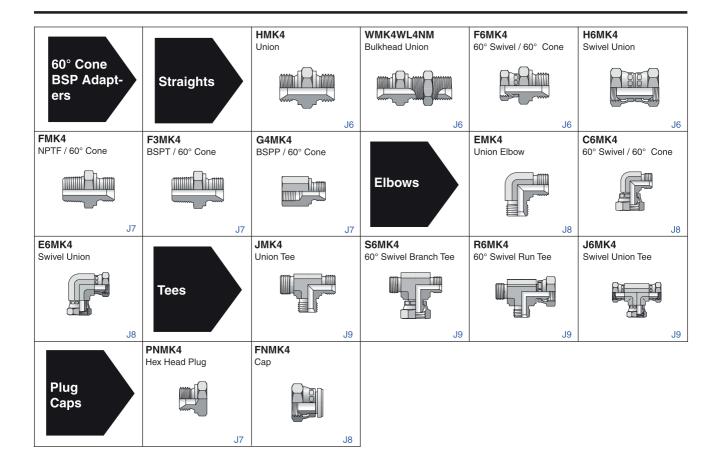




Special K4 BSP Adapters





Conversion Adapters (Shown in Section L)



O-Rings and Seals (Shown in Section O)





Introduction

Parker introduced K4 (BSP) adapters in the late 1990s to address market requirements for OEM and replacement BSP adapters. These fittings are typically used as hose adapters on equipment designed and/or manufactured throughout Europe, especially equipment with ties to the UK, Scandinavia, the Netherlands, Spain and Italy. BSP cone adapters are similar in function to NPSM (07 Adapters) but with BSPP threads.

The metal-to-metal sealing is achieved by a single line of contact between the conical surface of the 60° cone seat and the corresponding surface of the ballnose or cone swivel, as shown in Fig. J1.

K4 adapters are manufactured in accordance with BS5200 standards. The 60° internal seat is designed for sealing with BSP hose swivel connections offered by many manufacturers. K4 adapters mate with Parker hose fitting series shown in Table J1.

Further enhancing the flexibility of the K4 adapter product line is the ability for the male BSP cone end of the straight fittings to also be used as a port adapter in ISO 1179-1 / DIN 3852 ports. This is accomplished with the addition of a bonded seal (often referred to as a "Dowty" seal). This product feature is illustrated in Fig. J2.

It should be noted that Parker offers two very similar cone style BSPP adapters — P4 and K4. Parker's K4 (60° cone, BSPP) fittings conform to BS5200, while P4 adapters conforms to JIS B8363 specification. *K4 Adapters, while very similar to JIS P4 cone style fittings, are not interchangeable.* See the next page for more information regarding the interchangeability of JIS and BS fittings.

Design and Construction

Construction: Shaped K4 adapters are manufactured from a hot forged construction. Straight adapters are manufactured from cold drawn barstock.

Threads: The standard K4 products are manufactured with the thread forms listed below:

BSPP Threads: ISO 228-1 G BSPT Threads: ISO 7/1, JIS B 0203

NPTF Threads: SAE J476, ANSI B1.20.3, FED-STD-H28/8

Fig. J1 - K4 Interface

Adapter	Mating Parker Hose					
Connection End	Fitting Series					
K4 / K46	D9/92, B1, B2, B4					

Table J1 – Parker K4 Fittings Hose Adaptability

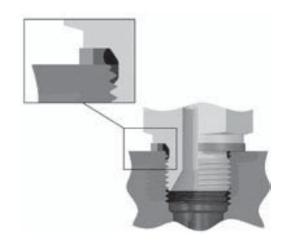


Fig. J2 – K4 End Used as a BSPP Port Adapter (in ISO 1179/ DIN 3852, Part 2 Port)

Assembly and Installation

Please refer to Section T for the assembly and installation instructions for K4 fittings.

Materials Specifications

K4 adapters are manufactured using state-of-the-art equipment and manufacturing technologies to assure construction integrity, highest strength, long service life and the highest quality. These materials are shown in Table J2.

Upon request, K4 fittings can be furnished in materials other than Parker's standard steel offering.

