

Compression Fittings

36 Series Metric

- > Wide range of types and sizes
- > Rugged and durable
- > Suitable for use under extreme conditions of temperature and pressure
- > Leakage free tube sealing
- > Suitable for metallic and nylon tubing
- > Thread adaptor not required - machining profile available
- > Now available in single part number format



Technical features

Medium:

Compressed air or any fluids compatible with the materials/tubing listed

Operating pressure:

The maximum working pressure is limited by the type of tubing being used. See typical application below.

Ambient temperature:

The maximum working temperature is generally limited by the type of tubing being used. See typical application below.

Tube sizes:

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

Thread types:

Parallel BSP - ISO 228

Taper BSP - ISO 7

Taper NPTF - ASME B1.20.1

Thread sizes:

1/8" ... 3/4"

Tube types:

Nylon 11 or 12 and other plasticised or unplasticised tubing which conforms to the tolerances specified in BS5409: Part 1 1976

Copper, annealed and half-hard to BS EN 12449:2016.

Double wall brazed steel.

Typical Application

Tube material - Annealed copper:

Working temperature range
-200°C ... +50°C

4 mm diameter tube - 128 bar max.
28 mm diameter tube - 41 bar max.

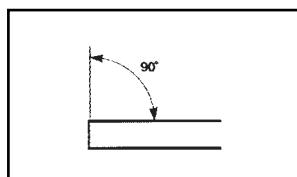
Tube material - Nylon:

Standard temperature range
-40 ... 20°C
4mm tube 28 bar max.
28mm tube 15 bar max.

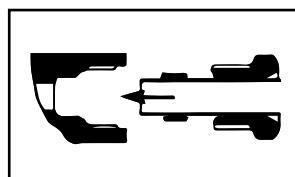
Materials:

Tubing nut, sleeve & body manufactured from bar: brass to BS EN 12164:2011
Body manufactured from stamping: brass to BS EN 12165:2016

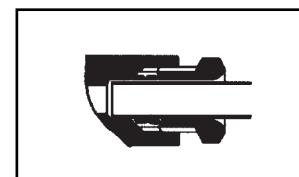
Method of Assembly



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



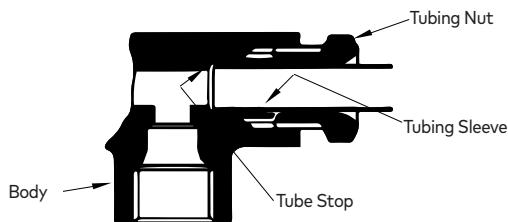
2. Place the tubing nut and sleeve on the tube and push the tube into the fitting until it bottoms on the tube stop.



3. Holding the tube firmly in contact with the tube stop screw the tubing nut down finger tight and then tighten a further 1 to 3/4 full turns. Slacken off the assembly and then pinch down again.

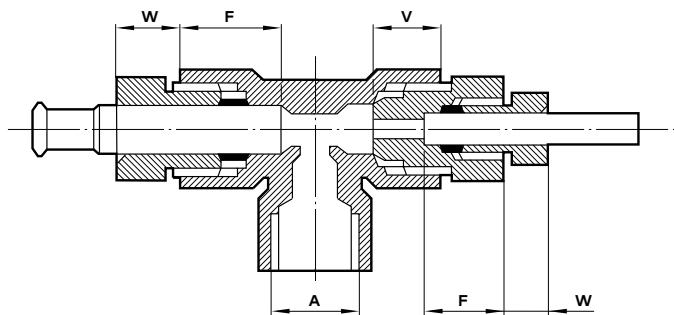
The method of preparation and assembly described will ensure leak-proof joints over a wide pressure range, depending upon the size and type of tubing being used. Failure to follow this guide, or over-tightening at any joint, will only lead to damage of the fittings or an unsatisfactory seal.

Components



Typical Dimensions

Hose stem to tube with reducing connector



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

A = outside diameter tube size and thread details.*

F = tube or stem length inside fitting.

V = nippled 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.

