



6,000 PSI (420 BAR) - 10,000 PSI (690 BAR)



**PNEUMOIDRAULICA ENGINEERING**

**INSTRUMENT PIPE FITTINGS**

## OVERVIEW

**Pneumoidraulica Engineering** instrument pipe fittings are precision machined from bar stock or forging and applied in chemical, petrochemical, oil refineries, shipbuilding, power generation, pulp and paper industries.



## PRESSURE RATINGS

Standard: 6,000 PSI (420 bar)  
High pressure: 10,000 PSI (690 bar)  
The high pressure type are marked "10K" in the body.



## MATERIAL

AISI 316 (or AISI 316L) Stainless Steel  
(other materials by special order).

## THREADS

NPT (National Pipe Taper) and exceed the requirements of ANSI B1.20.1.  
The NPT thread has a thread flank angle of 60° inclusive, and is mainly used in the petrochemical and process industries.  
BSPP or BSPT threads are available by special order.











## DIMENSIONS

For reference only, subject to change without prior notice.

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**6,000 psi rating (420 bar) – bar stock**










	Hex nipple..... 4
	Hex long nipple.....4
	Hex reducing nipple.....5
	Adapter.....5
	Reducing adapter.....6
	Reducing bushing.....6
	Hex coupling.....7
	Hex reducing coupling....7

**6,000 psi rating (420 bar) - forged**

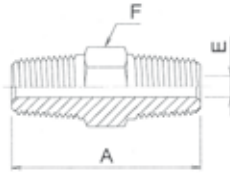
	Female/Female elbow...8
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	Male/Male elbow.....9
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# Index

10,000 psi rating (690 bar) – bar stock

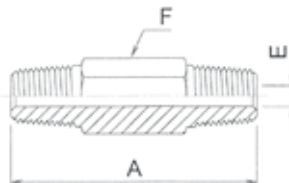
-  Hex nipple..... 11
-  Hex long nipple.....11
-  Hex reducing nipple.....12
-  Adapter.....12
-  Reducing adapter.....13
-  Reducing bushing.....13
-  Hex coupling.....14
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-  Female/Female elbow.... 15
-  Male/Female elbow.....16
-  Male/Male elbow.....16
-  Female Tee.....17
-  Male Tee.....17
-  Female cross.....18
-  Female cap .....18



**HEX NIPPLE**

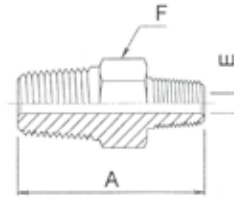
PIPE THREAD (NPT)	PART NO.	A	E	F
INCHES				
1/8	HN2	1.01	0.19	7/16
1/4	HN4	1.40	0.28	9/16
3/8	HN6	1.43	0.38	11/16
1/2	HN8	1.84	0.47	7/8
3/4	HN12	1.84	0.62	1 1/16
1	HN16	2.32	0.88	1 3/8



**HEX LONG NIPPLE**

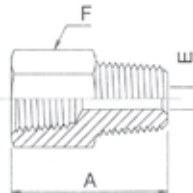
PIPE THREAD (NPT)	PART NO.	A					E	F
		AVAILABLE LENGTHS						
		1.50	2.00	2.50	3.00	4.00		
INCHES								
1/8	HLN2-*	*	*	*	*		0.19	7/16
1/4	HLN4-*	*	*	*	*	*	0.28	9/16
3/8	HLN6-*	*	*	*	*	*	0.38	11/16
1/2	HLN8-*		*		*	*	0.47	7/8
3/4	HLN12-*		*		*	*	0.62	1 1/16
1	HLN16-*				*	*	0.88	1 3/8

