

## Instrument Thread Fittings

for Use with 1/8" thru 1" Piping Systems

### Features

1. Precision pipe fittings for instrumentation and process control
2. Fine threads constructed 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

### Pipe Thread Symbol

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

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

- Working pressures calculated are reference only.
- Working pressures calculated as per Process Piping Code ANSI B31.3 with allowable stress 20.000 psi/SS316, 10.000 psi/Brass, 20.000 psi/Carbon steel and for working pressure in accordance with Power Piping Code ANSI B31.3 simply calculated applying a factor of .94 (94%) to above chart.
- Due to larger outer diameter of 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-SBH) are not covered with this pressure rating table therefore indicated in its dimensional table.

### Thread Specifications

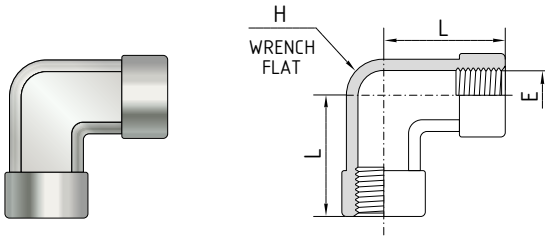
Thread Type	Identify	Specification
NPT	N	ASME B1.20.1, SAE AS71051
ISO/BSP (Parallel)	G	ISO 228, JIS B 0202
ISO/BSP (Tapered)	R	ISO 7/1, JIS B 0203

### Temperature Ratings

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

## ELBOW (FASL-F)

Female NPT both ends.

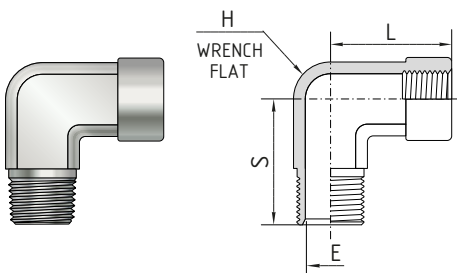


Part Number	Thread	Dimension(mm)		
		E	L	H
FASL-F-2N	NPT 1/8"	8.6	24.0	12.7
FASL-F-4N	NPT 1/4"	11.4	29.0	17.5
FASL-F-6N	NPT 3/8"	15.0	34.5	20.6
FASL-F-8N	NPT 1/2"	18.5	37.0	25.4
FASL-F-12N	NPT 3/4"	23.9	46.5	31.8
FASL-F-16N	NPT 1"	29.7	48.8	42.9

\*ISO Tapered Threads are available upon request.

## STREET ELBOW (FASL-MF)

Male to Female NPT.

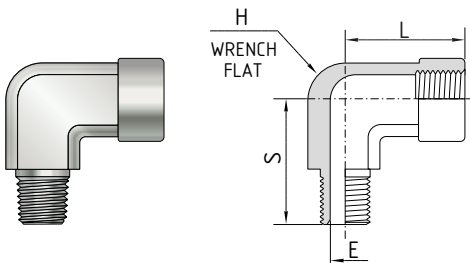


Part Number	Thread	Dimension(mm)			
		E	L	S	H
FASL-MF - 2N	NPT 1/8"	4.8	24.1	19.6	12.7
FASL-MF - 4N	NPT 1/4"	7.1	29.0	26.5	17.5
FASL-MF - 6N	NPT 3/8"	9.6	34.5	28.2	20.6
FASL-MF - 8N	NPT 1/2"	11.9	37.0	35.3	25.4
FASL-MF-12N	NPT 3/4"	15.7	46.5	39.6	31.8
FASL-MF-16N	NPT 1"	22.4	48.8	49.2	42.9

\*ISO Tapered Threads are available upon request.

## REDUCING STREET ELBOW (FASL-MF)

Male to Female NPT.

