

# Hope Instrument Thread Fittings

## Features

1. Precision pipe for instrumentation and process control
2. Fine threads construction to ensure leak-free & reliable systems
3. Male threads are protected with plastic cap
4. Various materials including SS316, Brass and Carbon steel
5. Many choice of connections and configurations, are available

## Temperature Ratings

SS316	-325F - 1200F (-198C - 648C)
Brass	-325F - 400F (-198C - 204C)
Carbon Steel	-20F - 350F (- 29C - 176C)

PTFE tape applied male threads limits to + 450 F (232C) in temperature at maximum

## 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	11,000	757	6700	461	5500	378	3300	227	11,000	757	6700	461
2	1/8	10,000	689	6500	447	5000	344	3200	220	10,000	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	265	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

Working pressure calculated are reference only

Working pressure calculated as per Piping Code ANSI B31.3 with allowable stress 20,000psi / SS316, 10,000psi / Brass, 20,000psi / Carbon steel and for working pressure in accordance with Power Piping Code B31.1 simply calculate applying a factor of .94 (94%) to above chart.

Due to larger outer diameter female threads pressure ratings of female are lower than male threads.

To determine kPa, multiply psig by 6.89

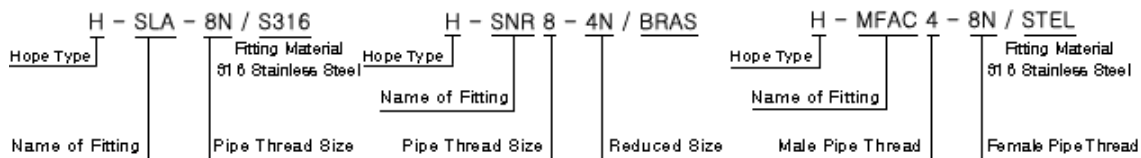
Pressure ratings of Hex Bushing (H-SHB) are not covered with this pressure rating table therefore indicated its dimensional table.

## PART NUMBER EXAMPLE & HOW TO ORDER

1) ALL PORTS BOTH ENDS TYPE

2) REDUCED TYPE

3) ADAPTER TYPE
























## Name of Fittings

SLA=Elbow	SXA=Cross	SNA=Hex Nipple
SLC=Street Elbow	SSA=Hex Coupling	SNR=Hex Reducing Nipple
SML=Male Elbow	SSR=Red. Coupling	SNL=Hex Long Nipple
STA= Tee	SHB=Hex Bushing	MFAA=Adapter
SRT=Run Tee	SCA=Pipe Cap	MFAC=Ruding Adapter
SBT=Branch Tee	SPB=Pipe Plug	SUR=Union Ball Joint
SMT=Male Tee	SBE=Close Nipple	KP-A=ISO Parallel Gasket

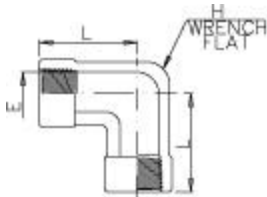
## Pipe Thread Symbol

Nom. Pipe Size	Symbol	ANSI Pipe Thread (NPT)	BSP/ISO Thread	
			Tapered(7/1)	Parallel(228/1)
1/8	2	2N	2R	2G
1/4	4	4N	4R	4G
3/8	6	6N	6R	6G
1/2	8	8N	8R	8G
3/4	12	12N	12R	12G
1	16	16N	16R	16G

	ELBOW H - SLA	3		CLOSE NIPPLE H- SBE	6
	STREET ELBOW H - SLC	3		HEX NIPPLE H- SNA	6
	REDUCING STREET ELBOW H- SLCR	3		HEX REDUCING NIPPLE H- SNR	7
	MALE ELBOW H- SML	3		HEX NIPPLE H- SNA - NR	7
	TEE H- STA	4		HEX NIPPLE H- SNA - NG	7
	RUN TEE H- SRT	4		HEX LONG NIPPLE H- SNL	7
	BRANCH TEE H- SBT	4		ADAPTER H- MFAA	8
	MALE TEE H- SMT	4		ADAPTER H- MFAB	8
	CROSS H- SXA	5		ADAPTER H- MFAA-N	8
	HEX COUPLING H- SSA	5		REDUCING ADAPTER H - MFAC	8
	HEX REDUCING COUPLING H- SSR	5		HEX BUSHING H - SHB	9
	PIPE CAP H- SCA	6		UNIO BALL JOINT H - SUR	9
	PIPE PLUG H- SPB	6		ISO PARALLEL GASKET KP - A	9

**ELBOW (H-SLA)**

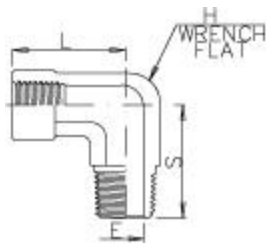
Female NPT both ends.



