

## UNIJIN® INDUSTRIAL BI-METAL THERMOMETER (BACK)

### Model : T110

T110 models are designed for use for direct indicating and measuring temperature in various industrial plants such as oil refinery, sugar refinery, chemical and rubber plant, food industries, refrigeration, process, engineering, general industry and etc. Pocket Thermowell must be used on all applications where thermometer bulb sensor is subjected to pressure, corrosive fluid or flow rate. Thermowell will make thermometer disassemble for calibration or replacement easier as the process will not disturbed.



### Standard Specification

**Dial Size**

63, 75, 100, 150mm

**Connection**

63, 75mm : 3/8" BSPT

100, 150, 200mm : 1/2" BSPT

**Scale Range (°C & °F)**

-50 ~ 50°C to -50 ~ 100°C,

-30 ~ 50°C to -30 ~ 120°C,

-20 ~ 50°C to -30 ~ 150°C,

0 ~ 50°C to 0 ~ 500°C

**Working Range**

Max 100% of Full Scale

**Accuracy**

± 2.0% of Full Scale

**Zero Adjustment**

At back case or at pointer

**Material**

Case & Cover : 304SS

Window : Glass

Sensing Element : Coiled bimetallic

Connection : 304SS

Stem : 304SS, max 2000mm

Stem OD : 6, 8, 10mm

### Thermometer Ordering Information

**Model**

T110

**Dial Size**

63, 75, 100, 150mm

**Scale Range**
**Stem Length**

63, 75, 100mm

**Connection Type**

3/8" BSPT

**Options**

Thermowell

### Example of Order

**Model**

T110

**Dial Size**

75mm

**Range**

0 ~ 100°C

**Stem Length**

100mm

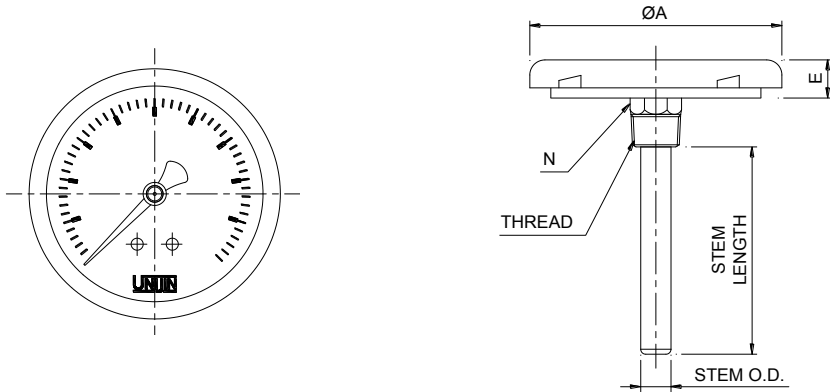
**Connection**

3/8" BSPT

**Options**

316SS Thermowell

## Basic Dimensions



Unit : mm

	$\varnothing 65$	$\varnothing 75$	$\varnothing 100$	$\varnothing 150$
<b>A</b>	65.3	84.2	117.8	160.0
<b>E</b>	29.5	28.0	36.0	37.0
<b>N</b>	17.0	17.0	21.0	21.0

## UNIJIN® INDUSTRIAL BI-METAL THERMOMETER (BOTTOM)

### Model : T120

T120 is used for measuring temperature of gas or fluid liquid. This is suitable for measurement, regulation and direct monitoring of the fluid, and meets the most stringent criteria on resistance to a corrosive atmosphere and exceptional climatic circumstance.