\* = LENGHT



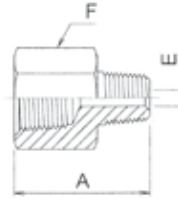
**HEX REDUCING NIPPLE**

PIPE THREAD (NPT)	PART NO.	A	E	F
<b>INCHES</b>				
1/4 X 1/8	HRN4-2	1.22	0.19	9/16
3/8 X 1/8	HRN6-2	1.25	0.19	11/16
3/8 X 1/4	HRN6-4	1.43	0.28	11/16
1/2 X 1/8	HRN8-2	1.47	0.19	7/8
1/2 X 1/4	HRN8-4	1.65	0.28	7/8
1/2 X 3/8	HRN8-6	1.65	0.38	7/8
3/4 X 1/4	HRN12-4	1.65	0.28	1 1/16
3/4 X 1/2	HRN12-8	1.84	0.47	1 1/16
1 X 1/2	HRN16-8	2.13	0.47	1 3/8
1 X 3/4	HRN16-12	2.13	0.62	1 3/8



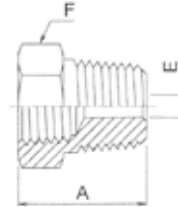
**ADAPTER**

PIPE THREAD (NPT)	PART NO.	A	E	F
<b>INCHES</b>				
1/8	A2	1.01	0.19	9/16
1/4	A4	1.40	0.28	3/4
3/8	A6	1.51	0.38	7/8
1/2	A8	1.94	0.47	1 1/16
3/4	A12	2.02	0.62	1 5/16
1	A16	2.28	0.88	1 5/8



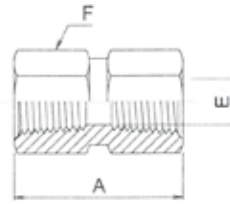
**REDUCING ADAPTER**

PIPE THREAD (NPT)	PART NO.	A	E	F
<b>INCHES</b>				
1/4F X 1/8M	RA4-2	1.01	0.19	9/16
3/8F X 1/8M	RA6-6	1.40	0.28	3/4
3/8F X 1/4M	RA6-4	1.51	0.38	7/8
1/2F X 1/8M	RA8-2	1.94	0.47	1 1/16
1/2F X 1/4M	RA8-4	2.02	0.62	1 5/16
1/2F X 3/8M	RA8-6	2.28	0.88	1 5/8
3/4F X 1/4M	RA12-4	1.01	0.19	9/16
3/4F X 3/8M	RA12-6	1.40	0.28	3/4
3/4F X 1/2F	RA12-8	1.51	0.38	7/8
1F X 1/4M	RA16-4	1.94	0.47	1 1/16
1F X 1/2M	RA16-8	2.02	0.62	1 5/16
1F X 3/4M	RA16-12	2.28	0.88	1 5/8



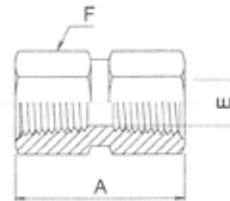
**REDUCING BUSHING**

PIPE THREAD (NPT)	PART NO.	A	E	F
<b>INCHES</b>				
1/4M X 1/8F	RB4-2	1.06	0.28	9/16
3/8M X 1/8F	RB6-2	0.86	0.34	11/16
3/8M X 1/4F	RB6-4	1.19	0.38	3/4
1/2M X 1/8F	RB8-2	1.08	0.34	7/8
1/2M X 1/4F	RB8-4	1.08	0.45	7/8
1/2M X 3/8F	RB8-6	1.41	0.47	7/8
3/4M X 1/4F	RB12-4	1.08	0.45	1 1/16
3/4M X 3/8F	RB12-6	1.08	0.59	1 1/16
3/4M X 1/2F	RB12-8	1.63	0.62	1 1/16
1M X 1/4F	RB16-4	1.37	0.45	1 3/8
1M X 3/8F	RB16-6	1.37	0.59	1 3/8
1M X 1/2F	RB16-8	1.37	0.73	1 3/8
1M X 3/4F	RB16-12	1.85	0.88	1 3/8



