



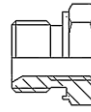
**RFS HYDRAULICS**  
CREATING OPPORTUNITIES



# PIPE ADAPTER FITTINGS

**INDEX**
**MFAD-GE**

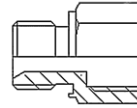
BSPP M x BSPP F Adapter with ED Seal



Page 4

**MFAE-GE**

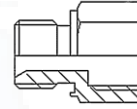
BSPP M x BSPP F Adapter with ED Seal



Page 5

**MFAE-GE-N**

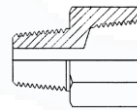
BSPP M x NPT F Adapter with ED Seal



Page 6

**MFAE-N**

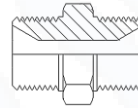
NPT M x NPT F Adapter



Page 7

**MHN-G / MHRN-G**

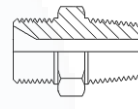
BSPP Adapter



Page 8 - 9

**MHN-G-N / MHRN-G-N**

BSPP x NPT Adapter



Page 10 - 11

**VSTI-GED**

Plug with ED Ring (Allan Key Head)



Page 12

## Ordering Information

### Pipe Size Designator

Pipe Nominal Size							
1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"
01	02	03	04	06	08	10	12

### Pipe Thread Designator

Designator	Symbol	Thread	Standard
N	NPT	Tapered	ANSI/ASME B1.20.1
R	BSPT, PT	Tapered	ISO 7-1, DIN 2299, BS21(BSPT), JIS B0203(PT)
G	BSPP, PF	Parallel	ISO 228-1, DIN 259, BS 2779(BSPP), JIS B0202(PF)

### Material of Construction

Material	Material Designator	Bar Stock	Forgings
Stainless Steel 316	SS	ASTM A479 Type 316 ASTM A276 Type 316	ASTM A182 F316
Carbon Steel	C	ASTM A108 JIS G4051 S20C-S45C	ASTM A105 JIS G3201 SF440A
Brass	B	ASTM B16 C36000 JIS H3250 C3604	ASTM B283 C37700 JIS H3250 C3771

Example:

For 1/4"BSPP x 3/8"NPT Male x Female carbon Steel Adapter the part number will be MFAE-04G-06N-C

## Temperature Ratings

Adapters with O-ring or gasket may be limited in temperature ratings.

### Adapter Materials

Adapter Material	Maximum Temperature °C (°F)
Stainless Steel 316	537 (1000)
Carbon Steel	204 (400)
Brass	190 (375)

### O-Ring and Gasket Materials

Components	Material	Temperature °C (°F)	
		Min	Max
SAE O-rings	FKM	-28 (-20)	204 (400)
Bonded Seal Gasket	NBR	-25 (-13)	110 (230)
	FKM	-15 (5)	204 (400)
Copper Gasket	COPPER	-198 (-325)	204 (400)

## Temperature De-rating Factor

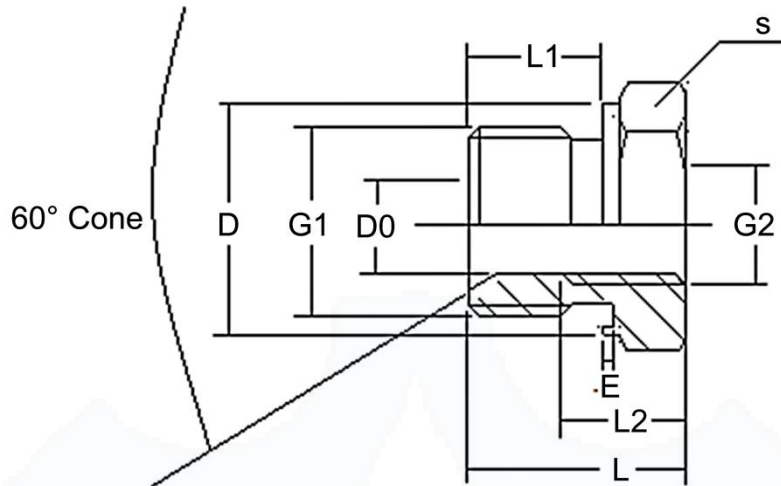
The de-rating factors for the allowable working pressure at a specific temperature are as per the requirements of ASME B31.3 process piping code.

