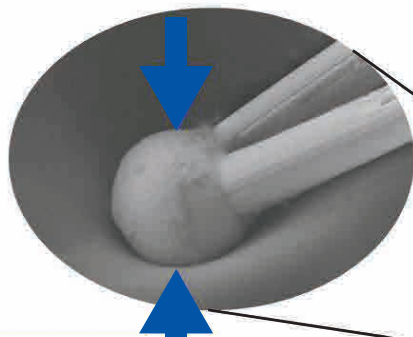


## Junkosha Multi-Core Cable and Assembly

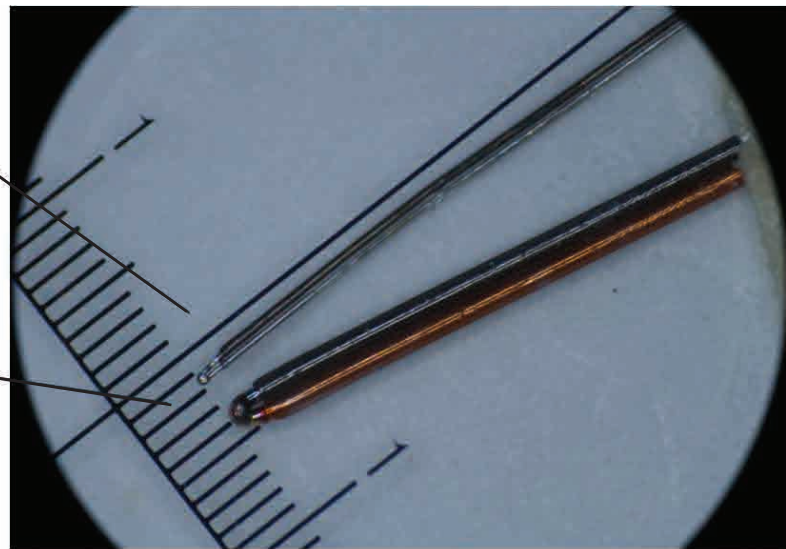
### Ultra-Fine Thermocouple

With the increased use of temperature monitoring catheters, the need for Ultra-Fine Thermocouples is growing. Junkosha Thermocouple Cables' structure is increasingly simplified compared to conventional thermistors and can be easily downsized. They can also be used for attaching multi-point thermal sensors to catheters in development. Few companies can manufacture thermocouples thinner than AWG 38. Junkosha has successfully commercialized polymer-coated thermocouples smaller than AWG 50. (Welded assemblies are under development.)



0.020"

- High Reliability
- Quick Response
- Excellent Thermoelectric Properties



#### Features

- Great reliability, faster reactivity and improved responsiveness for measurements.
- Excellent thermoelectromotive force
- Conductor range: smaller size which can be used from AWG 38 to AWG 50
- Compact thermocouple that allows for flexible catheter designs
- JIS C 1602 Tolerance Class 1 quality: temperature tolerance  $\pm 0.5^{\circ}\text{C}$
- Types of thermocouple: Type-T (copper-constantan), Type-K (chromel-alumel)
- Materials options: PU, PAI, PI, PFA, etc.
- Enable to add mold of UV resin for the tip

#### Use

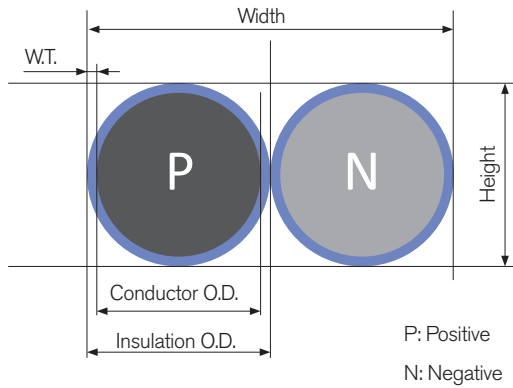
- Ablation catheters
- Esophageal temperature monitoring systems

#### Properties

	Type-T	Type-K
Material	Copper-Constantan	Chromel-Alumel
Conductor Size	AWG 38 ~ 50	AWG 38 ~ 50
Insulator	PU, PAI, PI, PFA, etc. *	PU, PAI, PI, PFA, etc. *
JIS C 1602 Tolerance	Class 1 Equivalent (within $\pm 0.5^{\circ}\text{C}$ )	Class 1 Equivalent (within $\pm 1.5^{\circ}\text{C}$ )

\*PU, PAI and PI have adhesive layer of PA based.

## Construction and Standard Sizes



Thermocouple Type	Type-T (Copper-Constantan), Type-K (Chromel-Alumel)
Insulation Material	Polyurethane, Polyamide-imide, Nylon, Polyimide, PFA
Temperature tolerance	+/-0.5°C or +/-1.5°C

### Metric Units

Your Space for Thermocouple	Finished Dimensions		Insulation			Conductors		
	Width [mm]	Height [mm]	W.T. [mm]	O.D. [mm]	Material	AWG	O.D. [mm]	Material Positive - Negative
φ 0.240	0.224	0.112	0.005	0.112	Polyurethane PAI PI PFA*	38	0.102	Type T: Constantan-Copper
φ 0.220	0.200	0.100	0.005	0.100		40	0.080	
φ 0.175	0.148	0.074	0.005	0.074		42	0.064	
φ 0.140	0.120	0.060	0.005	0.060		44	0.050	Type K: Alumel-Chromel
φ 0.120	0.100	0.050	0.005	0.050		46	0.040	
φ 0.100	0.080	0.040	0.005	0.040		48	0.030	
φ 0.085	0.070	0.035	0.005	0.035		50	0.025	

\*Wall thickness of PFA is 0.0125 mm

### Imperial Units

Your Space for Thermocouple	Finished Dimensions		Insulation			Conductors		
	Width [inch]	Height [inch]	W.T. [inch]	O.D. [inch]	Material	AWG	O.D. [inch]	Material Positive - Negative
φ 0.0095	0.0088	0.0044	0.0002	0.0044	Polyurethane PAI PI PFA*	38	0.0040	Type T: Constantan-Copper
φ 0.0085	0.0079	0.0039	0.0002	0.0039		40	0.0031	
φ 0.0065	0.0058	0.0029	0.0002	0.0029		42	0.0025	
φ 0.0055	0.0047	0.0024	0.0002	0.0024		44	0.0020	Type K: Alumel-Chromel
φ 0.0045	0.0039	0.0020	0.0002	0.0020		46	0.0016	
φ 0.0040	0.0031	0.0016	0.0002	0.0016		48	0.0012	
φ 0.0030	0.0028	0.0014	0.0002	0.0014		50	0.0010	

\*Wall thickness of PFA is 0.0005 inch

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