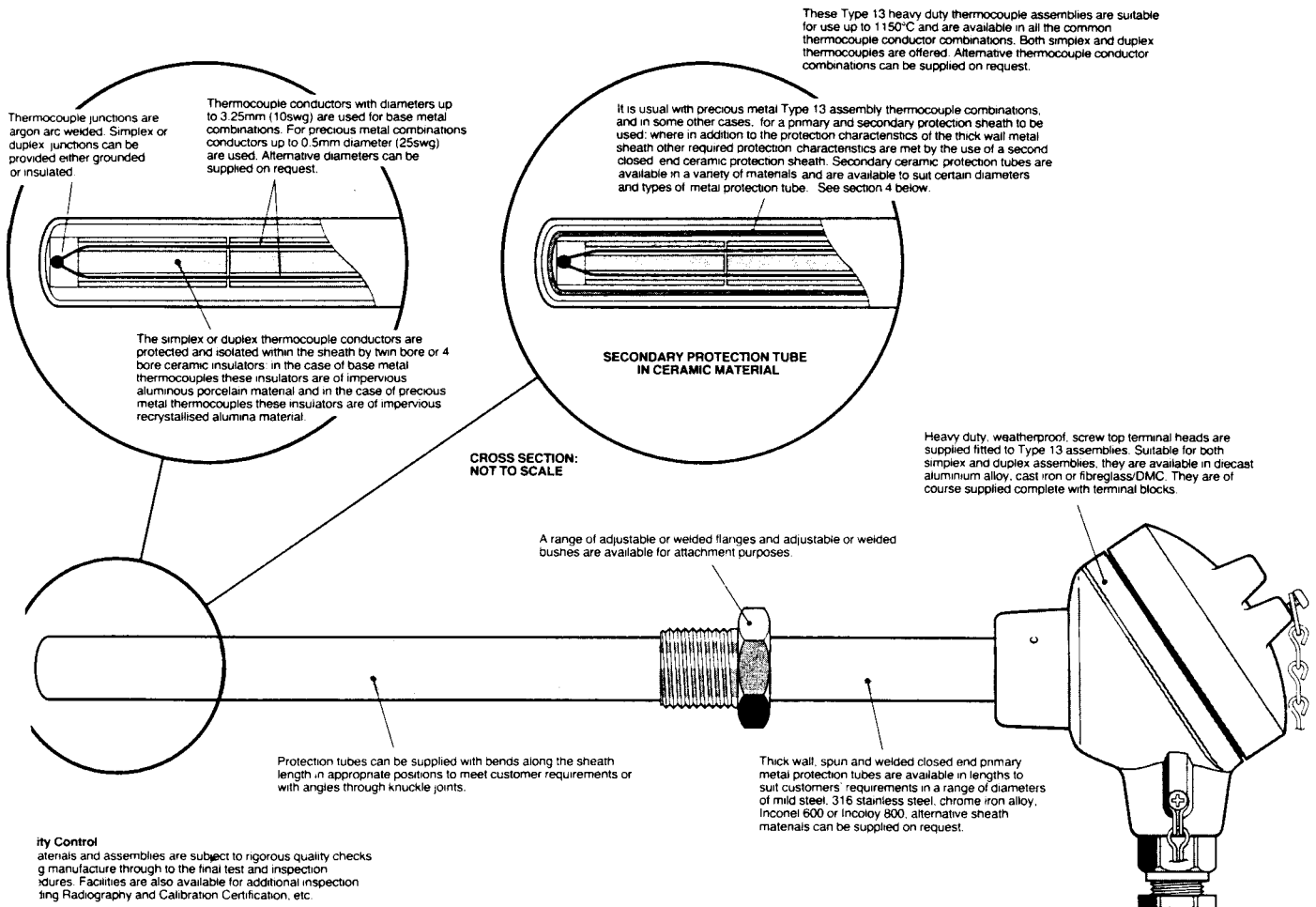


## HEAVY DUTY INDUSTRIAL METAL SHEATHED THERMOCOUPLE ASSEMBLIES

- WT assemblies are available with thick wall protective sheaths in chromium iron, iron nickel, nickel chromium, stainless steel alloys and mild steel etc.
- Heavy duty, weatherproof termination heads for both simplex and duplex Type WT assemblies are available in diecast aluminium alloy, cast iron or fibreglass/DMC.
- Depending on the sheath material selected Type WT assemblies are suitable for use in neutral, reducing or oxidising atmospheres and those with high concentrations of sulphurous gases.
- Available fittings include fixed or adjustable flanges, welded or adjustable bushes.
- Typical temperature measurement applications include: furnaces (blast, carburizing etc), kilns, ovens, boilers, flues, cyanide/galvanising baths and general heating and heat treatment applications.
- These assemblies are suited to arduous temperature measurement up to 1150°C dependent on the sheath material selected.
- The protective primary metal sheath of these assemblies is available with a range of standard outside diameters from 12.7mm to 26.9mm. The sheath length is to suit customer requirements.
- Thermocouple conductor combinations within Type WT assemblies can be selected from any of the common thermocouple conductor combinations.
- Type WT assemblies can be supplied with bends along the sheath length in appropriate positions to meet customer requirements or with angles through knuckle joints.