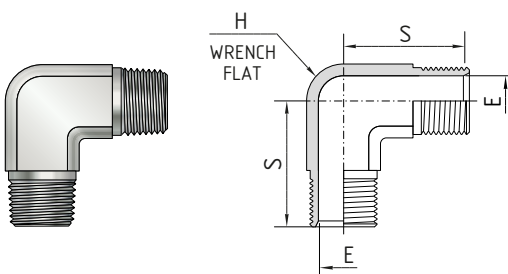


Part Number	Male Thread	Female Thread	Dimension(mm)			
			E	L	S	H
FASL-MF-2N-4N	NPT 1/2"	NPT 1/4"	4.8	29.0	22.4	17.5
FASL-MF-4N-6N	NPT 1/4"	NPT 3/8"	7.1	34.5	28.2	20.6
FASL-MF-4N-8N	NPT 1/4"	NPT 1/2"	7.1	37.0	30.5	25.4
FASL-MF-6N-8N	NPT 3/8"	NPT 1/2"	9.6	37.0	30.5	25.4
FASL-MF-8N-12N	NPT 1/2"	NPT 3/4"	11.9	46.5	39.6	31.8
FASL-MF-8N-16N	NPT 1/2"	NPT 1"	11.9	48.8	44.5	42.9

\*ISO Tapered Threads are available upon request.

## MALE ELBOW (FASL-M)

Male NPT both ends.

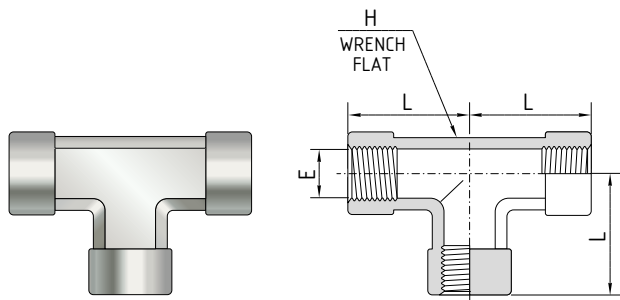


Part Number	Thread	Dimension(mm)		
		E	L	H
FASL-M-2N	NPT 1/8"	4.8	19.1	12.7
FASL-M-4N	NPT 1/4"	7.1	24.5	12.7
FASL-M-6N	NPT 3/8"	9.6	26.9	17.5
FASL-M-8N	NPT 1/2"	11.9	33.2	20.6
FASL-M-12N	NPT 3/4"	15.7	35.3	25.4
FASL-M-16N	NPT 1"	22.4	44.5	31.8

\*ISO Tapered Threads are available upon request.

**TEE (FAST-F)**

Female NPT all ports.

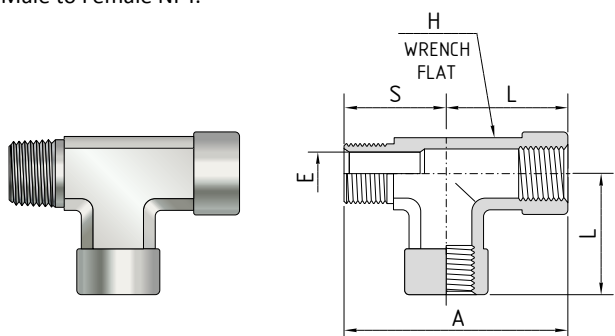


Part Number	Thread	Dimension(mm)			
		A	E	L	H
FAST-F-2N	NPT 1/8"	48.0	8.6	24.0	12.7
FAST-F-4N	NPT 1/4"	58.0	11.4	29.0	17.5
FAST-F-6N	NPT 3/8"	69.0	15.0	34.5	20.6
FAST-F-8N	NPT 1/2"	74.0	18.5	37.0	25.4
FAST-F-12N	NPT 3/4"	93.0	23.9	46.5	31.8
FAST-F-16N	1	97.0	29.7	48.5	42.9

\*ISO Tapered Threads are available upon request.

**RUN TEE (FAST-FMF)**

Male to Female NPT.

