



ASHWORTH
PEOPLE - PRODUCTS - SERVICE

PROCESS INDUSTRIES PRODUCT GUIDE



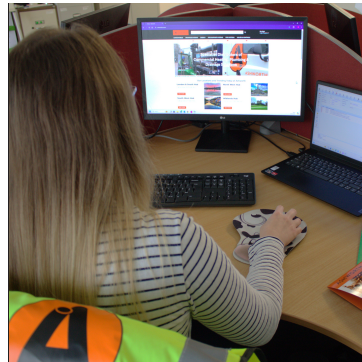
www.ashworth.uk.com

Welcome to Ashworth

Founded in 1907, Ashworth is recognised as one of the UK's leading suppliers of pipe and drainage systems, valves, and associated products into both the building services and process industry markets.

In 2018 Ashworth was purchased by the five Directors of our business all of which had over 25 years of experience in our industry. They saw an opportunity to turn an established but ailing business into a modern customer driven operation.

In the last four years we have been major suppliers to leading projects such as HS2 and Tideway.



OUR CUSTOMERS

We have heritage and experience of supplying pipes, fittings, valves, drainage, fire protection and bracketry for over 100 years into the Commercial Building Services, civils, Tunnelling, and Industrial Process markets.

Operating across the UK, we support our customers in delivering their projects on time and to budget.

Our approach to business is to meet the requirements of our customers, colleagues and suppliers in an open and collaborative approach.

ENVIRONMENT

To minimize our impact on the environment the company has a focus on waste reduction and each branch operates waste segregation to reduce landfill.

PEOPLE

They key strength within our business are our colleagues. Due to the vast product ranges, we supply, the importance of correct product selection and goods that are delivered safely and complete we highly value industry experience.

SERVICE

Our transport fleet operate to FORS Silver, and our vehicles are equipped with HIAB off-loading facilities complete with all the latest health & safety equipment to safely convey material to site. The lorries are specified with Euro 6 engines that meet the stringent London low emission zone standards.

HEALTH & SAFETY

Due to the nature of the business we operate in there is always an inherent danger in our day-to-day tasks.

The company rigorously maintains the highest Health & Safety standards and employs both a dedicated General Manager and Group Transport Manager to ensure that we meet these standards

QUALITY

Our focus on Quality is not limited to our ISO9001 process. Many of the projects we supply require detailed product certifications to match an individual SKU and a mill certification for critical applications where country of origin is also required.

Our supply chain partners are also the leading branded manufacturers in the market to ensure that our clients can install products with confidence.

PRODUCTS

Operating within the Mechanical, Public Health, civils, tunnelling, Industrial and Process markets we stock and supply high quality branded products suitable for critical applications. We operate to ISO9001, ISO14001 and are registered under the Achilles® Supply Chain Management scheme.



PRESSURE PLASTICS

Ashworth is now the UK's leading distributor in supplying to the process market. This is enhanced by highly experienced sales team knowledge in process valves and pressure plastics.



HEATING PRODUCTS

Our expertise within this market sector has led to the inclusion of further products within our extensive range. Our technically aware staff are always available to offer advice and support to customers on all types of heating and ventilation projects.



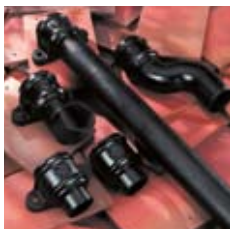
MECHANICAL SERVICES

The Ashworth brand has long been associated with the mechanical services market, offering a broad range of tubes, valves and fittings.



FIRE PROTECTION

Ashworth, the market leader in fire protection, has recognised the need to respond to the critical levels of service demanded in this fast-track environment. Alongside our standard packages we can offer a bespoke package of equipment and services dedicated to industry standards and insurance regulations.



DRAINAGE

As the UK's leader in the supply of drainage systems, we offer a product range in a variety of materials including cast iron, stainless steel, PVC, HDPE and aluminium to service the commercial internal and external rainwater, soil and waste markets.



INDUSTRY

The Ashworth team has extensive knowledge and experience in the supply of quality tube and process valves to all aspects of industry. Our competence in this area covers both the customer and manufacturing ends of the business.



CONTACT US

For more information regarding Ashworth products, please contact our experienced sales team who will be more than happy to help.