Temperature	°C	38	93	149	204	260	316	371	427	482	537
	°F	100	200	300	400	500	600	700	800	900	1000
De-rating Factors	Stainless Steel 316	1.00	1.00	1.00	0.96	0.90	0.85	0.82	0.79	0.78	0.76
	Carbon Steel	1.00	0.94	0.90	0.86	-	-	-	-	-	-
	Brass	1.00	0.78	0.69	0.13	-	-	-	-	-	-

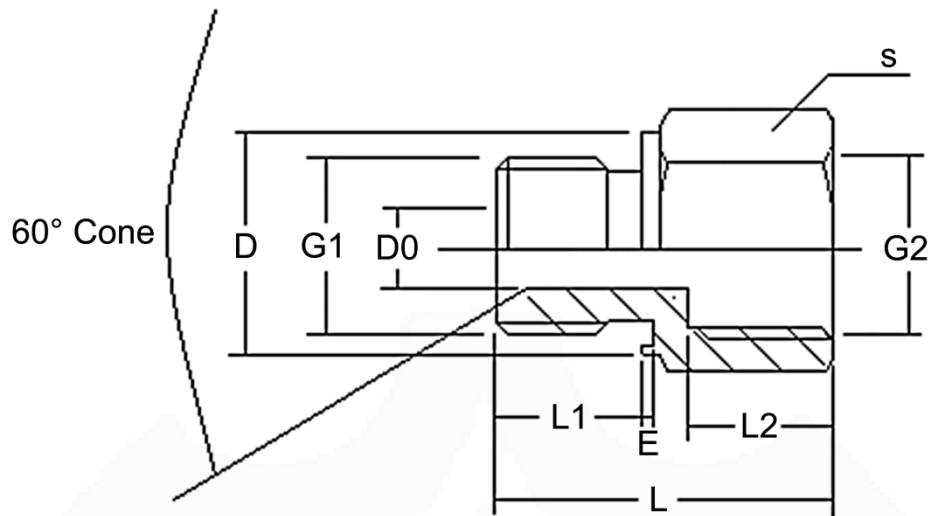
Example: A SS316 adapter of 6000 psig working pressure at 316°C (600°F),  
 6000 psig x 0.85 (factor) = 5100 psig

## Pressure Ratings

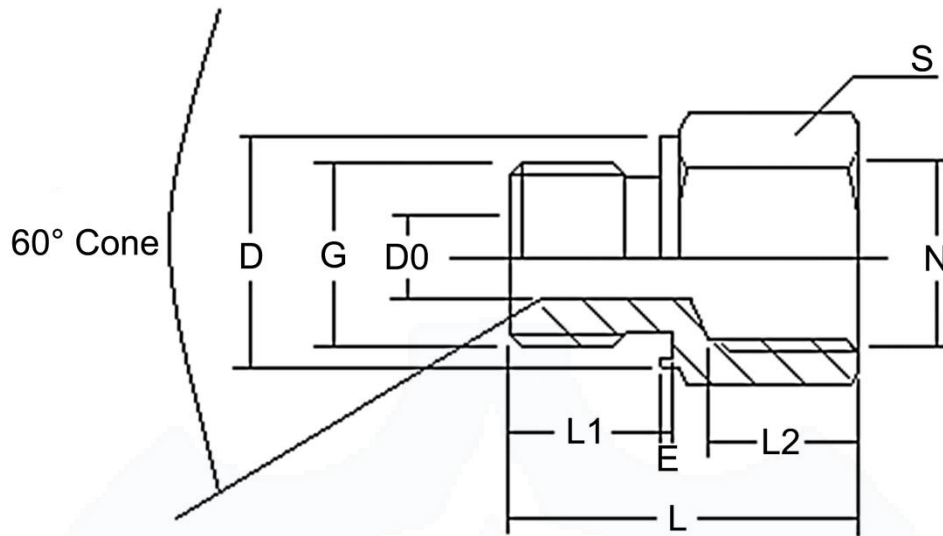
Pressure ratings for each adapter table are at ambient temperature of 37°C (100°F). The pressure ratings of adapters are as per the requirements of ASME B31.3 process piping guide.