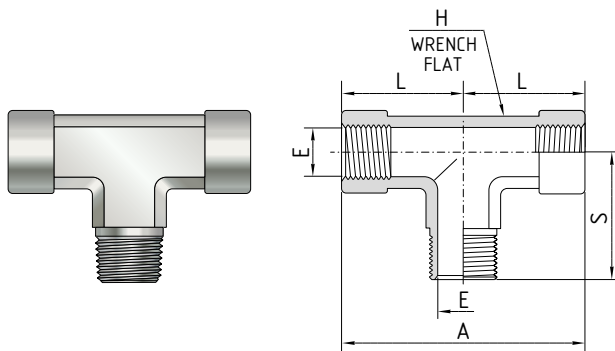


Part Number	Thread	Dimension(mm)				
		A	E	L	S	H
FAST-FMF-2N	NPT 1/8"	43.6	4.8	24.0	19.6	12.7
FAST-FMF-4N	NPT 1/4"	56.2	7.1	29.0	26.5	17.5
FAST-FMF-6N	NPT 3/8"	62.7	9.6	34.5	28.2	20.6
FAST-FMF-8N	NPT 1/2"	72.3	11.9	37.0	35.3	25.4
FAST-FMF-12N	NPT 3/4"	86.1	15.7	46.5	39.6	31.8
FAST-FMF-16N	NPT 1"	97.7	22.4	48.5	49.2	42.9

\*ISO Tapered Threads are available upon request.

**BRUNCH TEE (FAST-FFM)**

Female to Female to male NPT.

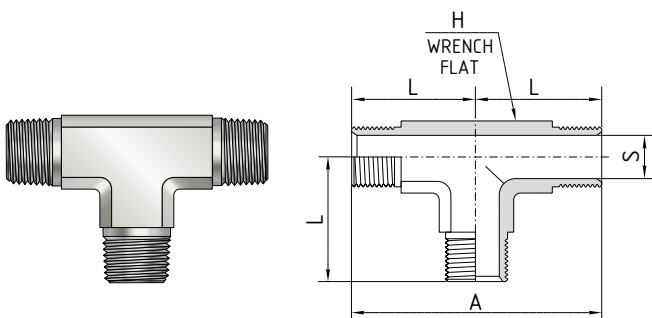


Part Number	Thread	Dimension(mm)				
		A	E	L	S	H
FAST-FFM-2N	NPT 1/8"	48.0	4.8	24.0	19.6	12.7
FAST-FFM-4N	NPT 1/4"	58.0	7.1	29.0	26.5	17.5
FAST-FFM-6N	NPT 3/8"	69.0	9.6	34.5	28.2	20.6
FAST-FFM-8N	NPT 1/2"	74.0	11.9	37.0	35.3	25.4
FAST-FFM-12N	NPT 3/4"	93.0	15.7	46.5	39.6	31.8
FAST-FFM-16N	NPT 1"	97.0	22.4	48.5	49.2	42.9

\*ISO Tapered Threads are available upon request.

**MALE TEE (FAST-M)**

Male NPT all ports.



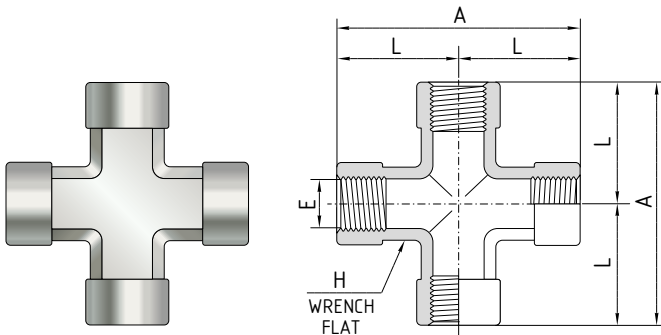
Part Number	Thread	Dimension(mm)			
		A	S	L	H
FAST-M-2N	NPT 1/8"	38.2	4.8	19.1	12.7
FAST-M-4N	NPT 1/4"	49.0	7.1	24.5	12.7
FAST-M-6N	NPT 3/8"	53.8	9.6	26.9	17.5
FAST-M-8N	NPT 1/2"	66.4	11.9	33.2	20.6
FAST-M-12N	NPT 3/4"	70.6	15.7	35.3	25.4
FAST-M-16N	NPT 1"	89.0	22.4	44.5	31.8

\*ISO Tapered Threads are available upon request.