Telephone: 0161 967 0400

PROCESS VALVES

Ashworth has long been recognised as a competitive, reliable and efficient supplier of manual and actuated valves to extremely diverse industries. As a result of our continued investment and our pursuit of excellence in this highly specialised sector of your business, we have expanded our team and opened a purpose built centre of excellence in Manchester where we carry extensive stocks of:

- Neles controls (Mesto) ball valves
- Richter lined valves
- Heaton gate, globe and check valves
- Abacus check valves
- Safety system relief valves
- Saunders diaphragm valves
- Tomoe butterfly valves
- Large range of actuators and ancillaries



Our team of specialists provide an ex-stock, overnight delivery service to any customer, anywhere in the United Kingdom. We can also offer an in-house actuation/instrumentation, assembly and test service which is monitored in accordance with our ISO 9001 quality plan. All products supplied conform to the European Equipment Directive PED97/23/EC.

Customer service is paramount and to this end we have a regionally focussed, highly skilled sales team. Both our internal and external sales personnel are process valve specialists with many years' experience and training in all aspects of process valve specification.

A wide range of specialist valves can be supplied to suit a multitude of extreme applications such as:

- Cryogenic service
- High temperature service
- Abrasive media service
- Slurry isolation
- High cycling duties
- Vacuum applications
- Degreased products for oxygen service
- NACE specification products for sour gas service
- High purity valves for pharmaceutical applications

PRESSURE PLASTICS

Ashworth offers a comprehensive range of process plastics for a wide range of applications. Through constant investment in the latest technology, Ashworth meets the high demands of longstanding and new customers whilst also meeting European standards required for these type of systems.

We offer an extensive range of pipes, valves and fittings in various materials suited to the demands of all applications including chemical and pharmaceutical industries, environmental technology, the food industry and high purity requirements.

As a result of our constant investment and research in this sector of the marketplace we offer pipes, valves and fittings in the following materials:

- PVC-U
 - ABS
 - PVDF
 - CPVC
 - Polypropylene
- In addition to:
- Actuated valves
 - Flow monitoring equipment



QUALITY TUBE

Ashworth specialises in the stock holding of carbon steel pipe and fittings, to meet the requirements of oil refineries, petrochemical plants, gas plants, power stations and their contractors and fabricators.

Operating within Ashworth is a specialist market-focused team, whose expertise covers both the customer and the manufacturing sectors of the business.

The team are always on hand to offer help and specialist advice, and can also provide fast delivery to any location in the UK.

WE STOCK

- API/A106 HFS pipe – up to 600mm (24")
- A333 low temperature pipe – up to 400mm (16")
- API 5L HFI pipe – up to 600mm (24")
- API 5L SAW pipe – from 600mm (24") to 1200mm (48")
- BS3799, 3000, 6000 PSI fittings – up to 100mm (4")
- BS1640/ANSI B16.9 weld fittings – up to 600mm (24")
- BS1560/ANSI B16.5 flanges – up to 600mm (24")
- ASTM A350 LF2 flanges – up to 600mm (24")

Also Available:

- Stainless steel tube, fittings and flanges
- Hygienic tube and fittings
- WPL6 low temperature fittings

MATERIAL DESCRIPTION

Hot finished seamless carbon steel tubes in accordance with API 5L Grade B and X42 supplied to product specification level 1 (PSL 1).

Also in accordance with ASTM A106 Grade B/ASME SA 106 and NACE MR 01-75.

CHEMICAL COMPOSITION

The chemical composition shall comply with the requirements of API 5L Grade B/X42 and A106/SA 106 Grade B.

The following instructions shall be imposed:

C	0.20% max
Mn	1.15% max
Si	0.10% min
P	0.030% max
S	0.010% max
CEV	0.41% max (long formula)

MECHANICAL PROPERTIES

The mechanical properties shall comply with the requirements of API 5L Grade B/X42 and A106/SA 106 Grade B with the following restrictions:

Yield strength	289 N/sq.mm (min)
Tensile strength	415 N/sq.mm (min)

SUPPLY CONDITION

Tubes shall be in the hot finished condition and be free from loose mill scale.

LENGTHS AND END FINISH

Tube lengths will be stated in the purchase order and are to be supplied as either:

All 'SRL' diameters are 5-7 metres

All 'DRL' diameters are 10-12 metres

Pipe ends are to be finished in accordance with API 5L

(uti 1 1/2" NB square cut, 2" NB and above with

walls <= 22mm:bevelled 30 Deg + 5 Deg – 0 Deg)

TESTING

The tubes shall be subject to the test required by API 5L and A106/SA 106.