Part Number	Pipe Size	L	E	H Wrench Flat
H-SLA- 2N	1/8	24.0	8.9	12.7
H-SLA- 4N	1/4	29.0	11.7	17.5
H-SLA- 6N	3/8	34.5	15.0	20.6
H-SLA- 8N	1/2	37.0	18.7	25.4
H-SLA- 12N	3/4	46.5	23.5	31.8
H-SLA- 16N	1	48.8	29.7	42.9

**STREET ELBOW (H-SLC)**

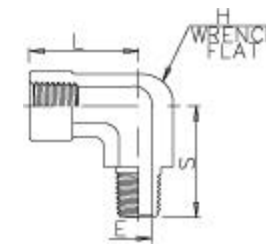
Female to male NPT.



Part Number	Pipe Size	L	S	E	H Wrench Flat
H-SLC-	1/8	24.1	19.6	4.8	12.7
H-SLC-	1/4	29.0	26.5	7.1	17.5
H-SLC-	3/8	34.5	28.2	9.6	20.6
H-SLC-	1/2	37.0	35.3	11.9	25.4
H-SLC- 12N	3/4	46.5	39.6	15.7	31.8
H-SLC- 16N	1	48.8	49.2	22.3	42.9

**REDUCING STREET ELBOW (H-SLCR)**

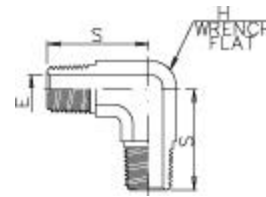
Female to male NPT.



Part Number	Pipe Size	L	S	E	H Wrench Flat
H-SLCR 4- 2N	1/4	1/8	29.0	22.4	4.8
H-SLCR 6- 4N	3/8	1/4	34.5	28.2	7.1
H-SLCR 8- 4N	1/2	1/4	37.0	30.5	7.1
H-SLCR 8- 6N	1/2	3/8	37.0	30.5	9.6
H-SLCR12- 8N	3/4	1/2	46.5	39.6	11.9
H-SLCR16- 8N	1	1/2	48.8	44.5	11.9

**MALE ELBOW (H-SML)**

Male NPT both ends.

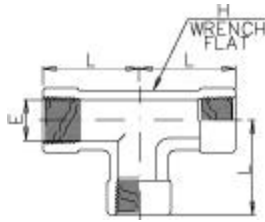


Part Number	Pipe Size	S	E	H Wrench Flat
H-SML-	1/8	19.05	4.8	12.7
H-SML-	1/4	24.5	7.1	12.7
H-SML-	3/8	26.9	9.6	17.5
H-SML-	1/2	33.2	11.9	20.6
H-SML- 12N	3/4	35.3	15.7	25.4
H-SML- 16N	1	44.5	22.3	31.8

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**TEE (H-STA)**

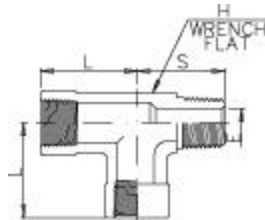
Female NPT all ports



Part Number	Pipe Size	S	E	H Wrench Flat
H-STA- 2N	1/8	24.0	8.9	12.7
H-STA- 4N	1/4	29.0	11.7	17.5
H-STA- 6N	3/8	34.5	15.0	20.6
H-STA- 8N	1/2	37.0	18.7	25.4
H-STA- 12N	3/4	46.5	23.5	31.8
H-STA- 16N	1	48.5	29.7	42.9

**RUN TEE (H-SRT)**

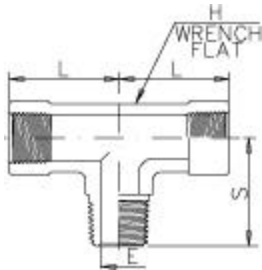
Female to male to female NPT.



