

---

# Instrumentation Thread Fittings



## Instrumentation Thread Fitting Index

 <p><b>ICN</b> Close Nipple</p> <p>4P</p>	 <p><b>IRHB</b> Reducing Hex Bushing</p> <p>6P</p>	 <p><b>IRSE</b> Reducing Street Elbow</p> <p>8P</p>
 <p><b>IHN</b> Hex Nipple</p> <p>4P</p> 	 <p><b>IHC</b> Hex Coupling</p> <p>6P</p>	 <p><b>IME</b> Male Elbow</p> <p>8P</p>
 <p><b>IHLN</b> Hex Long Nipple</p> <p>4P</p>	 <p><b>IHRC</b> Hex Reducing Coupling</p> <p>6P</p>	 <p><b>IFT</b> Female Tee</p> <p>8P</p>
 <p><b>IHRN</b> Hex Reducing Nipple</p> <p>5P</p>	 <p><b>IPG</b> ISO Parallel Gasket</p> <p>7P</p>	 <p><b>IBT</b> Branch Tee</p> <p>9P</p>
 <p><b>IA</b> Adapter</p> <p>5P</p> 	 <p><b>IPP</b> Pipe Plug</p> <p>7P</p>	 <p><b>IRT</b> Run Tee</p> <p>9P</p>
 <p><b>IRA</b> Reducing Adapter</p> <p>6P</p>	 <p><b>IPC</b> Pipe Cap</p> <p>7P</p>	 <p><b>IMT</b> Male Tee</p> <p>9P</p>
	 <p><b>IFE</b> Female Elbow</p> <p>7P</p>	 <p><b>IFC</b> Female Cross</p> <p>9P</p>
	 <p><b>ISE</b> Street Elbow</p> <p>8P</p>	

## Ordering Information

Example :

**I H N - 8 N - 8 R - B**

**1                    2 3                    2 3                    4**

### 1. Fitting Type

Please refer to Instrumentation Thread Fitting Index on page 2.

### 2. Pipe Thread Size

Size (inch)	1/8	1/4	3/8	1/2	3/4	1
ISO Tapered	2R	4R	6R	8R	12R	16R
NPT	2N	4N	6N	8N	12N	16N
ISO Parallel	2G	4G	6G	8G	12G	16G

※ For special sizes and configurations, please consult BMT (SUPERLOK) sales representative.

### 3. Pipe Thread Type

- **N** = NPT (ASME B1.20.1, SAE AS71051)
- **G** = ISO/BSP Parallel (ISO 228/1, JIS B 0202)
- **R** = ISO/BSP Tapered (ISO 7/1, JIS B 0203)

### 4. Material

The numbers in parentheses indicate the maximum temperature rating.

- **(Blank)** = 316 Stainless Steel [1000°F(537°C)]
- **B** = Brass [400°F(204°C)]
- **C** = Carbon Steel [375°F(190°C)]

## Installation Instructions

To ensure a leak-tight seal, BMT recommends the use of a pipe thread sealant on all NPT, ISO Tapered threads. The most effective sealing method is teflon tape. Tape should be used only on male tapered pipe threads.

Do not use tape on flared, coned or tube fitting ends.

Clean both male and female tapered threads. Wrap tape in the direction of the male tapered thread spiral.

## Gasket, O-Ring Materials

Component	Material	Temperature range °F(°C)
O-ring	Buna N	-25°C to 110°C (-13°F to 230°F)
	Fluorocarbon	-28°C to 204°C (-20°F to 400°F)
Copper gasket	Copper	-196°C to 204°C (-325°F to 400°F)

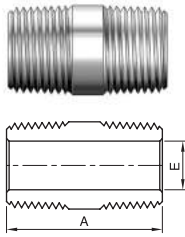
## Pressure Ratings

Size Designator	NPT Size	316 Stainless Steel				Brass				Carbon Steel			
		Male		Female		Male		Female		Male		Female	
		psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar
1	1/16	11000	757	6700	461	5500	378	3300	227	11000	757	6700	461
2	1/8	10000	689	6500	447	5000	344	3200	220	10000	689	6500	447
4	1/4	8000	551	6600	454	4000	275	3300	227	8000	551	6600	454
6	3/8	7800	537	5300	365	3900	268	2600	179	7800	537	5300	365
8	1/2	7700	530	4900	337	3800	261	2400	165	7700	530	4900	337
12	3/4	7300	502	4600	316	3600	248	2300	158	7300	502	4600	316
16	1	5300	365	4400	303	2600	179	2200	151	5300	365	4400	303
20	1 1/4	6000	413	5000	344	3000	206	2500	172	6000	413	5000	344
24	1 1/2	5000	344	4600	316	2500	172	2300	158	5000	344	4600	316
32	2	3900	268	3900	268	1900	130	1900	130	3900	268	3900	268