K4 BSP	Steel			
Adapters	ASTM	Туре		
Forged Bodies	A576	1214/1215		
Bar Stock Bodies	A108	12L14		

Table J2 – Standard Material Specifications for K4 Adapters



60° Cone Adapters: JIS vs. BS5200

Parker's P4 JIS 60° cone adapters are manufactured in accordance to JIS B8363 while Parker's K4 BSP adapters are manufactured in accordance to BS5200. The following are some pronounced differences that may help in distinguishing between the K4 and P4 fittings:

- 1. Thread length ("A" dimensions)
- 2. 60° angle diameter ("B" dimensions)
- The undercut area (area between threads and hex body) on the straight K4 fittings incorporates a bonded seal "locating pilot" for bonded seal
- Parker's JIS fittings are stamped with "JIS" on the forging body or hex of fitting

See Figs. J3 and J4 for details and see Tables J3 and J4 below for specific dimensional differences.

Size	BSPP Thread	M	A	В
2	1/8-28	0.38	0.418	0.276
4	1/4-19	0.51	0.570	0.394
6	3/8-19	0.65	0.609	0.531
8	1/2-14	0.82	0.726	0.650
12	3/4-14	1.04	0.805	0.866
16	1-11	1.30	0.883	1.102
20	1 1/4-11	1.64	0.945	1.417
24	1 1/2-11	1.87	0.962	1.654
32	2-11	2.34	1.102	2.126

Table J3 - Dimensions of JIS B8363 60° Cone Connection

Size	BSPP Thread	M	A	В
2	1/8-28	0.38	0.315	0.295
4	1/4-19	0.51	0.433	0.409
6	3/8-19	0.65	0.472	0.551
8	1/2-14	0.82	0.551	0.689
10	5/8-14	0.90	0.630	0.760
12	3/4-14	1.04	0.630	0.902
16	1-11	1.30	0.748	1.130
20	1 1/4-11	1.64	0.787	1.449
24	1 1/2-11	1.87	0.866	1.681
32	2-11	2.34	0.984	2.150

Table J4 - Dimensions of BS B5200 60° Cone Connection

While the 60° cone versions of JIS and K4 fittings utilize the same BSPP threads and seat angle, not all dimensions are consistent. Therefore, they cannot be interchanged because the differences can cause leakage problems. An example of this is illustrated in Fig. J5.

In summary, interchanging components between JIS and K4 adapters can, in some cases, lead to leakage problems and thus is not a recommended practice. The combination of matching proper components will create an effective seal as illustrated in Fig J6.

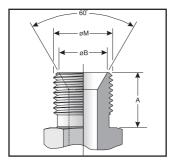


Fig. J3 – JIS B8363 60° Cone Connection (P4)

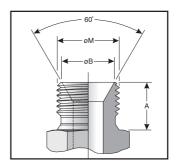


Fig. J4 – BS B5200 60° Cone Connection (K4)

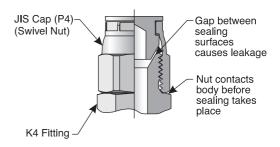


Fig. J5 – Illustration Showing Potential Leakage Problem When Mixing JIS and K4 Components

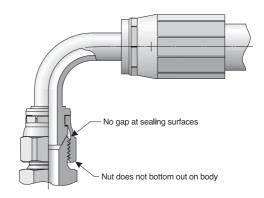
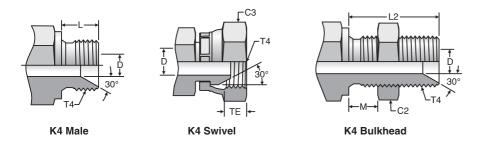


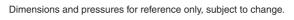
Fig. J6 – An Effective Seal Created with the Proper Combination of Components



K4 BSP Ends



	BSPP Thread	Bulkhead Nut Hex	Swivel Hex	Drill	Male Turn Back	Bulkhead Length	Max Bulkhead Thickness	Assembly Allowance
Dash Size	T4 BSPP	C2 (mm)	C3 (mm)	D (mm)	L (mm)	L2 (mm)	M (mm)	TE (mm)
2	1/8-28	_	14	3.5	8	_	_	_
4	1/4-19	19	19	4.7	11	28	9.5	7.3
6	3/8-19	22	22	7.9	12	32	12.5	8.4
8	1/2-14	27	27	11.1	14	35	12.3	9.3
10	5/8-14	30	30	14.3	16	35	10.7	_
12	3/4-14	36	32	16.7	16	38	13.3	11.3
16	1-11	41	41	22.2	19	41	10.0	13.6
20	1 1/4-11	50	50	28.6	20	44	12.0	_
24	1 1/2-11	55	60	33.3	22	48	14.0	
32	2-11	_	_	46.0	25	_	_	_