**BSPP M x BSPP F ADAPTER WITH ED SEAL (MFAD-GE)**


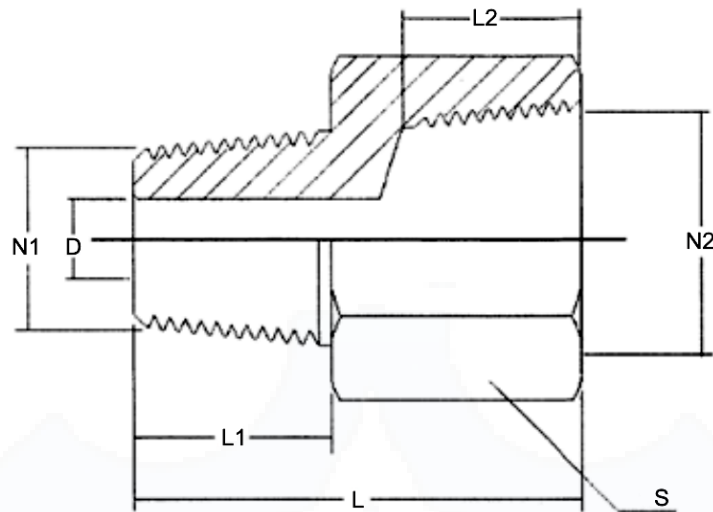
Part No.	S	D	D0	L	L1	L2	Male	Female	E	PN (BAR)
							Stud- G1	Stud- G2		
							G(PF)	G(PF)		
MFAD-06ED-02G	22	21.6	8	22	12	12	3/8"	1/8"	1.0	420
MFAD-08ED-04G	27	26.6	11	24	14	16	1/2"	1/4"	1.0	420
MFAD-12ED-02G	32	31.3	8	26	16	12	3/4"	1/8"	1.0	420
MFAD-12ED-04G	32	31.6	11	26	16	16	3/4"	1/4"	1.0	420
MFAD-12ED-06G	32	31.6	14	26	16	16	3/4"	3/8"	1.0	420
MFAD-16ED-04G	41	40.0	11	29	18	16	1"	1/4"	1.4	420
MFAD-16ED-06G	41	40.0	14	29	18	16	1"	3/8"	1.4	420
MFAD-16ED-08G	41	40.0	18	29	18	18	1"	1/2"	1.4	420
MFAD-20ED-04G	50	49.6	11	32	20	16	1 1/4"	1/4"	1.4	420
MFAD-20ED-06G	50	49.6	14	32	20	16	1 1/4"	3/8"	1.4	420
MFAD-20ED-08G	50	49.6	18	32	20	18	1 1/4"	1/2"	1.4	420
MFAD-20ED-12G	50	49.6	24	32	20	20	1 1/4"	3/4"	1.4	420
MFAD-24ED-04G	55	54.6	11	36	22	16	1 1/2"	1/4"	1.4	420
MFAD-24ED-06G	55	54.6	14	36	22	16	1 1/2"	3/8"	1.4	420
MFAD-24ED-08G	55	54.6	18	36	22	18	1 1/2"	1/2"	1.4	420
MFAD-24ED-12G	55	54.6	24	36	22	20	1 1/2"	3/4"	1.4	420
MFAD-24ED-16G	55	54.6	30	36	22	22	1 1/2"	1"	1.4	420

