

Tube End Connections Threads, Conformance Specifications and Use

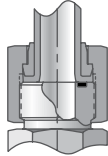
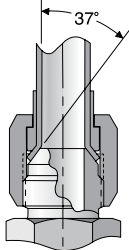
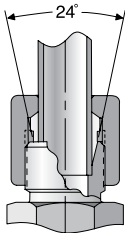
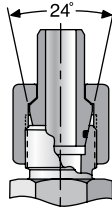
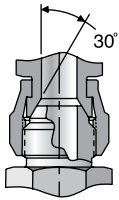
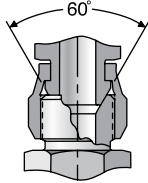
						
			SAE J514 ISO 8434-1 JIS B2351	ISO 8434-4		
Description	O-Ring Face Seal (ORFS) "Seal-Lok"	37° Flare "Triple-Lok"	Inch 24° Cone Flareless "Ferulok"	Metric 24° Cone Flareless "EO" and "EO2"	Metric 24° Cone Flareless "JIS"	30° Flare and 60° Cone "JIS"
Thread Type	ISO 263 ANSI B1.1 unified	ISO 263 ANSI B1.1, unified	ISO 263 ANSI B1.1, unified	ISO 261 Metric fine	ISO 261 JIS B 0207	ISO 228-1 JIS B0202, BS2779
ISO No.	8434-3 (12151-1) ¹⁾	8434-2 (12151-6) ¹⁾	—	8434-1 & -4 (12151-2) ¹⁾	—	—
SAE No.	J1453/J516 ²⁾	J514/J516 ²⁾	J514	—	—	—
DIN No.	—	—	—	3861, 3865 & 20078 ²⁾	—	—
JIS No.	—	—	—	Similar to B2351	B2351	B8363 ³⁾
BSI No.	—	—	—	—	—	Similar to BS 5200 ⁴⁾
Current use	Mainly used in North America slowly gaining acceptance in Europe and Japan.	Used throughout the world with major usage in North America.	Mainly used in North America.	Mainly used in Europe. Slowly gaining acceptance in North America.	Mainly used in Japan for hard plumbed systems.	Mainly used in Japan, U.K. and British commonwealth countries.

Table U5 — Tube End Connections

- 1) Hose fitting specification no.
- 2) Hose fitting specification no.
- 3) Adapter and hose fitting specification no.
- 4) 60° cone fittings only. See page U6 for more information.

Tube End Connections
Thread Size Guide — Inch Thread

Tube O.D. or Adapter Size			O-ring Face Seal (ORFS)	37° Flare	Inch 24° cone ³⁾ Flareless	SAE 45° Flare ³⁾
Nominal metric size ³⁾	Nominal Inch		SAE J1453	SAE J514	SAE J514	SAE J512
	size	SAE dash size				
(mm)	(in)		Inch ANSI B1.1, unified (ISO 263)	Inch ANSI B1.1, unified (ISO 263)	Inch ANSI B1.1, unified (ISO 263)	Inch ANSI B1.1, unified (ISO 263)
—	1/8	-2	—	5/16-24	5/16-24	5/16-24
4	—	—	—	—	—	—
5	3/16	-3	—	3/8-24	3/8-24	3/8-24
6	1/4	-4	9/16-18	7/16-20	7/16-20	7/16-20
8	5/16	-5	—	1/2-20	1/2-20	1/2-20
10	3/8	-6	11/16-16	9/16-18	9/16-18	5/8-18
12	1/2	-8	13/16-16	3/4-16	3/4-16	3/4-16
14	5/8	-10	1-14	7/8-14	7/8-14	7/8-14
15 ¹⁾	5/8	-10	1-14	7/8-14	—	—
16	5/8	-10	1-14	7/8-14	—	—
18 ¹⁾	3/4	-12	1 3/16-12	1 1/16-12	1 1/16-12	1 1/16-14
20	3/4	-12	1 3/16-12	1 1/16-12	—	—
22 ¹⁾	7/8	-14	—	1 3/16-12	1 3/16-12	—
25	1	-16	1 7/16-12	1 5/16-12	1 5/16-12	—
28 ¹⁾	1 1/4	-20	1 11/16-12	—	1 5/8-12	—
30	1 1/4	-20	1 11/16-12	1 5/8-12	—	—
32 ²⁾	1 1/4	-20	1 11/16-12	1 5/8-12	—	—
38	1 1/2	-24	2-12	1 7/8-12	1 7/8-12	—
50	2	-32	2 1/2-12	2 1/2-12	2 1/2-12	—

Table U6 — Tube End Connections

- 1) Not preferred for high pressure applications.
- 2) Non-preferred size. Use 30mm size in place of 32mm size.
- 3) Metric tube sizes do not apply to “Ferulok” and 45° flare fittings.