Torque Figures

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	5,7 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
16	46,0 Nm	31,0 Nm	26,0 Nm	-
22	79,0 Nm	68,0 Nm	46,0 Nm	-
28	76,0 Nm	68,0 Nm	96,0 Nm	-

Metric - Recommended torque using 360501** series tubing sleeves

Tubing nuts and tubing sleeves

Tubing nut 360500	Universal tubing sleeve 360501	Tubing sleeve metallic tube 360502
		

Page 5

Page 5

Page 5

Straight Connectors and Adaptors

Straight adaptor male ISO R - female tube 360530	Straight adaptor male ISO G - female tube 360504	Straight adaptor female ISO G - female tube 360505	Straight connector female tube 360503	Bracketed straight connector - female tube 360552	Bulkhead connector female tube 360508
					
Page 6	Page 7	Page 8	Page 8	Page 8	Page 8
Bulkhead locknut 360520	Straight stem adaptor male ISO R - tube stem 360531	Straight stem adaptor male ISO G - tube stem 360521	Nippled adaptor male ISO R - male tube 360556	Nippled adaptor female ISO G - male tube 360557	Nippled stem connector male tube - tube stem 360625
					
Page 8	Page 9	Page 9	Page 9	Page 9	Page 9
Reducing connector female tube - male tube 360517	Stem tailpiece adaptor tube stem - hose 360524	Tubing plug male tube thread 360509	Straight adaptor male NPTF - female tube 360532		
					
Page 10	Page 10	Page 10	Page 10		

Elbow Connectors and Adaptors

Elbow adaptor male ISO R - female tube 360005	Hobbs elbow adaptor male ISO G - female tube 360541	Hobbs coned locknut ISO G 360540	Hobbs seal 340156	Elbow adaptor female ISO G - female tube 360555	Elbow connector female tube 360511
					
Page 11	Page 11	Page 11	Page 11	Page 12	Page 12
Bracketed elbow connector - female tube 360548	Elbow stem connector female tube - tube stem 360551	Elbow adaptor male NPTF - female tube 360331			
					
Page 12	Page 12	Page 12			

Tee Connectors and Adaptors

Tee connector
female tube
360514



Page 13

Bracketed tee connector
female tube
360549



Page 13

Stem tee connector
female tube - tube stem
360550



Page 13

Side stem tee connector
female tube - tube stem
360511



Page 13

90° stem tee connector
female tube - tube stem
360631



Page 14

Accessories

Folded copper washer
480213



Page 14

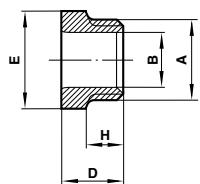
Bonded washer
480215



Page 14

Tubing Nut

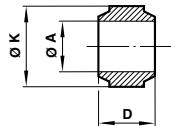
360500**



B O/D tube	A thread	D	E A/F	H	Model
4	M8 x 1.0	9.5	8	6.5	36050002
5	M10 x 1.0	10	10	6.5	36050003
6	M11 x 1.0	10.5	13	6.5	36050004
8	M13 x 1.0	12.1	13	7.6	36050005
10	M15 x 1.0	13.3	17	8.3	36050006
12	M18 x 1.5	15.7	19	8.7	36050007
16	M24 x 1.5	17.1	24	10.1	36050008
22	M30 x 1.5	21.5	30	14	36050010
28	M38 x 1.5	24.5	41	15.5	36050012

Universal Tubing Sleeve

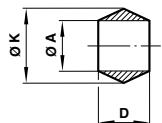
Suitable for nylon and metallic tubing
360501**



A O/D tube	D	K	Model
4	4.2	6.4	36050102
5	5.2	7.5	36050103
6	5.5	8.5	36050104
8	6.3	10.5	36050105
10	7	13	36050106
12	7.7	15.5	36050107
16	9	20	36050108
22	10.5	26.5	36050110
28	13.2	33	36050112

Tubing Sleeve

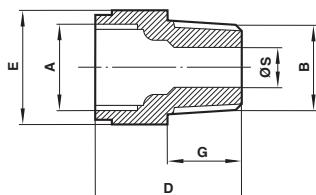
Suitable for metallic tubing only
360502**



A O/D tube	D	K	Model
4	4.6	5.7	36050202
6	5.5	8	36050204
8	6.3	10.3	36050205
10	7.5	12.6	36050206
12	7.5	14.9	36050207