**BSPP M x BSPP F ADAPTER WITH ED SEAL (MFAE-GE)**


Part No.	S	D	D0	L	L1	L2	Male	Female	E	PN (BAR)
							Stud- G1	Stud- G2		
							G(PF)	G(PF)		
MFAE-02ED-04G	19	14.0	4	31	8	17	1/8"	1/4"	1.0	420
MFAE-02ED-06G	24	14.0	4	32	8	17	1/8"	3/8"	1.0	420
MFAE-04ED-02G	19	18.6	5	29	12	12	1/4"	1/8"	1.0	420
MFAE-04ED-06G	24	18.6	5	34	12	16	1/4"	3/8"	1.0	420
MFAE-04ED-08G	30	18.6	5	37	12	18	1/4"	1/2"	1.0	420
MFAE-04ED-12G	36	18.6	5	40	12	20	1/4"	3/4"	1.0	420
MFAE-06ED-04G	22	21.6	8	34	12	16	3/8"	1/4"	1.0	420
MFAE-06ED-08G	30	21.6	8	37	12	18	3/8"	1/2"	1.0	420
MFAE-06ED-16G	41	21.6	8	42	12	22	3/8"	1"	1.0	420
MFAE-08ED-06G	27	26.6	12	37	14	16	1/2"	3/8"	1.0	420
MFAE-08ED-12G	36	26.6	12	40	14	20	1/2"	3/4"	1.0	420
MFAE-08ED-16G	41	26.6	12	45	14	22	1/2"	1"	1.0	420
MFAE-08ED-20G	55	26.6	12	47	14	24	1/2"	1 1/4"	1.0	420
MFAE-12ED-08G	32	31.6	16	42	16	18	3/4"	1/2"	1.0	420
MFAE-12ED-16G	41	31.6	16	47	16	22	3/4"	1"	1.0	420
MFAE-12ED-20G	55	31.6	16	50	16	24	3/4"	1 1/4"	1.0	420
MFAE-12ED-24G	60	31.6	16	52	16	26	3/4"	1 1/2"	1.0	420
MFAE-16ED-12G	41	40.0	20	48	18	20	1"	3/4"	1.4	420
MFAE-16ED-20G	55	40.0	20	52	18	24	1"	1 1/4"	1.4	420
MFAE-16ED-24G	60	40.0	20	54	18	26	1"	1 1/2"	1.4	420
MFAE-20ED-16G	50	49.6	25	52	20	22	1 1/4"	1"	1.4	420
MFAE-24ED-20G	55	54.6	32	56	22	24	1 1/2 "	1 1/4"	1.4	420

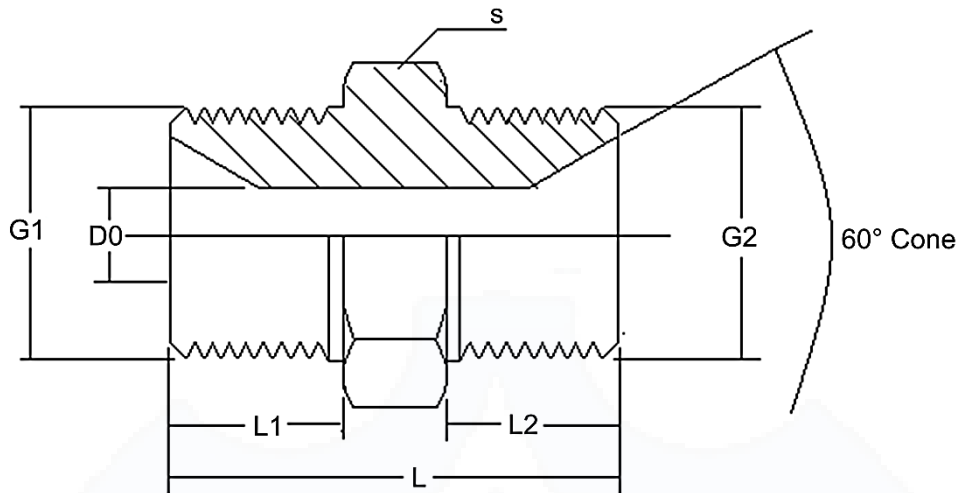
**BSPP M x NPT F ADAPTER WITH ED SEAL (MFAE-GE-N)**