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## CROSS (FASC-F)

Female NPT all ports.

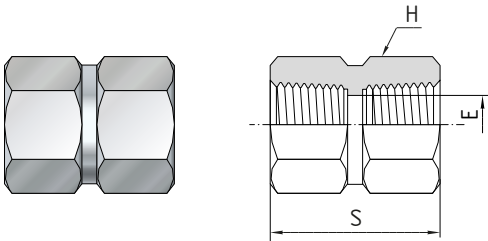


Part Number	Thread	Dimension(mm)			
		A	E	L	H
FASC-F-2N	NPT 1/8"	48.0	8.6	24.0	12.7
FASC-F-4N	NPT 1/4"	58.0	11.4	29.0	17.5
FASC-F-6N	NPT 3/8"	69.0	15.0	34.5	20.6
FASC-F-8N	NPT 1/2"	74.0	18.5	37.0	25.4
FASC-F-12N	NPT 3/4"	93.0	23.9	46.5	31.8
FASC-F-16N	NPT 1"	97.0	29.7	48.5	42.9

\* ISO Tapered Threads are available upon request

## HEX COUPLING (FASH-F)

Female NPT both ends.

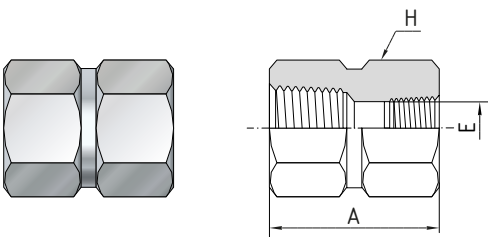


Part Number	Thread	Dimension(mm)		
		S	E	H
FASH-F-2N	NPT 1/8"	20.6	8.6	14.2
FASH-F-4N	NPT 1/4"	30.2	11.4	19.1
FASH-F-6N	NPT 3/8"	33.3	15.0	22.2
FASH-F-8N	NPT 1/2"	39.6	18.5	26.9
FASH-F-12N	NPT 3/4"	41.1	23.9	33.3
FASH-F-16N	NPT 1"	50.8	29.7	41.2

\* ISO Tapered Threads are available upon request

## HEX REDUCING COUPLING (FASH-F)

Female NPT to reduce Female NPT.

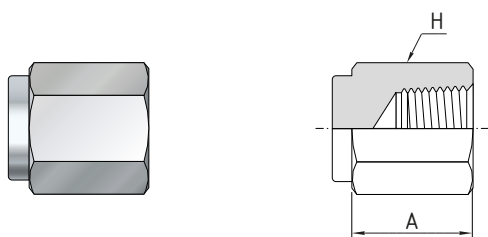


Part Number	Thread	Reduced Thread	Dimension(mm)		
			A	E	H
FASH-F-4N-2N	NPT 1/4"	NPT 1/8"	31.0	8.6	19.1
FASH-F-6N-4N	NPT 3/8"	NPT 1/4"	35.1	11.4	22.2
FASH-F-8N-2N	NPT 1/2"	NPT 1/8"	39.6	8.6	26.9
FASH-F-8N-4N	NPT 1/2"	NPT 1/4"	44.4	11.4	26.9
FASH-F-8N-6N	NPT 1/2"	NPT 3/8"	45.2	15.0	26.9
FASH-F-12N-4N	NPT 3/4"	NPT 1/4"	46.0	11.4	33.3
FASH-F-12N-8N	NPT 3/4"	NPT 1/2"	52.3	18.5	33.3
FASH-F-16N-8N	NPT 1"	NPT 1/2"	55.6	18.5	41.2
FASH-F-16N-12N	NPT 1"	NPT 3/4"	57.2	23.9	41.2

\*ISO Tapered Threads are available upon request.

**PIPE CAP (FASP-F)**

Female NPT.

