

Instrumentation Pipe Fittings



INDEX

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

Ordering Information

Example :

I HN - 8N - 8R - B

1 2 3 4 3 4 5

1. Instrumentation Thread Fittings 2. Fitting Type 3. Pipe Thread Size
 4. Pipe Thread Type 5. Material

Material Standards & Temperature Rating

Material	Identify	Max. Temperature °F(°C)
316 Stainless Steel	Nil	1000(537)
Brass	B	400(204)
Carbon Steel	C	375(190)

Thread Specifications

Thread Type	Identify	Specification
NPT	N	ASME B1.20.1, SAE AS71051
ISO/BSP (Parallel)	G	ISO 228/1, JIS B 0202
ISO/BSP (Tapered)	R	ISO 7/1, JIS B 0203

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

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)

Installation Instructions

To ensure a leak-tight seal, pipe thread sealant is required on all NPT, ISO tapered threads. The most effective sealing method is Teflon tape. This should be used only on male tapered pipe threads.

CAUTION: Do not use tape on flared, coned, or tube fitting ends. Clean both male and female tapered threads and wrap the tape in the direction of the male tapered thread spiral.

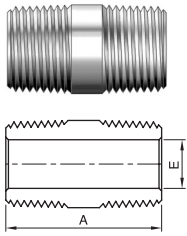
Pressure Ratings

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 Code for Pressure Piping B31.3, Process Piping with allowable stress 20,000psi for SS316, 10,000psi/Brass, and 20,000psi/ Carbon steel.
- To determine pressure ratings in accordance with B31.1, Power Piping:
 - 316 Stainless steel material : multiply by 0.94, Carbon steel material : multiply by 0.75, Brass material ratings remain the same.
- To determine kPa, multiply by 6.89.

ICN

Close Nipple



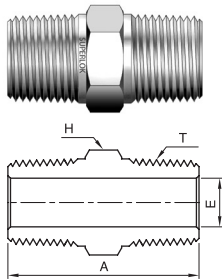
Male NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IHN

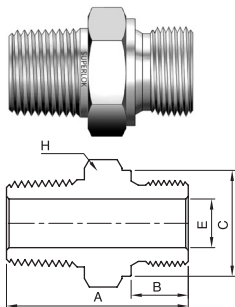
Hex Nipple



Male NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

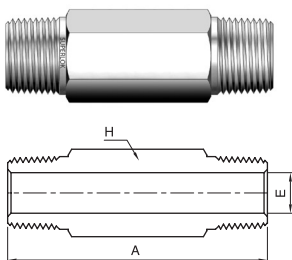


Male NPT to Male ISO Parallel Pipe Threads

Part Number	NPT Pipe Size	ISO/BSP Pipe Size (ISO 228)	Dimension				
			A	B	C	E	H
IHN - 2N - 2G	1/8	1/8	27.7	7.1	13.7	4.1	14.2
IHN - 4N - 4G	1/4	1/4	36.8	11.2	18.0	5.8	19.1
IHN - 6N - 6G	3/8	3/8	37.6	11.2	21.6	7.9	22.2
IHN - 8N - 8G	1/2	1/2	44.4	14.2	25.9	11.9	26.9
IHN - 12N - 12G	3/4	3/4	49.0	15.7	32.0	15.7	33.3
IHN - 16N - 16G	1	1	56.6	18.3	38.9	19.8	41.2

IHLN

Hex Long Nipple



Male NPT Threads

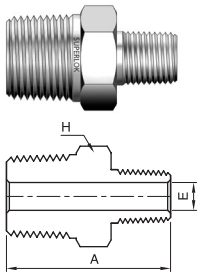
Part Number	NPT Pipe Size	Dimension		
		A	E	H
IHLN - 2N	1/8	*	4.8	11.1
IHLN - 4N	1/4	*	7.1	14.2
IHLN - 6N	3/8	*	9.6	17.4
IHLN - 8N	1/2	*	11.9	22.2
IHLN - 12N	3/4	*	15.7	26.9
IHLN - 16N	1	*	22.4	34.9

※ NOTE : The length of Nipple "A" is defined by user
Part Number Example : IHLN - 8N - 100L(length "A" : 100mm)

※ ISO Tapered Threads are available upon request.

IHRN

Hex Reducing Nipple



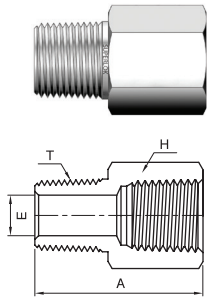
Male NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IA