HMK4

Union 60° Cone / 60° Cone

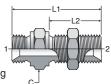
Mates with 92, B1, B2 and B4 style hose fitting



WMK4WL4NM

Bulkhead Union 60° Cone / 60° Cone

Mates with 92, B1, B2 and B4 style hose fitting



TUBE FITTING PART #	END SIZE 1 & 2 BSPP	C HEX (mm)	L1 (mm)	L2 (mm)	STANDARD Dynamic Pressure (x 1,000 PSI) S
4WMK4WL4NM	1/4	19	46.8	28	5.1
6WMK4WL4NM	3/8	22	52.5	32	5.1
8WMK4WL4NM	1/2	27	59.0	35	2.9
10WMK4WL4NM	5/8	30	61.5	35	2.9
12WMK4WL4NM	3/4	32	64.5	38	2.9
16WMK4WL4NM	1	41	71.2	41	1.7
20WMK4WL4NM	1 1/4	50	82.7	44	1.5
24WMK4WL4NM	1 1/2	55	90.7	48	

Includes Bulkhead nut.

TUBE	END SIZE		С		STANDARD Dynamic Pressure
FITTING	1	2	HEX	L	(x 1,000 PSI)
PART #	BSPP	BSPP	(mm)	(mm)	S
2HMK4	1/8	1/8	14	23.5	5.1
4-2HMK4	1/4	1/8	19	28.0	5.1
4HMK4	1/4	1/4	19	31.5	5.1
6-4HMK4	3/8	1/4	22	33.2	5.1
6HMK4	3/8	3/8	22	34.7	2.9
8-4HMK4	1/2	1/4	27	36.7	2.9
8-6HMK4	1/2	3/8	27	38.2	2.9
8HMK4	1/2	1/2	27	40.7	2.9
10-8HMK4	5/8	1/2	30	43.2	2.9
10HMK4	5/8	5/8	30	45.2	2.9
12-4HMK4	3/4	1/4	32	39.2	2.9
12-6HMK4	3/4	3/8	32	40.7	2.9
12-8HMK4	3/4	1/2	32	43.2	2.9
12-10HMK4	3/4	5/8	32	45.2	2.9
12HMK4	3/4	3/4	32	45.2	2.9
16-8HMK4	1	1/2	41	46.9	1.7
16-10HMK4	1	5/8	41	48.9	1.7
16-12HMK4	1	3/4	41	48.9	1.7
16HMK4	1	1	41	51.9	1.7
20-12HMK4	1 1/4	3/4	50	57.4	1.5
20-16HMK4	1 1/4	1	50	60.4	1.5
20HMK4	1 1/4	1 1/4	50	61.4	1.5
24-16HMK4	1 1/2	1	55	64.4	1.5
24-20HMK4	1 1/2	1 1/4	55	65.4	1.5
24HMK4	1 1/2	1 1/2	55	67.4	1.5
32-24HMK4	2	1 1/2	70	72.9	1
32HMK4	2	2	70	76.4	1

F6MK4

Swivel Nut Connector 60° Swivel / 60° Cone

Mates with D9/92, B1, B2 and B4 style hose fitting



H6MK4

Swivel Nut Union 60° Swivel / 60° Swivel

Mates with D9 style hose fitting



TUBE	END	С		STANDARD Dynamic Pressure	
FITTING	1	2	HEX	L	(x 1,000 PSI)
PART #	BSPP	BSPP	(mm)	(mm)	S
4-4F6MK4	1/4	1/4	19	36.6	5.1
4-6F6MK4	1/4	3/8	22	38.5	5.1
4-8F6MK4	1/4	1/2	27	42.0	2.9
6-4F6MK4	3/8	1/4	22	38.3	5.1
6-6F6MK4	3/8	3/8	22	40.0	5.1
6-8F6MK4	3/8	1/2	27	43.6	2.9
8-6F6MK4	1/2	3/8	27	43.5	2.9
8-8F6MK4	1/2	1/2	27	46.1	
8-12F6MK4	1/2	3/4	32	48.0	2.9
12-8F6MK4	3/4	1/2	32	48.6	
12-12F6MK4	3/4	3/4	32	50.0	2.9
12-16F6MK4	3/4	1	41	54.3	1.7
16-16F6MK4	1	1	41	57.3	1.7