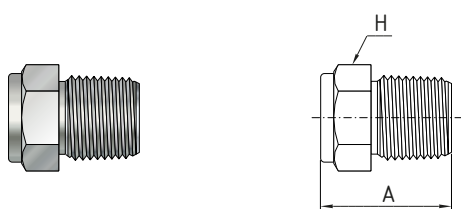


Part Number	Thread	Dimension(mm)	
		A	H
FASP-F-2N	NPT 1/8"	19.1	14.2
FASP-F-4N	NPT 1/4"	23.1	19.1
FASP-F-6N	NPT 3/8"	26.2	22.2
FASP-F-8N	NPT 1/2"	34.0	26.9
FASP-F-12N	NPT 3/4"	36.6	33.3
FASP-F-16N	NPT 1"	41.1	41.2

\* ISO Tapered Threads are available upon request

**PIPE PLUG (FASP-M)**

Male NPT.

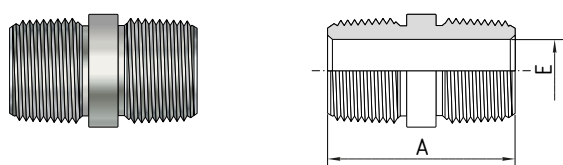


Part Number	Thread	Dimension(mm)	
		A	H
FASP-M-2N	NPT 1/8"	19.1	11.1
FASP-M-4N	NPT 1/4"	24.4	14.2
FASP-M-6N	NPT 3/8"	25.1	17.4
FASP-M-8N	NPT 1/2"	30.7	22.2
FASP-M-12N	NPT 3/4"	30.7	26.9
FASP-M-16N	NPT 1"	38.1	34.9

\* ISO Tapered Threads are available upon request

**CLOSE NIPPLE (FASR-M)**

Male NPT both ends.

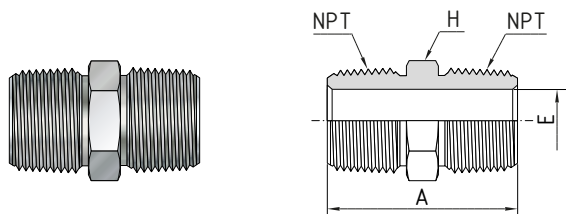


Part Number	NPT Thread	Dimension(mm)	
		A	E
FASR-M-2N	NPT 1/8"	19.1	4.8
FASR-M-4N	NPT 1/4"	28.4	7.1
FASR-M-6N	NPT 3/8"	28.4	9.6
FASR-M-8N	NPT 1/2"	38.1	11.9
FASR-M-12N	NPT 3/4"	38.1	15.7
FASR-M-16N	NPT 1"	47.8	22.4

\* ISO Tapered Threads are available upon request

**HEX NIPPLE (FASH-M)**

Male NPT both ends.



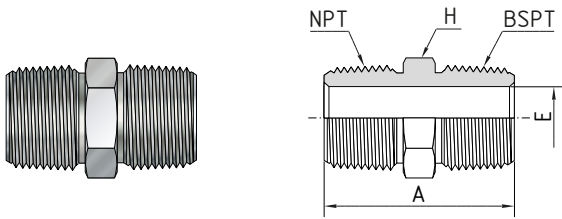
Part Number	NPT Thread	Dimension(mm)		
		A	E	H
FASH-M-2N	NPT 1/8"	25.6	4.8	11.1
FASH-M-4N	NPT 1/4"	35.6	7.1	14.2
FASH-M-6N	NPT 3/8"	36.3	9.6	17.4
FASH-M-8N	NPT 1/2"	46.7	11.9	22.2
FASH-M-12N	NPT 3/4"	46.7	15.7	26.9
FASH-M-16N	NPT 1"	58.9	22.4	34.9

\*ISO Tapered Threads are available upon request.

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## HEX NIPPLE (FASH-M)

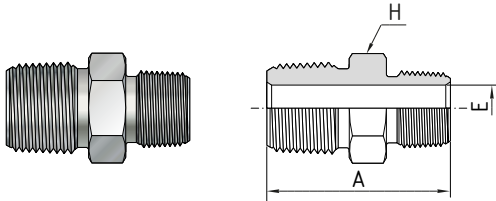
Male NPT to ISO tapered.