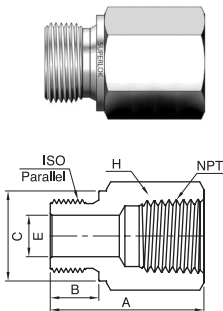
Adapter



Male to Female NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

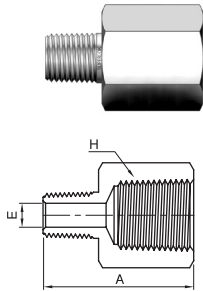


Male ISO Parallel Pipe Threads to Female NPT

Part Number	ISO/BSP Pipe Size (ISO 228)	NPT Pipe Size	Dimension				
			A	B	C	E	H
IA - 2G - 2N	1/8	1/8	25.1	7.1	13.7	4.1	14.2
IA - 4G - 4N	1/4	1/4	33.5	11.2	18.0	5.8	19.1
IA - 6G - 6N	3/8	3/8	35.8	11.2	21.6	7.9	22.2
IA - 8G - 8N	1/2	1/2	44.2	14.2	25.9	11.9	26.9
IA - 12G - 12N	3/4	3/4	48.0	15.7	32.0	15.7	33.3
IA - 16G - 16N	1	1	53.3	18.3	38.9	19.8	41.2

IRA

Reducing Adapter



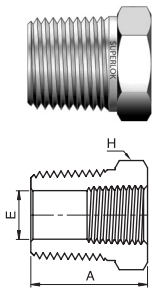
Male to Female NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IRHB

Reducing Hex Bushing



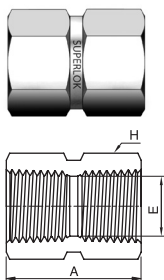
Male to Female NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IHC

Hex Coupling



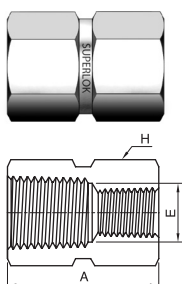
Female NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IHRC

Hex Reducing Coupling



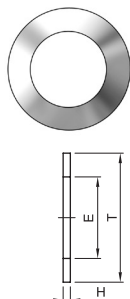
Female NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IPG

ISO Parallel Gasket

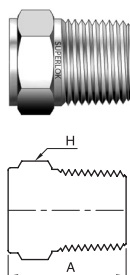


ISO Parallel Copper Gaskets

Part Number	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



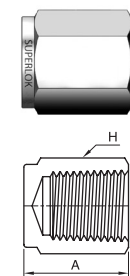
Male NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IPC

Pipe Cap



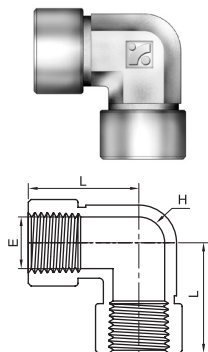
Female NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IFE

Female Elbow

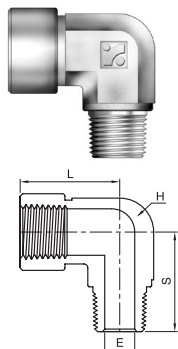


Female NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

ISE Street Elbow

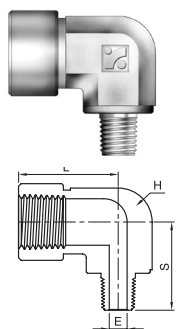


Female to Male NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IRSE Reducing Street Elbow

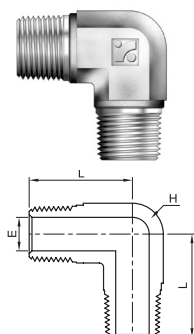


Female to Male NPT Threads

Part Number	Female Pipe Size	Male Pipe Size	Dimension			
			E	L	S	H
IRSE - 2N - 1N	1/8	1/16	3.0	26.4	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

※ ISO Tapered Threads are available upon request.

IME Male Elbow

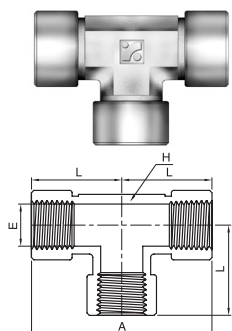


Male NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IFT Female Tee

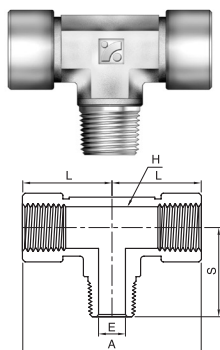


Female NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IBT Branch Tee

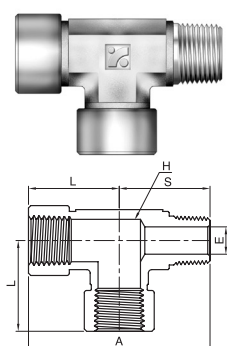


Male and Female NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IRT Run Tee

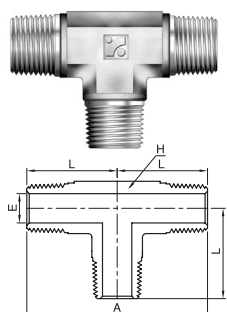


Male and Female NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IMT Male Tee

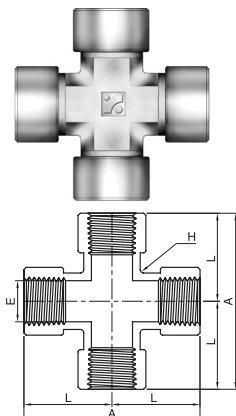


Male NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.

IFC Female Cross



Female NPT Threads

Part Number	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

※ ISO Tapered Threads are available upon request.