

# Gel Dryer

## Instruction Manual

### Catalogue Numbers

CSL-GDVH

CSL-GDVH35

Record the following for your records:

Model \_\_\_\_\_

Catalogue No. \_\_\_\_\_

Date of Delivery \_\_\_\_\_

Warranty Period \_\_\_\_\_

Serial No. \_\_\_\_\_

Invoice No. \_\_\_\_\_

Purchase Order No. \_\_\_\_\_

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# Safety Information

Use the same precautions as with any electrical device.

Before connecting this device to the electrical supply, check that your supply voltage is within the range stated on the rating label.

This device must be earthed.

Do not attempt to operate the device if damaged.

Place the unit in a safe, dry location.

The unit **MUST NOT** touch things in the surrounding area especially not heat sensitive materials.

Protect this unit from physical damage, corrosive agents and extreme temperatures.

Do not operate in a damp, humid environment where condensing moisture may short out internal electrical components.

When moving to or from a cold room, wait at least eight (8) hours for the unit to adopt ambient temperature and for condensing moisture to dry.

Do not place any kind of device on top of the Gel dryer.

Do follow the safety precautions for chemicals/dangerous materials!

# Packing List

Each unit includes the following items:

| SKU        | Main Unit | Mains Lead | Silicon Cover | Porous Gel Support | Instruction Manual |
|------------|-----------|------------|---------------|--------------------|--------------------|
| CSL-GDVH   |           |            |               |                    |                    |
| CSL-GDVH35 |           |            |               |                    |                    |

Packing List Checked by: \_\_\_\_\_

Date: \_\_\_\_\_

The packing lists should be referred to as soon as the units are received to ensure that all components have been included. The unit should be checked for damage when received.

Cleaver Scientific is liable for all missing or damaged parts / accessories within 7 days after customer received this instrument package. Please contact Cleaver Scientific immediately regarding this issue. If no response within such period from consignee party, that will be consignee party's whole responsibility.

Please contact your supplier if there are any problems or missing items.

# Operating Instructions

## Usage Guidance and restrictions

- Maximum altitude 2,000m.
- Temperature range between 4°C and 65°C.
- Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.
- Not for outdoor Use.

This apparatus is rated POLLUTION DEGREE 2 in accordance with IEC 664.

POLLUTION DEGREE 2, states that: "Normally only non-conductive pollution occurs.

Occasionally, however, a temporary conductivity caused by condensation must be expected".

## Connect the vacuum source

1. Connect a vacuum source to the gel dryer using vacuum tubing. We recommend using the CSL-GDPUMP gel dryer pump and CSL-GDPUMPTUBE tubing.
2. Keep tubing lengths to a minimum to improve the vacuum

## Set up the Gel Stack

1. Place the porous gel support on the base of the gel dryer.
2. Place a layer of filter paper between the gel and the gel support.
3. Place the gel on the filter paper layer and place another filter paper layer over the gel.
4. Close the silicon gasket over the gel and activate the vacuum source, ensuring the system is sealed.

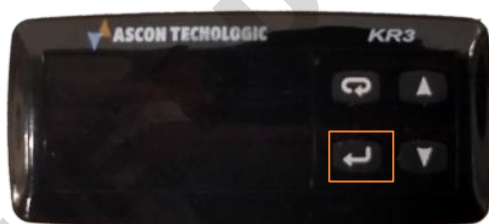
**N.B.** If you wish to evaluate the gel with a densitometer, we recommend also placing a cellophane sheet underneath and one above the gel (CSL-GDVHCS or CSL-GDVH35CS) and remove the air bubbles.

## Setting the temperature and time

The GDVH gel drier unit is operated by setting the desired temperature and time with the temperature controller. Once set, the timer starts immediately after pressing the start button, and so the set time include the time to reach the set temperature, allowing a gradual temperature increase in the gel. Time and temperature profiles should be optimised by the user for the type of gel being dried. Typical values for polyacrylamide gels are 80°C for 2 hours. Highly cross – linked and very thick gels or gradient gels should be dried at temperatures of about 50 to 60°C only. The drying time of a gel depends on size and thickness of the gel and on the capacity of the membrane vacuum pump used.

To set the temperature and time:

1. Plug the unit into the mains supply and power on using the power switch.
2. The controller with display “test”, this is an internal test that is carried out before operation, wait for the controller to display the current temperature value.



3. Press the enter key to access the temperature setting screen PR.S1 is displayed.
4. Use the up and down arrows to set the desired temperature, shown on the lower row of the display.
5. Press the enter key to move to the time setting, Pr.t1 is displayed.
6. Use the up and down arrows to set the desired temperature, shown on the lower row of the display.

- Once parameters have been set, wait for 5 seconds until the current temperature is displayed again.



- Press and hold the start key for 2 seconds to begin the programme. The temperature display will turn orange to indicate heating.
- Once drying is complete, turn off the system using the power switch. Your settings will be retained for future use.

## Troubleshooting

| Problem   | Solution   |
|---|--|
| LED does not light up   | <p>Check the FUSE to see if it is broken</p> <p>Ensure that the AC power switch is ON.</p> <p>Check the three-pronged power cord is properly plugged into a grounded three-prong AC outlet of the appropriate voltage.</p> |
| Timer is running, thermostat is heating, but the gel does not dry or takes extremely long time to dry | <p>Check the temperature setting.</p> <p>Check the vacuum: position of the silicone, tubing defects, capacity of the vacuum pump</p>   |
| Gel is torn during drying   | <p>Drying time is too short.</p> <p>Temperature is too high.</p> <p>Vacuum is not sufficient</p>   |
| Gel is distorted during drying  | <p>Temperature too high for thick or highly cross-linked or gradient gels.</p> <p>The vacuum was switched off too early and the gel was still warm.</p>  |

# Care and Maintenance

The Gel Dryer may be cleaned with a moist cloth containing a mild soap solution. The blocks are aluminium and may be cleaned with any of the commercial aluminium cleaners on the market taking care to thoroughly rinse any cleaning residue before use.

## Warranty

The Cleaver Scientific Ltd. (CSL) units have a warranty against manufacturing and material faults of twelve months from date of customer receipt.

If any defects occur during this warranty period, CSL will repair or replace the defective parts free of charge.

This warranty does not cover defects occurring by accident or misuse or defects caused by improper operation.

Units where repair or modification has been performed by anyone other than CSL or an appointed distributor or representative are no longer under warranty from the time the unit was modified.

Units which have accessories or repaired parts not supplied by CSL or its associated distributors have invalidated warranty.

CSL cannot repair or replace free of charge units where improper solutions or chemicals have been used. For a list of these please see the Care and Maintenance subsection.

If a problem does occur, then please contact your supplier or Cleaver Scientific Ltd:

Cleaver Scientific Ltd.

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