Tube End Connections

Thread Size Guide — Metric, BSPP and JIS Threads

Tube O.D. or Adapter Size (mm)	Metric 24° cone			Metric 24° cone Flareless	60° Cone	30° Flare and 60° Cone
	Flareless DIN 3861	Weld Nipple DIN 3865 “EO” and “EO-2”	JIS B2351 “JIS”	BS 5200	JIS B8363	
	LL Series Metric ISO 261	L Series Metric ISO 261	S Series Metric ISO 261	Metric ISO 261 (JIS B0207)	ISO 228-1 (BSPP) ⁵⁾	ISO 228-1 (JIS B 0202) (BSPP) ⁵⁾
—	—	—	—	—	—	—
4	M8 x 1	—	—	—	—	—
5	M10 x 1 ³⁾	—	—	—	—	—
6	M10 x 1	M12 x 1.5	M14 x 1.5	M12 x 1.5	G 1/8 A	G 1/4 B
8	M12 x 1	M14 x 1.5	M16 x 1.5	M14 x 1.5	G 1/4 A	—
9 ²⁾	—	—	—	—	—	G 3/8 B
10	M14 X 1 ⁴⁾	M16 x 1.5	M18 x 1.5	M16 x 1.5	G 3/8 A	—
12	M16 x 1 ⁴⁾	M18 x 1.5	M20 x 1.5	M18 x 1.5	G 1/2 A	G 1/2 B
14	—	—	M22 x 1.5	—	—	—
15 ¹⁾	—	M22 x 1.5	—	—	—	—
16	—	—	M24 x 1.5	M24 x 1.5	G 5/8 A ⁶⁾	—
18 ¹⁾	—	M26 x 1.5	—	—	—	—
19 ²⁾	—	—	—	—	—	G 3/4 B
20	—	—	M30 x 2	M28 x 1.5	G 3/4 A	—
22 ¹⁾	—	M30 x 2	—	—	—	—
25	—	—	M36 x 2	M35 x 1.5	G 1 A	G 1 B
28 ¹⁾	—	M36 x 2	—	—	—	—
30	—	—	M42 x 2	M40 x 1.5	G 1-1/4 A	—
32 ²⁾	—	—	—	—	—	G 1-1/4 B
35 ¹⁾	—	M42 x 2	—	—	—	—
38	—	—	M52 x 2	M48 x 1.5	G 1-1/2 A	G 1-1/2 B
42 ¹⁾	—	M52 x 2	—	—	—	—
50	—	—	—	—	G 2 A	G 2 B

Table U7— Tube End Connections

- 1) Not preferred for high pressure applications.
- 2) Not preferred sizes. Use 10mm, 20mm and 30mm sizes in place of 9mm, 19mm and 32mm sizes, respectively.
- 3) Covered in ISO 8434-1. Non-standard with Parker TFDE (Ermeto).
- 4) Not part of DIN or ISO standards, but offered by Parker TFDE (Ermeto).
- 5) ISO 228-1 G threads and JIS B 0202 G or PF threads can be interchanged. “A” and “B” indicate different tolerance classes on the male threads, “A” having tighter tolerances than “B”.
- 6) Non-preferred size.