The following shall be carried out as a minimum:

- Visual inspection
- Tensile test
- Flattening test
- Hydraulic test

CERTIFICATION

The tubes shall be certified in accordance with API 5L Grade B/X42 and ASTM A 106 Grade B/ASME SA 106 Grade B. All test certificates shall carry a statement of conformance to NACE MR 01-75. All test certification should also detail the Ashworth product code.

PROTECTION

Tubes shall be externally coated with air drying varnish.

MARKING

Each tube shall be marked, irrespective of size, in accordance with the requirements of API 5L Grade B/X42 and ASTM A 106 Grade B/ASME SA 106 Grade B plus cast numbers and item numbers.



Dimensions API, ASTM, A106 & A333

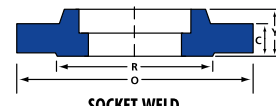
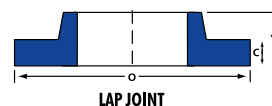
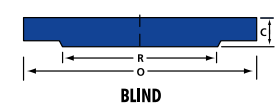
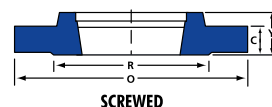
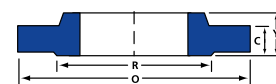
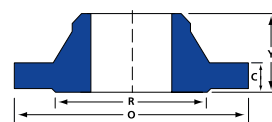
Outside Diameter (OD)			mm	Wall thickness in mm		Weight (mass) in kg/m							Non-Schedule ³⁾		
NPS ¹⁾	DN ²⁾	Inch		Schedule 20	Schedule 30	Schedule 40	Schedule 60	Schedule 80	Schedule 100	Schedule 120	Schedule 140	Schedule 160	STD	XS	XXS
3/8	10	0.675	17.1	—	—	2.31	—	3.20	—	—	—	—	2.31	3.32	—
				—	—	0.84	—	1.10	—	—	—	—	0.84	1.10	—
1/2	15	0.840	21.3	—	—	2.77	—	3.73	—	—	—	4.78	2.77	3.73	7.47
				—	—	1.27	—	1.62	—	—	—	1.95	1.27	1.62	2.55
3/4	20	1.050	26.7	—	—	2.87	—	3.91	—	—	—	5.56	2.87	3.91	7.82
				—	—	1.69	—	2.20	—	—	—	2.90	1.69	2.20	3.64
1	25	1.315	33.4	—	—	3.38	—	4.55	—	—	—	6.35	3.38	4.55	9.09
				—	—	2.50	—	3.24	—	—	—	4.24	2.50	3.24	5.45
1 1/4	32	1.660	42.2	—	—	3.56	—	4.85	—	—	—	6.35	3.56	4.85	9.70
				—	—	3.39	—	4.47	—	—	—	5.61	3.39	4.47	7.77
1 1/2	40	1.900	48.3	—	—	3.68	—	5.08	—	—	—	7.14	3.68	5.08	10.15
				—	—	4.05	—	5.41	—	—	—	7.25	4.05	5.41	9.55
2	50	2.375	60.3	—	—	3.91	—	5.54	—	—	—	8.74	3.91	5.54	11.07
				—	—	5.44	—	7.48	—	—	—	11.11	5.44	7.48	13.44
2 1/2	65	2.875	73	—	—	5.16	—	7.01	—	—	—	9.53	5.16	7.01	14.02
				—	—	8.63	—	11.41	—	—	—	14.92	8.63	11.41	20.39
3	80	3.500	88.9	—	—	5.49	—	7.62	—	—	—	11.13	5.49	7.62	15.24
				—	—	11.29	—	15.27	—	—	—	21.35	11.29	15.27	27.68
3 1/2	90	4.000	101.6	—	—	5.74	—	8.08	—	—	—	—	5.79	8.08	—
				—	—	13.57	—	18.64	—	—	—	—	13.57	18.64	—
4	100	4.500	114.3	—	—	6.02	—	8.56	—	11.13	—	13.49	6.02	8.56	17.12
				—	—	16.08	—	22.32	—	28.32	—	33.54	16.08	22.32	41.03
5	125	5.663	141.3	—	—	6.55	—	9.53	—	12.70	—	15.88	6.55	9.53	19.05
				—	—	21.77	—	30.97	—	40.28	—	49.12	21.77	30.97	57.43
6	150	6.625	168.3	—	—	7.11	—	10.97	—	14.27	—	18.26	7.11	10.97	21.95