- Pressure ratings are based on ASME B31.3 (Process Piping) with allowable stress 20,000 psi for 316 stainless steel, 10,000 psi for brass, and 20,000 psi for carbon steel.
- To determine pressure ratings in accordance with B31.1: multiply by 0.94 for 316 stainless steel and by 0.75 for carbon steel. For Brass, the ratings remain the same.
- To determine kPa, multiply by 6.89

## ICN

### Close Nipple

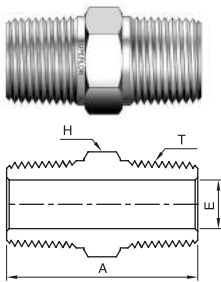


#### Male NPT Threads

Part No.	NPT Pipe Size	Dimension	
		A	E
ICN - 2N	1/8	19.1	4.8
ICN - 4N	1/4	28.4	7.1
ICN - 6N	3/8	28.4	9.6
ICN - 8N	1/2	38.1	11.9
ICN - 12N	3/4	38.1	15.7
ICN - 16N	1	47.8	22.4

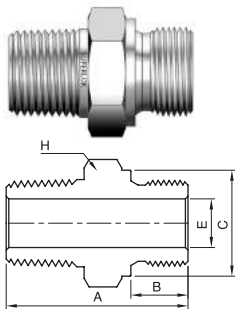
## IHN

### Hex Nipple



#### Male NPT Threads

Part No.	NPT Pipe Size	Dimension		
		A	E	H
IHN - 2N	1/8	25.6	4.8	11.1
IHN - 4N	1/4	35.6	7.1	14.2
IHN - 6N	3/8	36.3	9.6	17.4
IHN - 8N	1/2	46.7	11.9	22.2
IHN - 12N	3/4	46.7	15.7	26.9
IHN - 16N	1	58.9	22.4	34.9

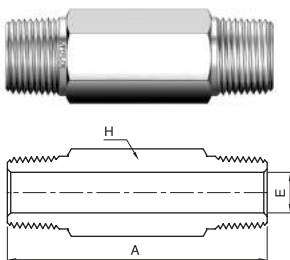


#### Male NPT to Male ISO Parallel Pipe Threads

Part No.	NPT Pipe Size	ISO/BSP Pipe Size (ISO 228)	Dimension				
			A	B	C	E	H
IHN - 2N - 2G	1/8	1/8	27.7	8	13.7	4.1	14.2
IHN - 4N - 4G	1/4	1/4	36.8	12	18.0	5.8	19.1
IHN - 6N - 6G	3/8	3/8	37.6	12	21.6	7.9	22.2
IHN - 8N - 8G	1/2	1/2	44.4	14	25.9	11.9	26.9
IHN - 12N - 12G	3/4	3/4	49.0	16	32.0	15.7	33.3
IHN - 16N - 16G	1	1	56.6	18	38.9	19.8	41.2

## IHLN

### Hex Long Nipple



#### Male NPT Threads

Part No.	NPT Pipe Size	Dimension		
		A	E	H
IHLN - 2N	1/8	*	4.8	11.1
IHLN - 4N	1/4	*	7.1	14.2
IHLN - 6N	3/8	*	9.6	17.4
IHLN - 8N	1/2	*	11.9	22.2
IHLN - 12N	3/4	*	15.7	26.9
IHLN - 16N	1	*	22.4	34.9

\* The length of Nipple "A" is defined by user (Part number example : IHLN - 8N - 100L when A = 100mm)

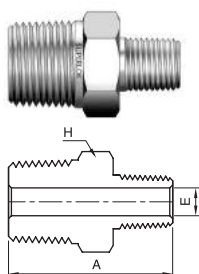
- Dimensions and Drawings are for reference only and are subject to change without prior notice.

- Unless otherwise specified, all dimensions are in millimeters.

- Sizes, pressure classes, and end connections not listed are available upon request.