Part Number	Pipe Size	L	S	E	H Wrench Flat
H-SRT- 2N	1/8	24.0	19.6	4.8	12.7
H-SRT- 4N	1/4	29.0	26.5	7.1	17.5
H-SRT- 6N	3/8	34.5	28.2	9.6	20.6
H-SRT- 8N	1/2	37.0	35.3	11.9	25.4
H-SRT- 12N	3/4	46.5	39.6	15.7	31.8
H-SRT- 16N	1	48.8	49.2	22.3	42.9

**BRANCH TEE (H-SBT)**

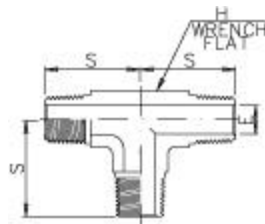
Female to female to male NPT.



Part Number	Pipe Size	L	S	E	H Wrench Flat
H-SBT- 2N	1/8	24.0	19.6	4.8	12.7
H-SBT- 4N	1/4	29.0	26.5	7.1	17.5
H-SBT- 6N	3/8	34.5	28.2	9.6	20.6
H-SBT- 8N	1/2	37.0	35.3	11.9	25.4
H-SBT- 12N	3/4	46.5	39.6	15.7	31.8
H-SBT- 16N	1	48.8	49.2	22.3	42.9

**MALE TEE (H-SMT)**

Male NPT all ports.

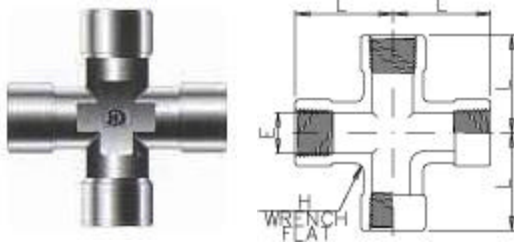


Part Number	Pipe Size	S	E	H Wrench Flat
H-SMT- 2N	1/8	19.05	4.8	12.7
H-SMT- 4N	1/4	24.5	7.1	12.7
H-SMT- 6N	3/8	26.9	9.6	17.5
H-SMT- 8N	1/2	33.2	11.9	20.6
H-SMT- 12N	3/4	35.3	15.7	25.4
H-SMT- 16N	1	44.5	22.3	31.8

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**CROSS (H-SXA)**

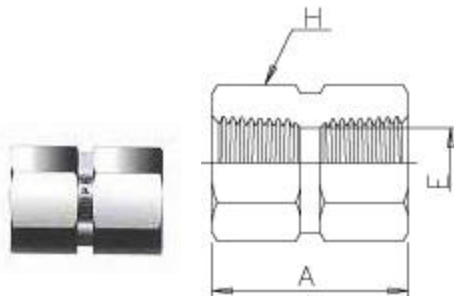
Female NPT all ports.



Part Number	Pipe Size	L	E	H Wrench Flat
H-SXA- 2N	1/8	24.0	8.9	12.7
H-SXA- 4N	1/4	29.0	11.7	17.5
H-SXA- 6N	3/8	34.5	15.0	20.6
H-SXA- 8N	1/2	37.0	18.7	25.4
H-SXA- 12N	3/4	46.5	23.5	31.8
H-SXA- 16N	1	48.8	29.7	42.9

**HEX COUPLING (H-SSA)**

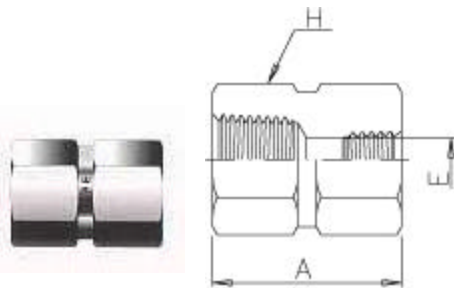
Female NPT both ends.



Part Number	Pipe Size	A	E	H Hex
H-SSA- 2N	1/8	20.3	8.9	14.2
H-SSA- 4N	1/4	30.0	11.7	19.05
H-SSA- 6N	3/8	33.0	15.0	22.2
H-SSA- 8N	1/2	39.4	18.7	26.9
H-SSA- 12N	3/4	41.0	23.5	31.8
H-SSA- 16N	1	50.5	29.7	41.2

**HEX REDUCING COUPLING (H-SSR)**

Female NPT to reduced female NPT.