### Standard Specification

#### Dial Size

63, 75, 100mm

#### Connection

63, 75mm : 3/8" BSPT

100mm : 1/2" BSPT

#### Scale Range (°C & °F)

-50 ~ 50°C to -50 ~ 100°C,

-30 ~ 50°C to -30 ~ 120°C,

-20 ~ 50°C to -30 ~ 150°C,

0 ~ 50°C to 0 ~ 500°C

#### Working Range

Max 100% of Full Scale

#### Accuracy

± 2.0% of Full Scale

#### Zero Adjustment

At pointer

#### Material

Case & Cover : 304SS

Window : Glass

Sensing Element : Coiled bimetallic

Connection : 304SS

Stem : 304SS, max 2000mm

Stem OD : 6, 8, 10mm

### Thermometer Ordering Information

#### Model

T120

#### Dial Size

63, 75, 100mm

#### Scale Range

#### Stem Length

63, 75, 100mm

#### Connection Type

1/2" BSPT

3/8" BSPT

#### Options

Thermowell

### Example of Order

#### Model

T120

#### Dial Size

75mm

#### Range

0 ~ 100°C

#### Stem Length

100mm

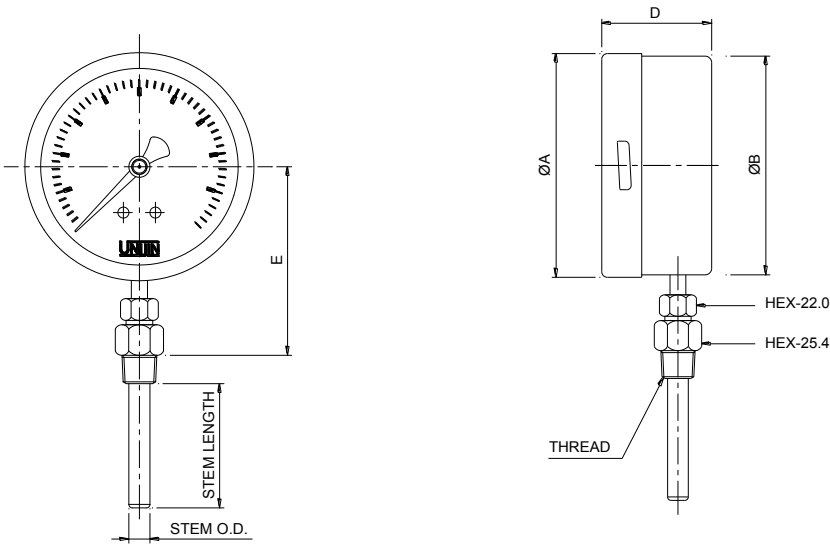
#### Connection

3/8" BSPT

#### Options

316SS Thermowell

Basic Dimensions



Unit : mm

	ø 63	ø 75	ø 100	ø 150
A	69.3	84.3	116.8	160.0
B	63.2	75.2	101.5	158.0
D	34.4	46.5	52.0	48.8
E	75.0	76.0	91.0	121.0

# UNIJIN® FREE ANGLE BI-METAL THERMOMETER

## Model : T190

T190 models are designed for use for direct indicating and measuring temperature in various industrial plants such as oil refinery, sugar refinery, chemical and rubber plant, food industries, refrigeration, process, engineering, general industry and etc. Pocket Thermowell must be used on all applications where thermometer bulb sensor is subjected to pressure, corrosive fluid or flow rate. Thermowell will make thermometer disassemble for calibration or replacement easier as the process will not be disturbed. Systems or equipment with strong vibration are apparent, the Capillary Thermometer model is recommended.



## Standard Specification

### Dial Size

100mm / 4"

### Connection

1/2" NPT / BSPT

### Scale Range (°C & °F)

-30~ 50°C;      0 ~ 60°C ;  
 0~ 100°C;      0~ 120°C;  
 0~ 150°C;      0~ 200°C;  
 0~ 300°C;      0~ 400°C;  
 0~ 500°C

### Working Range

Max 100% of Full Scale

### Stem OD

ø6.00mm, ø8.00mm

### IP Protection

IP65

### Accuracy

± class 1.5 ≤ 300 °C,  
 ± class 2.5 > 300 °C,  
 Option : Class 1

### Zero Adjustment

At back case

### Material

Case & Cover : 304SS / 316SS (option)  
 Window : Mineral; Tempered Glass  
 Sensing Element : Coiled bimetallic  
 Connection : 304SS / 316SS (Option)  
 Stem : 304SS / 316SS (Option)