Straight Male Adaptor

Female O/D tube to male taper ISO R thread
360530**



Straight Male Adaptor

Female O/D tube to male taper ISO R thread – kit of parts
18125****



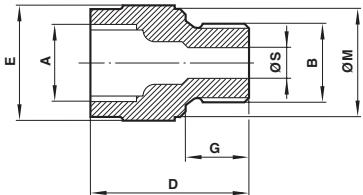
A thread for O/D tube	B thread	D	E A/F	G	S	Model
4	R1/8	18.5	13	9.5	2.8	36053002
5	R1/8	20	13	9.5	3.4	36053003
6	R1/8	20	14	9.5	4	36053004
8	R1/8	26.5	17	9.5	4.7	36053005
10	R1/8	28	19	9.5	4.7	36053006
4	R1/4	18	14	11.11	2.8	36053008
5	R1/4	21.6	14	11.11	3.4	36053009
6	R1/4	21.6	14	11.11	4	36053010
8	R1/4	23	17	11.11	6	36053011
10	R1/4	30	19	11.11	7	36053012
12	R1/4	31.1	22	11.11	6.4	36053013
8	R3/8	21	19	12.7	6	36053019
10	R3/8	26	19	12.7	8	36053020
12	R3/8	29	22	12.7	9.6	36053021
8	R1/2	25	22	15.9	6	36053028
10	R1/2	27	22	15.9	8	36053029
12	R1/2	30	22	15.9	10	36053030
16	R1/2	38.5	30	15.9	13.6	36053031
12	R3/4	33	30	19.1	10	36053044
16	R3/4	35	30	19.1	13.6	36053045

O/D tube	Thread	Adaptor	Tubing sleeve	Tubing nut	Model
4	R1/8	36053002	36050102	36050002	181250418
6	R1/8	36053004	36050104	36050004	181250618
8	R1/8	36053005	36050105	36050005	181250818
4	R1/4	36053008	36050102	36050002	181250428
6	R1/4	36053010	36050104	36050004	181250628
8	R1/4	36053011	36050105	36050005	181250828
10	R1/4	36053012	36050106	36050006	181251028
10	R3/8	36053020	36050106	36050006	181251038
12	R3/8	36053021	36050107	36050007	181251238
12	R1/2	36053030	36050107	36050007	181251248

Note: Minimum order quantity of 10 pieces sizes 4mm to 8mm tube, 1/8" and 1/4" thread

Straight Male Adaptor

Female O/D tube to male parallel ISO G thread
360504**



Straight Male Adaptor

Female O/D tube to male parallel ISO G thread – kit of parts
18225****



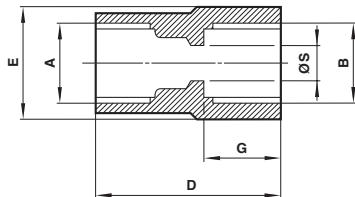
A thread for O/D tube	B thread	D	E A/F	G	M	S	Model
4	G1/8	15	13	7.4	13	2.8	36050402
6	G1/8	21	17	7.4	14	4	36050404
8	G1/8	25	17	7.4	14	5	36050405
6	G1/4	21	19	10	18	4	36050410
8	G1/4	25	19	10	18	6	36050411
10	G1/4	30	19	10	18	7	36050412
12	G1/4	30	22	10	18	7	36050413
6	G3/8	22	22	11.4	22	4	36050418
8	G3/8	23	24	11.4	22	6	36050419
10	G3/8	24	24	11.4	22	7.6	36050420
12	G3/8	29	24	11.4	22	9.6	36050421
8	G1/2	25	27	15	26	6	36050428
10	G1/2	25	27	15	26	7.6	36050429
12	G1/2	27	27	15	26	9.6	36050430
16	G1/2	36	27	15	26	13.6	36050431
16	G3/4	32	36	16.3	32	13.6	36050445
22	G3/4	43	36	16.3	32	19.0	36050447
22	G1	42	41	19.1	39	19.0	36050460

O/D tube	Thread	Adaptor	Tubing sleeve	Tubing nut	Model
6	G1/8	36050404	36050104	36050004	182250618
8	G1/8	36050405	36050105	36050005	182250818
6	G1/4	36050410	36050104	36050004	182250628
8	G1/4	36050411	36050105	36050005	182250828

Note: Minimum order quantity of 10 pieces sizes 4mm to 8mm tube, 1/8" and 1/4" thread

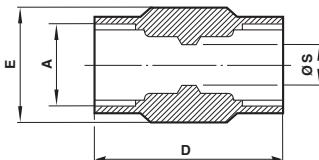
Straight Adaptor

Female O/D tube to female parallel ISO G thread
360505**



Straight Connector

Female O/D tube
360503**

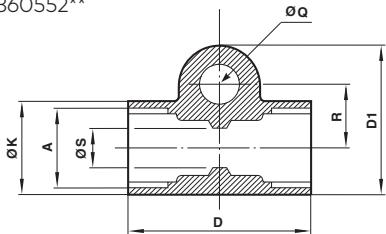


A thread for O/D tube	B thread	D	E A/F	G	S	Model
4	G1/8	23	13	11	2.8	36050502
6	G1/8	25	13	11	4	36050504
6	G1/4	27	17	12.7	4	36050510
8	G1/4	30	17	12.7	6	36050511
10	G1/4	31	19	12.7	7.6	36050512
10	G3/8	33	22	14.5	7.6	36050520
12	G3/8	33.5	22	14.5	9.6	36050521
12	G1/2	37	27	17.5	9.6	36050530