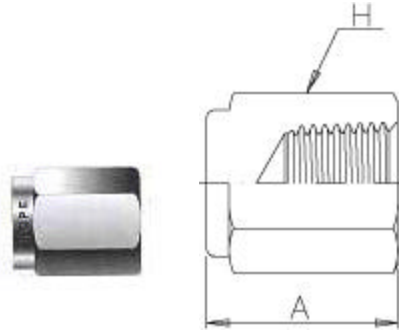


Part Number	Pipe Size	Raduced PipeSize	A	E	H Hex
H-SSR 4- 2N	1/4	1/8	31.2	8.9	19.05
H-SSR 6- 4N	3/8	1/4	34.8	11.7	22.2
H-SSR 8- 2N	1/2	1/8	39.4	8.7	26.9
H-SSR 8- 4N	1/2	1/4	44.2	11.7	26.9
H-SSR 8- 6N	1/2	3/8	45.0	15.0	26.9
H-SSR12- 4N	3/4	1/4	45.7	11.7	31.8
H-SSR12- 8N	3/4	1/2	52.0	18.7	31.8
H-SSR16- 4N	1	1/4	50.8	11.7	41.2
H-SSR16- 8N	1	1/2	55.4	18.7	41.2
H-SSR16-12N	1	3/4	57.0	23.5	41.2

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**PIPE CAP (H-SCA)**

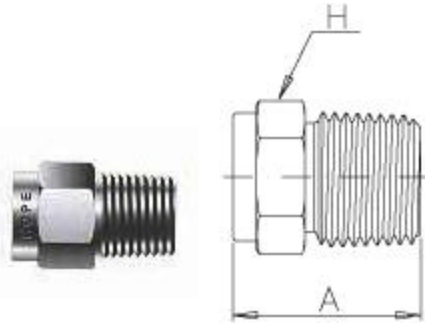
Female NPT.



Part Number	Pipe Size	A	H Hex
H-SCA- 2N	1/8	19.1	14.2
H-SCA- 4N	1/4	22.9	19.05
H-SCA- 6N	3/8	26.2	22.2
H-SCA- 8N	1/2	34.0	26.9
H-SCA- 12N	3/4	36.6	31.8
H-SCA- 16N	1	41.1	41.2

**PIPE PLUG (H-SPB)**

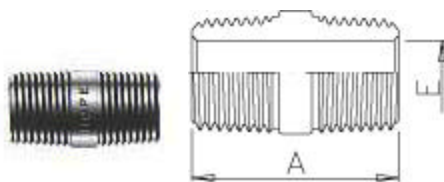
Male NPT.



Part Number	Pipe Size	A	H Hex
H-SPB - 2N	1/8	19.05	11.1
H-SPB - 4N	1/4	24.1	14.2
H-SPB - 6N	3/8	25	17.4
H-SPB - 8N	1/2	30.5	22.2
H-SPB - 12N	3/4	30.5	26.9
H-SPB - 16N	1	38.1	34.9

**CLOSE NIPPLE (H-SBE)**

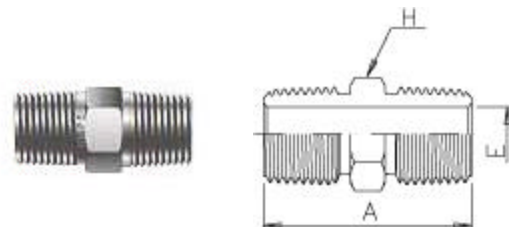
Male NPT both ends.



Part Number	Pipe Size	A	H Hex
H-SBE- 2N	1/8	19.05	4.8
H-SBE- 4N	1/4	28.4	7.1
H-SBE- 6N	3/8	28.4	9.6
H-SBE- 8N	1/2	31.7	11.9
H-SBE- 12N	3/4	31.7	15.7
H-SBE- 16N	1	47.8	22.4

**HEX NIPPLE (H-SNA)**

Male NPT both ends.

