

- **Wide range of types and sizes**
- **Rugged and durable**
- **Suitable for use under extreme conditions of pressure and temperature**
- **Ideal for most general industrial applications**
- **Supplied in kits complete with nuts, universal tubing sleeves and appropriate seals**



Technical Data

Medium:

Compressed air*

*Consult our Technical service for use with other fluids.

Operating Pressure:

The maximum working pressure is limited by the type of tubing being used.

Operating Temperature:

The maximum working temperature is limited by the type of tubing being used.

Tubing:

Nylon 11 or 12 and other plasticised or unplasticised tubing which conforms to the tolerances specified in BS 5409: Part 1 1976.

Copper, annealed and half-hard to BS 2871: Part 2 with dimensions generally to table 4.

Double wall brazed steel tube to dimensions laid out in Section 9.12.

Tube Sizes

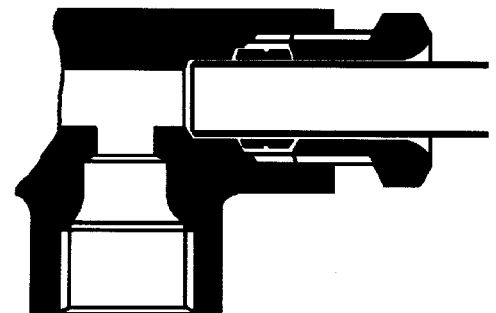
4, 5, 6, 8, 10, 12, 14, 15, 16, 18, 22, 28 mm O/D

Materials

Brass to BS 2874: 1986 (CZ121) for tubing nut, sleeve and body manufactured from bar, brass to BS 2872: 1969 (CZ122) for body manufactured from stamping. Banjo bolts have a bright nickel plated finish.

























Ordering Information

To order, quote appropriate product number from the tables on the following pages. The fittings are supplied complete with all nuts, universal tubing sleeves, seals and washers (unassembled) in boxes of 10.












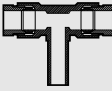

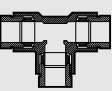
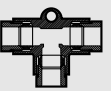
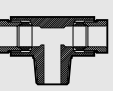
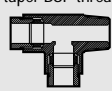

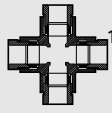
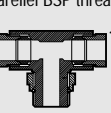

Straight Connectors and Adaptors

<p>FORM CUTTER 39 0500  Page 9.6.002.05</p>	<p>TAP 39 0501  Page 9.6.002.05</p>	<p>TUBING PLUG Male O/D tube thread 18 004  Page 9.6.002.06</p>	<p>STEM TAILPIECE ADAPTER O/D tube stem to hose 18 019  Page 9.6.002.06</p>	<p>FEMALE TAILPIECE ADAPTER Tube to hose 18 018  Page 9.6.002.06</p>	<p>STRAIGHT STEM ADAPTOR O/D tube stem to male thread 18 215  Page 9.6.002.06</p>	<p>STRAIGHT STEM ADAPTOR O/D tube stem to male taper BSP thread 18 115  Page 9.6.002.07</p>
<p>NIPPLED STEM CONNECTOR O/D tube stem to Male O/D tube 18 015  Page 9.6.002.07</p>	<p>REDUCING CONNECTOR 18 028  Page 9.6.002.07</p>	<p>UNEQUAL CONNECTOR Female tube to male tube 18 028  Page 9.6.002.07</p>	<p>BULKHEAD CONNECTOR Female O/D tube 18 029  Page 9.6.002.08</p>	<p>NIPPLED CONNECTOR Male O/D tube 18 027  Page 9.6.001.09</p>	<p>STRAIGHT CONNECTOR Female O/D tube 18 020  Page 9.6.002.09</p>	<p>BRACKETED STRAIGHT CONNECTOR Female O/D tube 18 021  Page 9.6.002.09</p>
<p>METRIC TO INCH ADAPTOR O/D tube male to metric O/D tube female 18 037  Page 9.6.002.09</p>	<p>NIPPLED ADAPTOR Male tube to metric and UNF female thread 18 528  Page 9.6.002.10</p>	<p>NIPPLED ADAPTOR Male O/D tube to male BSP taper 18 127  Page 9.6.002.10</p>	<p>NIPPLED ADAPTOR Male O/D tube to female parallel BSP thread 18 228  Page 9.6.002.10</p>	<p>STRAIGHT MALE ADAPTOR Female tube to male parallel BSP thread 18 125  Page 9.6.002.10</p>	<p>STRAIGHT MALE ADAPTOR (NPTF) Female O/D tube to male NPTF thread 18 425  Page 9.6.002.11</p>	<p>STRAIGHT MALE ADAPTOR Female O/D tube to metric male thread 18 525  Page 9.6.002.11</p>
<p>STRAIGHT MALE ADAPTOR Female O/D tube to male parallel BSP thread 18 225  Page 9.6.002.11</p>	<p>STRAIGHT ADAPTOR Female O/D tube to female parallel BSP thread 18 226  Page 9.6.002.10</p>	<p>HOBBS STRAIGHT CONNECTOR Male parallel BSP thread both ends 18 238  Page 9.6.002.19</p>				

Elbow Connectors and Adaptors



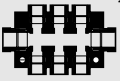
<p>UNIVERSAL STEM ELBOW O/D tube stem 18 042  Page 9.6.002.13</p>	<p>STEM ELBOW CONNECTOR Female O/D tube to O/D tube stem 18 043  Page 9.6.002.13</p>	<p>ELBOW CONNECTOR Female O/D tube 18 040  Page 9.6.002.13</p>	<p>BRACKETED ELBOW CONNECTOR Female O/D tube 18 041  Page 9.6.002.13</p>	<p>FEMALE ELBOW ADAPTOR Female O/D tube to female parallel BSP thread 18 246  Page 9.6.02.13</p>	<p>MALE ELBOW ADAPTOR Female O/D tube to male taper BSP thread 18 145  Page 9.6.002.14</p>	<p>HOBBS ELBOW ADAPTOR Female O/D tube to male parallel BSP thread 18 258  Page 9.6.002.19</p>
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Tee, 'Y' and Four Way Connectors and Adaptors



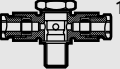
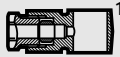




<p>STEM TEE CONNECTOR Female O/D tube to O/D tube stem 18 063  Page 9.6.002.14</p>	<p>SIDE STEM TEE CONNECTOR Female O/D tube to O/D tube stem 18 064  Page 9.6.002.14</p>	<p>TEE CONNECTOR Female O/D tube 18 060  Page 9.6.002.15</p>	<p>BRACKETED TEE CONNECTOR Female O/D tube 18 061  Page 9.6.002.15</p>	<p>MALE TEE ADAPTOR Female O/D tube to male taper BSP thread 18 165  Page 9.6.002.15</p>	<p>MALE SIDE TEE ADAPTOR Female O/D tube to male taper BSP thread 18 175  Page 9.6.002.16</p>	<p>'Y' CONNECTOR Female O/D tube 18 080  Page 9.6.002.16</p>
<p>FOUR WAY CONNECTOR Female O/D tube 18 060  Page 9.6.002.16</p>	<p>HOBBS ADAPTOR Female O/D tube to male parallel BSP thread 18 278  Page 9.6.002.20</p>	<p>90° STEM TEE CONNECTOR Female O/D tube to O/D tube stem 18 077  Page 9.6.002.11</p>				



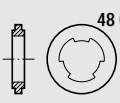






Manifolds

<p>CONNECTOR BLOCK</p>  <p>18 0A2</p> <p>Page 9.6.002.17</p>	<p>SINGLE SIDED MANIFOLD</p>  <p>18 042</p> <p>Page 9.6.002.17</p>	<p>DOUBLE SIDED MANIFOLD</p>  <p>18 0C6</p> <p>Page 9.6.002.13</p>				
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Banjos

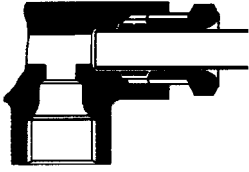
<p>ELBOW BANJO ASSEMBLY Female O/D tube to male parallel BSP thread</p>  <p>18 A51</p> <p>Page 9.6.002.21</p>	<p>ELBOW BANJO ASSEMBLY Female O/D tube to male parallel BSP thread</p>  <p>18 K51</p> <p>Page 9.6.002.21</p>	<p>TEE BANJO ASSEMBLY Female O/D tube to male parallel BSP thread</p>  <p>18 003</p> <p>Page 9.6.002.21</p>	<p>ELBOW BANJO BODY O/D tube</p>  <p>18 051</p> <p>Page 9.6.002.22</p>	<p>TEE BANJO BODY O/D tube</p>  <p>18 071</p> <p>Page 9.6.002.22</p>	<p>BANJO BOLTS - NON REGULATING Male parallel BSP thread</p>  <p>20 A00</p> <p>Page 9.6.002.22</p>	<p>Double stacking</p>  <p>20 B00</p> <p>Page 9.6.002.22</p>
<p>BANJO BOLTS - REGULATING</p>  <p>20 K00</p> <p>Page 9.6.002.23</p>						

Accessories

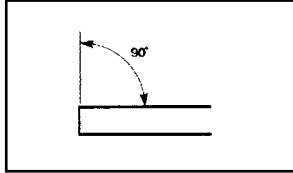
<p>SEALING WASHERS For use with banjo fitting</p>  <p>48 031</p> <p>Page 9.6.002.23</p>	<p>UNIVERSAL TUBING SLEEVE</p>  <p>18 002</p> <p>Page 9.6.002.24</p>	<p>TUBING SLEEVE Suitable for metallic tubing only</p>  <p>18 003</p> <p>Page 9.6.002.24</p>	<p>TUBING NUT</p>  <p>18 001</p> <p>Page 9.6.002.24</p>	<p>FOLDED COPPER WASHER</p>  <p>28 2E1</p> <p>Page 9.6.002.24</p>	<p>'O' RING SEAL</p>  <p>28 2E3</p> <p>Page 9.6.002.25</p>	<p>BULKHEAD LOCKNUT</p>  <p>18 6F1</p> <p>Page 9.6.002.08</p>
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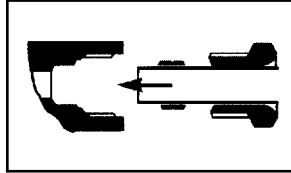
Assembly Details



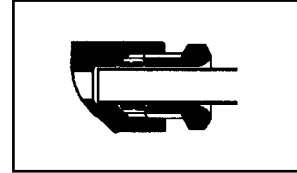
Method of Assembly



1. Ensure that the tube is cut square and is free from fraze.



2. Place the tubing nut and sleeve on the tube and push the tube into the fitting until it bottoms on the tube stop.



3. Holding the tube firmly in contact with the tube stop screw the tubing nut down finger tight and then tighten a further 1-1¼ full turns. Slacken off the assembly and then pinch down again.

The method of preparation and assembly described will ensure leak-proof joints over a wide pressure range, depending upon the size and type of tubing being used. Failure to follow this guide, or over-tightening at any joint, will only lead to damage of the fittings or an unsatisfactory seal.

