



Refrigerated immersion Coolers

C1GR
C2GR
CC26R

Operating Manual

If you have any feedback on Grant's products or services, we would like to hear from you. Contact:

Legal manufacturer

Grant Instruments (Cambridge) Ltd
Evolution House
Unit 2
Durham Way
Royston Gateway
SG8 5GX
UK

Tel: +44 (0) 1763 260 811

E-mail: support@grantinstruments.com

Representative in the European Union

Grant Instruments Europe B.V
Strawinskylaan 411
WTC, Tower A, 4th Floor
1077 XX, Amsterdam
The Netherlands

E-mail: grant@eu.grantinstruments.com

Country of Origin: UK

CONTENTS

1.	Safety	4
2.	Getting started	5
2.1	Unpacking	5
2.2	Installation	5
2.2.1	C1GR, C2GR	6
2.2.2	CC26R	6
3.	Specifications	7
3.1	Operating condition	7
3.2	Electrical details	7
3.3	Performance and dimensions	7
4.	Maintenance and service	6
4.1	General	8
4.2	Cleaning	8
4.2.1	General	8
4.2.2	Condenser cleaning	8
4.3	Routine safety tests	8
4.4	Replacement of fuses	8
4.5	Disposal	8
5.	Guarantee	9
6.	Service	9
7.	Compliance	10
7.1	WEEE directives	10
7.2	RoHS Directive	10
7.3	Electrical safety and Electromagnetic compatibility	10
7.4	REACH Regulation	10

1 Safety

The following symbols marked on the equipment mean:-



Caution: Read these operating instructions fully before use and pay particular attention to sections containing this symbol



Warning; flammable material

Always observe the following safety precautions



- Use only as specified by the operating instructions: if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- Consult the user manual for the equipment with which you intend to use this accessory cooler: ensure that you know how to operate it safely and are aware of any hazards, particularly relating to very hot or cold surfaces, or fluids and whether any of the fluids are hazardous.
- After transport or storage in humid conditions, always allow the equipment to stand for at least an hour at room temperature before operating.
- Connect only to an ac power (mains) outlet with a voltage corresponding to that on the serial number label.
- This product must be connected to an earthed ac power (mains) outlet.
- Before moving, disconnect from the ac power (mains) supply.
- When lifting use top flange by the ventilation grilles at the front and rear or lift from under the base.
- Only use the mains cord provided or one with an identical rating. Ensure that the ac power (mains) plug and the switch are easily accessible during use.
- Do not block or restrict the ventilation slots.
- If liquid is spilt inside the unit, disconnect it from the power supply and have it checked by a competent person
- It is the user organisation's responsibility to carry out appropriate decontamination if hazardous material is spilt on or inside the equipment

When using with Baths



- Do not check the temperature by touch, use the temperature display or a thermometer.
- To reduce the risk of eye injury during high temperature operation, use safety goggles or spectacles.
- Heat transfer fluids may be hazardous, make sure the Material Safety Data Sheet (MSDS) for the heat transfer fluid is available and the appropriate protective equipment is used.

2. Getting Started

2.1 Unpacking instructions

Standard equipment includes:

C1GR: C1GR Cooler
Mains cable
Immersion coil locator pack
Operating manual Part No. 34960 (these instructions).

C2GR: C2GR Cooler
Mains cable
Immersion coil locator pack
Operating manual Part No. 34960 (these instructions).

CC26R: CC26R Cooler
Mains cable
Immersion coil Retaining plate
Locking plate
2 x thumbscrews
Operating manual Part No. 34960 (these instructions).

Remove the packing materials carefully and retain for future shipment or storage.

2.2 Installation

WARNING: The equipment must be earthed (grounded). It is protected by electrical fuses. We strongly recommend that the power supply to any equipment for heating liquids should include a residual-current circuit breaker (earth leakage trip).

Check that the voltage rating of the products, given on the serial plate next to the power cable entry, is correct for your supply.

Fit the mains cable appliance coupler into the IEC socket at the rear of the unit, situated near to the mains (ON/OFF) switch.

Connect the mains cord plug to the supply mains socket outlet.

Switch ON to operate the refrigeration immersion coil. Ensure that the bath is correctly setup and operating to achieve the required temperature control, and to prevent the formation of ice.

Do not switch ON if :

- the temperature of the liquid in the bath is above 100°C
- the cooler has been tilted by more than 25° during the past six hours
- the interval since switching off the cooling system is less than 10 minutes

Note: condensed water vapour from the surrounding ambient air will dilute the water/glycol mixture and eventually cause ice to form on the immersion coil. Any ice build-up should be removed, and the transfer medium liquid replaced. The cooling power will be reduced if the ice is permitted to continue to build-up on the coil.

2.2.1 C1GR, C2GR

The C1GR and C2GR are designed for use with the Grant ST Series baths. The C2GR is only suitable for fitting in the 26, 28 and 38 litre baths.