**HEX COUPLING**

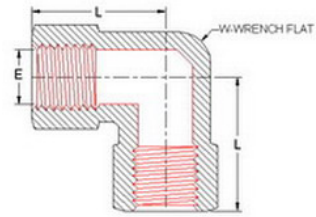
THREAD (NPT)	PART NO.	A	E	F
INCHES				
1/8	HC2	0.81	0.34	9/16
1/4	HC4	1.19	0.45	3/4
3/8	HC6	1.31	0.59	7/8
1/2	HC8	1.56	0.73	1 1/16
3/4	HC12	1.62	0.94	1 5/16
1	HC16	2.00	1.17	1 5/8



**HEX REDUCING COUPLING**

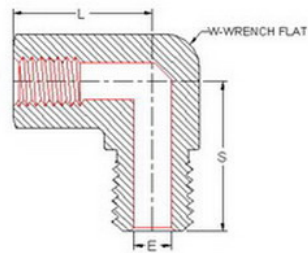
THREAD (NPT)	PART NO.	A	E	F
INCHES				
1/4 X 1/8	HRC4-2	1.22	0.34	3/4
3/8 X 1/4	HRC6-4	1.38	0.45	7/8
1/2 X 1/8	HRC8-2	1.56	0.34	1 1/16
1/2 X 1/4	HRC8-4	1.75	0.45	1 1/16
1/2 X 3/8	HRC8-6	1.78	0.59	1 1/16
3/4 X 1/4	HRC12-4	1.81	0.45	1 5/16
3/4 X 1/2	HRC12-8	2.06	0.73	1 5/16
1 X 1/2	HRC16-8	2.19	0.73	1 5/8
1 X 3/4	HRC16-12	2.25	0.94	1 5/8





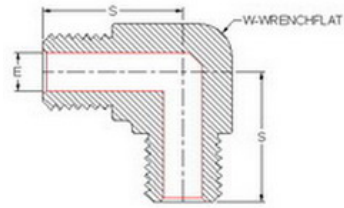
**FEMALE/FEMALE ELBOW**

THREAD (NPT)	PART NO.	E	L
INCHES			
1/8	FEF2	0.31	1.14
1/4	FEF4	0.43	0.98
3/8	FEF6	0.55	1.09
1/2	FEF8	0.71	1.40
3/4	FEF12	0.91	1.67
1	FEF16	1.14	1.86



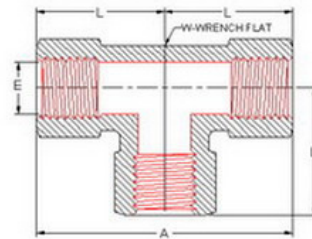
**MALE/FEMALE ELBOW**

THREAD (NPT)	PART NO.	E	L	S
INCHES				
1/8	SE2	0.20	0.79	0.83
1/4	SE4	0.24	0.98	1.02
3/8	SE6	0.31	1.09	1.17
1/2	SE8	0.39	1.40	1.40
3/4	SE12	0.59	1.67	1.59
1	SE16	0.83	1.86	1.78



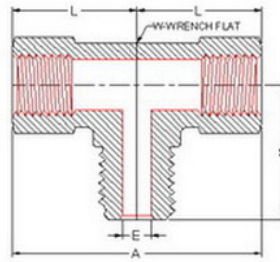
**MALE/MALE ELBOW**

THREAD (NPT)	PART NO.	E	S
INCHES			
1/8	MET2	0.20	1.14
1/4	MET4	0.24	0.94
3/8	MET6	0.31	1.06
1/2	MET8	0.39	1.29
3/4	MET12	0.59	1.48
1	MET16	0.83	1.78