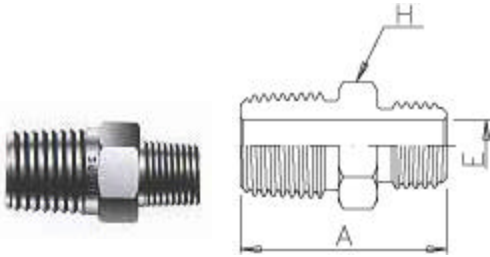


Part Number	Pipe Size	A	E	H Hex
H-SNA- 2N	1/8	25.4	4.8	11.1
H-SNA- 4N	1/4	35.3	7.1	14.2
H-SNA- 6N	3/8	36.1	9.6	17.4
H-SNA- 8N	1/2	46.7	11.9	22.2
H-SNA- 12N	3/4	46.7	15.7	26.9
H-SNA- 16N	1	58.7	22.3	34.9

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**HEX REDUCING NIPPLE (H-SNR)**

Male NPT to reduced male NPT.



Part Number	Pipe Size	Reduced Pipe Size	A	E	H Hex
H-SNR 4- 2N	1/4	1/8	30.7	4.8	14.2
H-SNR 6- 2N	3/8	1/8	32.0	4.8	17.4
H-SNR 6- 4N	3/8	1/4	36.1	7.1	17.4
H-SNR 8- 2N	1/2	1/8	37.2	4.8	22.2
H-SNR 8- 4N	1/2	1/4	41.7	7.1	22.2
H-SNR 8- 6N	1/2	3/8	41.7	9.6	22.2
H-SNR12- 4N	3/4	1/4	41.7	7.1	26.9
H-SNR12- 8N	3/4	1/2	46.7	11.9	26.9
H-SNR16- 4N	1	1/4	49.3	7.1	34.9
H-SNR16- 8N	1	1/2	54.1	11.9	34.9

**HEX LONG NIPPLE (H-SNL)**

Male NPT both ends.

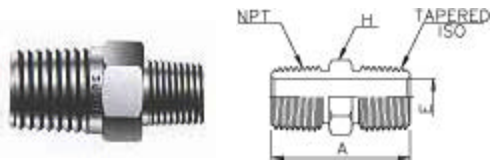


Specified length to be shown as last designator in part number.  
Example :L 51(51mm=2\*Length)

Part Number	Pipe Size	A	E	H Hex
H-SNL- 2N	1/8	*	4.8	11.1
H-SNL- 4N	1/4	*	7.1	14.2
H-SNL- 6N	3/8	*	9.7	17.4
H-SNL- 8N	1/2	*	11.9	22.2
H-SNL- 12N	3/4	*	15.7	26.9
H-SNL- 16N	1	*	22.4	34.9

**HEX NIPPLE (H-SNA)**

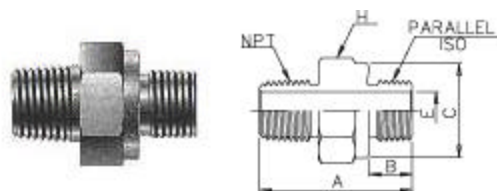
Male NPT to ISO tapered



Part Number	Pipe Size	BSP/ISO ThreadSize	A	E	H Hex
H-SNA- 2NR	1/8	1/8-28 7/1	24.6	4.1	11.1
H-SNA- 4NR	1/4	1/4-19 7/1	35.6	6.4	14.2
H-SNA- 6NR	3/8	3/8-19 7/1	36.3	9.7	17.4
H-SNA- 8NR	1/2	1/2-14 7/1	46	11.9	22.2
H-SNA-12NR	3/4	3/4-14 7/1	46.7	15.7	26.9
H-SNA- 16NR	1	1-11 7/1	58.9	22.4	34.9

**HEX NIPPLE (H-SNA)**

Male NPT to male ISO parallel

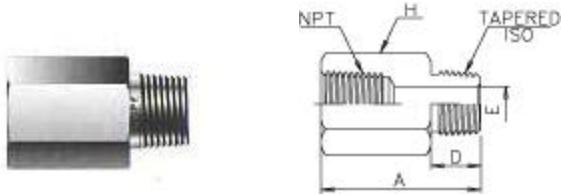


Part Number	Pipe Size	BSP/ISO ThreadSize	A	B	C	E	H Hex
H-SNA- 2NG	1/8	1/8-28 228/1	27.4	7.1	13.7	4.1	14.2
H-SNA- 4NG	1/4	1/4-19 228/1	36.8	11.2	17.8	5.8	19.05
H-SNA- 6NG	3/8	3/8-19 228/1	37.6	11.2	21.8	7.9	22.2
H-SNA- 8NG	1/2	1/2-14 228/1	45.0	14.2	26.1	11.9	26.9
H-SNA- 12NG	3/4	3/4-14 228/1	49.0	15.7	31.5	15.7	33.3
H-SNA- 16NG	1	1-11 228/1	56.9	18.3	38.9	19.8	41