**IHRN**

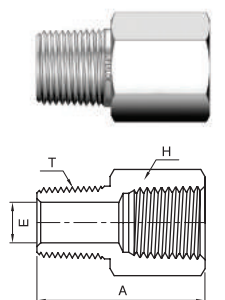
## Hex Reducing Nipple

**Male NPT Threads**

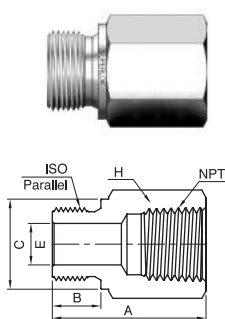
Part No.	NPT Pipe Size	Reduced Pipe Size	Dimension		
			A	E	H
IHRN - 2N - 1N	1/8	1/16	25.6	3.0	11.1
IHRN - 4N - 2N	1/4	1/8	31.0	4.8	14.2
IHRN - 6N - 2N	3/8	1/8	31.8	4.8	17.4
IHRN - 6N - 4N	3/8	1/4	36.3	7.1	17.4
IHRN - 8N - 2N	1/2	1/8	37.3	4.8	22.2
IHRN - 8N - 4N	1/2	1/4	41.9	7.1	22.2
IHRN - 8N - 6N	1/2	3/8	41.9	9.6	22.2
IHRN-12N - 4N	3/4	1/4	41.9	7.1	26.9
IHRN-12N - 8N	3/4	1/2	46.7	11.9	26.9
IHRN-16N - 4N	1	1/4	49.3	7.1	34.9
IHRN-16N - 8N	1	1/2	54.1	11.9	34.9
IHRN-16N -12N	1	3/4	54.1	15.7	34.9

**IA**

## Adapter

**Male to Female NPT Threads**

Part No.	NPT Pipe Size	Dimension		
		A	E	H
IA - 2N	1/8	27.9	4.8	14.2
IA - 4N	1/4	35.6	7.1	19.1
IA - 6N	3/8	38.4	9.6	22.2
IA - 8N	1/2	49.3	11.9	26.9
IA - 12N	3/4	51.3	15.7	33.3
IA - 16N	1	57.9	22.4	41.2

**Male ISO Parallel Pipe Threads to Female NPT**

Part No.	ISO/BSP Pipe Size (ISO 228)	NPT Pipe Size	Dimension				
			A	B	C	E	H
IA - 2G - 2N	1/8	1/8	25.1	8.0	13.7	4.1	14.2
IA - 4G - 4N	1/4	1/4	33.5	12.0	18.0	5.8	19.1
IA - 6G - 6N	3/8	3/8	35.8	12.0	21.6	7.9	22.2
IA - 8G - 8N	1/2	1/2	44.2	14.0	25.9	11.9	26.9
IA - 12G - 12N	3/4	3/4	48.0	16.0	32.0	15.7	33.3
IA - 16G - 16N	1	1	53.3	18.0	38.9	19.8	41.2

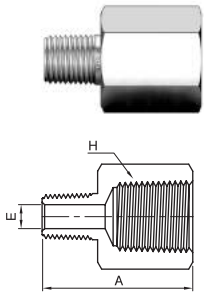
- Dimensions and Drawings are for reference only and are subject to change without prior notice.

- Unless otherwise specified, all dimensions are in millimeters.

- Sizes, pressure classes, and end connections not listed are available upon request.

## IRA

### Reducing Adapter

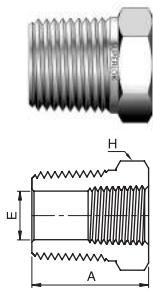


### Male to Female NPT Threads

Part No.	Male Pipe Size	Female Pipe Size	Dimension		
			A	E	H
IRA - 2N - 4N	1/8	1/4	32.0	4.8	19.1
IRA - 2N - 6N	1/8	3/8	33.8	4.8	22.2
IRA - 4N - 6N	1/4	3/8	38.1	7.1	22.2
IRA - 2N - 8N	1/8	1/2	40.1	4.8	26.9
IRA - 4N - 8N	1/4	1/2	44.7	7.1	26.9
IRA - 6N - 8N	3/8	1/2	44.4	9.6	26.9
IRA - 4N - 12N	1/4	3/4	47.0	7.1	33.3
IRA - 6N - 12N	3/8	3/4	46.2	9.6	33.3
IRA - 8N - 12N	1/2	3/4	51.3	11.9	33.3
IRA - 4N - 16N	1/4	1	49.8	7.1	41.2
IRA - 8N - 16N	1/2	1	54.9	11.9	41.2
IRA-12N - 16N	3/4	1	55.1	15.7	41.2