TUBE	END	SIZE		STANDARD Dynamic Pressure (x 1,000 PSI)
FITTING PART #	BSPP	2 BSPP	L (mm)	S
4H6MK4	1/4	1/4	37.0	5.1
6-4H6MK4	3/8	1/4	38.6	5.1
6H6MK4	3/8	3/8	40.5	5.1
8-4H6MK4	1/2	1/4	41.5	2.9
8-6H6MK4	1/2	3/8	42.9	2.9
8H6MK4	1/2	1/2	45.8	2.9
10H6MK4	5/8	5/8	47.5	2.9
12-8H6MK4	3/4	1/2	48.2	2.9
12H6MK4	3/4	3/4	49.5	2.9
16H6MK4	1	1	57.5	1.7
20H6MK4	1 1/4	1 1/4	66.0	1.5
24H6MK4	1 1/2	1 1/2	70.0	1.5



FMK4

NPTF Male Connector 60° Cone / NPT

Mates with 92, B1, B2 and B4 style hose fitting



F3MK4

BSPT Male Connector 60° Cone / BSPT

Mates with 92, B1, B2 and B4 style hose fitting



TUBE	END SIZE		С		STANDARD Dynamic Pressure
FITTING	1	2	HEX		(x 1,000 PSI)
PART #	BSPP	NPTF	(mm)	(mm)	s
2FMK4	1/8	1/8	14	24.4	5.1
2-4FMK4	1/8	1/4	19	28.9	5.1
4FMK4	1/4	1/8	19	28.9	5.1
4-4FMK4	1/4	1/4	19	33.4	5.1
4-6FMK4	1/4	3/8	19	33.6	5.1
6FMK4	3/8	1/4	22	35.1	5.1
6-6FMK4	3/8	3/8	22	35.1	5.1
6-8FMK4	3/8	1/2	22	39.9	5.1
8FMK4	1/2	3/8	27	38.6	2.9
8-8FMK4	1/2	1/2	27	43.4	2.9
8-12FMK4	1/2	3/4	27	43.9	2.9
12-8FMK4	3/4	1/2	32	45.9	2.9
12FMK4	3/4	3/4	32	45.9	2.9
12-16FMK4	3/4	1	36	50.8	2.9
16-12FMK4	1	3/4	41	49.6	1.7
16FMK4	1	1	41	54.5	1.7

TUBE	END	С		STANDARD Dynamic Pressure	
FITTING	1	2	HEX	L	(x 1,000 PSI)
PART #	BSPP	BSPT	(mm)	(mm)	s
2F3MK4	1/8	1/8	14	24.4	5.1
2-4F3MK4	1/8	1/4	14	28.9	5.1
4F3MK4	1/4	1/8	19	28.9	5.1
4-4F3MK4	1/4	1/4	19	33.4	5.1
4-6F3MK4	1/4	3/8	19	33.4	5.1
6F3MK4	3/8	1/4	22	35.1	5.1
6-6F3MK4	3/8	3/8	22	35.1	5.1
6-8F3MK4	3/8	1/2	22	39.9	2.9
8F3MK4	1/2	3/8	27	38.6	5.1
8-8F3MK4	1/2	1/2	22	43.4	2.9
10F3MK4	5/8	1/2	27	45.9	2.9
10-12F3MK4	5/8	3/4	30	45.9	2.9
12F3MK4	3/4	3/4	30	45.9	2.9
12-8F3MK4	3/4	1/2	32	46.0	1.7
12-16F3MK4	3/4	1	36	50.8	1.7
16F3MK4	1	1	41	54.5	1.7
16-12F3MK4	1	3/4	41	49.6	1.7
20F3MK4	1 1/4	1 1/4	50	63.7	1.5
24F3MK4	1 1/2	1 1/2	55	68.5	

G4MK4

BSPP Female Connector 60° Cone / BSPP

Mates with 92, B1, B2 and B4 style hose fitting



PNMK4

Hex Plug 60° Cone

Mates with 92, B1, B2 and B4 style hose fitting



TUBE	END SIZE		C		STANDARD Dynamic Pressure
FITTING	1	2	HEX	L	(x 1,000 PSI)
PART #	BSPP	BSPP	(mm)	(mm)	S
6G4MK4	3/8	1/4	22	37.1	5.1
6-6G4MK4	3/8	3/8	23	36.9	
8-4G4MK4	1/2	1/4	27	38.0	2.9
8G4MK4	1/2	3/8	30	45.3	2.9
12-4G4MK4	3/4	1/4	32	40.0	2.9
12-6G4MK4	3/4	3/8	32	41.6	2.9
12-8G4MK4	3/4	1/2	32	47.3	2.9
16-4G4MK4	1	1/4	41	43.0	1.7
16-6G4MK4	1	3/8	41	44.6	1.7
16-8G4MK4	1	1/2	41	50.3	1.7
16-12G4MK4	1	3/4	41	52.2	1.7

