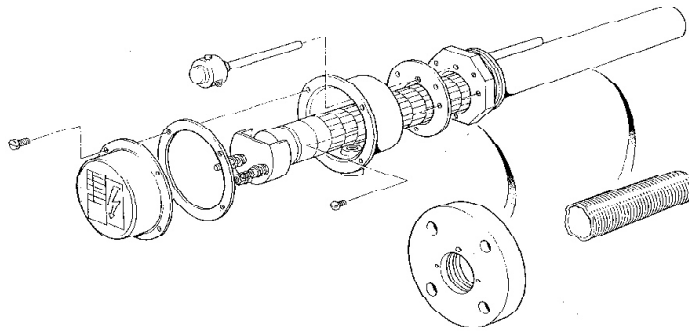


# **OPERATION AND MAINTENANCE INSTRUCTIONS**

**for**

## **"G/H/Q" Type IMMERSION HEATERS**



Single Tube Electric Immersion Heater

**A.K. Waugh Limited  
14 Loanbank Quadrant  
Govan  
Glasgow  
G51 3HZ**

**T: +44 (0)141 440 5775  
E: [sales@processheaters.co.uk](mailto:sales@processheaters.co.uk)  
W: [www.processheaters.co.uk](http://www.processheaters.co.uk)**

# Installation Instructions for Immersion Heaters

## 1.0 INSTALLATION

The immersion heater supplied is only suitable for horizontal mounting. Adequate withdrawal space must be provided, allowing - in the case of electric heaters, element core(s) and heater sheath or battery to be removed. Withdrawal distance is approximately the overall length of the heater, since normally there is little room for manipulation at the tank stub.

## 2.0 ELECTRICAL CONNECTIONS

One or more cable entry is provided on the terminal box to allow site connection of a suitable supply. Note that for Star connected elements 3 phases and 1 neutral cable are required, and for Delta wired elements 3 phase cable is required. When a thermostat is present a 2-core control circuit must be also wired in. A 3-core cable may be used if the thermostat has 3 contacts, this will enable the use of additional indicators.

## 3.0 METHOD OF OPERATION - Electrical Heaters

Heat is transferred to the liquid by means of removable ceramic heating element cores fitted into a sheath or tube. The element and sheath are closely matched to provide a good fit and therefore good heat transfer.

## 3.0B METHOD OF OPERATION - Steam Heaters

Heat is transferred to the liquid by means of pressurised steam condensing within a tube of given surface area. The surface area of the tube is calculated to suit the application.

## 4.0 SETTING OF THERMOSTATS - Electric Heaters

### General

Thermostats fitted have adjustable scales covering the temperature range required. Each thermostat is fitted in a pocket which enables replacement without draining down the vessel contents. It should be noted that in most cases the thermostat will sense a higher temperature than the bulk temperature since it will be in close proximity to the convective flow of liquid from the heater element sheath.

### Control Stat

This will be found generally on the TOP LEFT, as you look inside the terminal box. The setting can be varied as required either by hand or by using an electrical screwdriver.

### Master Stat

Where required, one master, or safety, thermostat is fitted to each heater in compliance with British Standards. This thermostat has a reset button visible and is located generally on the TOP RIGHT. The setting can be varied as required but should be 15-20°C above the Control setting. If the fluid temperature exceeds this value the thermostat will automatically switch off the entire circuit. It is necessary to manually reset this thermostat after correction of any fault.

## 5.0 MAINTENANCE

Maintenance is limited solely to electrical testing of the installation. If the earth insulation and where applicable the phase/phase insulation of the unit is not better than 1 ohm then the element must be removed and further tested. If the unit has been subjected to a period of disuse in a damp environment, gentle drying may correct any poor insulation values.

## 5.1 SPARES ORDERING INFORMATION

It is essential when ordering spares to quote **all** the details given on the nameplate :

***SERIAL NUMBER      DATE      KILOWATT RATING***