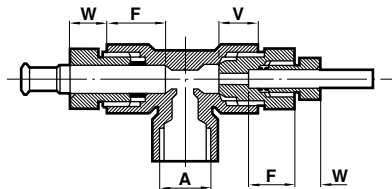
Torque Figures

Recommended torque using 18 002 0400 series sleeves

O/D Tube	Half Hard Copper	Annealed Copper	Nylon 11 & 12	Double Wall Brazed Steel
4	4,5 Nm	3,4 Nm	2,8 Nm	5,7 Nm
5	6,8 Nm	5,7 Nm	5,7 Nm	–
6	9,0 Nm	7,9 Nm	5,7 Nm	10,2 Nm
8	11,3 Nm	7,9 Nm	7,9 Nm	12,4 Nm
10	21,5 Nm	18,1 Nm	13,6 Nm	21,5 Nm
12	24,9 Nm	22,6 Nm	15,8 Nm	27,1 Nm
14	29,0 Nm	27,5 Nm	17,5 Nm	–
15	34,0 Nm	28,0 Nm	25,0 Nm	–
16	46,0 Nm	31,0 Nm	26,0 Nm	–
18	52,0 Nm	35,0 Nm	45,0 Nm	–
22	79,0 Nm	68,0 Nm	46,0 Nm	–
28	76,0 Nm	68,0 Nm	96,0 Nm	–

Typical Dimensions

Hose stem to tube with reducing connector



A = outside diameter tube size and thread details.*
 F = tube or stem length inside fitting.
 V = nipples connector length inside fitting.
 W = projection of tubing nut from compression joint.

All these dimensions are common to a particular tubing outside diameter size. Refer to later pages in this section for details of individual coupling dimensions. Dimensions V & W will vary with the torque applied so these dimensions are guidance only.

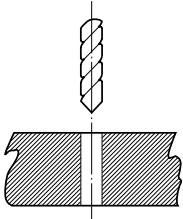
*Note: The 'O/D tube' sizes in the following tables refer to the Enots compression threads listed above.

O/D Tube	A thread details	F	V	W
4	M8 x 1,0	10,5	8,3	6,0
5	M10 x 1,0	12,0	9,5	6,5
6	M11 x 1,0	12,0	9,4	7,0
8	M13 x 1,0	15,0	11,7	8,0
10	M15 x 1,0	16,5	12,7	8,0
12	M18 x 1,5	17,0	13,4	9,0
14	M20 x 1,5	19,0	16,5	11,5
15	M22 x 1,5	18,5	16,0	10,0
16	M24 x 1,5	19,0	16,2	10,5
18	M26 x 1,5	20,0	17,0	10,5
22	M30 x 1,5	24,5	20,5	11,0
28	M38 x 1,5	30,0	25,8	12,5



Instructions For Machining

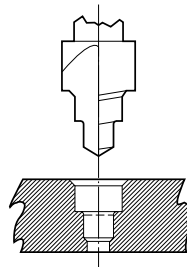
Where for some reason, such as saving overall space, it is desired to dispense with the male adaptor and fit a tube, complete with its associated nut and sleeve, direct into a casting, this may be done as illustrated below, by machining the correct form and thread with the appropriate size of form cutter and tap.



1. DRILL

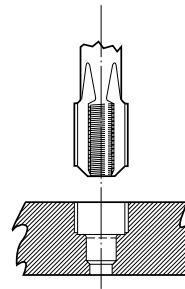
It is difficult to recommend specific drill sizes to suit our range of form cutters and taps without having detailed knowledge of the material to be machined and details of the particular installation.

As a general rule, however, when preparing for an Norgren compression assembly, a drill size of 1 mm less in diameter than the tubing size should be used, up to and including 8 mm tube. For larger tubing, a drill of approximately 2 mm less in diameter is recommended.



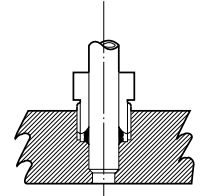
2. FORM

The correct form cutter should be selected from the table below for the outside diameter tubing being used.



3. TAP

The correct size thread tap should be selected from the table overleaf for the outside diameter tubing being used. Owing to the fine pitch of the threads used, only a plug tap is required.

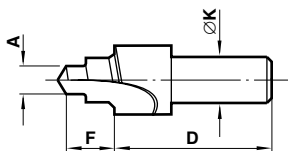


4. ASSEMBLY

The tube, or stem fittings, with appropriate tubing nut and sleeve, can now be assembled into the port.

We can advise on individual problems but we cannot be held responsible for failures due to non-observance of the dimensions and tolerances which we lay down for these compression unions.

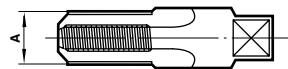
Form Cutter



Product number	A O/D tube	D	F	øK
39 0500 02	4	48	10,5	12,5
39 0500 03	5	48	12,0	12,5
39 0500 04	6	48	12,0	12,5
39 0500 05	8	48	15,0	12,5
39 0500 06	10	48	16,5	12,5
39 0500 07	12	48	17,0	16,0
39 0500 08	16	48	19,0	16,0
39 0500 10	22	48	24,5	20,0
39 0500 12	28	48	30,0	20,0

Tap

Plug taps only available

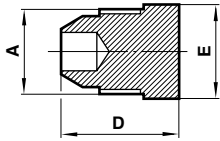


Product number tube	For O/D	A thread
39 0501 02	4	M8 x 1,0
39 0501 03	5	M10 x 1,0
39 0501 04	6	M11 x 1,0
39 0501 05	8	M13 x 1,0
39 0501 06	10	M15 x 1,0
39 0501 07	12	M18 x 1,5
39 0501 08	16	M24 x 1,5
39 0501 10	22	M30 x 1,5
39 0501 12	28	M38 x 1,5



Tubing Plug

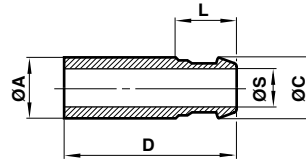
Male O/D tube thread



Product number	A O/D	D	E A/F
18 004 0400	4	15,3	8
18 004 0500	5	17,0	10
18 004 0600	6	17,0	13
18 004 0800	8	19,5	13
18 004 1000	10	21,0	17
18 004 1200	12	23,5	19
18 004 1400	14	27,0	22
18 004 1500	15	26,5	22
18 004 1600	16	27,0	24
18 004 1800	18	29,0	27
18 004 2200	22	33,5	30
18 004 2800	28	41,5	41

Stem Tailpiece Adaptor

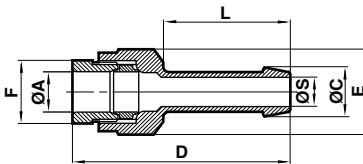
O/D tube stem to hose



Product number	A O/D stem	C hose bore	D	L	S
18 019 0405	4	5,0	36,5	17,5	1,9
18 019 0505	5	5,0	38,5	17,0	2,8
18 019 0606	6	6,3	40,5	17,5	4,3
18 019 0806	8	6,3	43,5	17,5	4,3
18 019 1010	10	10,0	47,0	19,0	7,3
18 019 1210	12	10,0	49,0	19,0	7,3
18 019 1612	16	12,5	54,8	20,0	9,7
18 019 2219	22	19,0	64,7	22,7	15,8
18 019 2825	28	25,0	75,0	24,0	21,5

Female Tailpiece Adaptor

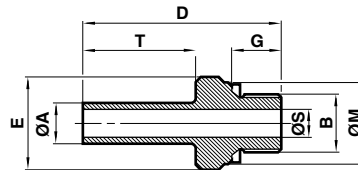
Tube to hose



Product number	A O/D tube	C hose bore	D	E A/F	F A/F	L	S
18 018 0806	8	6,3	45,0	17	13	20	5,5
18 018 1210	12	10,0	50,0	22	19	22	8,5
18 018 1612	16	12,5	55,5	27	24	23	10,5

Straight Stem Adaptor

O/D tube stem to male parallel BSP thread

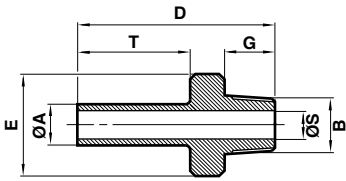


Product number	A O/D stem	B BSPP	D	E A/F	G	M	S	T
18 215 0518	5	1/8"	36	13	7,4	13	3	21
18 215 0818	8	1/8"	40	13	7,4	13	5	26
18 215 0628	6	1/4"	42	19	11,0	18	4	23
18 215 0828	8	1/4"	45	19	11,0	18	5	26
18 215 1038	10	3/8"	49	24	11,4	22	7	28
18 215 1238	12	3/8"	51	24	11,4	22	9	30
18 215 1648	16	1/2"	61	27	15,0	26	12	35
18 215 2268	22	3/4"	71	36	16,3	32	18	42
18 215 2888	28	1"	85	41	19,1	39	23	51



Straight Stem Adaptor

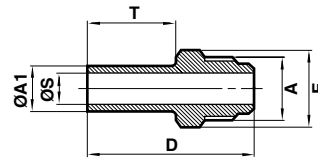
O/D tube stem to male taper BSP thread



Product number	A O/D stem	B Thread BSP	D	E A/F	G	S	T
18 115 0518	5	1/8"	35	13	9,5	3	21
18 115 0618	6	1/8"	37	13	9,5	4	23
18 115 0818	8	1/8"	40	13	9,5	5	26
18 115 0628	6	1/4"	42	14	11,1	4	23
18 115 0828	8	1/4"	45	14	11,0	5	26
18 115 1028	10	1/4"	47	14	11,1	7	28
18 115 1038	10	3/8"	49	19	12,7	7	28
18 115 1238	12	3/8"	51	19	12,7	9	30
18 115 1438	14	3/8"	56	19	12,7	9,6	35
18 115 1448	14	1/2"	60	22	15,9	11	35

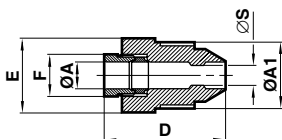
Nippled Stem Connector

O/D tube stem to Male O/D tube

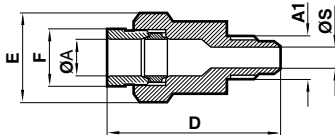


Product number	A1 O/D stem	A O/D tube	D	E A/F	S	T
18 015 0505	5	5	38,0	10,0	3,0	21,0
18 015 0606	6	6	40,0	13,0	4,0	23,0
18 015 0808	8	8	45,5	13,0	5,0	26,0
18 015 1010	10	10	49,0	17,0	7,0	28,0
18 015 1212	12	12	53,5	19,0	9,0	30,0
18 015 1616	16	16	62,0	24,0	12,0	35,0