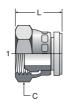
TUBE FITTING	END SIZE	C HEX	L	STANDARD Dynamic Pressure (x 1,000 PSI)
PART #	BSPP	(mm)	(mm)	S
2PNMK4	1/8	14	14.3	5.1
4PNMK4	1/4	19	18.8	5.1
6PNMK4	3/8	22	20.5	5.1
8PNMK4	1/2	27	24.0	2.9
10PNMK4	5/8	30	24.0	2.9
12PNMK4	3/4	32	26.5	2.9
16PNMK4	1	41	30.2	1.7
20PNMK4	1 1/4	50	38.7	1.5
24PNMK4	1 1/2	55	42.7	1.5
32PNMK4	2	70	48.2	1



FNMK4

Cap 60° Cone

Mates with D9 style hose fitting



EMK4

Union Elbow 60° Cone / 60° Cone

Mates with D9/92, B1, B2 and B4 style hose fitting



TUBE FITTING	END SIZE	C HEX	L	STANDARD Dynamic Pressure (x 1,000 PSI)
PART #	BSPP	(mm)	(mm)	S
2FNMK4	1/8	14	16.0	5.1
4FNMK4	1/4	19	20.6	5.1
6FNMK4	3/8	22	22.3	5.1
8FNMK4	1/2	27	22.7	2.9
10FNMK4	5/8	30	26.6	2.9
12FNMK4	3/4	32	28.0	2.9
16FNMK4	1	41	31.6	1.7
20FNMK4	1 1/4	50	35.9	1.5
24FNMK4	1 1/2	60	37.9	1.5

TUBE FITTING	END 1	L (TYP.)	٧	STANDARD Dynamic Pressure (x 1,000 PSI)	
PART #	BSPP	2 BSPP	(mm)	(mm)	S
2EMK4	1/8	1/8	16.6	11	5.1
4EMK4	1/4	1/4	27.8	14	5.1
6EMK4	3/8	3/8	31.7	19	5.1
8EMK4	1/2	1/2	37.0	22	2.9
10EMK4	5/8	5/8	39.0	22	2.9
12EMK4	3/4	3/4	41.6	27	2.9
16EMK4	1	1	49.7	23	1.7
20EMK4	1 1/4	1 1/4	54.4	41	1.5
24EMK4	1 1/2	1 1/2	53.7	48	1.5

C6MK4

Swivel Nut Elbow 60° Cone / 60° Swivel

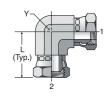
Mates with D9/92, B1, B2 and B4 style hose fitting



F6MK4

Swivel Nut Union Elbow 60° Swivel / 60° Swivel

Mates with D9 style hose fitting



TUBE FITTING	END SIZE			L2	Υ	STANDARD Dynamic Pressure (x 1,000 PSI)
PART #	BSPP	BSPP	(mm)	(mm)	(mm)	S
2C6MK4	1/8	1/8	16.6	22.0	11	5.1
4C6MK4	1/4	1/4	27.8	31.2	19	5.1
6C6MK4	3/8	3/8	31.7	36.2	22	5.1
8C6MK4	1/2	1/2	37.0	41.0	27	2.9
10C6MK4	5/8	5/8	39.0	41.6	27	2.9
12C6MK4	3/4	3/4	41.6	45.3	33	2.9
16C6MK4	1	1	49.7	53.9	41	1.7
20C6MK4	1 1/4	1 1/4	54.4	60.0	48	1.5
24C6MK4	1 1/2	1 1/2	53.7	63.3	48	1.5

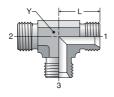
TUBE FITTING	END S	L	Υ	STANDARD Dynamic Pressure (x 1,000 PSI)	
PART #	BSPP	BSPP	(mm)	(mm)	S
4E6MK4	1/4	1/4	30.5	14	5.1
6E6MK4	3/8	3/8	33.0	19	5.1
8E6MK4	1/2	1/2	38.8	22	2.9
10E6MK4	5/8	5/8	39.4	22	2.9
12E6MK4	3/4	3/4	42.3	27	2.9
16E6MK4	1	1	49.0	33	1.7
20E6MK4	1 1/4	1 1/4	58.2	41	1.5
24E6MK4	1 1/2	1 1/2	63.3	48	1.5