Part Number	Thread	Thread	A	E	H, Wrench Flat
FASH-M-2NR	NPT 1/8"	RT 1/8"	24.6	4.1	11.1
FASH-M-4NR	NPT 1/4"	RT 1/4"	35.6	6.4	14.2
FASH-M-6NR	NPT 3/8"	RT 3/8"	36.3	9.7	17.4
FASH-M-8NR	NPT 1/2"	RT 1/2"	46.0	11.9	22.2
FASH-M-12NR	NPT 3/4"	RT 3/4"	46.7	15.7	26.9
FASH-M-16NR	NPT 1"	RT 1"	58.9	22.4	34.9

## HEX REDUCING NIPPLE (FASH-M)

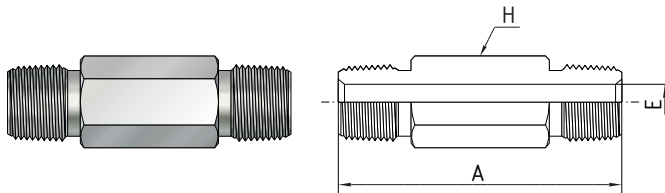
Male NPT to reduced male NPT.



Part Number	Thread	Thread (Reduced)	A	E	H, Wrench Flat
FASH-M-2N-1N	NPT 1/4"	NPT 1/16"	25.6	3.0	11.1
FASH-M-4N-2N	NPT 1/4"	NPT 1/8"	31.0	4.8	14.2
FASH-M-6N-2N	NPT 3/8"	NPT 1/8"	31.8	4.8	17.4
FASH-M-6N-4N	NPT 3/8"	NPT 1/4"	36.3	7.1	17.4
FASH-M-8N-2N	NPT 1/2"	NPT 1/8"	37.3	4.8	22.2
FASH-M-8N-4N	NPT 1/2"	NPT 1/4"	41.9	7.1	22.2
FASH-M-8N-6N	NPT 1/2"	NPT 3/8"	41.9	9.6	22.2
FASH-M-12N-4N	NPT 3/4"	NPT 1/4"	41.9	7.1	26.9
FASH-M-12N-8N	NPT 3/4"	NPT 1/2"	46.7	11.9	26.9
FASH-M-16N-4N	NPT 1"	NPT 1/4"	49.3	7.1	34.9
FASH-M-16N-8N	NPT 1"	NPT 1/2"	54.1	11.9	34.9
FASH-M-16N-12N	NPT 1"	NPT 3/4"	54.1	15.7	34.9

## HEX LONG NIPPLE (FASHL-M)

Male NPT both ends.

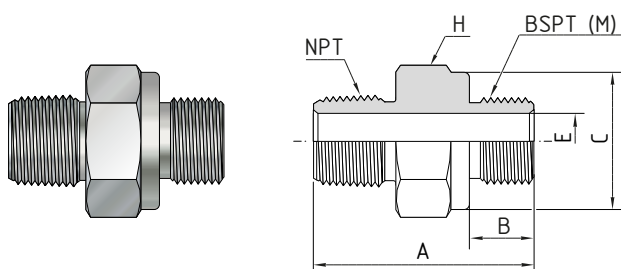


Part Number	Thread	A	E	H, Wrench Flat
FASHL-M-4N-51L	NPT 1/4"	51	7.1	14.2
FASHL-M-4N-76L	NPT 1/4"	76	7.1	14.2
FASHL-M-4N-100L	NPT 1/4"	100	7.1	14.2
FASHL-M-4N-152L	NPT 1/4"	152	7.1	14.2
FASHL-M-6N-51L	NPT 3/8"	51	9.6	17.4
FASHL-M-6N-76L	NPT 3/8"	76	9.6	17.4
FASHL-M-6N-100L	NPT 3/8"	100	9.6	17.4
FASHL-M-6N-152L	NPT 3/8"	152	9.6	17.4
FASHL-M-8N-51L	NPT 1/2"	51	11.9	22.2
FASHL-M-8N-76L	NPT 1/2"	76	11.9	22.2
FASHL-M-8N-100L	NPT 1/2"	100	11.9	22.2
FASHL-M-8N-152L	NPT 1/2"	152	11.9	22.2
FASHL-M-12N-76L	NPT 3/4"	76	15.7	26.9
FASHL-M-16N-76L	NPT 3/8"	76	22.8	34.9

\* The length of Nipple "A" is defined by user  
Part Number Example : FASHL-M-8N-76L (length "A" : 76mm)

## HEX NIPPLE (FASH-M)

Male NPT to Male ISO parallel.