Reducing Connector



Unequal Connector



Female O/D tube to male O/D tube

Product number	A1 O/D tube	A O/D tube	D	E A/F	F A/F	S
18 028 0504	5	4	26,0	10	8	2,8
18 028 0604	6	4	22,0	13	8	2,8
18 028 0804	8	4	25,5	13	8	2,8
18 028 0405	4	5	32,5	13	10	2,0
18 028 0605	6	5	28,5	13	10	3,4
18 028 0805	8	5	26,0	13	10	3,4
18 028 1005	10	5	27,5	17	10	3,4
18 028 1205	12	5	30,0	19	10	3,4
1 8028 1605	16	5	33,5	24	10	3,4
18 028 0406	4	6	33,0	13	13	2,0
18 028 0506	5	6	33,0	13	13	2,0
18 028 0806	8	6	32,0	13	13	4,0
18 028 1006	10	6	28,0	17	13	4,0
18 028 1206	12	6	30,5	19	13	4,0
18 028 1406	14	6	34,0	22	13	4,0
18 028 1506	15	6	33,5	22	13	6,0
18 028 1606	16	6	35,0	24	13	4,0
18 028 0408	4	8	37,0	17	13	2,0
18 028 0508	5	8	38,0	17	13	3,0
18 028 0608	6	8	38,0	17	13	4,0
18 028 1008	10	8	35,5	17	13	6,0
18 028 12 8	12	8	31,5	19	13	6,0
18 028 1408	14	8	35,0	22	13	6,0
18 028 1608	16	8	35,0	24	13	6,0
18 028 06 0	6	10	41,0	19	17	4,0
18 028 0810	8	10	43,0	19	17	5,2
18 028 1210	12	10	39,0	19	17	7,6
18 028 1410	14	10	42,0	22	17	7,6
18 028 1510	15	10	35,0	22	17	6,0
18 028 1610	16	10	35,0	24	17	7,6
18 028 0812	8	12	43,0	22	19	5,2
18 028 1012	10	12	45,0	22	19	7,5
18 028 1612	16	12	36,0	24	19	9,6
18 028 2212	22	12	42,5	30	19	9,6
18 028 2812	28	12	50,5	41	19	9,6
18 028 2214	22	14	44,0	30	22	12,0
18 028 2216	22	16	44,0	30	24	13,6
18 028 2816	28	16	52,0	41	24	13,6
18 028 2822	28	22	52,0	41	30	19,0

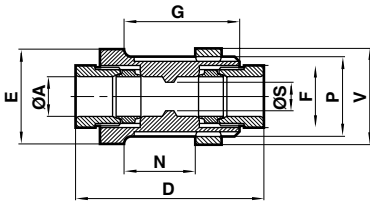


Compression Fittings

Bulkhead Connector

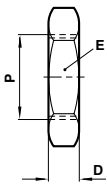
Female O/D tube

(Minimum Bulkhead thickness 3,0.)



Product number	A O/D tube	D	E A/F	F A/F	G	N max. bulkhead	P thread	S	V A/F	Bulkhead clearance drilling	Locknut number
18 029 0400	4	29,0	17	8	18	12	M12 x 1,0	2,8	17	13	186F1 00 12
18 029 0500	5	32,5	19	10	20	13	M15 x 1,0	3,4	22	16	186F1 00 15
18 029 0600	6	33,0	19	13	20	13	M15 x 1,0	4,0	22	16	186F1 00 15
18 029 0800	8	40,0	22	13	26	19	M18 x 1,5	6,0	24	19	186F1 00 18
18 029 1000	10	43,0	24	17	29	20	M20 x 1,5	7,6	27	21	186F1 00 20
18 029 1200	12	45,0	30	19	30	21	M24 x 1,5	9,6	30	25	186F1 00 24
18 029 1400	14	41,0	36	22	35	24	M28 x 1,5	12,0	36	30	186F1 00 28
18 029 1600	16	51,5	36	24	35	25	M30 x 1,5	13,6	41	32	186F1 00 30
18 029 2200	22	64,0	46	30	44	33	M38 x 1,5	19,0	46	40	186F1 00 38
18 029 2800	28	76,5	55	41	54	42	M48 x 1,5	25,0	55	50	186F1 00 48

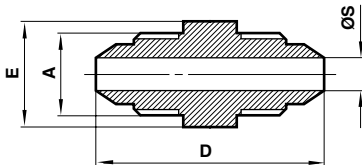
Bulkhead Locknut



Product number	P thread	D	E A/F
18 6F1 0012	M12 x 1,0	5	17
18 5F1 0015	M15 x 1,0	6	22
18 5F1 0018	M18 x 1,5	6	24
18 5F1 0020	M20 x 1,5	7	27
18 5F1 0024	M24 x 1,5	7	30
18 5F1 0028	M28 x 1,5	8	36
18 5F1 0030	M30 x 1,5	8	41
18 5F1 0038	M38 x 1,5	9	46
18 5F1 0048	M48 x 1,5	10	55

Nippled Connector

Male O/D tube

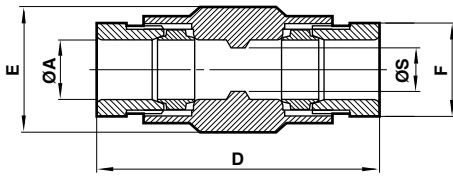


Product number	A O/D tube	D	E A/F	S
18 027 0400	4	28,0	8	2,2
18 027 0500	5	31,4	10	3,0
18 027 0600	6	31,4	13	4,0
18 027 0800	8	36,0	13	5,4
18 027 1000	10	39,0	17	7,0
18 027 1200	12	43,5	19	9,0



Straight Connector

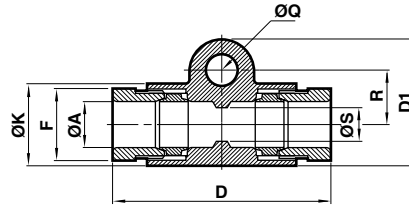
Female O/D tube



Product number	A O/D tube	D	E A/F	F A/F	S
18 020 0400	4	28,0	10	8	2,8
18 020 0500	5	32,5	13	10	3,4
18 020 0600	6	33,0	13	13	4,0
18 020 0800	8	40,0	17	13	6,0
18 020 1000	10	43,0	19	17	7,6
18 020 1200	12	45,0	22	19	9,6
18 020 1400	14	41,0	24	24	12,0
18 020 1500	15	50,0	27	22	12,6
18 020 1600	16	51,5	27	21	13,6
18 020 1800	18	54,0	32	27	15,3
18 020 2200	22	64,0	36	30	19,0
18 020 2800	28	76,5	46	41	25,0

Bracketed Straight Connector

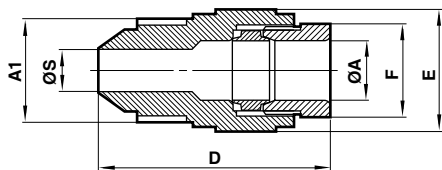
Female O/D tube



Product number	A O/D tube	D	D1	F A/F	K	Q	R	S
18 021 0400	4	30,0	14,9	8	10,3	5,2 x 11,9	5,5	3,0
18 021 0500	5	33,5	22,2	10	14,3	6,75 x 15,9	8,7	4,0
18 021 0600	6	34,0	22,2	13	14,3	6,75 x 15,9	8,7	4,5
18 021 0800	8	41,0	24,6	13	17,5	6,75 x 19,0	9,5	6,5
18 021 1000	10	43,0	25,4	17	23,8	6,75 x 25,4	11,1	8,0
18 021 1200	12	46,0	29,4	19	23,8	6,75 x 25,4	11,1	10,0

Metric to Inch Adaptor

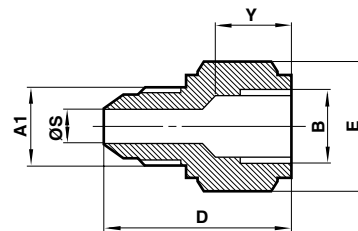
Inch O/D tube male to metric O/D tube female



Product number	A O/D tube	A1 O/D tube	D	E A/F	F A/F	S
18 037 0104	4	1/8"	24,5	10	8	1,6
18 037 0204	4	5/32"	23,5	10	8	2,4
18 037 0304	4	3/16"	28,0	10	8	2,8
18 037 0305	5	3/16"	28,5	13	10	2,8
18 037 0306	6	3/16"	34,0	13	13	2,8
18 037 0404	4	1/4"	26,0	13	8	2,8
18 037 0406	6	1/4"	30,5	13	13	3,2
18 037 0408	8	1/4"	33,5	17	13	3,2
18 037 0508	8	5/16"	34,0	17	13	6,0
18 037 0610	10	3/8"	36,0	19	17	6,3
18 037 0712	12	1/2"	41,0	22	19	9,6
18 037 0816	16	5/8"	45,0	30	24	13,6
18 037 0916	16	3/4"	46,5	30	24	13,6
18 037 0922	22	3/4"	59,5	36	30	16,0
18 037 1022	22	7/8"	56,0	36	30	19,0
18 037 1128	28	1 1/8"	66,5	46	41	25,0

Nippled Adaptor

Male tube to metric and UNF female thread

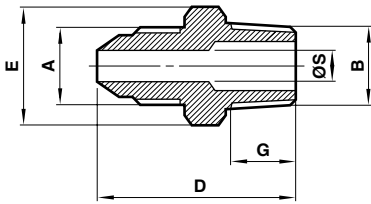


Product number	A1 O/D tube	B thread	D	E A/F	S	Y
18 528 0608	6	M8 x 1,0	21,5	13,0	4,0	8,0
18 528 0610	6	M10 x 1,0	26,0	14,0	4,0	11,0
18 528 0614	6	M14 x 1,5	27,5	19,0	4,0	11,0
18 428 0410	4	10-32 UNF	15,0	8,0	2,2	7,0



Nippled Adaptor

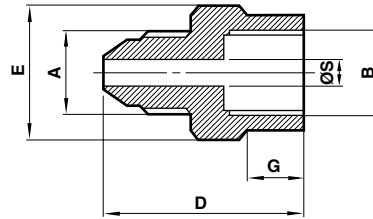
Male O/D tube to male taper BSP thread



Product number	A O/D tube	B thread BSP	D	E A/F	G	S
18 127 0418	4	1/8"	26,0	13	9,5	2,2
18 127 0518	5	1/8"	27,5	13	9,5	3,0
18 127 0618	6	1/8"	27,5	13	9,5	4,0
18 127 0818	8	1/8"	30,0	14	9,5	5,0
18 127 0428	4	1/4"	28,5	14	11,1	2,2
18 127 0528	5	1/4"	30,0	14	11,1	3,0
18 127 0628	6	1/4"	30,0	14	11,1	4,0
18 127 0828	8	1/4"	32,0	14	11,1	5,4
18 127 1028	10	1/4"	33,5	17	11,1	6,4
18 127 0838	8	3/8"	37,0	19	12,7	5,4
18 127 1038	10	3/8"	38,0	19	12,7	7,0
18 127 1238	12	3/8"	40,0	19	12,7	9,0
18 127 1638	16	3/8"	43,0	24	12,7	11,0
18 127 1248	12	1/2"	44,0	22	15,9	9,0
18 127 1648	16	1/2"	46,0	24	15,9	12,0