Part No.	S	D	D0	L	L1	L2	Male	Female	E	PN (BAR)
							Stud-G1	Stud-R		
							G(PF)	N(NPT)		
MFAE-04GE-04N	19	18.6	5	33	12	14	1/4"	1/4"	1.0	420
MFAE-04GE-06N	24	18.6	5	34	12	15	1/4"	3/8"	1.0	420
MFAE-04GE-08N	30	18.6	5	38	12	18	1/4"	1/2"	1.0	420
MFAE-04GE-12N	36	18.6	5	40	12	19	1/4"	3/4"	1.0	420
MFAE-04GE-16N	41	18.6	5	45	12	23	1/4"	1"	1.0	420
MFAE-06GE-04N	22	21.6	8	33	12	14	3/8"	1/4"	1.0	420
MFAE-06GE-06N	24	21.6	8	34	12	15	3/8"	3/8"	1.0	420
MFAE-06GE-08N	30	21.6	8	38	12	18	3/8"	1/2"	1.0	420
MFAE-06GE-12N	30	21.6	8	40	12	19	3/8"	3/4"	1.0	420
MFAE-06GE-16N	41	21.6	8	45	12	23	3/8"	1"	1.0	420
MFAE-08GE-08N	30	26.6	12	39	14	17	1/2"	1/2"	1.0	420
MFAE-08GE-12N	36	26.6	12	42	14	19	1/2"	3/4"	1.0	420
MFAE-08GE-16N	41	26.6	12	46	14	23	1/2"	1"	1.0	420
MFAE-08GE-20N	55	26.6	12	50	14	25	1/2"	1 1/4"	1.0	420
MFAE-08GE-24N	60	26.6	12	50	14	25	1/2"	1 1/2"	1.0	420
MFAE-12GE-12N	36	31.6	16	43	16	19	3/4"	3/4"	1.0	420
MFAE-12GE-16N	41	31.6	16	49	16	23	3/4"	1"	1.0	420
MFAE-12GE-20N	55	31.6	16	52	16	25	3/4"	1 1/4"	1.0	420
MFAE-12GE-24N	60	31.6	16	52	16	25	3/4"	1 1/2"	1.0	420
MFAE-16GE-16N	41	40	20	52	18	23	1"	1"	1.4	420
MFAE-16GE-20N	55	40.0	20	54	18	25	1"	1 1/4"	1.4	420
MFAE-16GE-24N	60	40	20	54	18	25	1"	1 1/2"	1.4	420
MFAE-20GE-20N	55	49.6	25	56	20	25	1 1/4"	1 1/4"	1.4	420
MFAE-20GE-24N	60	49.6	25	56	20	25	1 1/4"	1 1/2"	1.4	420
MFAE-24GE-24N	60	54.6	32	58	22	25	1 1/2"	1 1/2"	1.4	420

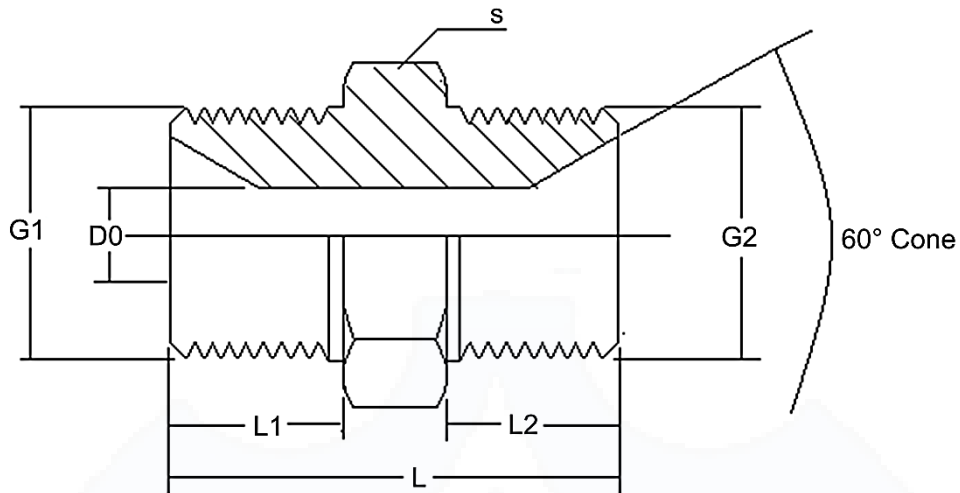
**NPT M x NPT F ADAPTER (MFAE-N)**


Part No.	S	D	L	L1	L2	Male	Female	PN (BAR)
						Stud-N1	Stud-N2	
						N(NPT)	N(NPT)	
MFAE-02-02N	15	5	25	10	10	1/8"	1/8"	420
MFAE-02-04N	19	5	31	10	14	1/8"	1/4"	420
MFAE-02-06N	22	5	32	10	15	1/8"	3/8"	420
MFAE-02-08N	27	5	38	10	18	1/8"	1/2"	420
MFAE-04-04N	19	7	34	14	14	1/4"	1/4"	420
MFAE-04-06N	22	7	37	14	15	1/4"	3/8"	420
MFAE-04-08N	27	7	43	14	18	1/4"	1/2"	420
MFAE-06-06N	22	9	36	15	15	3/8"	3/8"	420
MFAE-06-08N	27	9	43	15	18	3/8"	1/2"	420
MFAE-06-12N	36	9	49	15	19	3/8"	3/4"	420
MFAE-08-08N	27	13	43	18	18	1/2"	1/2"	420
MFAE-08-12N	36	13	49	18	19	1/2"	3/4"	420
MFAE-08-16N	41	13	56	18	23	1/2"	1"	420
MFAE-12-12N	36	18	49	19	19	3/4"	3/4"	420
MFAE-12-16N	41	18	56	19	23	3/4"	1"	420
MFAE-16-16N	41	23	60	23	23	1"	1"	420
MFAE-16-20N	50	23	63	23	25	1"	1 1/4"	420
MFAE-16-24N	60	23	63	23	25	1"	1 1/2"	420