A thread for O/D tube	D	E A/F	S	Model
4	22	10	2.8	36050302
6	26	13	4	36050304
8	32	17	6	36050305
10	35	19	7.6	36050306
12	36	22	9.6	36050307

Bracketed Straight Connector

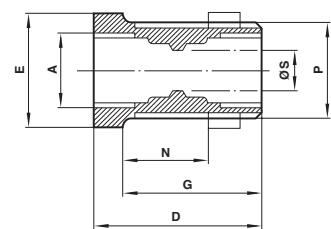
Female O/D tube
360552**



A thread for O/D tube	D	D1	K	Q	R	S	Model
8	33.3	24.6	17.5	6.75 x 19.0	9.5	6.5	36055205

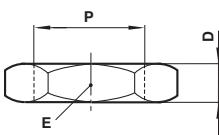
Bulkhead Connector

Female O/D tube
360508**



Bulkhead Locknut

360520**



A thread for O/D tube	D	E A/F	G	N max. bulkhead	P thread	S	Bulkhead clearance drilling	Locknut number	Model
4	23	17	18	12	M12 x 1.0	2.8	13	36052001	36050802
6	26	19	20	13	M15 x 1.0	4	16	36052003	36050804
8	32	22	26	19	M18 x 1.5	6	19	36052005	36050805
10	35	24	29	20	M20 x 1.5	7.6	21	36052006	36050806
12	36	30	30	21	M24 x 1.5	9.6	25	36052007	36050807
16	41	36	35	25	M30 x 1.5	13.6	32	36052008	36050808

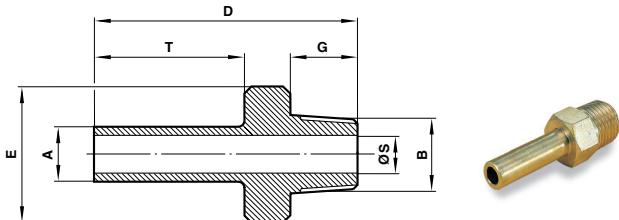
Minimum Bulkhead thickness 3,0

Locknuts should be ordered separately.

P thread	D	E A/F	Model
M12 x 1.0	5	17	36052001
M15 x 1.0	6	22	36052003
M18 x 1.5	6	24	36052005
M20 x 1.5	7	27	36052006
M24 x 1.5	7	30	36052007
M30 x 1.5	8	41	36052008

Straight Stem Adaptor

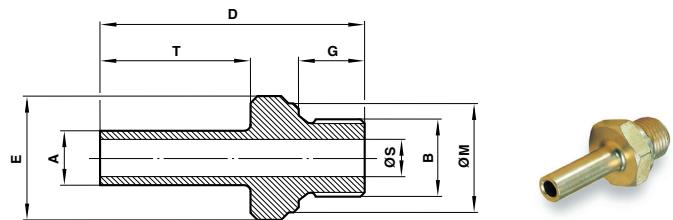
O/D tube stem to male taper ISO R thread
360531**



A O/D stem	B thread	D	E A/F	G	S	T	Model
6	R1/8	37	13	9.5	4	23	36053104
6	R1/4	42	14	11.1	4	23	36053110
8	R1/4	45	14	11.1	5	26	36053111
10	R1/4	47	14	11.1	7	28	36053112

Straight Stem Adaptor

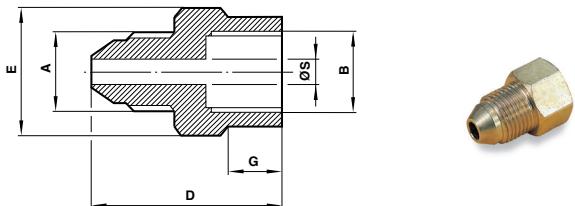
O/D tube stem to male parallel ISO G thread
360521**



A O/D stem	B thread	D	E A/F	G	M	S	T	Model
8	G1/4	45	19	10	18	5	26	36052111
16	G1/2	61	27	15	26	12	35	36052131

