electrical connections

- CE Mark

4.2 Specifications

Dimensions

Width	735 mm
Depth	680 mm
Height	1150 mm

Weight

Shipping	110 kg
Empty	105 kg
Operating	285 kg

Tank Capacity	190 litres	
Thermostat	Single HX	Carel I1 33SOER00
	Dual HX	Carel IR 33COHR00
Water Bank Capacity	72 litres	
Power Requirements	Single Phase 230V / 50 Hz (Amps dependent on pump configuration)	

4.3 Options

- Pump(s)

  - SPK2-11

  - SPK4-11

- Cooling Cassettes (Single or Dual) 5 kW, 8 kW, 10 kW @ -10°C SST.

- Glycol Manifolds complete with back check valves, ball valves and flow indicators.

- Glycol refractometer.

- External Glycol return safety solenoid.

- Refrigerant R134a, R404a, R22. Others POA.

5. Installation

5.1 Receiving

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

5.2 Unpacking

Carefully unpack the Lancer Everest system chiller from the shipping carton.

5.3 Unpacking Installation Kits (if supplied)

Inspect kits for concealed damage and if evident notify the delivery carrier and file a claim against them.

5.4 Selecting a Location

- Unit is for indoor use only unless suitably protected by a weatherproof enclosure.

- The Hoshizaki Lancer Everest system chiller should be located in a well-ventilated area that will allow easy access for servicing.

- Install on a flat, level surface. Level adjustments can be made on the adjustable legs.

5.5 Refrigeration Connection

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   Connecting Glycol Lines

- Connect glycol lines from the manifolds to the Hoshizaki Lancer Everest system chiller.

- Supply manifold direct to pump(s).

- Return manifold to glycol return pipe via return solenoid if required.

- After leak checking, ensure lines are fully insulated.

5.7   Electrical Connection

⚠	**Warning**	This unit must be properly electrically grounded (earthed) to avoid possible fatal electrical shock or serious injury to the operator. Electrical connection must be made in accordance with the appropriate local codes and regulations

⚠	**Warning**	Ensure glycol is added first, then water, prior to starting the refrigeration system – failure to do so will cause severe damage to the plate heat exchanger and refrigeration system, and will void all warranty

5.8   Filling Unit with Glycol / Water

The Lancer Everest system chiller requires a 30% glycol / water mixture. Put 60 litres of glycol in the tank and fill with water until the glycol / water mixture reaches the over flow.

The overflow should be plumbed away to a suitable drain or container, via a Goose neck.

5.9   Commissioning

- Turn refrigeration condensing unit off to prevent heat exchanger plate becoming too cold and freezing glycol on initial return.

- Turn power on to the Hoshizaki Lancer Everest system chiller.

- Turn pump(s) on and allow the python glycol lines to fill. Ensure liquid level does not drop below pump intake during initial filling of python.

- As required, top up the unit with a premixed 30:70 glycol / water mixture to correct level.

- Check water / glycol mixture with refractometer or hydrometer.

- Turn on condensing unit. If glycol bath temperature is above the set point of the thermostat the refrigeration solenoid should be operational.

- Check all connections for leaks.

- Monitor indicated temperature on thermostat and ensure temperature reduces to the set point.

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6. Thermostat, Settings & Programming

Carel

Parameter set 1	Type	Def	Description
/tl	F	1	1 = glycol probe displayed,
/c1	C	0.0	Calibration of glycol probe if required, generally should be 0.0
St	F	-2.0	Set point, refrigeration will turn off at this temperature
rd	F	1.0	Differential, glycol temp will increase from the cut out point by this value before the refrigeration turns on.
r1	F	-5.0	Minimum allowed set point
r2	F	5.0	Maximum allowed set point
r3	C	1	1 = cooling only no defrost
r4	C	6.5	Value to increase the set point by if the digital input is closed (optional switch)
r5	C	1	1 = temperature logging enabled
			while in LO or HI reading press set key to reset
rt	C		Period of temperature logging (hrs)
rH	F		Highest temp recorded over previous time span (rt)
rL	F		Lowest temp recorded over previous time span
c2	C	3	Minimum time after turning off before the control will give an output to the refrigeration solenoid
AL	C	4.0	Low temperature alarm, 4° below the set point (relative)

Controls programmed during manufacture by key.

If reset is required in field:

- Turn unit off, hold PRG key and restore power.

- On power up the control will default to Carel base settings.

