

# Datapaq Furnace Tracker®

## Low-height Quench Barriers

### for Aluminum-solution Processes

# USER GUIDE

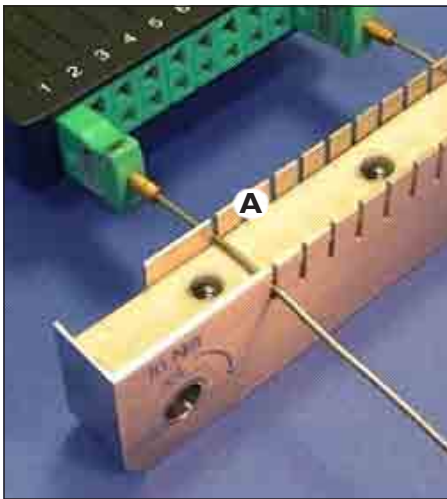


THESE guidance notes describe the assembly of evaporative water thermal barriers with 'comb-type' face-plates in Datapaq low-height quench systems, and should be read in conjunction with the *Furnace Tracker Low-height Quench System User Manual* (issue 2), replacing the section 'Assembling the Logger, Thermocouples and Inner Barrier'.

The systems are designed for use with mineral-insulated thermocouples of up to 1.6 mm diameter. Any number of thermocouples (up to the barrier's maximum) can be used, plus the logger's radio antenna if required.

### Assembly of Logger, Thermocouples and Barrier

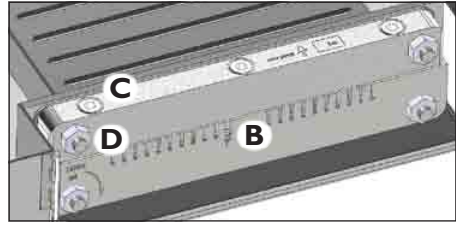
**1** Ensure that the lower half of the evaporative water barrier's face-plate is fitted with the correct silicone-foam gasket and that the side of the face-plate which has the torque specification marked on it is away from the logger.



**2** Lay each thermocouple wire across the lower half of the face-plate, in appropriate slots (**A**), positioning each one such that there will be a space of 60–65 mm between the logger and the face-plate. Fit the radio antenna (if used) in the slot marked  $\Psi$  (**B**, see p. 2).

**3** Once all the thermocouples and antenna (if used) are fitted, place the second silicone-foam gasket in the upper half of the face-plate. Holding the upper half so that its recessed side faces the logger, place it over the thermocouples. Take care that the upper half is correctly located within the lower half and that the gaskets are not pinched between the two halves.

**4** Fit the Allen bolts into the vertical holes in the upper half of the face-plate (C), and tighten them to the point where the material of the silicone gaskets protrudes from the thermocouple slots.

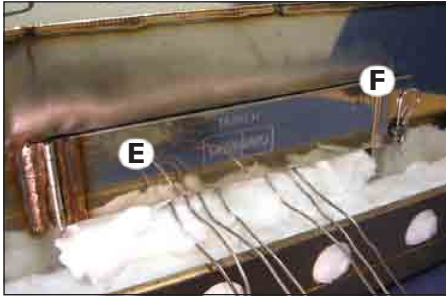


**5** Smear a thin coat of silicone grease onto one surface of the graphite gasket and carefully locate it on the four studs of the evaporative water barrier with the greased side against the barrier. Then grease the outer face of the gasket.

**6** The logger must now be reset; refer to your logger's *User Manual* for details of the process.

**7** Attach the logger to thermocouples, ensuring that the thermocouples do not cross over in the space between the logger and the face-plate, and that there are no sharp bends in the wires.

**8** Install the logger/thermocouples/face-plate assembly into the cavity in the evaporative water barrier, and fix the face-plate to the barrier using the four M8 nuts (D, above), torquing them evenly to 16 Nm.



**9** Before closing the barrier's small retaining door (E), ensure that the space between it and the face-plate is packed with insulation blanket. Secure the door with an R-clip (F).

### Fitting into the Retaining Frame

The assembly is now ready to be fitted into the insulation retaining frame. In the *Furnace Tracker Low-height Quench System User Manual*, see the section 'Fitting the Inner Barrier into the Water Barrier'. Note that two layers of insulation blanket should be fitted against the front face of the evaporative water barrier.

#### WARNING

*Forgetting to fill the thermal barrier with water will result in severe damage to the system.*

- Once the thermocouples are neatly arranged outside the frame (**G**), the system is ready for use and can be sent through the process.

#### **Typical System Components**

Insulation retaining frame.

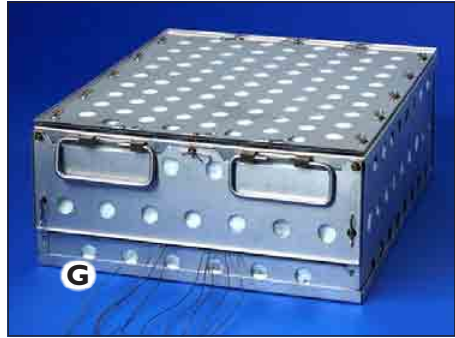
Evaporative water barrier, including face-plate.

High-temperature silicone-foam gaskets.

Graphite gaskets.

Insulation-cutting templates.

Insulation blanket.



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