Nippled Adaptor

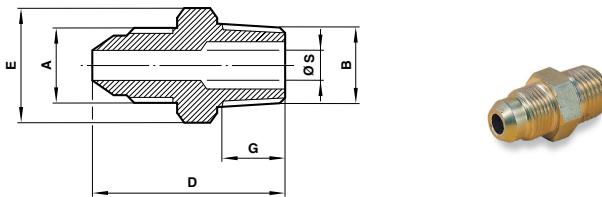
Male O/D tube to female parallel ISO G thread
360557**



A thread for O/D tube	B thread	D	E A/F	G	S	Model
6	G1/8	24.5	13	7.5	4	36055704
8	G1/4	30	17	6	5.4	36055711
10	G1/4	31.5	17	6	7	36055712

Nippled Adaptor

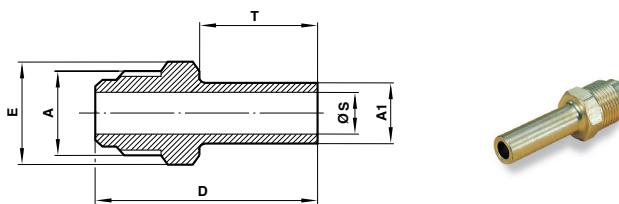
Male O/D tube to male taper ISO R thread
360556**



A thread for O/D tube	B thread	D	E A/F	G	S	Model
8	R1/8	30	14	9.5	5	36055605
6	R1/4	30	14	11.1	4	36055610
8	R1/4	32	14	11.1	5.4	36055611

Nippled Stem Connector

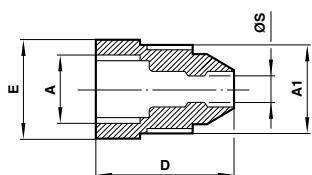
Male O/D tube to O/D tube stem
360625**



A1 O/D stem	A thread for O/D tube	D	E A/F	S	T	Model
8	8	45.5	13	5	26	36062505
10	10	49	17	7	28	36062506
12	12	53.5	19	9	30	36062507

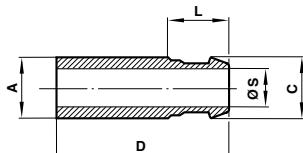
Reducing Connector

Female O/D tube to male O/D tube
360517**



Stem Tailpiece Adaptor

O/D tube stem to hose
360524**

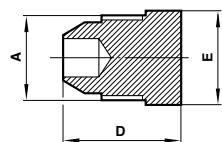


A thread for O/D tube	A thread for O/D tube	D	E A/F	S	Model
6	4	16	13	2.8	36051727
8	4	19.5	13	2.8	36051728
8	5	19.5	13	3.4	36051738
8	6	25	13	4	36051747
12	6	23.5	19	4	36051749
12	8	23.5	19	6	36051757
16	12	27	24	9.6	36051771

A O/D stem	C hose bore	D	L	S	Model
6	6.3	40.5	17.5	4.3	36052424
8	6.3	43.5	17.5	4.3	36052425
10	10	47	19	7.3	36052442
16	12.5	54.8	20	9.7	36052453

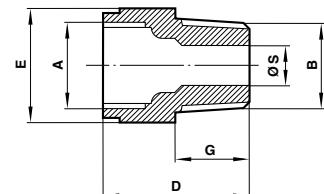
Tubing Plug

Male O/D tube thread
360509**



Straight Male Adaptor (NPTF)

Female O/D tube to male NPTF thread
360532**

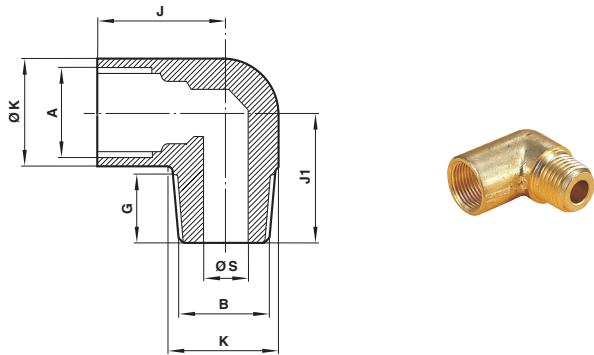


A thread for O/D tube	D	E A/F	Model
4	15.3	8	36050902
6	17	13	36050904
8	19.5	13	36050905
10	21	17	36050906
12	23.5	19	36050907
16	27	24	36050908

A thread for O/D tube	B thread NPTF	D	E A/F	G	S	Model
6	1/8"	20	14	9.5	4	36053204
6	1/4"	22.5	17	14.3	4	36053210