				—	—	28.26	—	42.56	—	54.21	—	67.57	28.26	42.56	79.22
8	200	8.625	219.1	6.35	7.04	8.18	10.31	12.70	15.09	18.26	20.62	23.01	8.18	12.70	22.23
				33.32	36.82	42.55	53.09	64.64	75.92	90.44	100.93	111.27	42.55	64.64	107.93
10	250	10.750	273.0	6.35	7.80	9.27	12.70	15.09	18.26	21.44	25.40	28.58	9.27	12.70	25.40
				41.76	51.01	60.29	81.53	95.98	114.71	133.01	155.10	172.27	60.29	81.53	155.10
12	300	12.750	323.8	6.35	8.38	10.31	14.27	17.48	21.44	25.40	28.58	33.32	9.53	12.70	25.40
				49.71	65.19	79.71	108.93	132.05	159.87	186.92	208.08	238.69	73.86	97.44	186.92
14	350	14.000	355.6	7.92	9.53	11.13	15.09	19.05	23.83	27.29	31.75	35.71	9.53	12.70	—
				67.91	81.33	94.55	126.72	158.11	194.98	224.66	253.58	281.72	81.33	107.40	—
16	400	16.000	406.4	7.92	9.53	12.70	16.66	21.44	26.19	30.96	36.53	40.49	9.53	12.70	—
				77.83	93.27	123.31	160.13	203.54	245.57	286.66	333.21	365.38	93.27	123.31	—
18	450	18.000	457	7.92	11.13	14.27	19.05	23.83	29.36	34.93	39.67	45.24	9.53	12.70	—
				87.71	122.38	155.81	205.75	254.57	309.64	363.58	408.28	459.39	105.17	139.16	—
20	500	20.000	508	9.53	12.70	15.09	20.62	26.19	32.54	38.10	44.45	50.01	9.53	12.70	—
				117.15	155.13	183.43	247.84	311.19	381.55	441.52	508.15	564.85	117.15	155.13	—
22	—	22.000	559	9.53	12.70	—	22.23	28.58	34.93	41.28	47.63	53.98	9.53	12.70	—
				129.14	171.10	—	294.27	373.85	451.45	527.05	600.67	672.30	129.14	171.10	—
24	600	24.000	610	9.53	14.27	17.48	24.61	30.96	38.89	46.02	52.37	59.54	9.53	12.70	—
				141.12	209.65	255.43	355.28	442.08	547.71	640.03	720.15	808.22	141.12	187.06	—
26	—	26.000	660	—	—	—	—	—	—	—	—	—	9.53	12.70	—
				—	—	—	—	—	—	—	—	—	152.88	202.74	—
28	700	28.000	711	12.70	15.88	—	—	—	—	—	—	—	9.53	12.70	—
				218.71	272.23	—	—	—	—	—	—	—	164.86	218.71	—
30	750	30.000	762	12.70	15.88	—	—	—	—	—	—	—	9.53	12.70	—
				234.67	292.18	—	—	—	—	—	—	—	175.84	234.67	—
32	800	32.000	812	12.70	15.88	—	—	—	—	—	—	—	9.53	12.70	—
				250.64	312.15	—	—	—	—	—	—	—	188.82	250.64	—
34	850	34.000	863	12.70	15.88	—	—	—	—	—	—	—	9.53	12.70	—
				266.71	332.12	—	—	—	—	—	—	—	200.31	266.61	—
36	900	36.000	914	12.70	15.88	—	—	—	—	—	—	—	9.53	12.70	—
				282.27	351.70	—	—	—	—	—	—	—	212.56	282.27	—
38	950	38.000	965	—	—	—	—	—	—	—	—	—	9.53	12.70	—
				—	—	—	—	—	—	—	—	—	224.54	298.24	—
40	1000	40.000	1015	—	—	—	—	—	—	—	—	—	9.53	12.70	—
				—	—	—	—	—	—	—	—	—	236.53	314.22	—
42	1050	42.000	1067	—	—	—	—	—	—	—	—	—	9.53	12.70	—
				—	—	—	—	—	—	—	—	—	248.52	330.19	—
48	1200	48.000	1219	—	—	—	—	—	—	—	—	—	9.53	12.70	—
				—	—	—	—	—	—	—	—	—	284.24	377.80	—