### Option

Thermowell available on request  
 Liquid Filled

## Example of Order

## Thermometer Ordering Information

### Model

T190

### Dial Size

100mm

### Scale Range

refer Table above

### Stem Length (mm)

80, 100, 150, 230  
 (Others available on request)

### Connection Type

1/2" NPT / BSPT

### Options

Thermowell

### Model

T190

### Dial Size

4"

### Range

0 ~ 200°C

### Stem Length

150mm

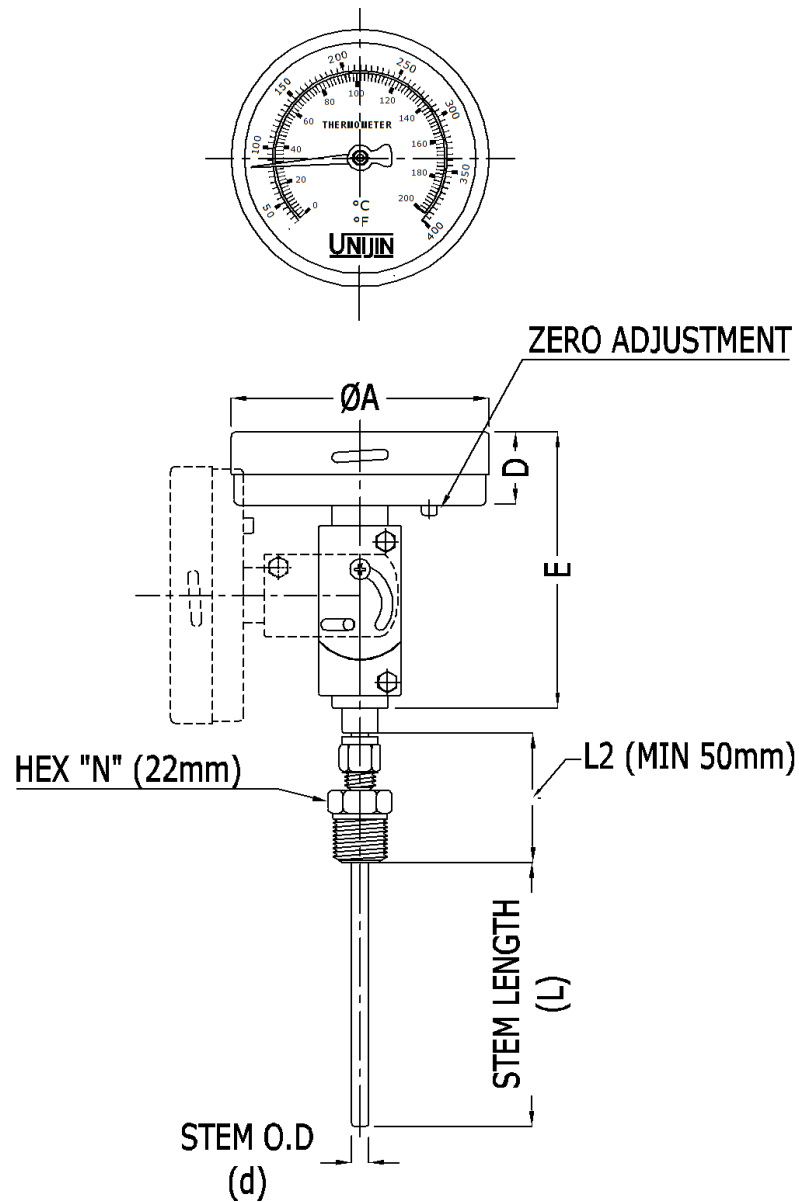
### Connection

1/2" NPT

### Options

316SS  
 Thermowell

## Basic Dimensions



Unit : mm

	ø 100
<b>A</b>	100.0
<b>D</b>	28.5
<b>E</b>	107.5
STEM LENGTH (L)	60 ~ 500
STEM O.D (d)	6.0

# UNIJIN® FULLY STAINLESS STEEL CAPILLARY THERMOMETER

## Model : T210

T210 (Dry) and T211 (Oil Filled) models are designed for use in measuring temperature of corrosive and non-corrosive fluid in all industries, operated in aggressive and non-aggressive environment. Thermowell will make thermometer disassemble for calibration or replacement easier as the process will not disturbed.