Nippled Adaptor

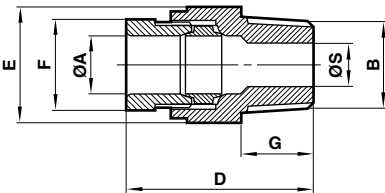
Male O/D tube to female parallel BSP thread



Product number	A O/D tube	B thread BSP	D	E A/F	G	S
18 228 0418	4	1/8"	24,0	13	7,5	2,2
18 228 0518	5	1/8"	24,5	13	7,5	3,0
18 228 0618	6	1/8"	24,5	13	7,5	4,0
18 228 1028	6	1/4"	28,0	17	11,0	4,0
18 228 0828	8	1/4"	30,0	17	11,0	5,4
18 228 1028	10	1/4"	31,5	17	11,0	7,0
18 228 0838	8	3/8"	30,5	22	11,5	5,4
18 228 1038	10	3/8"	32,0	22	11,5	7,0
18 228 1238	12	3/8"	34,0	22	11,5	9,0
18 228 1248	12	1/2"	39,5	27	15,0	9,0

Straight Male Adaptor

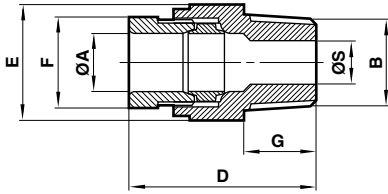
Female O/D tube to male taper BSP thread



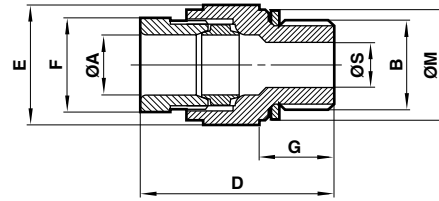
Product number	A O/D tube	B thread BSP	D	E A/F	F	G	S
18 125 0418	4	1/8"	24,5	13	8	9,5	2,8
18 125 0518	5	1/8"	26,5	13	10	9,5	3,4
18 125 0618	6	1/8"	27,0	14	13	9,5	4,0
18 125 0818	8	1/8"	34,5	17	13	9,5	4,7
18 125 1018	10	1/8"	36,0	19	17	9,5	4,7
18 125 0428	4	1/4"	24,0	14	8	11,1	2,8
18 125 0328	5	1/4"	28,0	14	10	11,1	3,4
18 125 0628	6	1/4"	28,5	14	13	11,1	4,0
18 125 0828	8	1/4"	31,0	17	13	11,1	6,0
18 125 1028	10	1/4"	38,0	19	17	11,1	7,0
18 125 1228	12	1/4"	40,0	22	19	11,1	6,4
18 125 0638	6	3/8"	28,0	19	13	12,7	4,0
18 125 0838	8	3/8"	29,0	19	13	12,7	6,0
18 125 1038	10	3/8"	34,0	19	17	12,7	8,0
18 125 1238	12	3/8"	38,0	22	19	12,7	9,6
18 125 1438	14	3/8"	47,5	24	22	12,7	9,6
18 125 1638	16	3/8"	45,5	30	24	12,7	10,0
18 125 0848	8	1/2"	34,0	22	13	15,9	6,0
18 125 1048	10	1/2"	35,0	22	17	15,9	8,0
18 125 1248	12	1/2"	39,0	22	19	15,9	10,0
18 125 1448	14	1/2"	50,5	24	22	15,9	12,0
18 125 1548	15	1/2"	41,0	27	22	15,9	12,6
18 125 1648	16	1/2"	49,0	30	24	15,9	13,6
18 125 1268	12	3/4"	42,0	30	27	19,5	10,0
18 125 1668	16	3/4"	45,5	30	30	19,1	13,6
18 125 1868	18	3/4"	45,5	32	41	19,0	15,3



Straight Male Adaptor (NPTF)
Female O/D tube to male NPTF thread



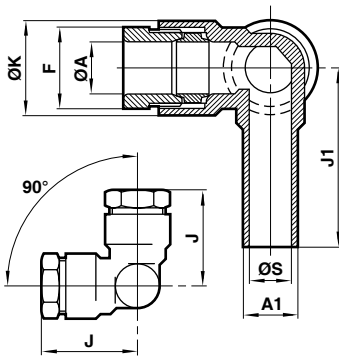
Straight Male Adaptor
Female O/D tube to metric male thread



Product number	A O/D tube	B thread NPTF	D	E A/F	F A/F	G	S
18 425 0518	5	1/8"	25,5	13	10	9,5	3,4
18 425 0618	6	1/8"	27,0	14	13	9,5	4,0
18 425 0818	8	1/8"	34,5	17	13	9,5	4,7
18 425 0528	5	1/4"	28,5	14	10	14,3	3,4
18 425 0628	6	1/4"	29,5	14	13	14,3	4,0
18 425 0828	8	1/4"	34,0	17	13	14,3	6,0
18 425 1028	10	1/4"	41,0	19	17	14,3	7,6
18 425 1228	12	1/4"	43,0	22	19	14,3	8,0
18 425 0838	8	3/8"	31,0	19	13	14,3	6,0
18 425 1038	10	3/8"	35,0	19	17	14,3	7,6
18 425 1238	12	3/8"	40,0	22	19	14,3	9,6
18 425 1048	10	1/2"	34,0	24	17	19,0	7,6
18 425 1248	12	1/2"	40,0	24	19	19,0	9,6
18 425 1648	16	1/2"	50,5	30	24	19,0	12,0

Product number	A O/D	B thread tube	D	E A/F	F A/F	G	M	S
18 525 0408	4	M8 x 1,0	25,0	13	8	8,1	12,0	2,8
18 525 0508	5	M8 x 1,0	27,5	13	10	8,0	12,0	3,0
18 525 0510	5	M10 x 1,0	26,5	14	10	8,0	13,5	3,4
18 525 0610	6	M10 x 1,0	27,0	17	13	8,1	14,0	4,0
18 625 0612	6	M12 x 1,0	27,0	17	13	8,1	16,5	4,0
18 625 0812	8	M12 x 1,0	33,0	17	13	8,1	16,5	5,0
18 525 0812	8	M12 x 1,5	34,0	17	13	10,0	16,5	5,5
18 525 1014	10	M14 x 1,5	36,0	19	17	10,1	18,5	6,0
18 525 1216	12	M16 x 1,5	37,0	22	19	10,1	21,0	7,6

90° Stem Tee Connector
Female O/D tube to O/D tube stem

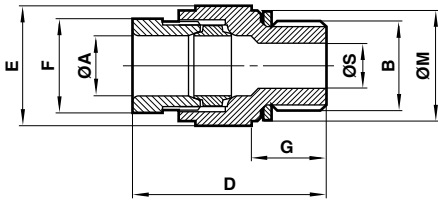


Product number	A O/D tube	A1 O/D stem	F A/F	J	J1	K	S
18 077 0505	5	5	10	23,5	29,5	12,3	3
18 077 0606	6	6	13	26,0	30,6	14,3	4
18 077 0808	8	8	13	31,0	34,9	17,5	5
18 077 1010	10	10	17	31,0	41,3	23,2	7
18 077 1212	12	12	19	34,0	43,5	23,2	9



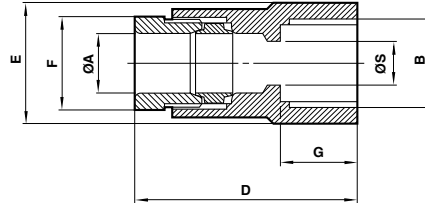
Straight Male Adaptor

Female O/D tube to male parallel BSP thread



Straight Adaptor

Female O/D tube to female parallel BSP thread

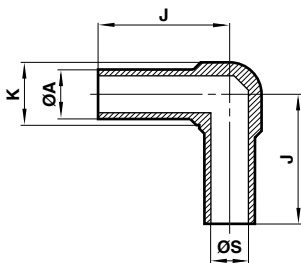


Product number	A O/D tube	B thread BSP	D	E A/F	F A/F	G	M	S
18 225 0418	4	1/8"	21,0	13	8	7,4	13	2,8
18 225 0518	5	1/8"	24,5	13	10	7,4	13	3,4
18 225 0618	6	1/8"	25,0	17	13	7,4	14	4,0
18 225 0818	8	1/8"	33,0	17	13	7,4	14	5,0
18 225 0428	4	1/4"	24,0	19	8	11,0	18	2,8
18 225 0528	5	1/4"	26,5	19	10	11,0	18	3,4
18 225 0628	6	1/4"	28,0	19	13	11,0	18	4,0
18 225 0828	8	1/4"	33,0	19	13	11,0	18	6,0
18 225 1028	10	1/4"	38,0	19	17	11,0	18	7,0
18 225 1228	12	1/4"	39,0	22	19	11,0	18	7,0
18 225 0638	6	3/8"	29,0	22	13	11,4	21,5	4,0
18 225 0838	8	3/8"	31,0	24	13	11,4	22	6,0
18 225 1038	10	3/8"	32,0	24	17	11,4	22	7,6
18 225 1238	12	3/8"	38,0	24	19	11,4	22	9,6
18 225 1638	16	3/8"	44,5	27	24	11,4	22	10,0
18 225 0848	8	1/2"	33,0	27	13	15,0	26	6,0
18 225 1048	10	1/2"	33,0	27	17	15,0	26	7,6
18 225 1248	12	1/2"	36,0	27	19	15,0	26	9,6
18 225 1648	16	1/2"	46,5	27	24	15,0	26	13,6
18 225 2248	22	1/2"	55,0	36	30	15,0	26	13,6
18 225 1668	16	3/4"	42,5	36	24	16,3	32	13,6
18 225 2268	22	3/4"	54,0	36	30	16,3	32	19,0
18 225 2868	28	3/4"	65,5	46	41	16,3	32	19,0
18 225 2288	22	1"	53,0	41	30	19,1	39	19,0
18 225 2888	28	1"	64,5	46	41	19,1	39	25,0

Product number	A O/D tube	B thread BSP	D	E A/F	F A/F	G	S
18 226 0418	4	1/8"	29,0	13	8	9,5	2,8
18 226 0518	5	1/8"	31,5	13	10	9,5	3,4
18 226 0618	6	1/8"	32,0	13	13	9,5	4,0
18 226 0818	8	1/8"	36,0	17	13	9,5	6,0
18 226 0528	5	1/4"	33,5	17	10	11,0	3,4
18 226 06 8	6	1/4"	34,0	17	13	11,0	4,0
18 226 0828	8	1/4"	38,0	17	13	11,0	6,0
18 226 1028	10	1/4"	39,0	19	17	11,0	7,6
18 226 0838	8	3/8"	40,0	22	13	12,7	6,0
18 226 1038	10	3/8"	41,0	22	17	12,7	7,6
18 226 1238	12	3/8"	42,5	22	19	12,7	9,6
18 226 1248	12	3/8"	46,0	27	19	16,0	9,6
18 226 1648	16	3/8"	48,5	30	24	16,0	13,6
18 226 2268	22	3/4"	59,0	36	30	17,5	19,0
18 226 2888	28	1"	67,5	46	41	19,0	25,0