Quality Tube Flange Dimensions to BS1560

CARBON STEEL FLANGES TO ANSI B16.5

ASA 150lb

Nominal Pipe Size	Outside Diameter of Flange O	Thickness of Flange C	Diameter of Raised Face R	Length through hub – Y			Drilling		
				Welding Neck	Slip-on, Scribed, Socket Weld	Lap Joint	Diameter of Bolt	No.	mm
mm	mm	mm	mm	mm	mm	mm	mm	No.	mm
15	89.0	11.1	34.9	47.6	15.9	15.9	60.3	4	15.9
20	98.0	12.7	42.9	52.4	15.9	15.9	69.8	4	15.9
25	108.0	14.3	50.8	55.6	17.5	17.5	79.4	4	15.9
32	117.0	15.9	63.5	57.2	20.6	20.6	88.9	4	15.9
40	127.0	17.5	73.0	61.9	22.2	22.2	98.4	4	15.9
50	152.0	19.0	92.1	63.5	25.4	25.4	120.6	4	19.0
65	178.0	22.2	104.8	69.9	28.6	28.6	139.7	4	19.0
80	190.0	23.8	127.0	69.9	30.2	30.2	152.4	4	19.0
90	216.0	23.8	139.7	71.4	31.7	31.7	177.8	8	19.0
100	229.0	23.8	157.2	76.2	33.3	33.3	190.5	8	19.0
125	254.0	23.8	185.7	88.9	36.5	36.5	215.9	8	22.2
150	279.0	25.4	215.9	88.9	39.7	39.7	241.3	8	22.2
200	343.0	28.6	269.9	101.6	44.5	44.5	298.4	8	22.2
250	406.0	30.2	323.8	101.6	49.2	49.2	362.0	12	25.4
300	483.0	31.8	381.0	114.3	55.6	55.6	431.8	12	25.4
350	533.0	34.9	412.7	127.0	57.2	57.2	476.2	12	28.6
400	597.0	36.5	469.9	127.0	63.5	63.5	539.8	16	28.6
450	635.0	39.7	533.4	139.7	68.3	68.3	577.8	16	31.8
500	698.0	42.9	584.2	144.5	73.0	73.0	635.0	20	31.8
550	749.0	46.0	641.3	149.2	79.4	79.4	692.1	20	34.9
600	813.0	47.6	692.1	152.4	82.6	82.6	749.3	20	34.9



ASA 300lb

Nominal Pipe Size	Outside Diameter of Flange O	Thickness of Flange C	Diameter of Raised Face R	Length through hub – Y			Drilling		
				Welding Neck	Slip-on, Scribed, Socket Weld	Lap Joint	Diameter of Bolt	No.	mm
mm	mm	mm	mm	mm	mm	mm	mm	No.	mm
15	95.0	14.3	34.9	52.4	22.2	22.2	66.7	4	15.9
20	117.0	15.9	42.9	57.2	25.4	25.4	82.6	4	19.0
25	123.8	17.5	50.8	61.9	27.0	27.0	88.9	4	19.0
32	133.3	19.0	63.5	65.1	27.0	27.0	98.4	4	19.0
40	155.6	20.6	73.0	68.3	30.2	30.2	114.3	4	22.2
50	165.1	22.2	92.1	69.9	33.3	33.3	127.0	8	19.0
65	190.0	25.4	104.8	76.2	38.1	38.1	149.2	8	22.2
80	209.5	28.6	127.0	79.4	42.9	42.9	168.3	8	22.2
90	288.6	30.2	139.7	81.0	44.4	44.4	184.1	8	22.2
100	254.0	31.8	157.2	85.7	47.6	47.6	200.0	8	22.2
125	279.4	34.9	185.7	98.4	50.8	50.8	234.9	8	22.2
150	317.5	36.5	215.9	98.4	52.4	52.4	269.9	12	22.2
200	381.0	41.3	269.9	111.1	61.9	61.9	330.2	12	25.4
250	444.0	47.6	323.8	117.5	66.8	66.8	387.4	16	28.6
300	520.7	50.8	381.0	130.2	73.0	73.0	450.8	16	31.8
350	584.2	54.0	412.7	142.9	76.2	76.2	514.4	20	31.8
400	647.7	57.2	469.9	146.1	82.6	82.6	571.5	20	34.9
450	711.2	60.3	533.4	158.8	88.9	88.9	628.6	24	34.9
500	774.7	63.5	584.2	161.9	95.3	95.3	685.8	24	34.9
550	838.2	66.7	641.3	165.1	101.6	101.6	742.9	24	41.3
600	914.4	69.8	692.1	168.3	106.4	106.4	812.8	24	41.3