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**ADAPTER (H-MFAA)**

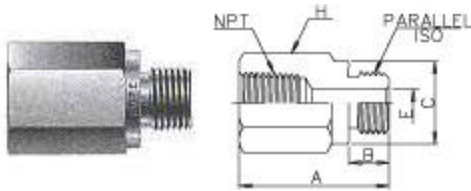
F NPT to male ISO tapered.



Part Number	Pipe Size	BSP/ISO ThreadSize	A	D	E	H Hex
H-MFAA- 2RN	1/8	1/8-28 7/1	27.4	9.7	4.8	14.2
H-MFAA- 4RN	1/4	1/4-19 7/1	35.8	14.2	7.1	19.05
H-MFAA- 6RN	3/8	3/8-19 7/1	37.6	14.2	9.7	22.2
H-MFAA- 8RN	1/2	1/2-14 7/1	49.0	19.1	11.9	26.9
H-MFAA- 12RN	3/4	3/4-14 7/1	50.3	19.1	15.7	31.8
H-MFAA- 16RN	1	1-11 7/1	58.0	23.9	22.3	41.2

**ADAPTER (H-MFAB)**

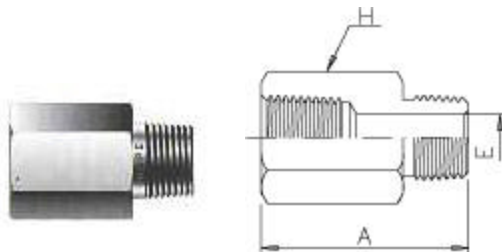
Female NPT male ISO parallel



Part Number	Pipe Size	BSP/ISO ThreadSize	A	B	C	E	H Hex
H-MFAB- 2GN	1/8	1/8-28 228/1	24.9	7.1	13.7	4.1	14.2
H-MFAB- 4GN	1/4	1/4-19 228/1	33.3	11.2	17.8	5.8	19.05
H-MFAB- 6GN	3/8	3/8-19 228/1	37.8	11.2	21.8	7.9	22.2
H-MFAB- 8GN	1/2	1/2-14 228/1	43.9	14.2	26.1	11.9	26.9
H-MFAB- 12GN	3/4	3/4-14 228/1	50.8	15.7	31.5	15.7	33.3
H-MFAB- 16GN	1	1-11 228/1	53.1	18.3	38.9	19.8	41.2

**ADAPTER (H-MFAA)**

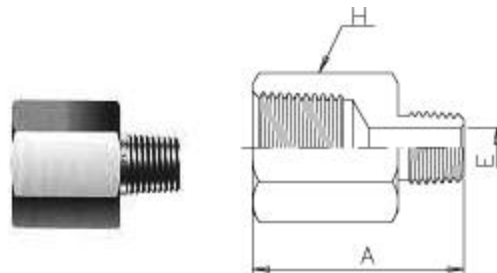
Female NPT to same size male NPT.



Part Number	Pipe Size	A	E	H Hex
H-MFAA- 2N	1/8	27.4	4.8	14.2
H-MFAA- 4N	1/4	35.6	7.1	19.05
H-MFAA- 6N	3/8	37.8	9.6	22.2
H-MFAA- 8N	1/2	49.0	11.9	26.9
H-MFAA- 12N	3/4	50.3	15.7	31.8
H-MFAA- 16N	1	58.0	22.3	41.2

**REDUCING ADAPTER (H-MFAC)**

Female NPT to reduced male NPT.