Universal Stem Elbow

O/D tube stem

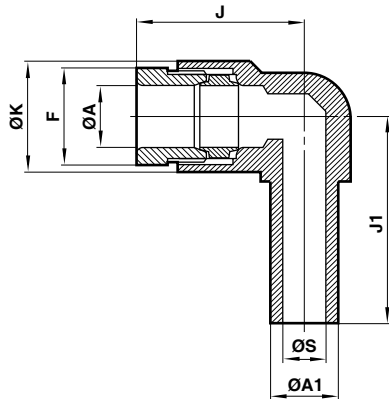


Product number	A O/D stem	J	K	S
18 042 0800	8	31,8	11,1	5,0



Stem Elbow Connector

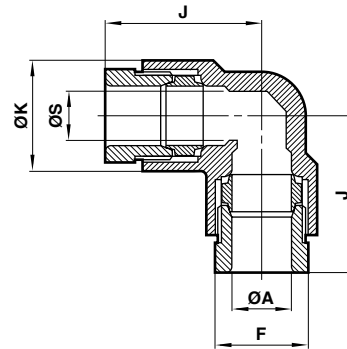
Female O/D tube to O/D tube stem



Product number	A O/D tube	A1 O/D stem	F A/F	J	J1	K	S
18 043 0505	5	5	10	23,5	29,5	14,3	3
18 043 0606	6	6	13	26,0	30,6	14,3	4
18 043 0808	8	8	13	31,0	34,9	17,5	5
18 043 1010	10	10	17	31,0	41,3	23,0	7
18 043 1212	12	12	19	33,0	43,5	23,0	9
18 043 1616	16	16	24	40,5	53,0	30,0	12

Elbow Connector

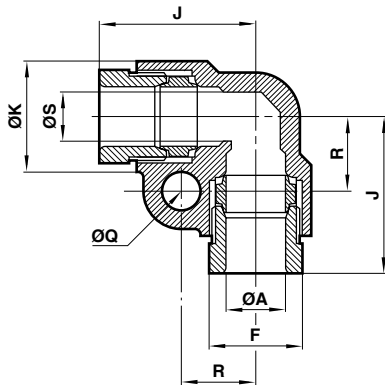
Female O/D tube



Product number	A O/D tube	F A/F	J	K	S
18 040 0400	4	8	19,5	11,1	2,8
18 040 0500	5	10	22,0	12,7	3,4
18 040 0600	6	13	23,0	14,3	4,0
18 040 0800	8	13	28,0	16,0	6,0
18 040 1000	10	17	31,0	20,0	7,6
18 040 1200	12	19	34,0	24,0	9,6
18 040 1500	15	22	39,0	27,8	12,6
18 040 1600	16	24	39,5	27,8	13,6
18 040 1800	18	27	42,5	30,9	15,3
18 040 2200	22	30	50,0	36,5	19,0
18 040 2800	28	41	59,5	47,6	25,0

Bracketed Elbow Connector

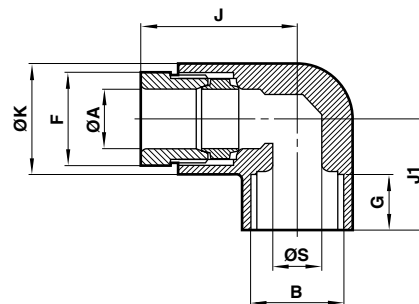
Female O/D tube



Product number	A O/D tube	F A/F	J	K	Q	R	S
18 041 0400	4	8	19,5	10,3	5,2 x 11,9	7,1	3,0
18 041 0500	5	10	30,5	13,5	6,75 x 16,7	6,7	4,0
18 041 0600	6	13	28,0	16,7	6,75 x 19,0	7,8	4,5
18 041 0800	8	13	34,0	16,7	6,75 x 19,0	7,8	6,5
18 041 1000	10	17	33,5	22,2	6,75 x 25,4	11,2	8,0
18 041 1200	12	19	41,0	22,2	6,75 x 25,4	11,2	10,0

Female Elbow Adaptor

Female O/D tube to female parallel BSP thread

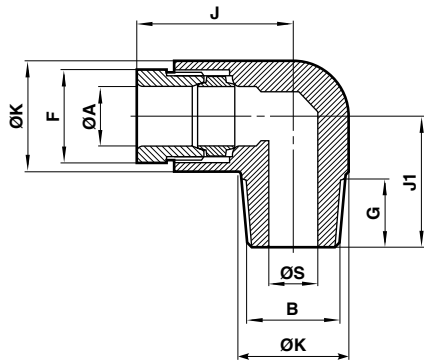


Product number	A O/D tube	B thread BSP	F A/F	G	J	J1	K	S
18 246 0418	4	1/8"	8	7,4	20,0	12,5	12,7	2,8
18 246 0518	5	1/8"	10	7,4	22,0	12,5	12,7	3,4
18 246 0628	6	1/4"	13	11,0	23,0	17,5	17,5	4,0
18 246 0828	8	1/4"	13	11,0	28,0	18,5	17,5	6,0
18 246 1228	10	1/4"	17	11,0	30,0	18,5	20,6	7,6
18 246 1038	10	3/8"	17	11,4	29,5	22,0	20,6	7,6
18 246 1238	12	3/8"	19	11,4	33,5	22,0	23,8	9,6
18 246 1638	16	3/8"	24	11,4	40,5	22,0	28,5	13,6
18 246 1248	12	1/2"	19	15,0	36,5	26,0	24,6	9,6
18 246 1648	16	1/2"	24	15,0	40,5	29,0	28,5	13,6



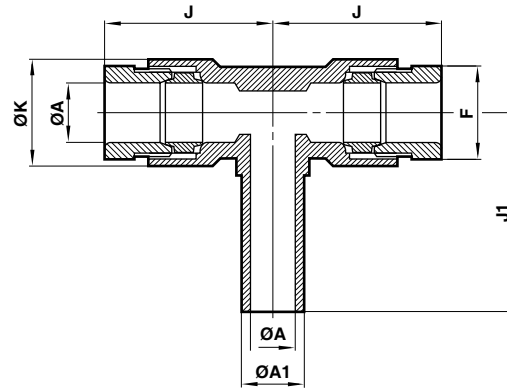
Male Elbow Adaptor

Female O/D tube to male taper BSP thread



Stem Tee Connector

Female O/D tube to O/D tube stem



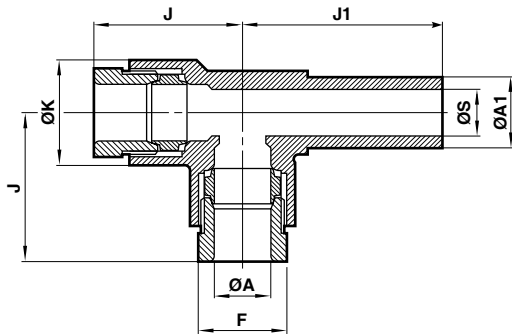
Product number	A O/D tube	B thread BSP	F A/F	G	J	J1	K	S
18 145 0418	4	1/8"	8	9,5	21,0	15,5	11,1	4,7
18 145 0518	5	1/8"	10	9,5	23,0	17,0	12,7	4,7
18 145 0618	6	1/8"	13	9,5	23,5	18,2	14,3	4,7
18 145 0818	8	1/8"	13	9,5	28,0	20,0	15,9	4,7
18 145 0428	4	1/4"	8	11,11	22,0	19,8	14,3	6,3
18 145 0528	5	1/4"	10	11,11	23,0	19,8	14,3	6,3
18 145 0628	6	1/4"	13	11,11	24,0	19,0	14,3	6,3
18 145 0828	8	1/4"	13	11,11	28,5	21,0	15,9	6,3
18 145 1028	10	1/4"	17	11,11	29,0	23,0	20,6	6,3
18 145 1228	12	1/4"	19	11,11	31,0	25,0	23,8	6,3
18 145 0638	6	3/8"	13	12,7	25,0	24,0	17,4	9,6
18 145 0838	8	3/8"	13	12,7	30,0	24,0	17,4	9,6
18 145 1038	10	3/8"	17	12,7	29,5	24,0	20,6	9,6
18 145 1238	12	3/8"	19	12,7	33,5	26,0	23,8	9,6
18 145 1638	16	3/8"	24	12,7	36,5	28,0	28,6	9,6
18 145 0848	8	1/2"	13	15,9	31,5	28,5	23,8	12,7
18 145 1048	10	1/2"	17	15,9	33,0	28,5	23,8	12,7
18 145 1248	12	1/2"	19	15,9	34,5	33,0	28,6	12,6
18 145 1548	15	1/2"	22	15,9	37,0	32,0	28,6	12,7
18 145 1648	16	1/2"	24	15,9	38,5	32,0	28,6	12,7
18 145 1668	16	3/4"	24	19,0	39,5	34,5	28,6	17,5
18 145 1868	18	3/4"	27	19,1	41,5	37,5	31,8	17,5
18 445 0518	5	1/8"	10	9,5	23,0	17,4	12,7	4,7
18 445 0618	6	1/8"	13	9,5	23,5	18,2	14,3	4,7
18 445 0818	8	1/8"	13	9,5	28,0	20,0	15,9	4,7
18 445 0528	5	1/4"	10	14,3	23,5	24,6	15,9	6,3
18 445 0628	6	1/4"	13	14,3	24,0	24,6	25,9	6,3
18 445 0828	8	1/4"	13	14,3	28,5	24,6	15,9	6,3
18 445 1028	10	1/4"	17	14,3	30,0	27,0	20,6	6,3
18 445 1228	12	1/4"	19	14,3	31,0	28,6	24,5	6,3
18 445 1038	10	3/8"	17	14,3	31,5	27,0	20,6	9,6
18 445 1238	12	3/8"	19	14,3	33,5	28,6	24,5	9,6
18 445 1248	12	1/2"	19	19,1	35,0	35,0	28,6	12,7
18 445 1648	16	1/2"	24	19,1	37,5	35,0	28,6	12,7

Product number	A O/D tube	A1 O/D stem	F A/F	J	J1	K	S
18 063 0505	5	5	10	20,5	29,5	14,3	3
18 063 0606	6	6	13	23,5	30,6	14,3	4
18 063 0808	8	8	13	26,5	34,9	17,5	5
18 063 1010	10	10	17	29,0	41,3	23,3	7
18 063 1212	12	12	19	31,5	43,5	23,0	9
18 063 1616	16	16	24	38,0	55,0	35,0	12
18 063 2222	22	22	30	49,0	60,0	35,0	18
18 063 2828	28	28	41	57,5	75,0	45,0	23



Side Stem Tee Connector

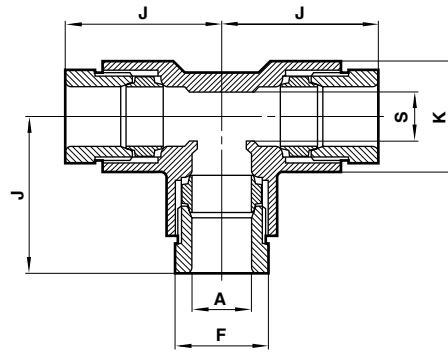
Female O/D tube to O/D tube stem



Product number	A O/D tube	A1 O/D stem	F A/F	J	J1	K	S
18 064 0505	5	5	10	23,5	29,5	12,3	3
18 064 0606	6	6	13	26,0	30,6	14,3	4
18 064 0808	8	8	13	31,0	34,9	17,4	5
18 064 10 10	10	10	17	32,0	41,3	23,0	7
18 064 12 12	12	12	19	35,0	43,5	23,0	9