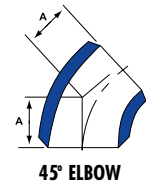
ASA 600lb

Nominal Pipe Size	Outside Diameter of Flange O	Thickness of Flange C	Diameter of Raised Face R	Length through hub – Y			Drilling		
				Welding Neck	Slip-on, Scribed, Socket Weld	Lap Joint	Diameter of Bolt	No.	mm
mm	mm	mm	mm	mm	mm	mm	mm	No.	mm
15	95.0	14.3	34.9	52.4	22.2	22.2	66.7	4	15.9
20	117.0	15.9	42.9	57.1	25.4	25.4	82.6	4	19.0
25	124.0	17.5	50.8	61.9	27.0	27.0	88.9	4	19.0
32	133.3	20.6	63.5	66.8	28.6	28.6	98.4	4	19.0
40	155.6	22.2	73.0	69.9	31.8	31.8	114.3	4	22.2
50	165.1	25.4	92.1	73.0	36.5	36.5	127.0	8	19.0
65	190.0	28.6	104.8	79.4	41.3	41.3	149.2	8	22.2
80	209.5	31.8	127.0	82.6	46.0	46.0	168.3	8	22.2
90	228.6	34.9	139.7	85.7	49.2	49.2	184.1	8	25.4
100	273.0	38.1	157.2	101.6	54.0	54.0	215.9	8	25.4
125	330.2	44.4	185.7	114.3	60.3	60.3	266.7	8	28.6
150	355.6	47.6	215.9	117.5	66.8	66.8	292.1	12	28.6
200	419.1	55.6	269.9	133.4	76.2	76.2	349.2	12	31.8
250	508.0	63.5	323.8	152.4	85.7	85.7	431.8	16	34.9
300	558.8	66.7	381.0	155.6	92.1	92.1	488.9	20	34.9
350	603.2	69.8	412.7	165.1	93.7	93.7	527.0	20	38.1
400	685.8	76.2	469.9	177.8	106.4	106.4	603.2	20	41.3
450	742.9	82.6	533.4	184.2	117.5	117.5	654.0	20	44.4
500	812.8	88.9	584.2	190.5	127.0	127.0	723.0	24	44.4
550	870.0	95.2	641.3	196.8	133.3	133.3	777.9	24	47.6
600	939.8	101.6	692.1	203.2	139.7	139.7	838.2	24	50.8