## Standard Specification

### Dial Size

100, 150mm

### Connection

1/2" BSPT

### Scale Range (°C & °F)

-50 ~ 50°C to -50 ~ 100°C,

-30 ~ 50°C to -30 ~ 120°C,

-20 ~ 50°C to -30 ~ 150°C,

0 ~ 50°C to 0 ~ 500°C

### Working Range

Max 100% of Full Scale

### Accuracy

± 2.0% of Full Scale

### Zero Adjustment

At back case or at pointer

### Material

Case & Cover : 304SS

Window : Glass

Connection : 304SS

Stem : 304SS, max 2000mm

Capillary : 304SS

Stem OD : 6, 8, 10mm

## Thermometer Ordering Information

### Model

T210

### Mounting Type

B : Bottom connection with surface mounting plate

M: lower back with panel mounting plate

### Dial Size

100mm

### Scale Range

### Stem Length

### Connection Type

1/2" BSPT

### Options

Thermowell

Oil Filled

## Example of Order

### Model

T211

### Dial Size

100mm

### Range

0 ~ 100°C

### Stem Length

100mm

### Connection

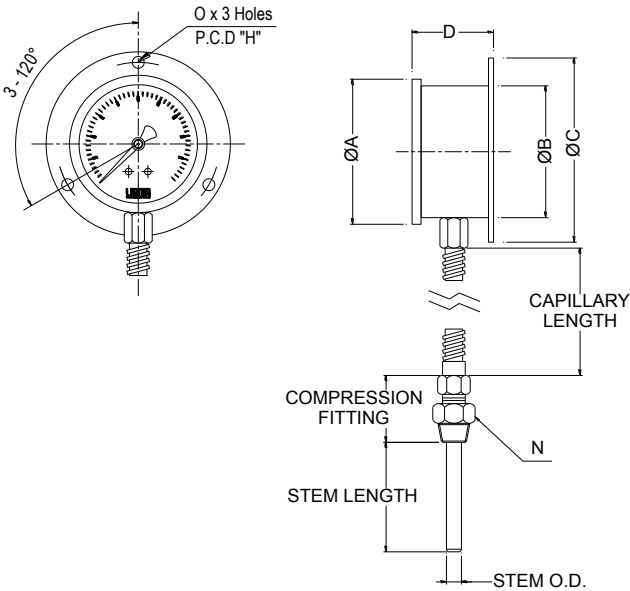
1/2" BSPT

### Options

Oil Filled

Basic Dimensions

CODE B

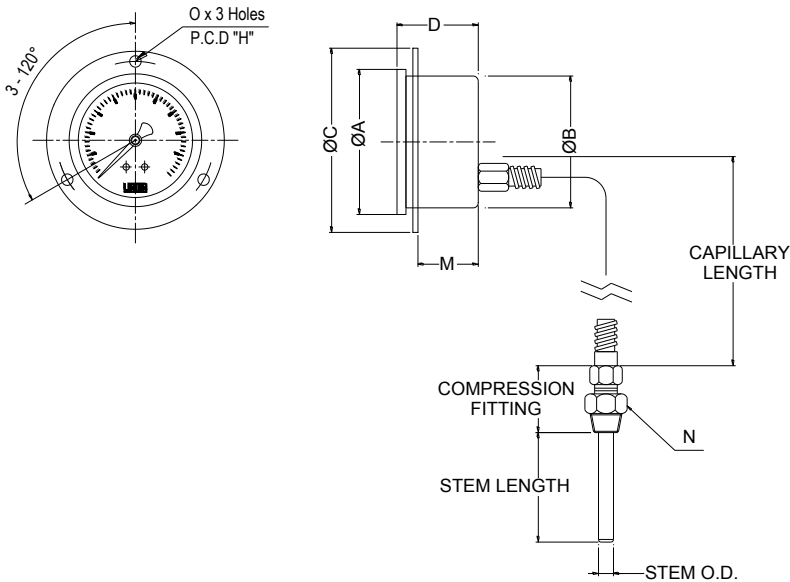


B: Bottom with surface mounting plate

Unit : mm

	ø 100	ø 150
A	111.0	160.0
B	99.5	158.0
C	132.7	210.0
D	40.0	51.6
H	118.0	185.0
N	21.0	21.0
O	5.5	8.0

CODE M



M: Lower back with panel mounting plate