## IRHB

### Reducing Hex Bushing

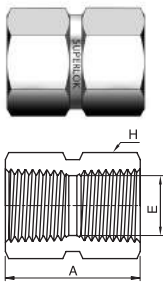


### Male to Female NPT Threads

Part No.	Male Pipe Size	Female Pipe Size	Dimension		
			A	E	H
IRHB - 4N - 2N	1/4	1/8	26.9	7.1	14.2
IRHB - 6N - 2N	3/8	1/8	21.8	8.6	17.4
IRHB - 6N - 4N	3/8	1/4	30.2	9.6	19.1
IRHB - 8N - 2N	1/2	1/8	27.4	8.6	22.2
IRHB - 8N - 4N	1/2	1/4	27.4	11.4	22.2
IRHB - 8N - 6N	1/2	3/8	35.8	11.9	22.2
IRHB-12N - 4N	3/4	1/4	27.4	11.4	26.9
IRHB-12N - 6N	3/4	3/8	27.4	15.0	26.9
IRHB-12N - 8N	3/4	1/2	41.4	15.7	26.9
IRHB-16N - 4N	1	1/4	34.8	11.4	34.9
IRHB-16N - 6N	1	3/8	34.8	15.0	34.9
IRHB-16N - 8N	1	1/2	34.8	18.5	34.9
IRHB-16N - 12N	1	3/4	47.0	22.4	34.9

## IHC

### Hex Coupling

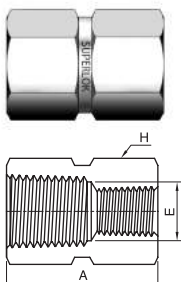


### Female NPT Threads

Part No.	Pipe Size	Dimension		
		A	E	H
IHC - 2N	1/8	20.6	8.6	14.2
IHC - 4N	1/4	30.2	11.4	19.1
IHC - 6N	3/8	33.3	15.0	22.2
IHC - 8N	1/2	39.6	18.5	26.9
IHC - 12N	3/4	41.1	23.9	33.3
IHC - 16N	1	50.8	29.7	41.2

## IHRC

### Hex Reducing Coupling



### Female NPT Threads

Part No.	Pipe Size	Reduced Pipe Size	Dimension		
			A	E	H
IHRC - 4N - 2N	1/4	1/8	31.0	8.6	19.1
IHRC - 6N - 4N	3/8	1/4	35.1	11.4	22.2
IHRC - 8N - 2N	1/2	1/8	39.6	8.6	26.9
IHRC - 8N - 4N	1/2	1/4	44.4	11.4	26.9
IHRC - 8N - 6N	1/2	3/8	45.2	15.0	26.9
IHRC-12N - 4N	3/4	1/4	46.0	11.4	33.3
IHRC-12N - 8N	3/4	1/2	52.3	18.5	33.3
IHRC-16N - 8N	1	1/2	55.6	18.5	41.2
IHRC-16N - 12N	1	3/4	57.2	23.9	41.2

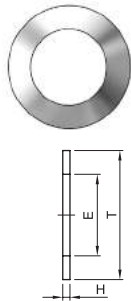
- Dimensions and Drawings are for reference only and are subject to change without prior notice.

- Unless otherwise specified, all dimensions are in millimeters.

- Sizes, pressure classes, and end connections not listed are available upon request.

## IPG

### ISO Parallel Gasket

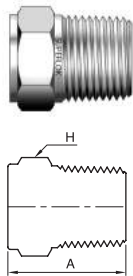


### ISO Parallel Copper Gaskets

Part No.	Pipe Size	Dimension		
		E	H	T
IPG - 2	1/8	10.2	2.0	16.0
IPG - 4	1/4	13.4	2.0	19.5
IPG - 6	3/8	17.0	2.0	24.0
IPG - 8	1/2	21.2	2.0	29.0
IPG - 12	3/4	27.2	2.0	34.5
IPG - 16	1	34.0	2.0	42.0

## IPP

### Pipe Plug

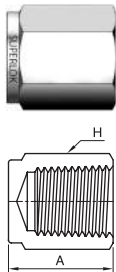


### Male NPT Threads

Part No.	Pipe Size	Dimension	
		A	H
IPP - 2N	1/8	19.1	11.1
IPP - 4N	1/4	24.4	14.2
IPP - 6N	3/8	25.1	17.4
IPP - 8N	1/2	30.7	22.2
IPP - 12N	3/4	30.7	26.9
IPP - 16N	1	38.1	34.9