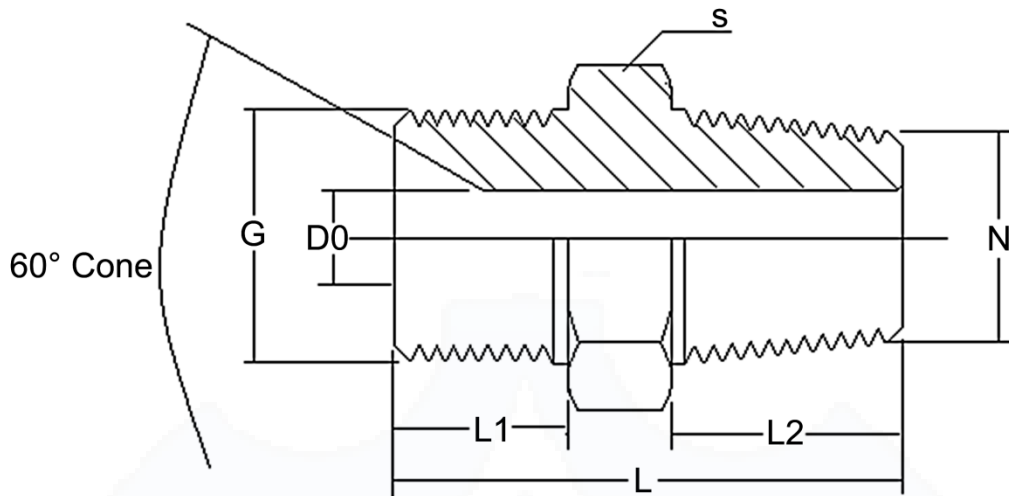


**BSPP ADAPTER (MHN-G)**


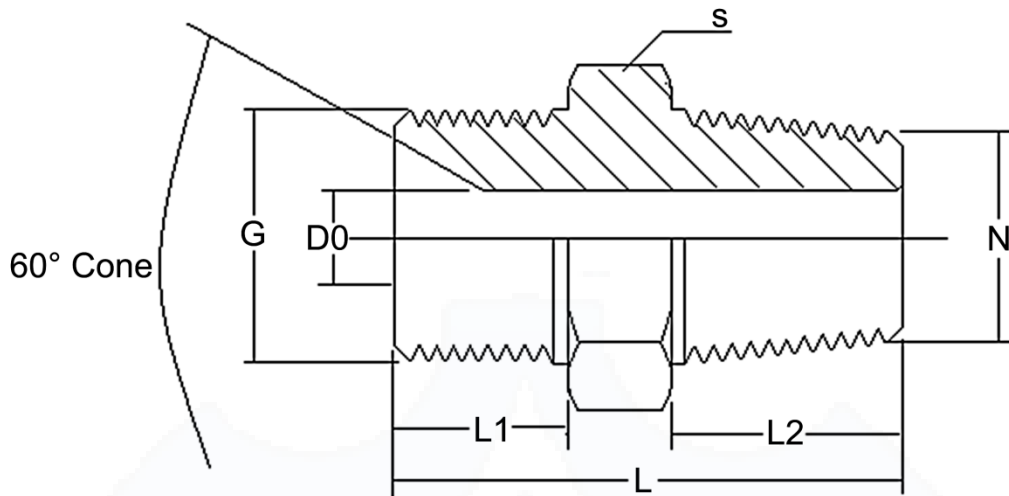
Part No.	S	D0	L	L1	L2	Male	Male	PN (BAR)
						Stud-G1	Stud-G2	
						G(PF)	G(PF)	
MHN-4G	19	5.5	30	11	11	1/4"	1/4"	420
MHN-6G	22	8	35	12	12	3/8"	3/8"	420
MHN-8G	27	12	41	14	14	1/2"	1/2"	420
MHN-12G	32	16	47	16	16	3/4"	3/4"	420
MHN-16G	41	22	52	18	18	1"	1"	420
MHN-20G	50	28	58	20	20	1 1/4"	1 1/4"	420
MHN-24G	55	34	66	23	23	1 1/2"	1 1/2"	420
MHN-32G	70	44	74	25	25	2"	2"	420
MHRN-4G-2G	19	4	28	12	8	1/4"	1/8"	420
MHRN-6G-2G	22	4	30	12	8	3/8"	1/8"	420
MHRN-6G-4G	22	6	34	12	12	3/8"	1/4"	420
MHRN-8G-2G	27	4	37	14	8	1/2"	1/8"	420
MHRN-8G-4G	27	6	39	14	12	1/2"	1/4"	420
MHRN-8G-6G	27	8	39	14	12	1/2"	3/8"	420
MHRN-10G-8G	30	12	41	18	14	5/8"	1/2"	420
MHRN-12G-2G	32	4	39	16	8	3/4"	1/8"	420
MHRN-12G-4G	32	6	43	16	12	3/4"	1/4"	420
MHRN-12G-6G	32	8	43	16	12	3/4"	3/8"	420
MHRN-12G-8G	32	12	45	16	14	3/4"	1/2"	420