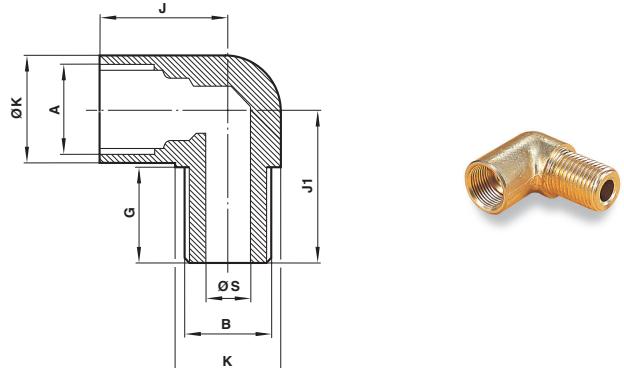
Male Elbow Adaptor

Female O/D tube to male taper ISO R thread
360005**



Hobbs Elbow Adaptor

Female O/D tube to male parallel ISO R thread
360541**



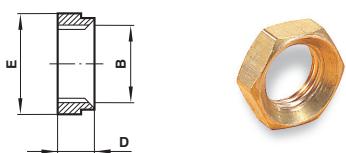
A thread for O/D tube	B thread	G	J	J1	K	S	Model
4	R1/8	9.5	14.9	16.5	11.1	4.7	36000502
5	R1/8	9.5	16.5	17	12.7	4.7	36000503
6	R1/8	9.5	16.5	18.2	14.3	4.7	36000504
8	R1/8	9.5	20	20	15.9	4.7	36000505
4	R1/4	11.11	15.7	19.8	14.3	6.3	36000508
6	R1/4	11.11	17.2	19	14.3	6.3	36000510
8	R1/4	11.11	20.6	21	15.9	6.3	36000511
10	R1/4	11.11	21	23	20.6	6.3	36000512
12	R1/4	11.11	22.2	25	24.6	6.3	36000513
8	R3/8	12.7	21.8	24	17.4	9.6	36000519
10	R3/8	12.7	21.5	24	20.6	8	36000520
12	R3/8	12.7	24.5	26	24.6	9.6	36000521
10	R1/2	15.9	24.9	29.2	24.6	12.7	36000529
12	R1/2	15.9	25.4	33	28.6	12.7	36000530
16	R1/2	15.9	28	32	28.6	12.7	36000531
16	R3/4	19.0	29.0	34.5	28.6	17.5	36000545

A thread for O/D tube	B thread	G	J	J1	K	S	Model
8	G1/4	17.5	20.6	27	15.8	6.3	36054111
16	G1/2	23.0	28.0	38.0	28.6	12.7	36054131

The design of a Hobbs fittings 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 polyurethane seal.

Hobbs Coned Locknut

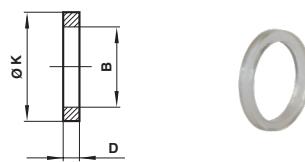
Female parallel ISO G thread
360540**



B thread	D	E A/F	Model
G1/8	7	17	36054001
G1/4	8.4	19	36054002
G3/8	9.6	24	36054003
G1/2	10.9	27	36054004

Hobbs Seal

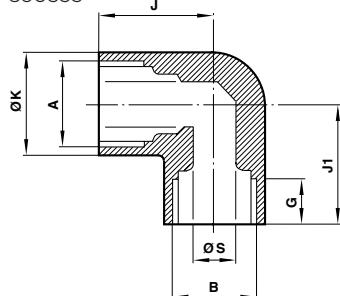
340156**



B to seal thread	D	K	Model
G1/4	2.5	15.9	34015602
G3/8	2.5	20.7	34015603
G1/2	2.6	24.3	34015604

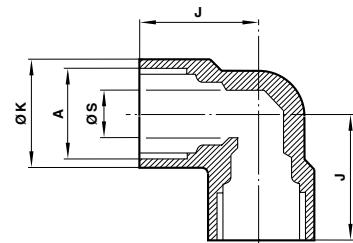
Female Elbow Adaptor

Female O/D tube to female parallel ISO R thread
360555**



Elbow Connector

Female O/D tube to female O/O tube
360511**

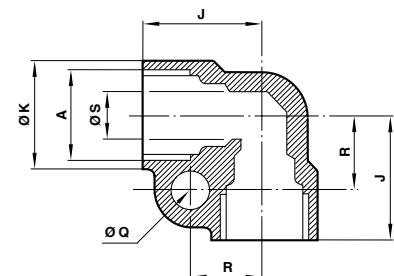


A thread for O/D tube	B Thread	G	J	J1	K	S	Model
4	G1/8	7.4	14	12.5	12.7	2.8	36055502
6	G1/4	11	16	17.5	17.5	4	36055510
8	G1/4	11	20	18.5	17.5	6	36055511
10	G1/4	11	22	18.5	20.6	7.6	36055512
10	G3/8	11.4	21.5	22	20.6	7.6	36055520
12	G3/8	11.4	24.5	22	24.6	9.6	36055521
12	G1/2	15	24.5	26	24.6	9.6	36055530