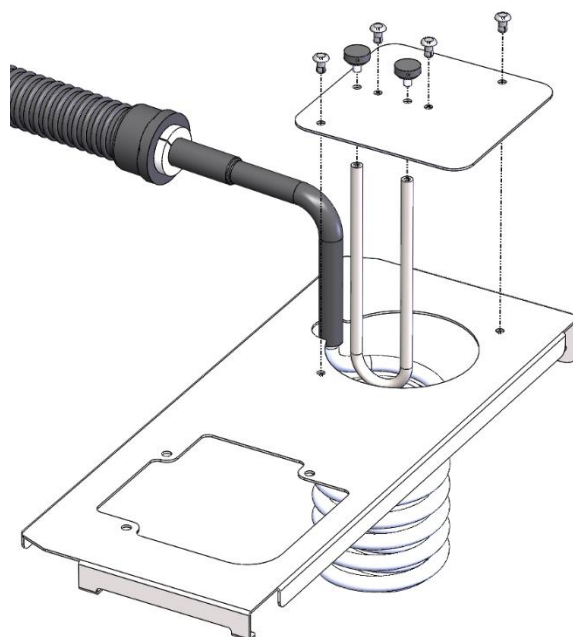
For fitting immersion coil in the ST series baths:

1. Remove bridge plate from ST bath. Remove the black rivets to separate the blanking plate. Retain the rivets for later
2. Use the thumb screws provided to secure the “u” shaped bracket to the blanking plate as shown.
3. Slide the cooling coil over the “u” shaped bracket and feed the cooling coil through the bridge plate. Check that the coil hose fits through the cut out.
4. Secure the blanking plate with the rivets.

Ensure that the unit is located so that the ventilation grilles are not less than 100mm from any obstruction.

The cooling coil may be immersed in liquids up to 100°C but the cooler should only be used to cool down the liquid, not to operate continuously above 40°C.

Immersed material: the cooling coil is nickel plated copper.



2.2.1 CC26R

The CC26R is designed for use with the Grant OLS26 shaking water baths.

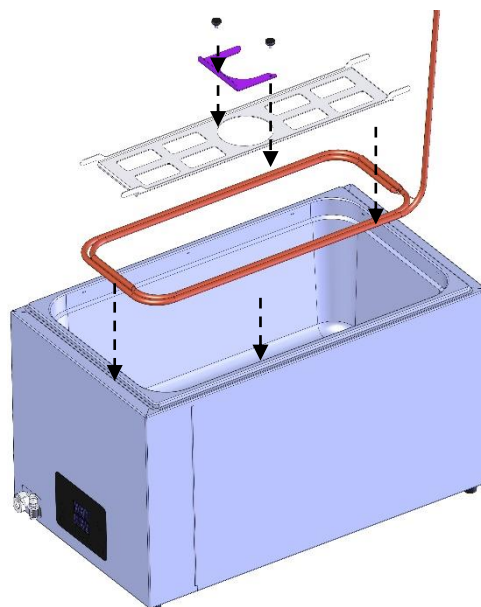
For fitting immersion coil into the OLS26 shaking water bath:

1. Remove shaking tray and trolley from the OLS26
2. Position the CC26R cooling unit next to the OLS26. Ensure that the ventilation grilles are more than 100mm from any obstruction
3. Place the immersion coil in the base of the bath with the feed pipe at the rear. Hold in place with the retaining plate
4. Slide the locking plate onto the bath's cam block housing and fasten with the 2 thumbscrews
5. Refit the shaking trolley and tray

Grant recommends a 50% water and Ethylene glycol (antifreeze) solution. Please follow the instruction included with the OLS26 shaking water bath regarding filling the unit, setting operating temperature and shaking speed.

The cooling coil may be immersed in liquids up to 100°C but the cooler should only be used to cool down the liquid, not to operate continuously above 40°C.

Immersed material: the cooling coil is nickel plated copper



3. Specifications

3.1 Operating conditions

Ambient Temperature	5 to 30°C
Maximum relative humidity	80% R.H. in room temperatures up to 30°C
Altitude above sea level	Up to 2,000 m (6,500 ft)
Operating Environment	Indoor use only

3.2 Electrical details

Pollution degree: 2

Installation Category: II

Note: Mains supply voltage fluctuations are not to exceed $\pm 10\%$ of the nominal supply voltage

C1GR		
Mains supply:	220-240V @ 50Hz	115-127V @ 60Hz
Power consumption	0.9 A	3.0A
C2GR		
Mains supply:	220-240V @ 50Hz	115-127V @ 60 Hz
Power consumption	1.8 A	3.0A
CC26R		
Mains supply:	220-240V @ 50Hz	115-127V @ 60 Hz
Power consumption	1.8A	3.0A

3.3 Performance and dimensions

Model		C1GR	C2GR	CC26R
Cooling power	@ 20°C	350W	400W	350w
	@ 0°C	110W	320W	250w
	@ -10°C	-	170W	-
Refrigeration gas	R290	40g	60g	65g
Dimensions	d/w/h	460/305/225mm	460/305/225mm	460/305/225mm
Flexible pipe	length	925mm	925mm	925mm
Coil	Diameter	77/55mm	77/105mm	460mm L x 190mm W
	/length			
Weight	Kg	16	21	21

4. Maintenance and Service

4.1 General

No routine maintenance is required except for cleaning the condenser fins and enclosure (see section 3.2). There are no user serviceable parts inside the unit. If the unit is visibly damaged or does not operate correctly, please contact our service department in the UK (see section 5), or your local distributor (outside the UK) to arrange repair.