Symbol	Description
⊖	Compressor on/off
✵	Fan on/off
❄	Defrost ~ defost mode requested
AUX	Auxillary ~ antisweat heater function
⚠	Alarm (high /low temp)
🕐	Clock ~ timer for defrost
☼	Light ~ anti sweat heater function
⚒	Service ~ malfunction (EEPROM error,probe fault)
❄	Continuous Cylce

6.1 Alarm Conditions, Causes and Remedies

Message:	**Er0**
Description:	**Sensor error**
Cause:	**Faulty Sensor**
Consequences on Control Action:	**Depends on C10**
Reset:	**R: automatic; V: manual**
Remedies:	**Check connections; check sensor signal (eg. NTC = 10k 25°C)**

Message:	**Er1**
Description:	**Sensor NTC2 error**
Cause:	**Faulty Sensor**
Consequences on Control Action:	**If C19=1 and mode1,2 – refer to Er0;** **vice versa control action goes on normally**
Reset:	**R: automatic; V: manual**
Remedies:	**Check connections; check sensor signal (eg. NTC = 10k 25°C)**

Message:	**Er2**
Description:	**Memory error**
Cause:	**Voltage drop during programming state.** **Memory damaged by electromagnetic interferences**
Consequences on Control Action:	**Stoppage**
Reset:	**R: automatic; V: manual**
Remedies:	**Reset factory-set values, turn off the controller,** **Turn on again holding down PRG**

Message:	**Er3**
Description:	**Alarm via external contact on digital input**
Cause:	**The contact linked to the digital input is open**
Consequences on Control Action:	**depending on C31**
Reset:	**R: depends on C29 and C30; V = manual**
Remedies:	**Check C29, C30, C31, and P28; check the external contact Er4**

Message:	**Er4**
Description:	**HIGH Temperature alarm**
Cause:	**P26 has been exceeded for a time-interval > P28 unchanged**
Consequences on Control Action:	**Control action goes on regularly**
Reset:	**R: automatic; V: manual**
Remedies:	**Check P26, P27, and P28**

Message:	**Er5**
Description:	**LOW Temperature alarm**
Cause:	**P25 has been below P28 for a time-interval > P28 unchanged**
Consequences on Control Action:	**Control action goes on regularly**
Reset:	**R: automatic; V: automatic (*)**
Remedies:	**Check P26, P27, and P28**

R = Control Action   /   V = Display
(*) = to get manual alarm reset, just give P27 (alarm differential) a high value

6.2 Scheduled Maintenance

- Check water/glycol level.
- Check water/glycol concentration using refractometer (see chart).

Relative freeze points and refractometer readings for propylene glycol / water mix
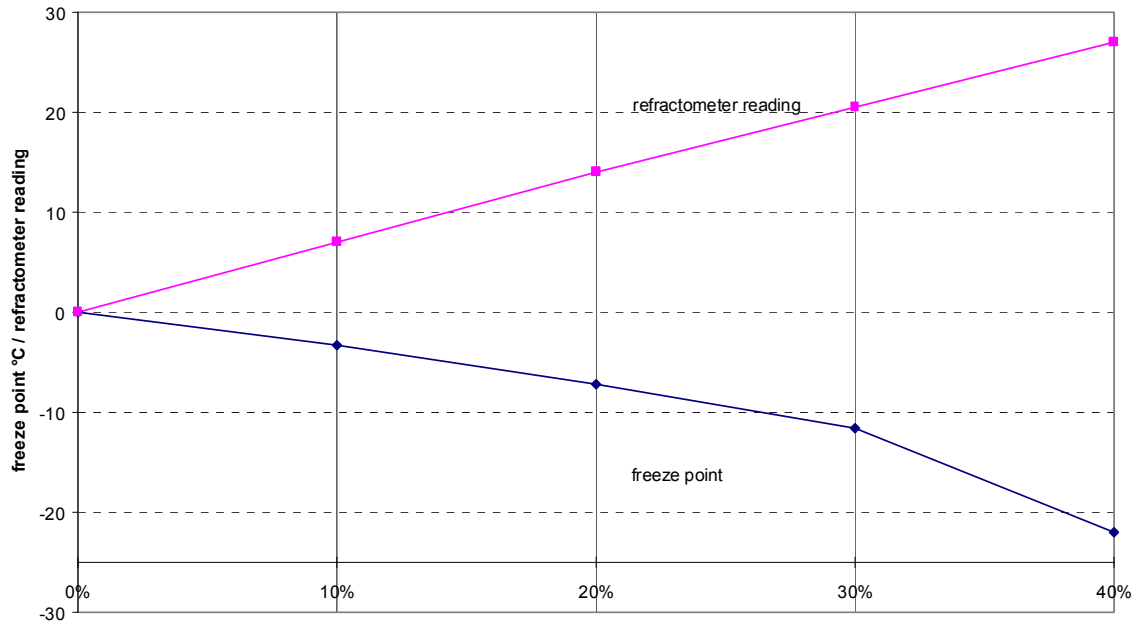
6.3 Trouble Shooting

TROUBLE	CAUSE	REMEDY
Condensing unit will not start.	Power Failure.	Check for blown fuse or cord pulled out.
	Thermostat/probe failure.	Replace.
	Solenoid coil failure.	Replace.
Beer Warm	Glycol bath temp within control set points	Check set points.
	Suction line hand valve if fitted (closed	Open hand valve
	Faulty Glycol Pump	Repair/replace pump
	Faulty TX valve	Replace TX valve
	Incorrect Glycol concentration (poor agitation)	Check with refractometers and adjust
No product flow	Thermostat Set too low Frozen product line.	Reset thermostat
		Switch off refrigeration while leaving pump running and beer tap open. Allow to thaw. Ensure that water is not lift in product lines after cleaning/ flushing Some beers will freeze when set temp is below -2.5°C