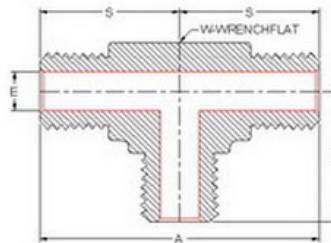
**FEMALE TEE**

THREAD (NPT)	PART NO.	A	E	L
INCHES				
1/8	T2	1.57	0.31	0.79
1/4	T4	1.95	0.43	0.98
3/8	T6	2.18	0.55	1.09
1/2	T8	2.80	0.71	1.40
3/4	T12	3.27	0.91	1.67
1	T16	3.72	1.41	1.86



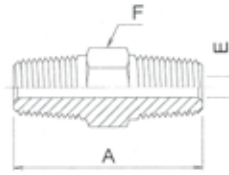
**BRANCH TEE**

THREAD (NPT)	PART NO.	A	E	L	S
INCHES					
1/8	BT2	1.57	0.20	0.79	0.83
1/4	BT4	1.95	0.24	0.98	1.02
3/8	BT6	2.18	0.31	1.09	1.17
1/2	BT8	2.80	0.39	1.40	1.40
3/4	BT12	3.27	0.59	1.67	1.59
1	BT16	3.72	0.83	1.86	1.78



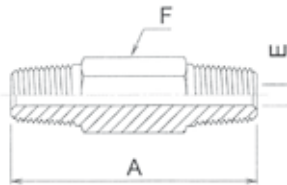
**MALE TEE**

THREAD (NPT)	PART NO.	A	E	S
INCHES				
1/8	MT2	1.56	0.20	0.83
1/4	MT4	1.89	0.24	1.02
3/8	MT6	2.11	0.31	1.17
1/2	MT8	2.57	0.39	1.40
3/4	MT12	2.95	0.59	1.59
1	MT16	3.56	0.83	1.78



**HEX NIPPLE**

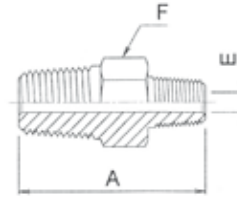
PIPE THREAD (NPT)	PART NO.	A		E		F	
		INCHES	MM	INCHES	MM	INCHES	MM
1/8	HHN2	1.06	27.0	0.16	4.1	13	330
1/4	HHN4	1.46	37.1	0.22	5.6	17	430
3/8	HHN6	1.46	37.1	0.28	7.1	19	480
1/2	HHN8	1.89	48.0	0.35	8.9	22	560



**HEX LONG NIPPLE**

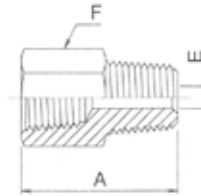
PIPE THREAD (NPT)	PART NO.	A					E	F
		AVAILABLE LENGTHS						
		1.50	2.00	2.50	3.00	4.00		
		INCHES						MM
1/4	HHLN4-*		*			*	0.22	17
3/8	HHLN6-*		*			*	0.28	19
1/2	HHLN8-*	*	*				0.35	22

\* = LENGHT



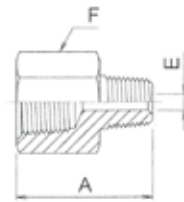
**HEX REDUCING NIPPLE**

PIPE THREAD (NPT)	PART NO.	A	E	F
<b>INCHES</b>				<b>MM</b>
1/4 x 1/8	HHRN4-2	1.26	0.16	13
3/8 x 1/8	HHRN6-2	1.26	0.16	17
3/8 x 1/4	HHRN6-4	1.42	0.22	19
1/2 x 1/8	HHRN8-2	1.50	0.16	22
1/2 x 1/4	HHRN8-4	1.69	0.22	19
1/2 x 3/8	HHRN8-6	1.69	0.28	22



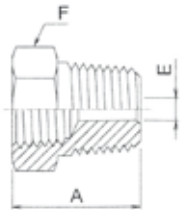
**ADAPTER**

PIPE THREAD (NPT)	PART NO.	A	E	F
<b>INCHES</b>				<b>MM</b>
1/4	HA4	1.42	0.22	17
3/8	HA6	1.42	0.28	19
1/2	HA8	1.89	0.35	22