## IPC

### Pipe Cap

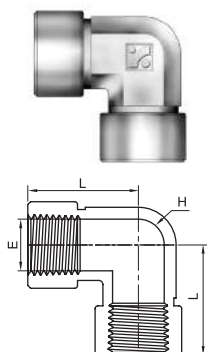


### Female NPT Threads

Part No.	Pipe Size	Dimension	
		A	H
IPC - 2N	1/8	19.1	14.2
IPC - 4N	1/4	23.1	19.1
IPC - 6N	3/8	26.2	22.2
IPC - 8N	1/2	34.0	26.9
IPC - 12N	3/4	36.6	33.3
IPC - 16N	1	41.1	41.2

## IFE

### Female Elbow



### Female NPT Threads

Part No.	Pipe Size	Dimension		
		E	L	H
IFE - 2N	1/8	8.6	24.0	12.7
IFE - 4N	1/4	11.4	29.0	17.5
IFE - 6N	3/8	15.0	34.5	20.6
IFE - 8N	1/2	18.5	37.0	25.4
IFE - 12N	3/4	23.9	46.5	31.8
IFE - 16N	1	29.7	48.8	42.9

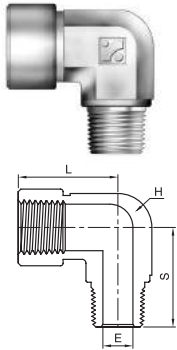
- Dimensions and Drawings are for reference only and are subject to change without prior notice.

- Unless otherwise specified, all dimensions are in millimeters.

- Sizes, pressure classes, and end connections not listed are available upon request.

## ISE

### Street Elbow

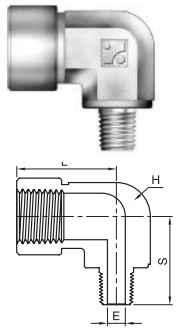


#### Female to Male NPT Threads

Part No.	Pipe Size	Dimension			
		E	L	S	H
ISE - 2N	1/8	4.8	24.1	19.6	12.7
ISE - 4N	1/4	7.1	29.0	26.5	17.5
ISE - 6N	3/8	9.6	34.5	28.2	20.6
ISE - 8N	1/2	11.9	37.0	35.3	25.4
ISE - 12N	3/4	15.7	46.5	39.6	31.8
ISE - 16N	1	22.4	48.8	49.2	42.9

## IRSE

### Reducing Street Elbow

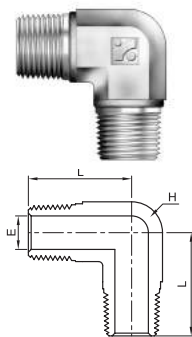


#### Female to Male NPT Threads

Part No.	Female Pipe Size	Male Pipe Size	Dimension			
			E	L	S	H
IRSE - 2N - 1N	1/8	1/16	3.0	24.1	22.1	12.7
IRSE - 4N - 2N	1/4	1/8	4.8	29.0	22.4	17.5
IRSE - 6N - 4N	3/8	1/4	7.1	34.5	28.2	20.6
IRSE - 8N - 4N	1/2	1/4	7.1	37.0	30.5	25.4
IRSE - 8N - 6N	1/2	3/8	9.6	37.0	30.5	25.4
IRSE - 12N - 8N	3/4	1/2	11.9	46.5	39.6	31.8
IRSE - 16N - 8N	1	1/2	11.9	48.8	46.5	42.9

## IME

### Male Elbow

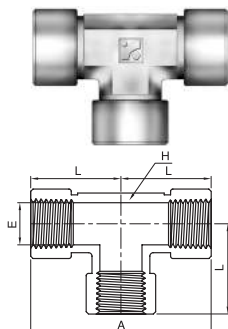


#### Male NPT Threads

Part No.	Pipe Size	Dimension		
		E	L	H
IME - 2N	1/8	4.8	19.1	12.7
IME - 4N	1/4	7.1	24.5	12.7
IME - 6N	3/8	9.6	26.9	17.5
IME - 8N	1/2	11.9	33.2	20.6
IME - 12N	3/4	15.7	35.3	25.4
IME - 16N	1	22.4	44.5	31.8

## IFT

### Female Tee



#### Female NPT Threads

Part No.	Pipe Size	Dimension			
		A	E	L	H
IFT - 2N	1/8	48.0	8.6	24.0	12.7
IFT - 4N	1/4	58.0	11.4	29.0	17.5
IFT - 6N	3/8	69.0	15.0	34.5	20.6
IFT - 8N	1/2	74.0	18.5	37.0	25.4
IFT - 12N	3/4	93.0	23.9	46.5	31.8
IFT - 16N	1	97.0	29.7	48.5	42.9

- Dimensions and Drawings are for reference only and are subject to change without prior notice.