Unit : mm

	ø 100	ø 150
A	111.0	160.0
B	99.5	158.0
C	132.7	210.0
D	40.0	51.6
H	118.0	185.0
M	28.5	30.0
N	21.0	21.0
O	5.5	8.0



## UNIJIN® GLASS THERMOMETER

### Model : T400

T400 models are designed for corrosive environment which media do not corrode the brass and which do not have high viscosity or do not crystallize with applicable on general industry, chemical, petrochemical and etc.



### Standard Specification

#### Model

T400 S (Direct bottom connection)  
T400 L (Lower back connection)

#### Connection

1/2" BSPT

#### Casing Dimension

V-shape, 150mm x 35mm

#### Scale Range (°C & °F)

-30 ~ 50 °C,  
0 ~ 100 °C,  
0 ~ 120 °C,  
0 ~ 150 °C,  
0 ~ 200 °C

*Special Range*

#### Accuracy

± 2.0% of Full Scale

#### Working Range

Maximum Scale Value

#### Material

Case : Nylon Fiber  
Temperature Element : Alcohol  
Stem : Brass  
Stem OD : 10mm

### Thermometer Ordering Information

#### Model

T400 S : Straight  
T400 L : Lower back

#### Scale Range

#### Stem Length

2½",  
4",  
6"

#### Connection Type

1/2" BSPT

#### Options

Thermowell

### Example of Order

#### Model

T400S

#### Range

0 ~ 100°C

#### Stem Length

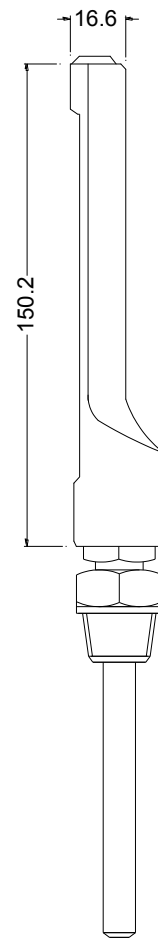
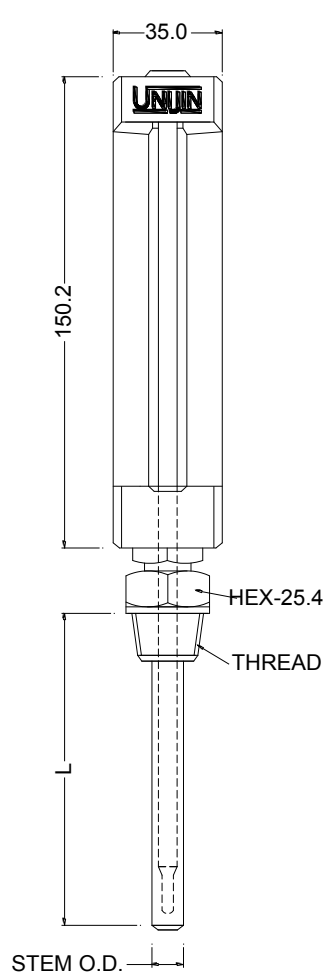
4"