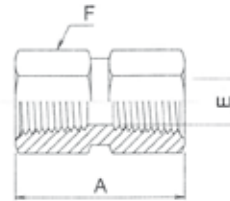
**REDUCING ADAPTER**

PIPE THREAD (NPT)	PART NO.	A	E	F
<b>INCHES</b>				<b>MM</b>
1/4F X 1/8M	HRA4-2	1.18	0.16	19
3/8F X 1/8M	HRA6-2	1.26	0.16	22
3/8F X 1/4M	HRA6-4	1.42	0.22	22
1/2F X 1/4M	HRA8-4	1.69	0.22	28
1/2F X 3/8M	HRA8-6	1.69	0.28	28



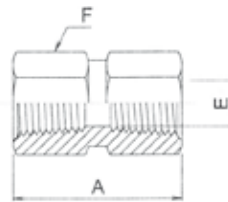
**REDUCING BUSHING**

PIPE THREAD (NPT)	PART NO.	A	E	F
<b>INCHES</b>				<b>MM</b>
1/4M X 1/8F	HRB4-2	0.87	0.16	17
3/8M X 1/4F	HRB6-4	0.87	0.22	19
1/2M X 1/8F	HRB8-2	1.10	0.16	22
1/2M X 1/4F	HRB8-4	1.10	0.22	22
1/2M X 3/8F	HRB8-6	1.10	0.28	22
3/4M X 1/4F	HRB12-4	1.18	0.22	28
1M X 1/4F	HRB16-4	1.38	0.22	36



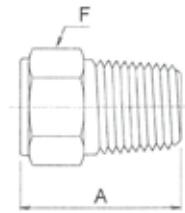
**HEX COUPLING**

THREAD (NPT)	PART NO.	A	E	F
INCHES				MM
1/8	HHC2	0.76	0.34	17
1/4	HHC4	1.14	0.45	19
3/8	HHC6	1.14	0.59	22
1/2	HHC8	1.50	0.73	28



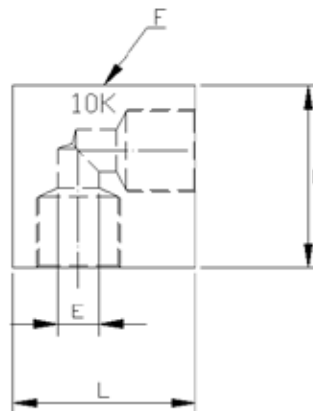
**HEX REDUCING COUPLING**

THREAD (NPT)	PART NO.	A	E	F
INCHES				MM
1/4 X 1/8	HHRC4-2	0.94	0.34	19
3/8 X 1/8	HHRC6-2	1.02	0.34	22
3/8 X 1/4	HHRC6-4	1.14	0.45	22
1/2 X 1/8	HHRC8-2	1.22	0.34	28
1/2 X 1/4	HHRC8-4	1.42	0.45	28
1/2 X 3/8	HHRC8-6	1.50	0.59	28



**PIPE PLUG**

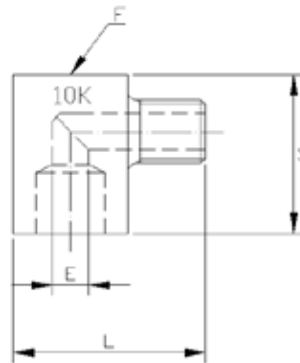
PIPE THREAD (NPT)	PART NO.	A	F
<b>INCHES</b>			
1/8	PP2	0.75	7/16
1/4	PP4	0.96	9/16
3/8	PP6	0.99	11/16
1/2	PP8	1.21	7/8
3/4	PP12	1.21	1 1/16
1	PP16	1.50	1 3/8