Tee Connector

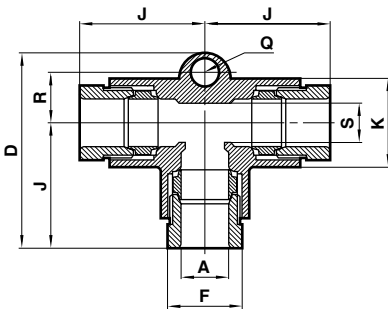
Female O/D tube



Product number	A O/D tube	F A/F	J	K	S
18 060 0400	4	8	18,5	10,3	2,8
180 60 0500	5	10	22,0	12,7	3,4
18 060 0600	6	13	23,0	14,3	4,0
18 060 0800	8	13	28,0	16,0	6,0
18 060 1000	10	17	31,0	20,0	7,6
18 060 1200	12	19	34,0	24,0	9,6
18 060 1500	15	22	38,0	28,6	12,6
18 060 1600	16	24	38,5	28,6	13,6
18 060 1800	18	27	42,5	31,0	17,5
18 060 2200	22	30	50,0	36,5	19,0
18 060 2800	28	41	57,5	47,6	25,0

Bracketed Tee Connector

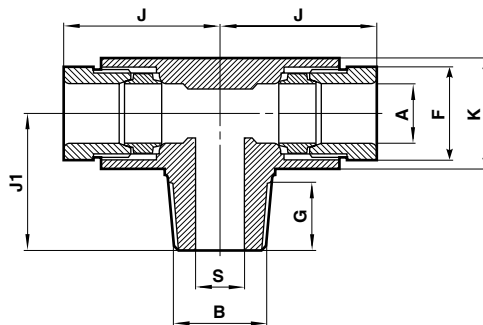
Female O/D tube



Product number	A O/D tube	D	F A/F	J	K	Q	R	S
18 061 0400	4	23,0	8	19,5	10,3	5,20 x 11,9	5,5	3,0
18 061 0500	5	31,0	10	22,5	14,3	6,75 x 15,9	8,7	4,0
18 061 0600	6	31,5	13	23,5	14,3	6,75 x 15,9	8,7	4,5
18 061 0800	8	36,5	13	28,5	17,5	6,75 x 19,0	9,5	6,5
18 061 1000	10	40,5	17	31,0	23,8	6,75 x 25,4	11,1	8,0
18 061 1200	12	42,0	19	33,5	23,8	6,75 x 25,4	11,1	9,6

Male Tee Adaptor

Female O/D tube to male taper BSP thread

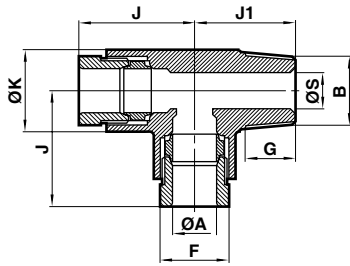


Product number	A O/D tube	B thread BSP	F A/F	G	J	J1	K	S
18 165 0418	4	1/8"	8	9,5	20,5	17,0	12,7	3,5
18 165 0518	5	1/8"	10	9,5	23,0	17,0	12,7	3,5
18 165 0618	6	1/8"	13	9,5	23,5	18,0	14,3	3,5
18 165 0828	8	1/4"	13	11,11	27,0	20,0	15,9	6,3
18 165 1028	10	1/4"	17	11,11	30,0	23,0	19,0	6,3
18 165 1238	12	3/8"	19	12,7	33,5	26,0	23,8	9,5



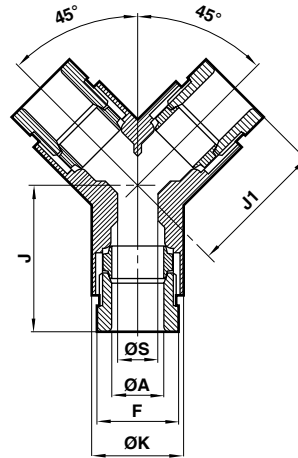
Male Side Tee Adaptor

Female O/D tube to male taper BSP thread



'Y' Connector

Female O/D tube

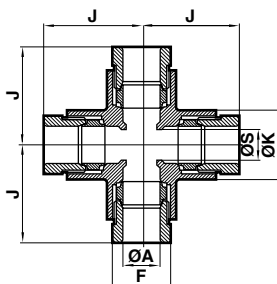


Product number	A O/D tube	B thread BSP	F A/F	G	J	J1	J2	K	S
18 175 0418	4	1/8"	8	9,5	19,5	17,0	13,5	12,7	2,8
18 175 0518	5	1/8"	10	9,5	22,0	17,0	15,5	12,7	3,5
18 175 0618	6	1/8"	13	9,5	23,0	18,5	16,0	14,3	4,0
18 175 0828	8	1/4"	13	11,1	28,0	22,0	20,0	15,9	6,0
18 175 1028	10	1/4"	17	11,1	31,0	23,0	23,0	19,0	6,4
18 175 1238	12	3/8"	19	12,7	34,0	27,0	25,0	23,8	9,6

Product number	A O/D tube	F A/F	J	J1	K	S
18 080 0400	4	8	20,0	20,0	11,1	2,8
18 080 0500	5	10	22,5	21,5	12,7	3,4
18 080 0600	6	13	24,0	23,0	14,3	4,0
18 080 0800	8	13	28,0	26,5	17,5	6,0
18 080 1000	10	17	30,0	28,5	23,8	7,6
18 080 1200	12	19	33,0	31,0	23,8	9,6
18 080 1600	16	24	39,5	35,5	31,8	13,6
18 080 2200	22	30	48,0	43,0	35,7	19,0
18 080 2800	28	41	57,5	52,5	44,5	25,0

Four Way Connector

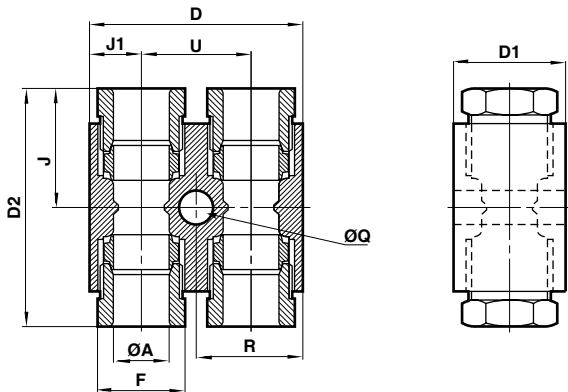
Female O/D tube



Product number	A O/D tube	F A/F	J	K	S
18 060 0400	4	8	19,0	10,3	2,8
18 090 0500	5	10	22,0	12,7	3,4
18 090 0600	6	13	23,0	14,3	4,0
18 090 0800	8	13	28,0	16,0	6,0
18 090 1000	10	17	31,0	20,0	7,6
18 090 1200	12	19	33,5	24,0	9,6
18 090 1600	16	24	38,5	28,6	13,6
18 090 2200	22	30	48,0	36,5	19,0
18 090 2800	28	41	57,5	47,6	25,0



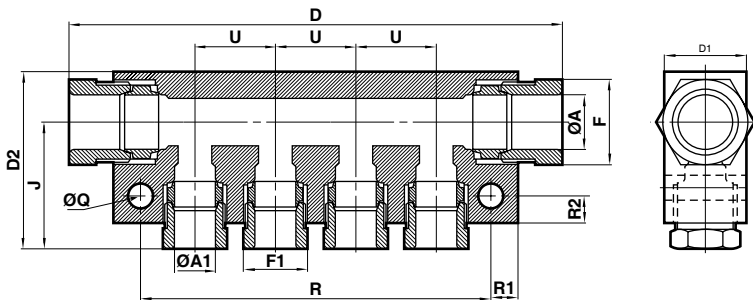
Connector Block



Product number	Number* of outlets	A O/D tube	D	D1	D2	F A/F	J	J1	Q	R	U
18 0A2 0400	2	4	24	12	35	8	11,5	6,0	5,4	12	12
18 0A2 0500	2	5	26	13	40	10	13,5	6,5	5,4	13	13
18 0A2 0600	2	6	32	16	39	13	13,5	8,0	6,5	16	16
18 0A2 0800	2	8	32	16	50	13	17,0	8,0	6,5	16	16
18 0A2 1000	2	10	42	21	52	17	18,0	10,5	8,3	21	21
18 0A2 1200	2	12	46	23	56	19	19,0	11,5	8,3	23	23

*Other number of outlets available to special order

Single Sided Manifold

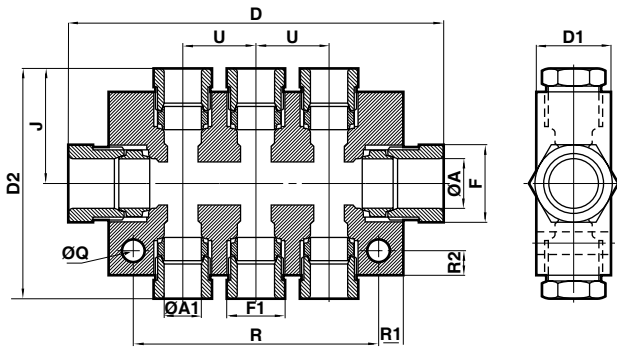


Product number	Number of outlets	Inlet A O/D tube	Outlet A1 O/D tube	F A/F	F1 A/F	D	D1	D2	J	Q	R	R1	R2	U
18 0B4 0804	4	8	4	13	8	88	16	31,0	23,0	6,5	60	6	6	12
18 0B4 0805	4	8	5	13	10	91	16	31,5	23,5	6,5	63	6	6	13
18 0B4 1206	4	12	6	19	13	106	23	38,0	27,0	6,5	76	6	6	16
18 0B4 1208	4	12	8	19	13	110	23	41,0	30,0	8,3	76	8	8	16
18 0B4 1610	4	16	10	24	17	132	29	48,0	34,0	8,3	95	8	8	21
18 0B4 1612	4	16	12	24	19	142	29	49,0	35,0	8,3	105	8	8	23

Manifolds up to 12 outlets can be provided subject to minimum economic production quantity.



Double Sided Manifold



Product number	Number of outlets	A O/D tube Inlet	A1 O/D tube Outlet	F A/F	F1 A/F	D	D1	D2	J	Q	R	R1	R2	U
18 0C6 0804	6	8	4	13	8	76	16	44	22,0	6,5	48	6	6	12
18 0C6 0805	6	8	5	13	10	78	16	45	22,5	6,5	50	6	6	13
18 0C6 1206	6	12	6	19	13	90	23	54	27,0	6,5	60	6	6	16
18 0C6 1208	6	12	8	19	13	94	23	60	30,0	8,3	60	8	8	16
18 0C6 1610	6	16	10	24	17	111	29	69	34,5	8,3	74	8	8	21
18 0C6 1612	6	16	12	24	19	119	29	71	35,5	8,3	82	8	8	23

Manifolds up to 12 outlets can be provided subject to minimum economic production quantity.