JMK4

Union Tee 60° Cone (all three ends)

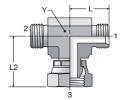
Mates with 92, B1, B2 and B4 style hose fitting



S6MK4

Swivel Nut Branch Tee 60° Cone / 60° Cone / 60° Swivel

Mates with D9/92, B1, B2 and B4 style hose fitting



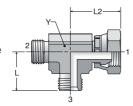
TUBE FITTING	1	END SIZE	3	L	Y	STANDARD Dynamic Pressure (x 1,000 PSI)
PART #	BSPP	BSPP	BSPP	(mm)	(mm)	S
2JMK4	1/8	1/8	1/8	16.6	11	
4JMK4	1/4	1/4	1/4	27.8	19	5.1
6JMK4	3/8	3/8	3/8	31.7	22	5.1
8JMK4	1/2	1/2	1/2	37.0	27	2.9
10JMK4	5/8	5/8	5/8	39.0	27	2.9
12JMK4	3/4	3/4	3/4	41.9	33	2.9
16JMK4	1	1	1	49.7	41	1.7
20JMK4	1 1/4	1 1/4	1 1/4	54.4	48	1.5
24JMK4	1 1/2	1 1/2	1 1/2	53.7	48	1.5

TUBE FITTING	END SIZE			L	L2	Υ	STANDARD Dynamic Pressure (x 1,000 PSI)
PART #	BSPP	BSPP	BSPP	(mm)	(mm)	(mm)	S
2S6MK4	1/8	1/8	1/8	16.6	22.0	11	5.1
4S6MK4	1/4	1/4	1/4	27.8	31.2	19	5.1
6S6MK4	3/8	3/8	3/8	31.7	36.2	27	5.1
8S6MK4	1/2	1/2	1/2	37.0	41.0	27	2.9
10S6MK4	5/8	5/8	5/8	39.0	41.6	27	2.9
12S6MK4	3/4	3/4	3/4	41.6	45.3	33	2.9
16S6MK4	1	1	1	49.7	53.9	41	1.8
20S6MK4	1 1/4	1 1/4	1 1/4	54.4	60.0	48	1.5

R6MK4

Swivel Nut Run Tee 60° Cone / 60° Swivel / 60° Cone

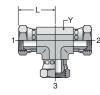
Mates with D9/92, B1, B2 and B4 style hose fitting



J6MK4

Swivel Nut Union Tee 60° Swivel (all three ends)

Mates with D9 style hose fitting



TUBE	END SIZE						STANDARD Dynamic Pressure
FITTING	1	2	3	L	L2	Υ	(x 1,000 PSI)
PART #	BSPP	BSPP	BSPP	(mm)	(mm)	(mm)	S
2R6MK4	1/8	1/8	1/8	16.6	22.0	11	5.1
4R6MK4	1/4	1/4	1/4	27.8	31.2	19	5.1
6R6MK4	3/8	3/8	3/8	31.7	36.2	27	5.1
8R6MK4	1/2	1/2	1/2	37.0	41.0	27	2.9
10R6MK4	5/8	5/8	5/8	39.0	41.6	27	2.9
12R6MK4	3/4	3/4	3/4	41.6	45.3	33	2.9
16R6MK4	1	1	1	49.7	53.9	41	1.8
20R6MK4	1 1/4	1 1/4	1 1/4	54.4	60.0	48	1.5

	E	ND SIZE				STANDARD Dynamic Pressure
TUBE FITTING	1 2 3			(TYP.)	Υ	(x 1,000 PSI)
PART #	BSPP	BSPP	BSPP	(mm)	(mm)	S
4J6MK4	1/4	1/4	1/4	30.5	14	5.1
6J6MK4	3/8	3/8	3/8	33.0	19	5.1
8J6MK4	1/2	1/2	1/2	38.8	22	2.9
10J6MK4	5/8	5/8	5/8	39.4	22	2.9
12J6MK4	3/4	3/4	3/4	42.3	27	2.9
16J6MK4	1	1	1	49.0	33	1.7
20J6MK4	1 1/4	1 1/4	1 1/4	58.2	41	1.5