**FEMALE/FEMALE ELBOW**

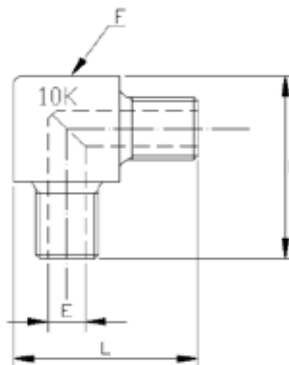
THREAD (NPT)	PART NO.	E	L	F
<b>INCHES</b>				<b>MM</b>
1/8	HFE2	0.34	1.14	19
1/4	HFE4	0.45	1.49	25
3/8	HFE6	0.59	1.95	32
1/2	HFE8	0.73	1.97	38





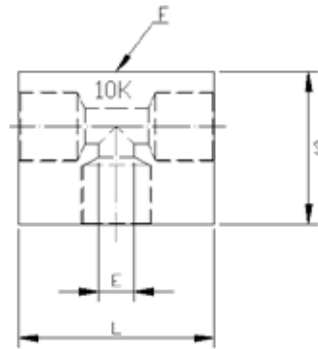
**MALE/FEMALE ELBOW**

THREAD (NPT)	PART NO.	E	L	S	F
INCHES					MM
1/8	HSE2	0.16	1.2	0.91	19
1/4	HSE4	0.22	1.30	0.98	25
3/8	HSE6	0.28	1.40	1.10	32
1/2	HSE8	0.35	1.61	1.26	38



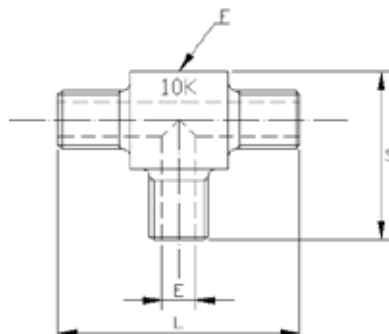
**MALE/MALE ELBOW**

THREAD (NPT)	PART NO.	E	L	F
INCHES				MM
1/8	HME2	0.16	0.69	16
1/4	HME4	0.22	0.94	19
3/8	HME6	0.28	0.98	19
1/2	HME8	0.35	1.30	25



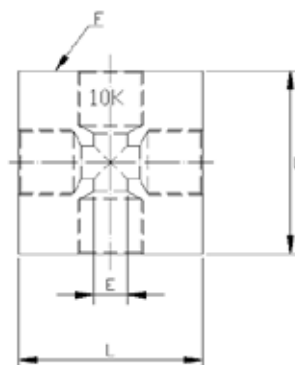
**FEMALE TEE**

THREAD (NPT)	PART NO.	E	L	S	F
INCHES					MM
1/8	HFT2	0.16	1.50	1.12	19
1/4	HFT4	0.22	1.97	1.50	25
3/8	HFT6	0.28	2.48	1.95	32
1/2	HFT8	0.35	2.48	1.97	38



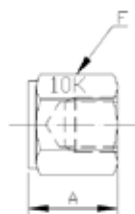
**MALE TEE**

THREAD (NPT)	PART NO.	E	L	S	F
INCHES					MM
1/8	HMT2	0.16	1.38	0.69	16
1/4	HMT4	0.22	1.89	0.94	19
3/8	HMT6	0.28	1.93	0.98	19
1/2	HMT8	0.35	2.64	1.30	25



**FEMALE CROSS**

THREAD (NPT)	PART NO.	E	L	F
INCHES				MM
1/8	HURC2	0.16	1.50	19
1/4	HURC4	0.22	1.97	25
3/8	HURC6	0.28	2.48	32
1/2	HURC8	0.35	2.48	38



**FEMALE CAP**

THREAD (NPT)	PART NO.	A	F
INCHES		MM	
1/8	HFC2	0.63	18
1/4	HFC4	0.87	24
3/8	HFC6	0.98	30
1/2	HFC8	1.34	38



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