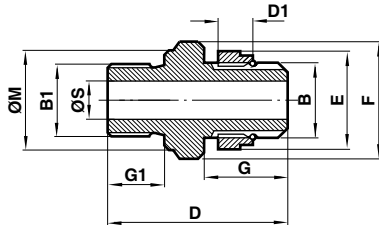


Hobbs Couplings

The design of a Hobbs coupling allows the fittings to be screwed into a parallel BSP tapping and accurately located for position in both height and direction before it is secured with the special coned locknut and seal. Wring locknut down metal to metal to create an effective seal.

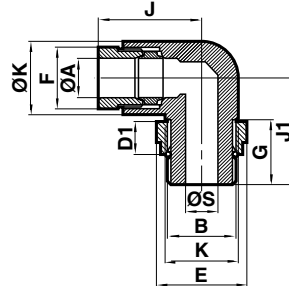
Hobbs Straight Connector

Male parallel BSP thread both ends.



Hobbs Elbow Adaptor

Female O/D tube to male parallel BSP thread.



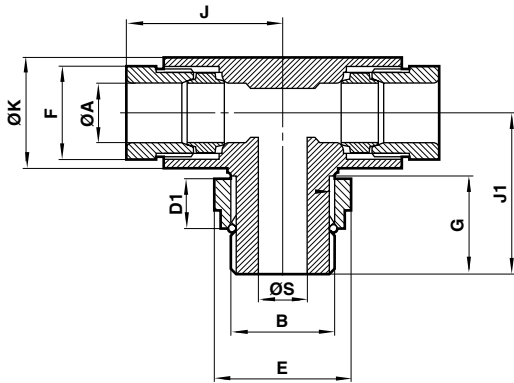
Product number	B thread BSP	B1 thread BSP	D	D1	E A/F	F A/F	G	G1	M	S
18 238 1818	1/8"	1/8"	27,0	7,0	17	13	14,0	7,4	13	5,0
18 238 2828	1/4"	1/4"	35,5	8,4	19	19	17,5	11,0	18	7,0
18 238 3838	3/8"	3/8"	40,0	9,6	24	24	20,0	11,4	22	10,0
18 238 4848	1/2"	1/2"	48,0	10,9	27	27	23,0	15,0	26	13,6
18 238 6868	3/4"	3/4"	52,5	10,9	32	36	25,4	16,3	32	19,0
18 238 8888	1"	1"	64,0	13,3	41	41	31,8	19,1	39	25,0
18 238 1828	1/4"	3/8"	31,5	7,0	17	17	17,5	7,4	14	5,0
18 238 2838	3/8"	1/4"	39,0	8,4	19	19	20,0	11,0	18	7,0
18 238 3848	1/2"	3/8"	44,0	9,6	24	24	23,0	11,4	22	10,0
18 238 4868	3/4"	1/2"	51,0	10,9	27	27	25,4	15,0	26	13,6
18 238 6888	1"	3/4"	61,0	10,9	32	36	31,8	16,3	32	19,0

Product number	A O/D tube	B thread BSP	D1	E A/F	F A/F	G	J	J1	K	S
18 258 0418	4	1/8"	7,0	17	8	14,0	20,9	22,0	11,3	4,7
18 258 0518	5	1/8"	7,0	17	10	14,0	23,0	22,0	14,3	4,7
18 258 0618	6	1/8"	7,0	17	13	14,0	23,5	22,0	14,3	4,7
18 258 0818	8	1/8"	7,0	17	13	14,0	27,5	23,8	15,8	4,7
18 258 0428	4	1/4"	8,4	19	8	17,5	21,7	25,4	14,3	6,3
18 258 0528	5	1/4"	8,4	19	10	17,5	23,7	25,4	14,3	6,3
18 258 0628	6	1/4"	8,4	19	13	17,5	24,2	25,4	14,3	6,3
18 258 0828	8	1/4"	8,4	19	13	17,5	28,6	27,0	15,8	6,3
18 258 1028	10	1/4"	8,4	19	17	17,5	29,7	30,1	23,8	6,3
18 258 1228	12	1/4"	8,4	19	19	17,5	31,2	30,1	23,8	6,3
18 258 0638	6	3/8"	9,6	24	13	20,0	25,2	30,2	17,4	9,6
18 258 0838	8	3/8"	9,6	24	13	20,0	29,8	30,2	17,4	9,6
18 258 1038	10	3/8"	9,6	24	17	20,0	31,3	33,0	20,0	9,6
18 258 1230	12	3/8"	9,6	24	19	20,0	33,5	33,0	23,8	9,6
18 258 1638	16	3/8"	9,6	24	24	20,0	36,5	35,0	28,6	9,6
18 258 0848	8	1/2"	10,9	27	13	23,0	31,4	36,5	23,8	12,7
18 258 1048	10	1/2"	10,9	27	17	23,0	33,0	36,5	23,8	12,7
18 258 1248	12	1/2"	10,9	27	19	23,0	34,4	36,5	23,8	12,7
18 258 1648	16	1/2"	10,9	27	24	23,0	38,5	38,0	28,6	12,7
18 258 2248	22	1/2"	10,9	27	30	23,0	44,0	42,0	36,5	12,7
18 258 1668	16	3/4"	10,9	32	24	25,4	40,5	43,7	31,8	17,5
18 258 2268	22	3/4"	10,9	32	30	25,4	47,5	45,2	36,5	17,5
18 258 2868	28	3/4"	10,9	32	41	25,4	53,3	49,0	44,5	17,5
18 258 2288	22	1"	13,3	41	30	32,0	49,5	50,8	36,5	24,0
18 258 2888	28	1"	13,3	41	41	32,0	57,5	56,5	44,5	24,0



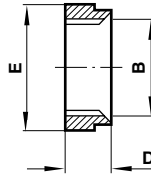
Hobbs Elbow Adaptor

Female O/D tube to male parallel BSP thread



Hobbs Coned Locknut

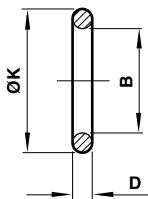
Female parallel BSP thread



Product number	A O/D tube	B thread BSP	D1	E A/F	F A/F	G	J	J1	K	S
18 278 0418	4	1/8"	7,0	17	8	14,0	21,0	22,0	14,3	4,7
18 278 0518	5	1/8"	7,0	17	10	14,0	22,0	22,0	14,3	4,7
18 278 0618	6	1/8"	7,0	17	13	14,0	22,5	22,0	14,5	4,7
18 278 0818	8	1/8"	7,0	17	13	14,0	27,5	23,8	15,8	4,7
18 278 0428	4	1/4"	8,4	19	8	17,5	21,5	25,4	14,3	6,3
18 278 0528	5	1/4"	8,4	19	10	17,5	23,5	25,4	14,3	6,3
18 278 0628	6	1/4"	8,4	19	13	17,5	24,0	25,4	14,3	6,3
18 278 0828	8	1/4"	8,4	19	13	17,5	28,5	27,0	15,8	6,3
18 278 1028	10	1/4"	8,4	19	17	17,5	29,5	30,1	23,8	6,3
18 278 1228	12	1/4"	8,4	19	19	17,5	31,0	30,1	23,8	6,3
18 278 0638	6	3/8"	9,6	24	13	20,0	26,0	30,2	17,4	9,6
18 278 0838	8	3/8"	9,6	24	13	20,0	30,0	30,2	17,4	9,6
18 278 1038	10	3/8"	9,6	24	17	20,0	31,0	33,0	23,8	9,6
18 278 1230	12	3/8"	9,6	24	19	20,0	33,5	33,0	23,8	9,6
18 278 1638	16	3/8"	9,6	24	24	20,0	36,5	35,0	28,5	9,6
18 278 0848	8	1/2"	10,9	27	13	23,0	31,5	36,5	23,8	12,7
18 278 1048	10	1/2"	10,9	27	17	23,0	33,0	36,5	23,8	12,7
18 278 1248	12	1/2"	10,9	27	19	23,0	34,5	36,5	23,8	12,7
18 278 1648	16	1/2"	10,9	27	24	23,0	38,5	38,0	28,5	12,7
18278 2248	22	1/2"	10,9	27	30	23,0	44,0	44,0	36,5	12,7
18 278 1668	16	3/4"	10,9	32	24	25,4	40,5	43,7	31,8	17,5
18 278 2268	22	3/4"	10,9	32	30	25,4	47,5	45,7	36,5	17,5
18 278 2868	28	3/4"	10,9	32	41	25,4	53,5	50,0	44,5	17,5
18 278 2288	22	1"	13,3	41	30	32,0	49,5	51,3	36,5	24,0
18 278 2888	28	1"	13,3	41	41	32,0	57,5	56,5	44,5	24,0

Product number	B thread BSP	D	E A/F
18 2F2 0018	1/8"	7,0	17
18 2F2 0028	1/4"	8,4	19
18 2F2 0038	3/8"	9,6	24
18 2F2 0048	1/2"	10,9	27
18 2F2 0068	3/4"	10,9	32
18 2F2 0088	1"	13,3	41

Hobbs Seal



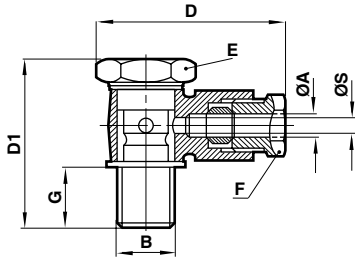
Product number	B for BSP thread	D	D
18 2E6 0018	1/8"	2	12,7
18 2E6 0028	1/4"	2,5	15,9
18 2E6 0038	3/8"	2,5	20,7
18 2E6 0048	1/2"	2,6	24,3
18 2E6 0068	3/4"	2,6	30,2
18 2E6 0088	1"	3,2	37,2



Elbow Banjo Assembly

Non Regulating BSPP Bolt

Female O/D tube to male parallel BSP thread

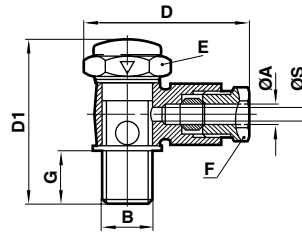


Product number	A O/D tube	B thread BSPP	D*	D1	E A/F	F A/F	G	S
18 A51 0418	4	1/8"	32	29	14	8	6,5	2,8
18 A51 0518	5	1/8"	35	29	14	10	6,5	3,4
18 A51 0618	6	1/8"	35	29	14	13	6,5	4,0
18 A51 0818	8	1/8"	39	29	14	13	6,5	6,0
18 A51 0628	6	1/4"	38	33	17	13	7,5	4,0
18 A51 0828	8	1/4"	42	33	17	13	7,5	6,0
18 A51 1028	10	1/4"	44	33	17	17	7,5	7,6
18 A51 0838	8	3/8"	48	41	22	13	10,0	6,0
18 A51 1038	10	3/8"	49	41	22	17	10,0	7,6
18 A51 1238	12	3/8"	50	41	22	19	10,0	9,6
18 A51 1048	10	1/2"	54	49	27	17	14,0	7,6
18 A51 1248	12	1/2"	56	49	27	19	14,0	9,6

*This dimension will vary with torque applied and is for guidance only.