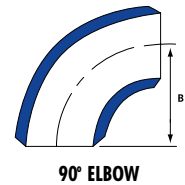
Quality Tube Weld Fittings

BS1640/ANSI B16.9

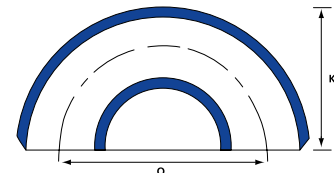
Nominal pipe size mm	Long Radius				Short Radius			Equal Tees C and M No.	Caps E mm
	45 Elbows	90 Elbows	180 Returns		90 Elbows	180 Returns			
	A mm	B mm	K mm	O mm	B mm	K mm	O mm		
15	16.0	38.0	48.0	76.0				25.0	25.0
20	19.0*	38.0*	43.0	57.0				28.0	25.0
25	22.0	38.0	56.0	76.0	25.0	41.0	51.0	38.0	38.0
32	25.0	48.0	70.0	95.0	32.0	52.0	64.0	48.0	38.0
40	29.0	57.0	83.0	114.0	38.0	62.0	76.0	57.0	38.0
50	35.0	76.0	106.0	152.0	51.0	81.0	102.0	64.0	38.0
65	44.0	95.0	132.0	191.0	64.0	100.0	127.0	76.0	38.0
80	51.0	114.0	159.0	229.0	76.0	121.0	152.0	86.0	51.0
90	57.0	133.0	184.0	267.0	89.0	140.0	178.0	95.0	64.0
100	64.0	152.0	210.0	305.0	102.0	159.0	203.0	105.0	64.0
125	79.0	190.0	262.0	381.0	127.0	197.0	254.0	124.0	76.0
150	95.0	229.0	313.0	457.0	152.0	237.0	305.0	143.0	89.0
200	127.0	305.0	414.0	610.0	203.0	313.0	406.0	178.0	102.0
250	159.0	381.0	518.0	762.0	254.0	391.0	508.0	216.0	127.0
300	190.0	457.0	619.0	914.0	305.0	467.0	610.0	254.0	152.0
350	222.0	533.0	711.0	1067.0	356.0	533.0	711.0	279.0	165.0
400	254.0	610.0	813.0	1219.0	406.0	610.0	813.0	305.0	178.0
450	286.0	686.0	914.0	1372.0	457.0	686.0	914.0	343.0	203.0
500	318.0	762.0	1016.0	1524.0	508.0	762.0	1016.0	381.0	229.0
550	343.0	838.0	1118.0	1676.0	559.0	838.0	1118.0	419.0	254.0
600	381.0	914.0	1219.0	1829.0	610.0	914.0	1219.0	432.0	267.0
650	406.4	990.6							267.0
700	438.2	1066.8							267.0
750	469.9	1143.0						559.0	267.0
900	565.2	1371.6						673.0	267.0



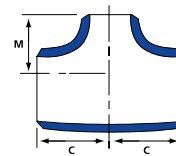
45° ELBOW



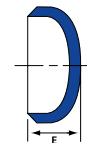
90° ELBOW



180° RETURN



EQUAL TEE



CAP

Nominal pipe size mm	Reducers Height H mm	Reducing Tees Centre to End	
		Run C mm	Branch M mm
20 x 15	38.0		
25 x 20	51.0	38.0	38.0
25 x 15	51.0	38.0	38.0
32 x 25	51.0	48.0	48.0
32 x 20	51.0	48.0	48.0
40 x 32	64.0	57.0	57.0
40 x 25	64.0	57.0	57.0
40 x 20	64.0	57.0	57.0
50 x 40	76.0	64.0	60.0
50 x 25	76.0	64.0	51.0
65 x 50	89.0	76.0	70.0
65 x 40	89.0	76.0	67.0
80 x 65	89.0	86.0	83.0
80 x 50	89.0	86.0	76.0
80 x 40	89.0	86.0	73.0
100 x 80	102.0	105.0	98.0
100 x 65	102.0	105.0	95.0
100 x 50	102.0	105.0	88.9
125 x 100	127.0	124.0	117.0
125 x 80	127.0	124.0	111.0
150 x 125	140.0	143.0	137.0
150 x 100	140.0	143.0	130.0
150 x 80	140.0	143.0	124.0

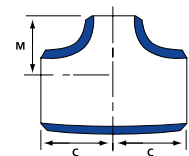
Nominal pipe size mm	Reducers Height H mm	Reducing Tees Centre to End	
		Run C mm	Branch M mm
200 x 150	152.0	178.0	168.0
200 x 125	152.0	178.0	162.0
200 x 100	152.0	178.0	156.0
250 x 200	178.0	216.0	203.0
250 x 150	178.0	216.0	194.0
300 x 250	203.0	254.0	241.0
300 x 200	203.0	254.0	229.0
300 x 150	203.0	254.0	219.0
350 x 300	330.0	279.0	270.0
350 x 250	330.0	279.0	257.0
400 x 350	356.0	305.0	305.0
400 x 300	356.0	305.0	295.0
400 x 250	356.0	305.0	283.0
450 x 400	381.0	343.0	330.0
450 x 350	381.0	343.0	330.0
450 x 300	381.0	343.0	321.0
500 x 450	508.0	381.0	368.0
500 x 400	508.0	381.0	356.0
500 x 350	508.0	381.0	356.0
600 x 500	508.0	432.0	432.0
600 x 450	508.0	432.0	419.0
600 x 400	508.0	432.0	406.0



CONCENTRIC REDUCER



ECCENTRIC REDUCER



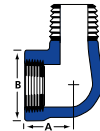
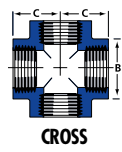
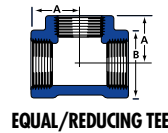
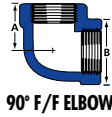
REDUCING TEE