A thread for O/D tube	J	K	S	Model
6	16	14.3	4	36051104
8	20	16	6	36051105
10	23	20	7.6	36051106
12	25	24	9.6	36051107

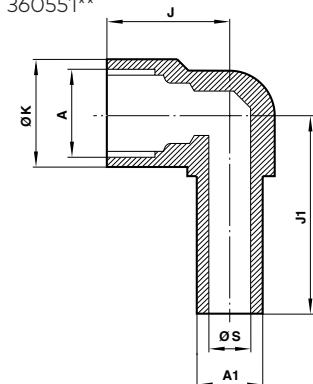
Bracketed Elbow Connector

Female O/D tube to female O/D tube
360548**



Stem Elbow Connector

Female O/D tube to O/D tube stem
360551**

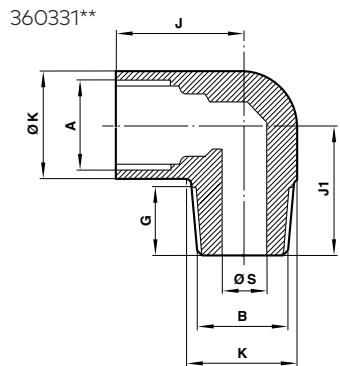


A thread for O/D tube	J	K	Q	R	S	Model
6	21	16.7	6.75 x 19.0	7.8	4.5	36054804
8	26.2	16.7	6.75 x 19.0	7.8	6.5	36054805

A thread for O/D tube	A1 O/D stem	J	J1	K	S	Model
6	6	19	30.6	14.3	4	36055104
8	8	23	34.9	17.5	5	36055105
10	10	23	41.3	23	7	36055106
12	12	24	43.5	23	9	36055107
16	16	30	53	30	12	36055108

Male Elbow Adaptor

Female tube to male NPTF thread
360331**

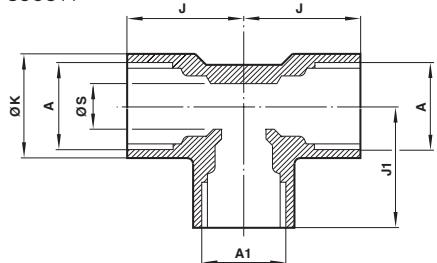


A thread for O/D tube	B NPTF thread	G	J	J1	K	S	Model
12	3/8"	14.3	24.5	28.6	24.6	9.6	36033121

Tee Connector

Female O/D tube

360514**

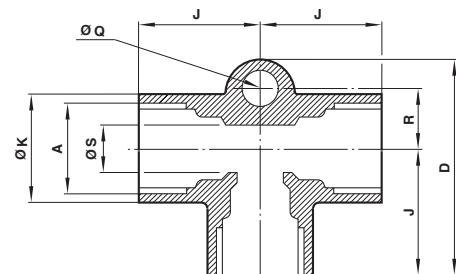


A thread for O/D tube	A1 thread for O/D tube	J	J1	K	S	Model
6	6	16	16	14.3	4	36051404
8	8	20	20	16	6	36051405
10	10	23	23	20	7.6	36051406
12	12	25	25	24	9.6	36051407

Bracketed Tee Connector

Female O/D tube

360549**

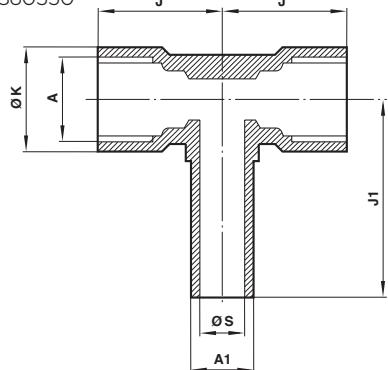


A thread for O/D tube	D	J	K	Q	R	S	Model
8	36.4	20.5	17.7	6.75 x 19.0	9.5	6.5	36054905