Regulating BSPP Bolt

Female O/D tube to male parallel BSP thread



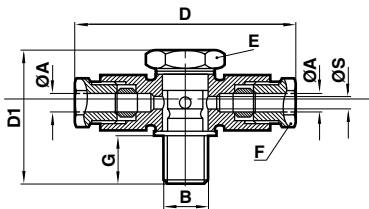
Product number	A O/D tube	B thread BSPP	D*	D1	E A/F	F A/F	G	S
18 K51 0518	5	1/8"	35	34	14	10	6,5	3,4
18 K51 0818	8	1/8"	39	34	14	13	6,5	6,0
18 K51 0828	8	1/4"	42	36,5	17	13	7,5	6,0

* This dimension will vary with torque applied and is for guidance only. Arrow on bolt hexagon indicates free flow direction.

Tee Banjo Assembly

Non Regulating BSPP Bolt

Female O/D tube to male parallel BSP thread



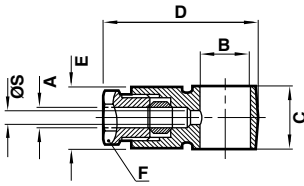
Product number	A O/D tube	B thread BSPP	D*	D1	E A/F	F A/F	G	S
18 A71 0518	5	1/8"	53	29	14	10	6,5	3,4
18 A71 0618	6	1/8"	54	29	14	13	6,5	4,0
18 A71 0628	6	1/4"	56	33	17	13	7,5	4,0
18 A71 0828	8	1/4"	64	33	17	13	7,5	6,0
18 A71 1038	10	1/4"	68	33	17	17	7,5	7,6
18 A71 0838	8	3/8"	70	41	22	13	10,0	6,0

*This dimension will vary with torque applied and is for guidance only.



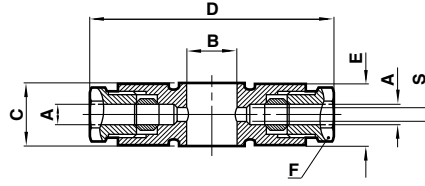
Elbow Banjo Body

O/D tube



Tee Banjo Body

O/D tube



Product number	A O/D tube	B for BSP bolt	C	D*	E	F	S
18 051 0418	4	1/8"	14,0	32	11,5	8	2,8
18 051 0518	5	1/8"	14,0	35	13,0	10	3,4
18 051 0618	6	1/8"	14,0	35	14,0	13	4,0
18 051 0818†	8	1/8"	16,0	39	16,0	13	6,0
18 051 0628	6	1/4"	16,0	38	14,0	13	4,0
18 051 0828	8	1/4"	16,0	42	16,0	13	6,0
18 051 1028†	10	1/4"	18,5	44	18,5	17	7,6
18 051 0838	8	3/8"	20,5	48	17,0	13	6,0
18 051 1038	10	3/8"	20,5	49	18,5	17	7,6
18 051 1238	12	3/8"	21,5	50	21,5	19	9,6
18 051 1048	10	1/2"	22,0	54	18,5	17	7,6
18 051 1248	12	1/2"	22,0	56	21,5	19	9,6

Product number	A O/D tube	B for BSP bolt	C	D*	E	F	S
18 071 0518	5	1/8"	14,0	53	13,0	10	3,4
18 071 0618	6	1/8"	14,0	54	14,0	13	4,0
18 071 0628	6	1/4"	16,0	56	14,0	13	4,0
18 071 0828	8	1/4"	16,0	64	16,0	13	6,0
18 071 1028†	10	1/4"	18,5	68	18,5	17	7,6
18 071 0838	8	3/8"	20,5	70	17,0	13	6,0

*This dimension will vary with torque applied and is for guidance only.

†To double stack this body order longer bolt 20P00 00 28, see below.

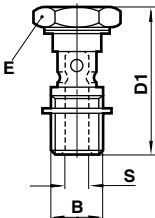
*This dimension will vary with torque applied and is for guidance only.

†To double stack these bodies order longer bolts 20P00 00 18 or 20P00 00 28, see below.

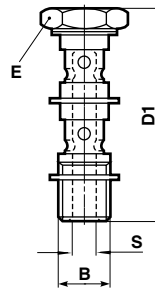
Banjo Bolts – Non Regulating

Single stacking

Male parallel BSP thread



Double stacking
Male parallel BSP thread



Product number	B thread BSP	D1	E A/F	S
20 A00 0018	1/8"	29	14	4,5
20 A00 0028	1/4"	33	17	5,5
20 A00 0038	3/8"	41	22	9,2
20 A00 0048	1/2"	49	27	10,5

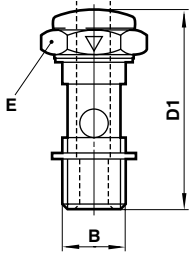
All banjo bolts supplied complete with sealing washers.

Product number	B thread BSP	D1	E A/F	S
20 B00 0018	1/8"	44,0	14	4,5
20 B00 0028	1/4"	50,0	17	5,5
20 B00 0038	3/8"	62,5	22	9,2
20 B00 0048	1/2"	74,0	27	10,5
20 P00 0018†	1/8"	47,5	14	4,5
20 P00 0028†	1/4"	55,0	17	5,5

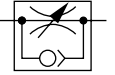
*To be used only with bodies marked †, see tables above.



Banjo Bolts – Regulating

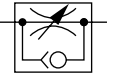


Regulating Out Male parallel BSP thread



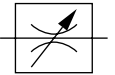
Product number	B thread BSP	D1	E
20 K00 0018	1/8"	34	14
20 K00 0028	1/4"	37	17
20 K00 0038	3/8"	52	22
20 K00 0048	1/2"	58	27

Regulating In Male parallel BSP thread



Product number	B thread BSP	D1	E
20 L00 0018	1/8"	34	14
20 L00 0028	1/4"	37	17
20 L00 0038	3/8"	52	22
20 L00 0048	1/2"	58	27

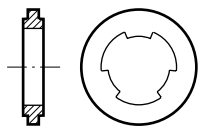
Bi-Directional Flow Male parallel BSP thread



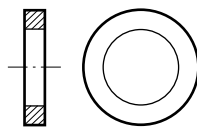
Product number	B thread BSP	D1	E
20 M00 0018	1/8"	34	14
20 M00 0028	1/4"	37	17
20 M00 0038	3/8"	52	22
20 M00 0048	1/2"	58	27

All banjo bolts supplied complete with sealing washers. Arrow on bolt hexagon indicates free flow direction.

Sealing Washers – for use with banjo fitting



Nylon



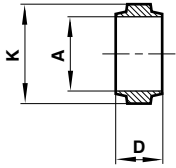
Copper

Product number	Size	Material
48 031 400	M5	Nylon
28 2E1 0018	1/8"	Copper
28 2E1 0028	1/4"	Copper
28 2E1 0038	3/8"	Copper
28 2E1 0048	1/2"	Copper



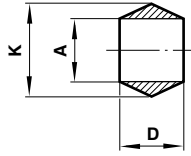
Universal Tubing Sleeve

Suitable for nylon and metallic tubing



Tubing Sleeve

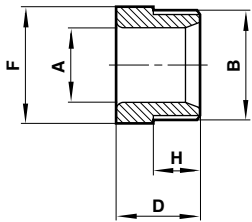
Suitable for metallic tubing only



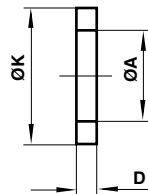
Product number	A O/D tube	D	K
18 002 0400	4	4,2	6,4
18 002 0500	5	5,2	7,5
18 002 0600	6	5,5	8,5
18 002 0800	8	6,3	10,5
18 002 1000	10	7,0	13,0
18 002 1200	12	7,7	15,5
18 002 1500	15	9,1	19,5
18 002 1600	16	9,0	20,0
18 002 1800	18	10,1	23,0
18 002 2200	22	10,5	26,5
18 002 2800	28	13,2	33,0

Product number	A O/D tube	D	K
18 003 0400	4	4,6	5,7
18 003 0500	5	5,0	6,8
18 003 0600	6	5,5	8,0
18 003 0800	8	6,3	10,3
18 003 1000	10	7,5	12,6
18 003 1200	12	7,5	14,9
18 003 1500	15	9,0	18,3

Tubing Nut



Folded Copper Washer



Metric & Inch

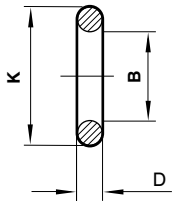
Product number	A O/D tube	B thread	D	F A/F	H
18 001 0400	4	M8 x 1,0	9,5	8	8,0
18 001 0500	5	M10 x 1,0	10,0	10	7,0
18 001 0600	6	M11 x 1,0	10,5	13	8,0
18 001 0800	8	M13 x 1,0	12,1	13	9,0
18 001 1000	10	M15 x 1,0	13,3	17	9,5
18 001 1200	12	M18 x 1,5	15,7	19	10,0
18 001 1500	15	M22 x 1,5	17,0	22	10,0
18 001 1600	16	M24 x 1,5	17,1	24	11,0
18 001 1800	18	M26 x 1,5	19,5	27	12,0
18 001 2200	22	M30 x 1,5	21,5	30	15,0
18 001 2800	28	M38 x 1,5	24,5	41	18,0

Product number	A	Suitable for B			D	K
		BSP thread	or metric thread	or imperial thread		
28 2E1 0018	9,8	1/8"	-	3/8" x 24TPI	1,5	13,5
28 2E1 0028	13,2	1/4"	-	-	1,5	17,7
28 2E1 0038	16,7	3/8"	M16	-	1,5	21
28 2E1 0048	21,0	1/2"	-	-	1,5	26,4
28 2E1 0059	23,0	5/8"	-	-	1,8	28,6
28 2E1 0068	26,5	3/4"	-	-	1,8	32,4
28 2E1 0078	30,2	7/8"	M30	-	1,8	36,2
28 2E1 0088	33,3	1"	M33	-	1,8	38,9
28 2E1 00A8	42,0	1 1/4"	-	-	2,2	49,9

For 'A' thread details refer to page 9.6.001.04.



'O'-Ring Seal



Product number	B for BSP thread	D	K
282E3 00 18	1/8"	1,6	11,3
282E3 00 28	1/4"	1,6	14,3
282E3 00 38	3/8"	1,6	18,3
282E3 00 48	1/2"	2,4	23,4
282E3 00 68	3/4"	2,4	29,4
282E3 00 88	1"	3,0	35,5

The 'O'-ring seals shown on this page are suitable for use with our metric range of parallel threaded adaptors.

Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where *pressures* and *temperatures* can exceed those listed under '**Technical Data**'.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult Norgren.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products where applicable.