#### Connection

1/2" BSPT

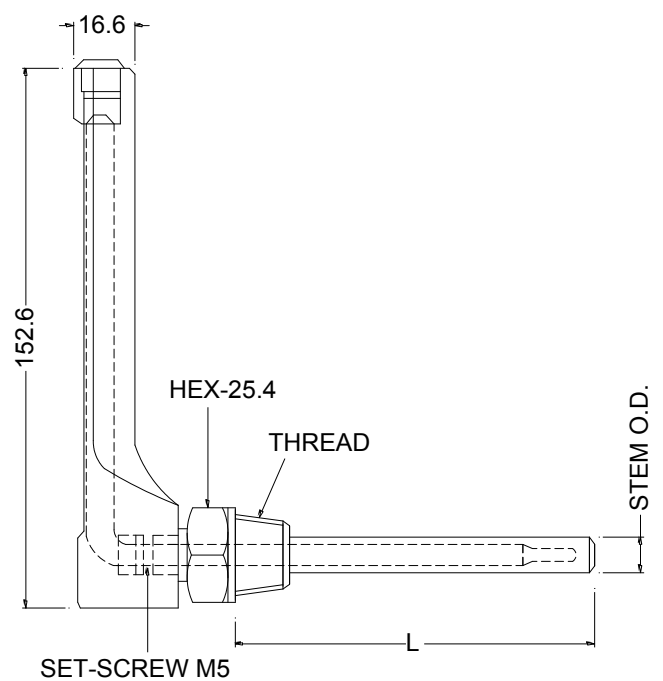
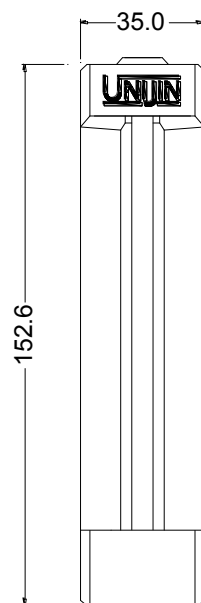
## Basic Dimensions

CODE S



Unit : mm

CODE L



# Metallic protection tube resistance temperature detector

## Model : R210 series

Spec. sheet no. **URD02-02**

### Service intended

Among temperature sensors, it is the most stable and accurate sensor.

It has a better repeatability, and shows more dependable outputs than thermocouple.

It is possible to perform an area measuring, and has a better resistance against the containment .

However, it has a slow response time due to its complexity of the resistance element and its big size.

It is constructed with an insulated lead wire and with protection tube which is designed to protect the insulated lead wire.



### Standard features

#### Element

Pt 100Ω at 0°C

#### Tolerances on temperature reading

Class A :  $\pm (0.15 + 0.002 | t |)$

Class B :  $\pm (0.3 + 0.005 | t |)$

#### Head type

Compact Type	General Type Weatherproof

#### Head material

ALDC (Standard)

304SS (Not available compact type)

316SS (Not available compact type)

#### Temperature range

-200 ~ 250°C (Mica type element)

-200 ~ 600°C (Film type element)

#### Protecting tube material

304SS and 316SS

#### Protecting tube outer diameter

6.4, 8.0 and 10 mm

## Main order

## Ordering information

### 1. Base model

- R211** Metallic protection tube resistance temperature detector  
(Single element)
- R212** Metallic protection tube resistance temperature detector  
(Double (Duplex) element)

### 2. Head type

- A** General (Weatherproof)
- L** Compact (Small)

### 3. Element

- P** Pt 100Ω (B)
- 9** Pt 100Ω (A)

### 4. Tube material

- 0** 304SS
- 1** 316SS
- 9** Other

### 5. Protecting tube and sheath outer diameter (mm)

- F9** 6.4 (Double elements is not available)
- G9** 8.0
- J9** 10.0

### 6. Conduit connection

- 1** ½" PF
- 2** ½" PT
- 3** ½" NPT
- 4** ¾" PF
- 5** ¾" PT
- 6** ¾" NPT
- 9** Other
- A** None (Extended lead wire type only)