4.2 Cleaning

4.2.1 General

The enclosure can be cleaned with a lightly dampened soft cloth after disconnection from the supply. Do not use strong and/or aggressive solvents. The immersed coil assembly can be cleaned with soapy water.

Before using any other decontamination or cleaning method, except that recommended above, check with our Service Department, or in other countries with our distributor, that the proposed method will not damage or impair the safety of the equipment.

4.2.2 Condenser cleaning

Cooling power will be reduced if the refrigeration condenser fins become blocked with dust and/or foreign material pulled in by the cooling fan. The equipment should be internally cleaned by a suitable qualified electrician and/or Grant appointed representative on a regular basis to prevent the build-up of foreign material within the equipment.

4.3 Routine safety tests

If routine tests are to be made, we recommend a test of the integrity of the protective earth conductor and an insulation test at 500 V DC. Routine flash tests are not recommended for any electrical equipment, because repeated high voltage tests degrade insulation materials.

4.4 Replacement of fuses

Disconnect the mains plug from the supply. Remove the IEC power connector from the rear of the equipment. Using a suitable blunt tool, release the fuse drawer retaining clip and slide out the fuse drawer. Check and replace with the correct fuse type, as previously fitted, or if necessary as detailed below:

Size: 1.25 x 0.25-inch (31.75x6.35mm), ceramic (high breaking capacity), quick acting type 'F'

Model C1GR:	220-240V:	5AF	115-120V:	10AF
Model C2GR:	220-240V:	10AF	115-120V:	10AF
Model CC26R:	220-240V:	10AF	115-120V:	10AF

After inserting the replacement fuses into the fuse holders, slide the drawer back into the aperture provided in the AC-inlet and replace the IEC power connector.

4.5 Disposal

This unit contains refrigerant gas which must NOT be discharged into the atmosphere. At the end of the unit's working life, either have the gas removed safely by using refrigerant recovery equipment or return the unit to Grant Instruments for disposal.

5. Guarantee

When used in laboratory conditions and according to these working instructions, this equipment is guaranteed for THREE YEARS against faulty materials or workmanship.

Service repairs outside of the guarantee period by Grant Instruments, carry a further one-year guarantee.

6. Service

For service, return for repair to our Service Department in the UK or, in other countries, to our distributor.

Grant Instruments (Cambridge) Ltd
Service Department
Evolution House
Unit 2
Durham Way
Royston Gateway
SG8 5GX
England

Tel: +44 (0) 1763 260811

E-mail: service@grantinstruments.com

7. Compliance

7.1 WEEE Directive

In Europe, at the end of its life the unit must be disposed of in accordance with the WEEE directive, For information regarding WEEE collections in the UK please contact our B2B Compliance Scheme directly on 01691 676 124

Grant Instruments complies fully with the Waste Electrical & Electronic Equipment (WEEE) regulations 2006. We are a member of the B2B compliance scheme (Scheme Approval Number WEE/MP3338PT/SCH), which handle our WEEE obligations on our behalf. Grant Instruments have been issued with a unique registration number by the Environmental Agency, this reference number is WEE/GA0048TZ.

For other countries please contact your equipment supplier.

For General WEEE information please visit: www.b2bcompliance.org.uk

7.2 RoHS Directive

All the products covered by this manual comply with the requirements of the RoHS Directive (Directive 2011/65/EC & 2015/863). This means the products are free of Lead and other hazardous substances covered by the directive.

7.3 Electrical safety and Electromagnetic compatibility

All the products covered by this manual comply the requirements of the Low Voltage Directive (2014/35/EC) for Electrical safety and the EMC directive (2014/30/EC) for Electromagnetic compatibility.

7.4 REACH Regulation

This product does not contain any listed SVHCs at greater than 0.1% by weight that must be identified in accordance with Regulation (EC) No 1907/2006 and therefore does not have an entry in the SCIP database

Notes



Grant Instruments (Cambridge) Ltd
Evolution House, Unit 2
Durham Way
Royston Gateway
SG8 5GX
UK

Tel: +44 (0) 1763 260811
salesdesk@grantinstruments.com
www.grantinstruments.com

34960 V3 DMN W35

Representative in the European Union
Grant Instruments Europe B.V
Strawinskylaan 411
WTC, Tower A, 4th Floor
1077 XX AMSTERDAM
THE NETHERLANDS

grant@eu.grantinstruments.com

C1GR, C1GR US, C2GR, C2GR US, CC26R, CC26R US
Operating manual Part No. 34960

www.grantinstruments.com