6.4 Electrical Diagram

240V A\C SINGLE HX

240V A\C DUAL HX

24V A\C

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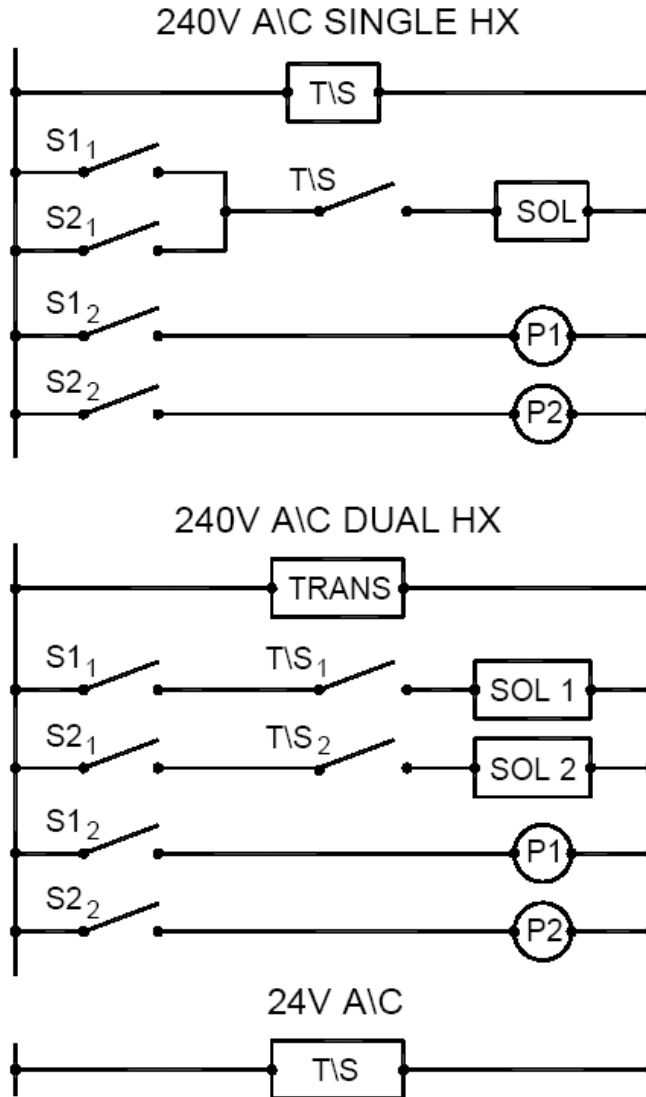
7.   Spare Parts List

Parts No.	Description
78634552	Pump SPK2-11
78634369	Pump SPK4-11
83643267	Thermostat – Single HX IR33SOER00 CAREL
83643279	Thermostat– Dual HX IR33COH00 CAREL
83000091	Probe - Thermostat
87000050	Solenoid Valve EVR3 – 5 kW
87000051	Solenoid Valve EVR6 – 8 & 10 kW
87606635	Solenoid Valve – Glycol Return
83000101	Coil – Solenoid Valve
87600222	TX Valve – 404A – 5 kW
87600223	TX Valve – 404A – 5 kW
87600224	TX Valve – 404A – 8 kW
87600224	TX Valve – 404A – 10 kW
87600220	TX Valve – R22 – 5 kW
87600220	TX Valve – R22 – 8 kW
87600221	TX Valve – R22 – 10 kW
83634242	Lead Pump A (Left)
83634357	Lead Pump B (Right)
83000102	Switch D.P.S.T
83600701	Rubber Boot (Switch)
79232218	Leg - Adjustable

8.   Certificate of Warranty

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

Parts And Equipment

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 replace of defective parts will be at the sole discretion of 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

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 Lancer or its sub-contractor. All claims for warranty are to be made on the Lancer branch that undertook the installation.

Labour

Lancer will not normally cover any labour costs associated with a warranty claim. Subject to the approval of the Divisional Sales Manager, 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

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 Lancer, the equipment has been used in a situation the equipment has not been designed for;

b.   If in the opinion of 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 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 Lancer or its nominees or using other than Hoshizaki Lancer approved replacement parts.

9.   Manufacturer's Checklist

☐   Leak check all refrigeration components with the leak detector.

☐   Liquid line solenoid and suction line, check valve installed for correct flow direction.

☐   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, set thermostat; Solenoid coil energises.

☐   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.

☐   Decals in correct position.

☐   Serial number plaque 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: …………………………………………………………………   ☐   Electrical Continuity

Inspection Number: …………………………………………………………………   ☐   Earth Continuity

☐   Insulation

Checked by: ……………………………………………   Date: ……………………………….

Model No: ……………………………………………   Serial No: ……………………….

Warranty Validation Card No: …………………………………   Work Order No: …………………

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