### 7. Mounting type

- X** Refer to mounting table (11<sup>th</sup> character)

### 8. Connection type

- XX** Refer to mounting table (12<sup>th</sup> and 13<sup>th</sup> character)

### 9. Insert length

- X** Refer to insert length table (14<sup>th</sup> character)

### 10. Option

- 0** None
- 1** Accessories
- 4** Epoxy coated ALDC head
- 5** Head material : 304SS (Only for weatherproof head)
- 6** Head material : 316SS (Only for weatherproof head)
- 7** Accessories and epoxy coated ALDC head
- 8** Accessories and head material : 304SS  
(Only for weatherproof head)
- 9** Accessories and head material : 316SS  
(Only for weatherproof head)

1	2	3	4	5	6	7	8	9	10
R211	A	P	1	F9	1	X	XX	X	0

Sample  
ordering code

**Mounting, connection type and insert length table - 11<sup>th</sup> thru 14<sup>th</sup> characters**

11 <sup>th</sup> character		12 <sup>th</sup> character		13 <sup>th</sup> character		14 <sup>th</sup> character	
Code	Mounting	Code	Connection size and connector material	Code	Connection type	Code	Insert length (mm)
A	None	A	None	A	None	A	100 mm
	Fixed thread lag length						
B	80 mm	B	1/8" and 304SS	B	PT	B	200 mm
C	100 mm	C	1/4" and 304SS	C	NPT	C	300 mm
D	150 mm	D	3/8" and 304SS	D	PF	D	400 mm
E	200 mm	E	1/2" and 304SS	E	NPS	E	500 mm
F	Other	F	3/4" and 304SS	F	UNF	F	600 mm
	Fixed flange lag length						
G	80 mm	G	1" and 304SS	G	BSPT	G	700 mm
H	100 mm	H	1 1/4" and 304SS	H	BSPF	H	800 mm
J	150 mm	J	1 1/2" and 304SS	J	MM	J	900 mm
	Fixed flange lag length						
K	200 mm	K	2" and 304SS	K	ANSI 150 Lb RF	K	1,000 mm
L	Other	L	3" and 304SS	L	ANSI 150 Lb FF	L	1,500 mm
M	Movable thread	M	7/8" and 304SS	M	ANSI 300 Lb RF	M	2,000 mm
N	Movable flange	N	1 1/8" and 316SS	N	ANSI 300 Lb FF	N	2,500 mm
P	Compression fitting	P	1/4" and 316SS	O	Sanitary	P	3,000 mm
	Union and nipple length			P	ANSI 600 Lb RF		
Q	100 mm length	Q	3/8" and 316SS	Q	ANSI 600 Lb FF	Q	3,500 mm
R	150 mm length	R	1/2" and 316SS	R	JIS 5K RF	R	4,000 mm
S	Other	S	3/4" and 316SS	S	JIS 5K FF	S	4,500 mm
	Nipple length						
T	50 mm	T	1" and 316SS	T	JIS 10K RF	T	5,000 mm
U	100 mm	U	1 1/4" and 316SS	U	JIS 10K FF	U	6,000 mm
V	150 mm	V	1 1/2" and 316SS	V	JIS 20K RF	V	7,000 mm
W	Other	W	2" and 316SS	W	JIS 20K FF	W	8,000 mm
X	Fixed thread	X	3" and 316SS	X	ANSI 1,500 Lb RTJ	X	9,000 mm
		Y	7/8" and 316SS	Y	ANSI 2,500 Lb RTJ	Y	10,000 mm
Z	Other	Z	Other	Z	Other	Z	Other

Note for 14<sup>th</sup> character, please choose a code of next higher length if applicable length is not.  
Actual length shall be specified.