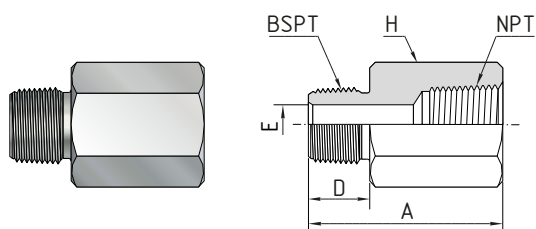


Part Number	NPT Thread	ISO/BSP Thread	Dimension(mm)				
			A	B	C	E	H
FASH-M-2NG	NPT 1/8"	NPT 1/8"	25.1	7.1	13.7	4.1	14.2
FASH-M-4NG	NPT 1/4"	NPT 1/4"	33.5	11.2	18.0	5.8	19.1
FASH-M-6NG	NPT 3/8"	NPT 3/8"	35.8	11.2	21.6	7.9	22.2
FASH-M-8NG	NPT 1/2"	NPT 1/2"	44.2	14.2	25.9	11.9	26.9
FASH-M-12NG	NPT 3/4"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

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**ADAPTER (FASH-MF)**

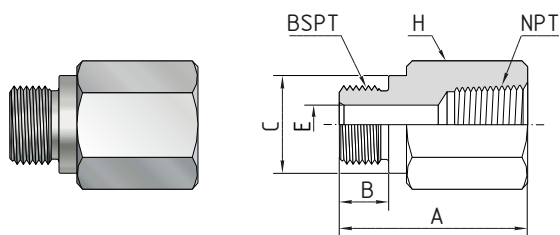
Male NPT to Female ISO tapered.



Part Number	Male Thread	Female Thread	A	D	E	H, Wrench Flat
FASH-MF-2RN	RT 1/8"	NPT 1/8"	27.4	9.7	4.8	14.2
FASH-MF-4RN	RT 1/4"	NPT 1/4"	35.8	14.2	7.1	19.05
FASH-MF-6RN	RT 3/8"	NPT 3/8"	37.6	14.2	9.7	22.2
FASH-MF-8RN	RT 1/2"	NPT 1/2"	49.0	19.1	11.9	26.9
FASH-MF-12RN	RT 3/4"	NPT 3/4"	50.3	19.1	15.7	31.8
FASH-MF-16RN	RT 1"	NPT 1"	58.0	23.9	22.3	41.2

**ADAPTER (FASH-MF)**

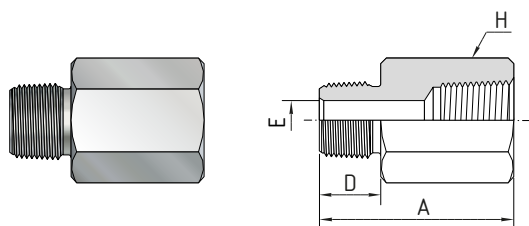
Male NPT to Female ISO tapered.



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

**ADAPTER (FASH-MF)**

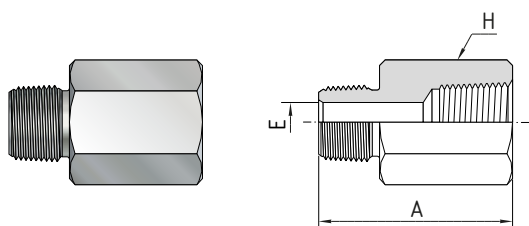
Male NPT to Female NPT.