**BSPP ADAPTER (MHRN-G)**


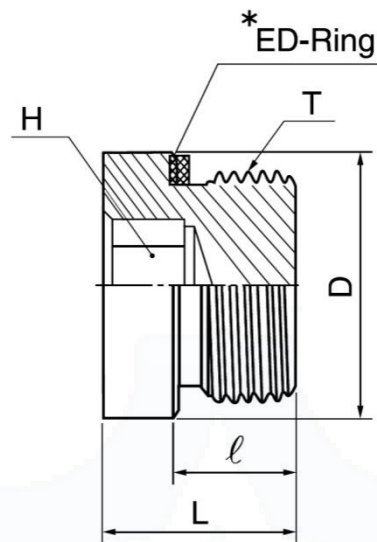
Part No.	S	D0	L	L1	L2	Male	Male	PN (BAR)
						Stud-G1	Stud-G2	
						G(PF)	G(PF)	
MHRN-16G-4G	41	6	46	18	12	1"	1/4"	420
MHRN-16G-6G	41	8	46	18	12	1"	3/8"	420
MHRN-16G-8G	41	12	48	18	14	1"	1/2"	420
MHRN-16G-12G	41	16	50	18	16	1"	3/4"	420
MHRN-20G-6G	50	8	50	20	12	1 1/4"	3/8"	420
MHRN-20G-8G	50	12	52	20	14	1 1/4"	1/2"	420
MHRN-20G-12G	50	16	54	20	16	1 1/4"	3/4"	420
MHRN-20G-16G	50	22	56	20	18	1 1/4"	1"	420
MHRN-24G-6G	55	8	54	22	12	1 1/2"	3/8"	420
MHRN-24G-8G	55	12	56	22	14	1 1/2"	1/2"	420
MHRN-24G-12G	55	16	58	22	16	1 1/2"	3/4"	420
MHRN-24G-16G	55	22	60	22	18	1 1/2"	1"	420
MHRN-24G-20G	55	28	62	22	20	1 1/2"	1 1/4"	420
MHRN-32G-6G	70	8	61	25	12	2"	3/8"	420
MHRN-32G-8G	70	12	63	25	14	2"	1/2"	420
MHRN-32G-12G	70	16	65	25	16	2"	3/4"	420
MHRN-32G-16G	70	22	67	25	18	2"	1"	420
MHRN-32G-20G	70	28	69	25	20	2"	1 1/4"	420
MHRN-32G-24G	70	34	71	25	22	2"	1 1/2"	420