Port End Connections
Threads, Conformance Specifications, and Use

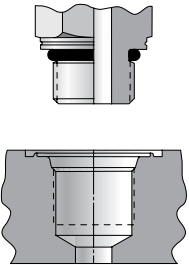
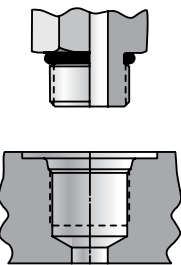
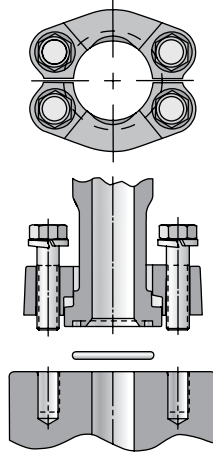
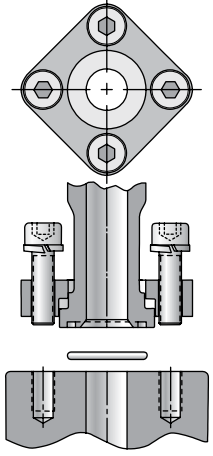
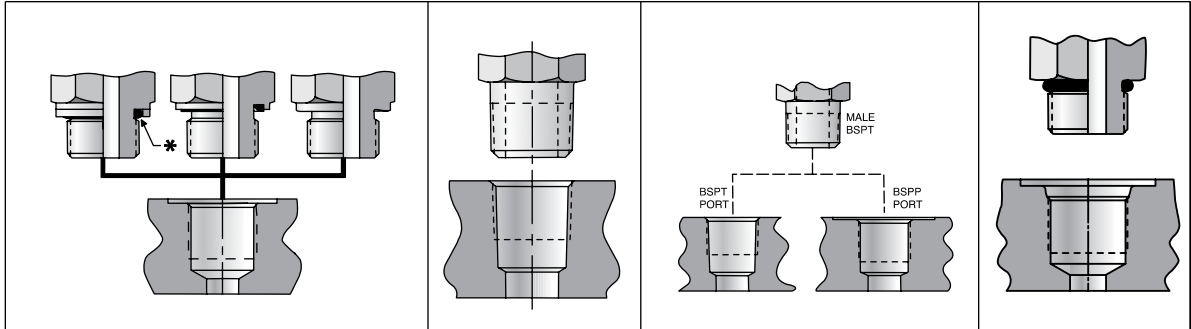
				
Port Description	Metric Straight Thread O-Ring Port	SAE Straight Thread O-Ring Port	Four Screw Split Flange	Four Screw One Piece Square Flange
Thread Type	ISO 261 Metric Fine	ISO 263 ANSI B1.1, Unified	Metric screws: ISO 261 Inch screws: ISO 263	ISO 261
ISO No.	6149	11926	6162	6164
SAE No.	J2244	J1926	J518 (covers inch screws only)	—
DIN No.	3852-3 Form "W"	—	—	—
JIS No.	—	—	B8363 (covers flange head only)	—
BSI No.	—	—	—	—
Current use	Gaining use in U.S. and western Europe. Widely used in former Soviet block countries.	Widely used in North America. Limited use in the rest of the world.	Widely used throughout the world.	Mainly used in Germany. Limited use elsewhere.

Table U8 — Port End Connections

Dimensions and pressures for reference only, subject to change.

Port End Connections

Threads, Conformance Specifications, and Use



Port Description	British Standard Pipe Parallel (BSPP) Flat Face Port	Metric Straight Thread Flat Face Port	NPTF - Dryseal American Standard Taper Pipe	JIS/BSPT British Standard Pipe, Taper	JIS/BSPP British Standard Pipe, Parallel O-ring Port
Thread Type	ISO 228-1 BS 2779	ISO 261 Metric Fine	ANSI B1.20.3	ISO 7 BS 21 JIS B 0203	ISO 228-1 BS 2779 JIS B 0202
ISO No.	1179	9974	—	—	—
SAE No.	—	—	J476	—	—
DIN No.	3852-2 Form X or Y	3852-1 Form X or Y	—	Similar to: 3852-2 form Z	—
JIS No.	—	—	—	B8363	B2351 Type "O"
BSI No.	—	—	—	—	Similar to BS 5380
Current use	Most popular in western Europe and former UK colonies. Limited use in rest of the world.	Moderate use in Europe, mainly in Germany.	Mainly used in North America some use in rest of the world.	Mainly used in Japan and parts of western Europe.	Mainly used in Japan. Some use in U.K. of similar port, BS5380.

Table U9 — Port End Connections

Dimensions and pressures for reference only, subject to change.