### SCHEMATIC OF TYPICAL ASSEMBLY

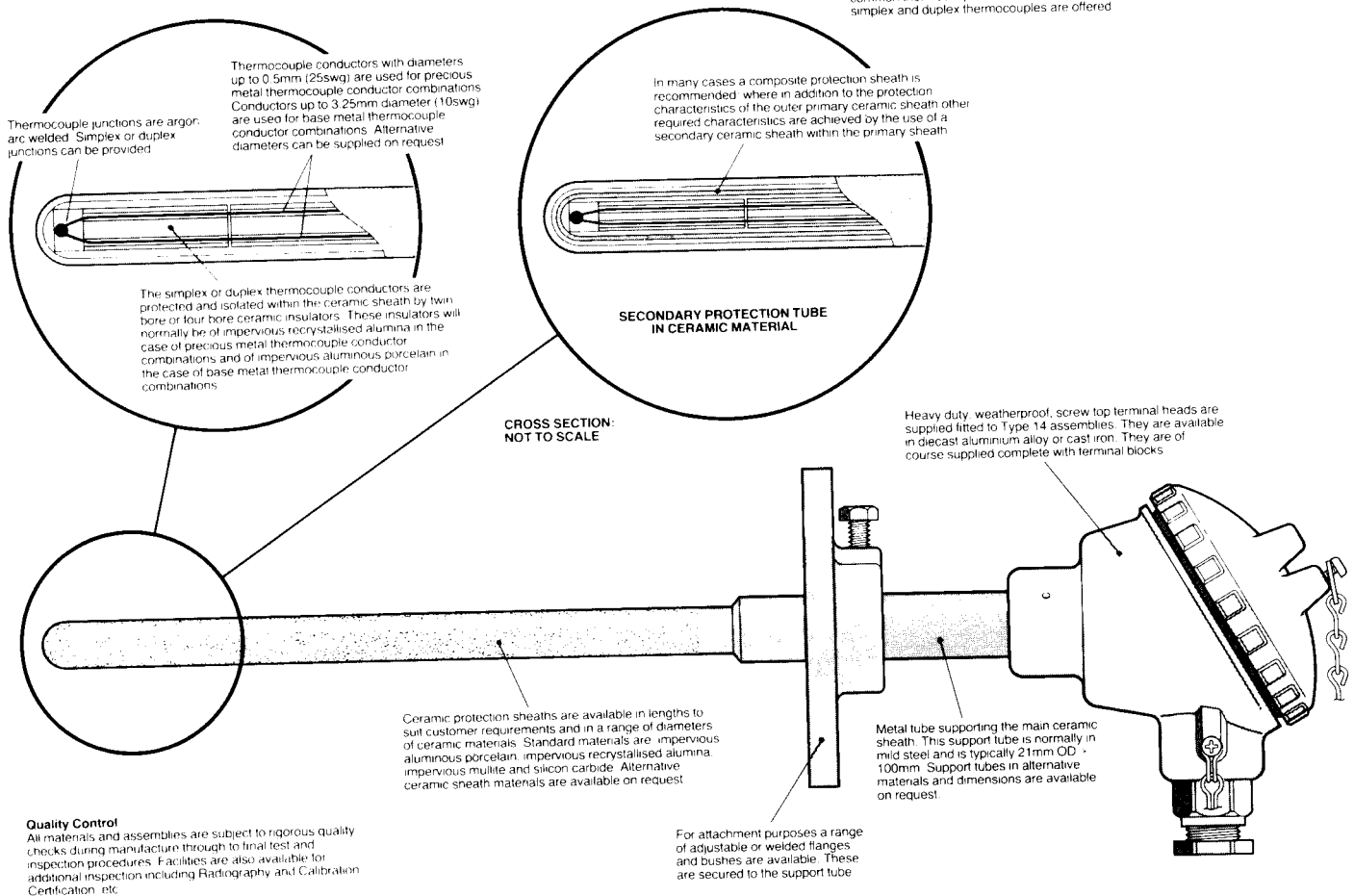


# WT HIGH TEMPERATURE INDUSTRIAL CERAMIC SHEATHED THERMOCOUPLE ASSEMBLIES

- WT assemblies are used for temperature measurement up to 1600°C plus in kilns, furnaces and flues etc.
- The protective ceramic sheaths of these assemblies are available as standard with a range of diameters from 10mm. We are pleased to advise on which sheath material and size to select to suit the operating temperature ranges, atmosphere and thermal conditions of your particular application.
- Heavy duty, weatherproof termination heads for both simplex and duplex Type WT assemblies are available in either diecast aluminium alloy or cast iron.
- Available attachment fittings include fixed or adjustable flanges, welded or adjustable bushes.
- Type WT assemblies are available as standard with primary and optional secondary ceramic protective sheaths in a range of diameters of; impervious aluminous porcelain, impervious recrystallised alumina, impervious mullite and silicon carbide etc.
- Assemblies in all the common thermocouple conductor combinations are available in both simplex and duplex thermocouples.
- These assemblies can be supplied with bends (via knuckle joints), in appropriate positions along the sheath to meet customer requirements.

## Schematic of typical assembly

These Type 14 high temperature industrial thermocouple assemblies are suitable for use up to 1600 C plus dependent upon the model selected. They are available in all the common thermocouple conductor combinations. Both simplex and duplex thermocouples are offered.



### Quality Control

All materials and assemblies are subject to rigorous quality checks during manufacture through to final test and inspection procedures. Facilities are also available for additional inspection including Radiography and Calibration Certification, etc.

## TYPE WT THERMOCOUPLES

**TABLE 1  
COLD END TERMINATIONS**