**BSPP x NPT ADAPTER (MHN-G-N)**


Part No.	S	D0	L	L1	L2	Male	Male	PN (BAR)
						Stud-G	Stud-N	
						G(PF)	N(NPT)	
MHN-4G-4N	19	5	33	12	14	1/4"	1/4"	420
MHN-6G-6N	22	8	34	12	15	3/8"	3/8"	420
MHN-8G-8N	27	12	42	14	18	1/2"	1/2"	420
MHN-12G-12N	32	16	45	16	19	3/4"	3/4"	420
MHN-16G-16N	41	22	53	18	23	1"	1"	420
MHN-20G-20N	50	28	59	20	25	1 1/4"	1 1/4"	420
MHN-24G-24N	55	32	62	22	25	1 1/2"	1 1/2"	420
MHN-32G-32N	69	46	72	25	27	2"	2"	420
MHRN-4G-2N	19	4	29	12	10	1/4"	1/8"	420
MHRN-4G-6N	19	5	34	12	15	1/4"	3/8"	420
MHRN-4G-8N	22	5	38	12	18	1/4"	1/2"	420
MHRN-4G-12N	27	5	41	12	19	1/4"	3/4"	420
MHRN-6G-2N	22	4	29	12	10	3/8"	1/8"	420
MHRN-6G-4N	22	5	33	12	14	3/8"	1/4"	420
MHRN-6G-8N	22	8	38	12	18	3/8"	1/2"	420
MHRN-6G-12N	27	8	41	12	19	3/8"	3/4"	420

**BSPP x NPT ADAPTER (MHRN-G-N)**


Part No.	S	D0	L	L1	L2	Male	Male	PN (BAR)
						Stud-G	Stud-N	
						G(PF)	N(NPT)	
MHRN-8G-4N	27	5	37	14	14	1/2"	1/4"	420
MHRN-8G-6N	27	8	38	14	15	1/2"	3/8"	420
MHRN-8G-12N	27	12	43	14	19	1/2"	3/4"	420
MHRN-8G-16N	36	12	48	14	23	1/2"	1"	420
MHRN-12G-8N	32	12	44	16	18	3/4"	1/2"	420
MHRN-12G-16N	36	16	50	16	23	3/4"	1"	420
MHRN-16G-8N	41	12	48	18	18	1"	1/2"	420
MHRN-16G-12N	41	16	49	18	19	1"	3/4"	420
MHRN-16G-20N	46	22	57	18	25	1"	1 1/4"	420
MHRN-20G-8N	50	12	52	20	18	1 1/4"	1/2"	420
MHRN-20G-12N	50	16	53	20	19	1 1/4"	3/4"	420
MHRN-20G-16N	50	22	57	20	23	1 1/4"	1"	420
MHRN-24G-16N	55	22	60	22	23	1 1/2"	1"	420
MHRN-24G-20N	55	28	62	22	25	1 1/2"	1 1/4"	420

**Plug with ED Ring (Allan Key Head) (VSTI-GED)**


Part No.		T	T	D	H	L	ℓ	PN, bar	
GE	ME	G(PF)	M(Metric)					C	SS
VSTI-02GED	VSTI-M10ED	1/8"	M10 x 1.0	14.0	5	12.0	8	400	400
-	VSTI-M12ED	-	M12 x 1.5	17.0	6	17.0	12	400	400
VSTI-04GED	VSTI-M14ED	1/4"	M14 x 1.5	19.0	6	17.0	12	400	400
VSTI-06GED	VSTI-M16ED	3/8"	M16 x 1.5	22.0	8	17.0	12	400	400
-	VSTI-M18ED	-	M18 x 1.5	23.9.0	8	17.0	12	400	400
-	VSTI-M20ED	-	M20 x 1.5	25.9	10	19.0	14	400	400
VSTI-08GED	VSTI-M22ED	1/2"	M22 x 1.2	27.0	10	19.0	14	400	400
-	VSTI-M26ED	-	M26 x 1.5	31.9	12	21.0	16	400	400
VSTI-12GED	VSTI-M27ED	3/4"	M27 x 2.0	32.0	12	21.0	16	400	400
VSTI-16GED	VSTI-M33ED	1"	M33 x 2.0	39.9	17	22.5	16	400	400
VSTI-20GED	VSTI-M42ED	1 1/4"	M42 x 2.0	49.9	22	22.5	16	315	315
VSTI-24GED	VSTI-M48ED	1 1/2"	M48 x 2.0	55.0	24	22.5	16	315	315

## **RFS Hydraulics**

### **Conditions of Use of Catalogue:**

The information in the catalogue are not binding and in order to improve distribution, RFS Hydraulics Sdn Bhd reserves the right to make any change including size and pressure ratings considered necessary at any time and without prior notice. According to the copyright and the civil law, any reproduction (also partial) of figures and texts of this catalogue by means of electronic, mechanical, photocopies, microfilms, recordings or other is forbidden without RFS Hydraulics Sdn Bhd's authorization.  
Catalogue Version: 2020