Stem Tee Connector

Female O/D tube to O/D tube stem

360550**

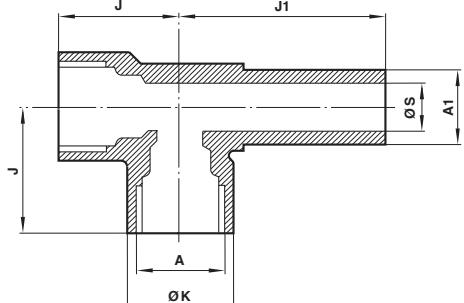


A thread for O/D tube	A O/D stem	J	J1	K	S	Model
8	8	18.5	34.9	17.5	5	36055005

Side Stem Tee Connector

Female O/D tube to O/D tube stem

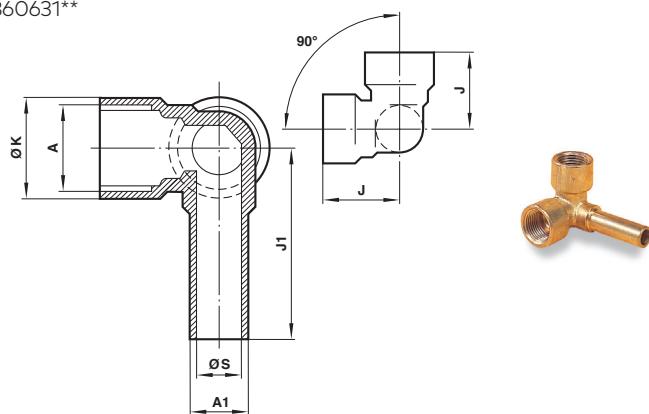
360511**



A thread for O/D tube	A1 O/D stem	J	J1	K	S	Model
6	6	19	30.6	14.3	4	36062604
8	8	23	34.9	17.4	5	36062605

90° Stem Tee Connector

Female O/D tube to O/D tube stem
360631**



A thread for O/D tube	A1 O/D stem	J	J1	K	S	Model
6	6	19	33.5	14.3	4	36063104
8	8	23	38	17.5	5	36063105

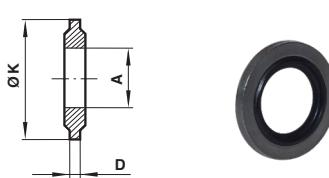
Folded Copper Washer

480213**



Bonded Washer

480215**



A for ISO G thread	D	K	Model
G1/8	1.8	13.5	48021301
G1/4	1.8	17.6	48021302
G3/8	1.8	20.9	48021303
G1/2	1.8	26.4	48021304
G3/4	1.8	32.4	48021306
G1	1.8	38.9	48021308

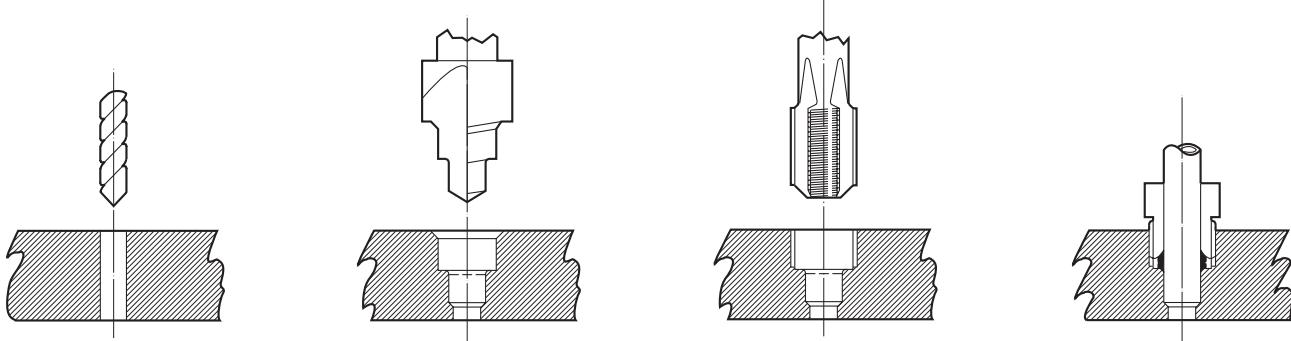
Operating Pressure: 20 Bar (max)
Temperature: -10°C to +80°C

A for ISO G thread	D	K	Model
G1/8	2	15.9	48021501
G1/4	2	20.6	48021502
G3/8	2	23.8	48021503
G1/2	2	28.6	48021504
G3/4	2	34.9	48021506
G1	2.5	42.8	48021508

Operating Pressure: 128 Bar (max)
Temperature: -30°C to +110°C

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 a 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 overleaf 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.

Note: Form cutters are available on request, contact Norgren technical service for more information

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 features/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 Ltd.

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.