Part Number	NPT Thread	Dimension(mm)			T* ISO/BSP Thread (ISO 7/1)
		A	D	H	
FASH-MF-2N	NPT 1/8"	27.9	4.8	14.2	NPT 1/8"
FASH-MF-4N	NPT 1/4"	35.6	7.1	19.1	NPT 1/4"
FASH-MF-6N	NPT 3/8"	38.4	9.6	22.2	NPT 3/8"
FASH-MF-8N	NPT 1/2"	49.3	11.9	26.9	NPT 1/2"
FASH-MF-12N	NPT 3/4"	51.3	15.7	33.3	NPT 3/4"
FASH-MF-16N	NPT 1"	57.9	22.4	41.2	NPT 1"

**REDUCING ADAPTER (FASH-MF)**

Male NPT to reduced Female NPT.

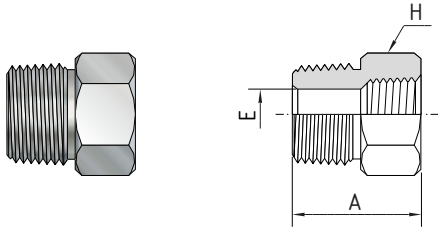


Part Number	Male Thread	Female Thread	A	E	H, Wrench Flat
FASH-MF-2N-4N	NPT 1/8"	NPT 1/4"	32.0	4.8	19.1
FASH-MF-2N-6N	NPT 1/8"	NPT 3/8"	33.8	4.8	22.2
FASH-MF-4N-6N	NPT 1/4"	NPT 3/8"	38.1	7.1	22.2
FASH-MF-2N-8N	NPT 1/8"	NPT 1/2"	40.1	4.8	26.9
FASH-MF-4N-8N	NPT 1/4"	NPT 1/2"	44.7	7.1	26.9
FASH-MF-6N-8N	NPT 3/8"	NPT 1/2"	44.4	9.6	26.9
FASH-MF-4N-12N	NPT 1/4"	NPT 3/4"	47.0	7.1	33.3
FASH-MF-6N-12N	NPT 3/8"	NPT 3/4"	46.2	9.6	33.3
FASH-MF-8N-12N	NPT 1/2"	NPT 3/4"	51.3	11.9	33.3
FASH-MF-4N-16N	NPT 1/4"	NPT 1"	49.8	7.1	41.2
FASH-MF-8N-16N	NPT 1/2"	NPT 1"	54.9	11.9	41.2
FASH-MF-16N-16N	NPT 1"	NPT 1"	55.1	15.7	41.2

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## HEX BUSHING (FASH-MF)

Male NPT to reduced female NPT.



Part Number	Male Thread	Female Thread	A	E	H, Wrench Flat
FASH-MF-4N-2N	NPT 1/4"	NPT 1/8"	26.9	7.1	14.2
FASH-MF-6N-2N	NPT 3/8"	NPT 1/8"	21.8	8.6	17.4
FASH-MF-6N-4N	NPT 3/8"	NPT 1/4"	30.2	9.6	19.1
FASH-MF-8N-2N	NPT 1/2"	NPT 1/8"	27.4	8.6	22.2
FASH-MF-2N-4N	NPT 1/2"	NPT 1/4"	27.4	11.4	22.2
FASH-MF-8N-6N	NPT 1/2"	NPT 3/8"	35.8	11.9	22.2
FASH-MF-12N-4N	NPT 3/4"	NPT 1/4"	27.4	11.4	26.9
FASH-MF-12N-6N	NPT 3/4"	NPT 3/8"	27.4	15.0	26.9
FASH-MF-12N-8N	NPT 3/4"	NPT 1/2"	41.4	15.7	26.9
FASH-MF-16N-4N	NPT 1"	NPT 1/4"	34.8	11.4	34.9
FASH-MF-16N-6N	NPT 1"	NPT 3/8"	34.8	15.0	34.9
FASH-MF-16N-8N	NPT 1"	NPT 1/2"	34.8	18.5	34.9
FASH-MF-16N-12N	NPT 1"	NPT 3/4"	47.0	22.4	34.9