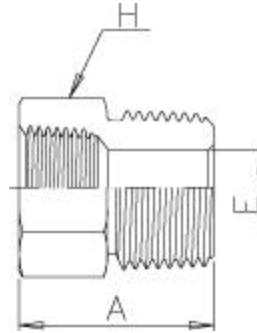


Part Number	Female Pipe Size	Male Pipe Size	A	E	H Hex
H-MFAC 2- 4N	1/4	1/8	31.5	4.8	19.05
H-MFAC 2- 6N	3/8	1/8	33.5	4.8	22.2
H-MFAC 4- 6N	3/8	1/4	37.8	7.1	22.2
H-MFAC 2- 8N	1/2	1/8	10.0	4.8	26.9
H-MFAC 4- 8N	1/2	1/4	44.5	7.1	26.9
H-MFAC 6- 8N	1/2	3/8	44.5	9.6	26.9
H-MFAC 4-12N	3/4	1/4	45.7	7.1	31.8
H-MFAC 6-12N	3/4	3/8	45.7	9.6	31.8
H-MFAC 8-12N	3/4	1/2	51.1	11.9	31.8
H-MFAC 4-16N	1	1/4	50.8	7.1	41.2
H-MFAC 8-16N	1	1/2	55.3	11.9	41.2
H-MFAC16-16N	1	1	54.9	15.7	41.2

All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.

**HEX BUSHING (H-SHB)**

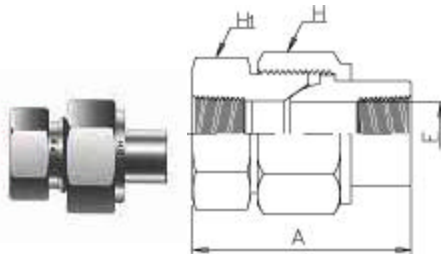
Male NPT to reduced female NPT.



Part Number	Male Pipe Size	Female Pipe Size	A	E	H Hex	Working Pressure (PSIG)		
						316SS	Brass	Carbon Steel
H-SHB 4- 2N	1/4	1/8	26.7	7.1	14.2	5600	3100	6200
H-SHB 6- 2N	3/8	1/8	21.8	8.5	17.4			
H-SHB 6- 4N	3/8	1/4	30.0	9.6	19.05	5200	3100	6200
H-SHB 8- 2N	1/2	1/8	27.4	8.5	22.2	-	-	-
H-SHB 8- 4N	1/2	1/4	27.4	11.7	22.2	5800	3100	6200
H-SHB 8- 6N	1/2	3/8	35.6	11.9	22.2	4400	2500	5100
H-SHB12- 4N	3/4	1/4	27.4	11.4	26.9	-	-	-
H-SHB12- 6N	3/4	3/8	27.4	15.0	26.9	-	-	-
H-SHB12- 8N	3/4	1/2	41.4	15.7	26.9	-	-	-
H-SHB16- 4N	1	1/4	34.8	11.4	34.9	-	-	-
H-SHB16- 8N	1	1/2	34.8	18.5	34.9	-	-	-
H-SHB16-12N	1	3/4	34.8	22.4	34.9	-	-	-

**UNION BALL JOINT (H-SUR)**

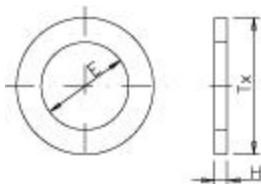
Male NPT both ends.



Part Number	Pipe Size	A	E	H Hex	H1 Hex
H-SUR- 2N	1/8	45.7	6.9	28.6	23.8
H-SUR- 4N	1/4	59.4	9.1	34.9	30.2
H-SUR- 6N	3/8	63.5	13.2	38.1	33.3
H-SUR- 8N	1/2	68.6	15.7	44.5	41.3
H-SUR- 12N	3/4	79.2	22.4	50.8	47.6
H-SUR- 16N	1	90.4	26.2	63.5	60.3

**ISO PARALLEL GASKET (KP-A)**

Male NPT both ends.



Part Number	Pipe Size	E	H	Tx
KP-A-01	1/8	10.0	2.0	18.0
KP-A-03	1/4	14.0	2.0	22.0
KP-A-05	3/8	17.0	2.0	26.0
KP-A-07	1/2	22.0	2.0	32.0
KP-A-11	3/4	27.0	2.0	38.0
KP-A-16	1	34.0	2.0	42.0

Used to provide seal with ISO parallel thread.  
(Material is Copper only)

All dimensions are in millimeters unless otherwise specified. Dimensions are for reference only, subject to change.