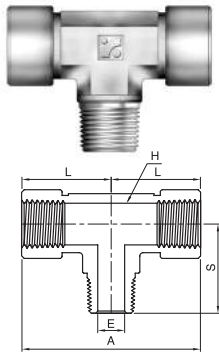
- Unless otherwise specified, all dimensions are in millimeters.

- Sizes, pressure classes, and end connections not listed are available upon request.



## IBT

### Branch Tee

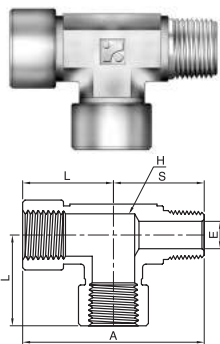


#### Male and Female NPT Threads

Part No.	Pipe Size	Dimension				
		A	E	L	S	H
IBT - 2N	1/8	48.0	4.8	24.0	19.6	12.7
IBT - 4N	1/4	58.0	7.1	29.0	26.5	17.5
IBT - 6N	3/8	69.0	9.6	34.5	28.2	20.6
IBT - 8N	1/2	74.0	11.9	37.0	35.3	25.4
IBT - 12N	3/4	93.0	15.7	46.5	39.6	31.8
IBT - 16N	1	97.0	22.4	48.5	49.2	42.9

## IRT

### Run Tee

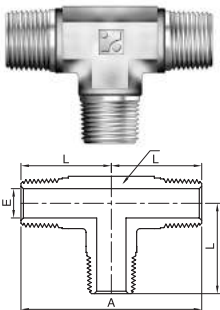


#### Male and Female NPT Threads

Part No.	Pipe Size	Dimension				
		A	E	L	S	H
IRT - 2N	1/8	43.6	4.8	24.0	19.6	12.7
IRT - 4N	1/4	56.2	7.1	29.0	26.5	17.5
IRT - 6N	3/8	62.7	9.6	34.5	28.2	20.6
IRT - 8N	1/2	72.3	11.9	37.0	35.3	25.4
IRT - 12N	3/4	86.1	15.7	46.5	39.6	31.8
IRT - 16N	1	97.7	22.4	48.5	49.2	42.9

## IMT

### Male Tee

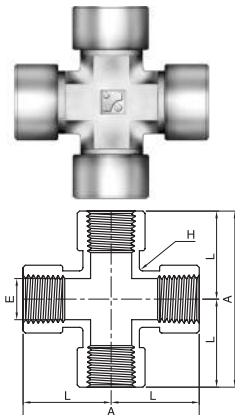


#### Male NPT Threads

Part No.	Pipe Size	Dimension			
		A	E	L	H
IMT - 2N	1/8	38.2	4.8	19.1	12.7
IMT - 4N	1/4	49.0	7.1	24.5	12.7
IMT - 6N	3/8	53.8	9.6	26.9	17.5
IMT - 8N	1/2	66.4	11.9	33.2	20.6
IMT - 12N	3/4	70.6	15.7	35.3	25.4
IMT - 16N	1	89.0	22.4	44.5	31.8

## IFC

### Female Cross



#### Female NPT Threads

Part No.	Pipe Size	Dimension			
		A	E	L	H
IFC - 2N	1/8	48.0	8.6	24.0	12.7
IFC - 4N	1/4	58.0	11.4	29.0	17.5
IFC - 6N	3/8	69.0	15.0	34.5	20.6
IFC - 8N	1/2	74.0	18.5	37.0	25.4
IFC - 12N	3/4	93.0	23.9	46.5	31.8
IFC - 16N	1	97.0	29.7	48.5	42.9

- Dimensions and Drawings are for reference only and are subject to change without prior notice.

- Unless otherwise specified, all dimensions are in millimeters.

- Sizes, pressure classes, and end connections not listed are available upon request.