

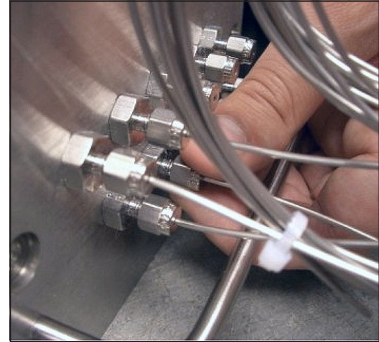
# Furnace Tracker®

## Compression Glands

### USER GUIDE



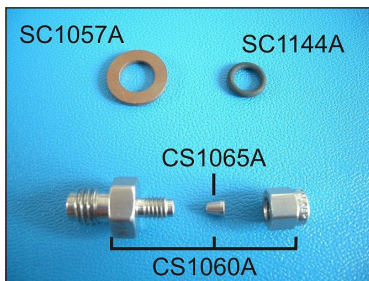
WHEN it is necessary to seal a thermal barrier fully against water, etc., a compression gland is often used to make the seal around each thermocouple where it enters the barrier. Small-diameter mineral-insulated thermocouples (1.5 mm or 1/16 in.) are normally used in these applications. This guide describes how to fit the compression gland to the face-plate of the thermal barrier, how to fit the thermocouple into the gland, and how to replace the thermocouple.



*Compression glands installed on the face-plate of a thermal barrier.*

#### ***Fitting the Compression Gland to the Face-plate of the Thermal Barrier***

The compression-gland assembly (part no. CS1060A) has three components: main body, compression 'olive' (CS1065A) and retaining nut. Take care when undoing the gland assembly, as the olive is small and easily lost.



*Compression-gland assembly (body, olive and nut), with sealing washer and O-ring above.*

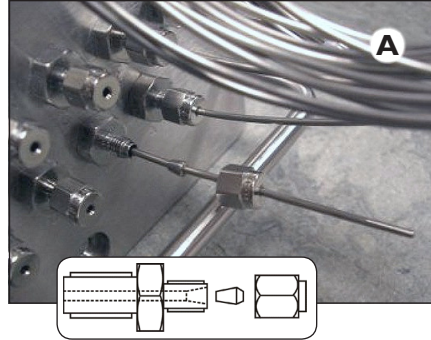
The compression gland fits into a threaded hole in the face-plate of the barrier; between the barrier's face-plate and the mating face of the compression gland's main body there is either a copper washer (SC1057A) or a rubber O-ring (SC1144A), depending on the type of application. If the compression gland is removed at any point, a new washer or O-ring must always be fitted.

When fitting the compression gland, first ensure that all mating surfaces are clean. With the washer or O-ring in place, tighten the compression-gland body against the

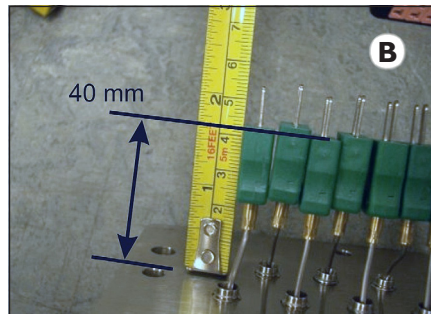
face-plate using a torque wrench set to 10 Nm/7.4 lb-ft (copper washer) or 5 Nm/3.7 lb-ft (rubber O-ring).

## Fitting the Thermocouples

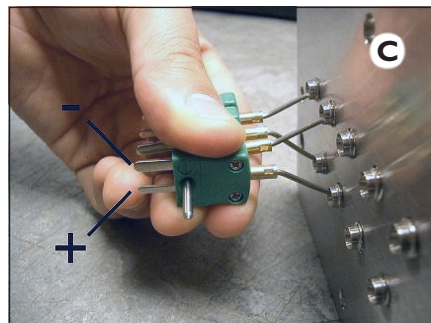
1. First straighten the thermocouple, ensuring there are no kinks that will catch in the compression gland.
2. Remove the nut and olive from the compression gland body, and thread the thermocouple through the gland from the inside of the face-plate.
3. Slide the olive over the thermocouple wire outside the face-plate, with the olive's longer taper facing the thermal barrier **(A)**, and then slide the nut over the wire and start it turning, by less than half a turn, on the compression-gland body (see **A** – inset shows compression gland body, olive and nut).



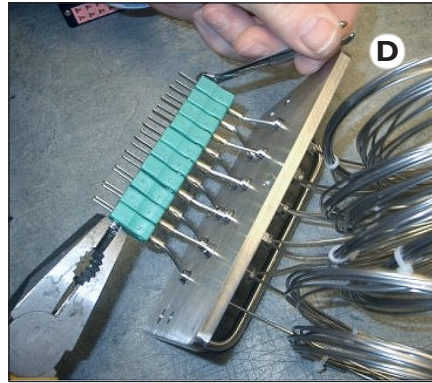
4. Pull the thermocouple through until the base of the thermocouple plug pins is 40 mm (1.5 in.) from the inside of the barrier face-plate **(B)** and tighten the nut to finger tightness.



5. Repeat this for all thermocouples, ensuring that the thermocouple plug pins (+ and -) are all in the same orientation **(C)**. It may be necessary to bend the thermocouples slightly to ensure all the plugs line up.



- When all thermocouples are fitted, clamp them together by threading the locking rod through them and tightening the lock-nuts on either end (D).



- If any thermocouple channels are not used, insert a blanking pin (SC0052) into the compression-gland body (E).

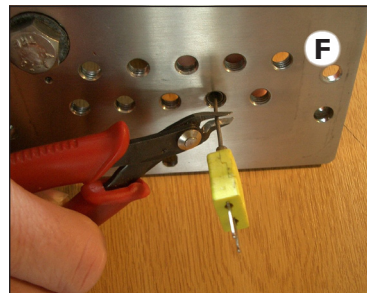
*Failure to fit a blanking pin may result in water leaking into the thermal barrier and destroying the data logger.*



- Tighten the compression-gland nuts to compress the olives around the thermocouples or blanking pins. Do not over-tighten the nut as it will easily shear the compression gland: using an open-ended wrench, tighten until the nut grips, and then a further  $\frac{1}{2}$ – $\frac{3}{4}$  turn.
- Check that the gasket between the face-plate and the thermal barrier is in good condition and that both faces are clean. Then – when the thermocouples have been attached to the logger, and the logger has been re-set, triggered and placed in the barrier (see the *User Manual* for your logger) – tighten the face-plate of the barrier.

## Replacing a Thermocouple

If a thermocouple needs at any point to be replaced, cut the wire near its plug (F), then loosen the compression-gland nut and fit a new thermocouple, as above. Do not try to re-use the old olive from the old thermocouple: always fit a new olive to ensure a good seal.



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