WT 95	Small diecast aluminium termination head
WT96	Large die cast aluminium termination head

**TABLE 2  
SHEATH DIAMETER**

I	9,52mm (10mm in Porcelain Sheaths)
K	12,7mm
P	15,9mm (5/8 inch) (15mm in Porcelain)
R	19,1mm (3/4 inch)
S	21,5mm (1/2" Nominal Bore ) (21mm in Porcelain)

( OTHER SPECIAL SIZES ON REQUEST )

**TABLE 3  
WIRE CALIBRATION**

### STANDARD THERMOCOUPLE ALLOY CONDUCTOR COMBINATIONS

Code	Conductor combination	Recommended operating temperature range for conductor combinations*	
		Continuous °C	Short term °C
K	Nickel Chromium vs Nickel Aluminium	0 to +1100	-180 to +1350
T	Copper vs Constantan	-185 to +300	-250 to +400
J	Iron vs Constantan	+20 to +700	-180 to +750
E	Nickel Chromium vs Constantan	0 to +800	—
N	Nickel-Chromium-Silicon vs Nickel-Silicon-Magnesium	0 to +1100	0 to +1300
R	Platinum - 13% Rhodium vs Platinum	0 to +1600	-50 to +1700
S	Platinum - 10% Rhodium vs Platinum	0 to +1550	-50 to +1700
B	Platinum - 30% Rhodium vs Platinum 6% Rhodium	+100 to +1550	+50 to +1820
W5	Tungsten - 5% Rhenium vs Tungsten - 26% Rhenium	+20 to + 2300	0 to + 2600
W3	Tungsten - 3% Rhenium vs Tungsten - 25% Rhenium	+20 to +2000	0 to +2100

**Table 4  
HOT JUNCTIONS**

7 = EXPOSED
8 = GROUNDED
9 = UNGROUNDED

**SHEATH MATERIALS**

B	INCONEL 600
C	AISI 316 ST/ST
D	AISI 310 ST/ST
E	AISI 446 ST/ST
G	NICKEL
H	MONEL
V	HASTELLOY X
J	HASTELLOY C
K	INCOLOY 800
(AP)	PYTHAGORAS 610 - ALUMINOUS PORCELAIN
(RA)	ALSINT 710 - RECRYSTALLISED ALUMINA

**TYPICAL PT No.**

**WT - 95 - 300 - I R 9 (AP)**

Wire and Bead Style		_____
Small Diecast Head		_____
Length in mm		_____
Diameter (10mm)		_____
PtvsPtRH 13% (R)		_____
Ungrounded Junction		_____
Aluminous Porcelain Sheath		_____

**WT - 96 - 600 - S K 9 D**

WIRE AND BEAD STYLE		_____
LARGE DIECAST ALUMINIUM HEAD		_____
Length in mm		_____
1/2" Nominal Bore		_____
Sched 40		_____
Nicr/Nial (K)		_____
Ungrounded Junction		_____
AISI 310 ST/ST		_____