*These items may be supplied to alternative dimensions A:11.0 and B:29.0 at manufacturer's discretion

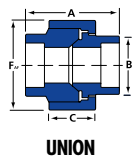
Quality Tube Forged Steel Fittings

BS3799/ANSI B16.11 THREADED

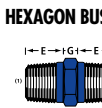
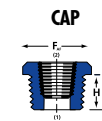
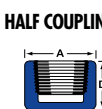
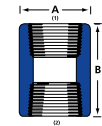
Nominal pipe size inches	Nominal pipe size mm	A inches mm	B inches mm	C inches mm
0.125	6	0.81 20.60	0.88 22.40	0.69 17.50
0.25	8	0.97 24.60	1.00 25.40	0.75 19.10
0.375	10	1.12 28.40	1.31 33.30	0.88 22.40
0.5	15	1.31 33.30	1.50 38.10	1.00 25.40
0.75	20	1.50 38.10	1.81 46.00	1.12 28.40
1	25	1.75 44.50	2.19 55.60	1.31 33.30
1.25	32	2.00 50.80	2.44 62.00	1.38 35.10
1.5	40	2.38 60.50	2.97 75.40	1.69 42.90
2	50	2.50 63.50	3.31 84.10	1.72 43.70
2.5	65	3.25 82.60	4.00 101.60	2.06 52.30
3	80	3.75 95.20	4.75 120.70	2.50 63.50
4	100	4.50 114.30	6.00 152.40	3.12 79.20



Nominal pipe size inches	Nominal pipe size mm	A inches mm	B inches mm	C inches mm	F inches mm
0.125	6	1.57 39.90	0.67 17.00	0.63 16.00	1.26 32.00
0.25	8	1.69 42.90	0.75 19.10	0.71 18.00	1.26 32.00
0.375	10	1.89 48.00	0.87 22.10	0.75 19.10	1.42 36.10
0.5	15	2.00 50.80	1.18 29.90	0.83 21.10	1.69 42.90
0.75	20	2.24 56.90	1.42 36.10	0.94 23.90	1.97 50.00
1	25	2.52 64.00	1.61 40.90	0.98 24.90	2.36 59.90
1.25	32	2.76 70.10	1.97 50.10	1.14 28.90	2.76 70.10
1.5	40	3.11 78.90	2.36 59.90	1.18 29.90	3.07 77.90
2	50	3.50 88.90	2.76 70.10	1.46 37.10	3.74 94.90
2.5	65	4.65 118.10	3.35 85.10	1.89 48.00	4.92 124.90
3	80	4.76 120.90	3.94 100.10	2.00 50.80	5.51 139.90
4	100	6.25 158.80	5.50 139.70	2.63 66.80	7.50 190.50



Nominal pipe size inches	Nominal pipe size mm	A inches mm	B inches mm	C inches mm	D inches mm	E BSP inches mm	E NPT inches mm	F inches mm	f inches mm	G inches mm	H inches mm
0.125	6	0.62 15.70	1.25 31.70	0.63 16.00	0.75 19.10	0.39 9.90	0.38 9.90	0.44 11.20	0.433 11.00	0.24 6.10	0.38 9.70
0.25	8	0.75 19.00	1.38 35.00	0.69 17.60	1.00 25.40	0.59 15.00	0.44 11.20	0.62 15.80	0.59 15.00	0.24 6.10	0.44 11.20
0.375	10	0.88 22.00	1.50 38.10	0.75 19.10	1.00 25.40	0.63 16.00	0.50 12.70	0.69 17.60	0.71 18.10	0.31 7.90	0.50 12.70
0.5	15	1.12 28.40	1.88 47.80	0.94 23.90	1.25 31.80	0.79 20.10	0.56 14.30	0.88 22.40	0.87 22.10	0.31 7.90	0.56 14.30
0.75	20	1.38 35.00	2.00 50.80	1.00 25.40	1.44 36.60	0.83 21.10	0.62 15.80	1.06 27.00	1.06 27.00	0.39 9.90	0.62 15.80
1	25	1.75 44.50	2.38 60.50	1.19 30.30	1.62 41.20	0.98 24.90	0.75 19.10	1.38 35.10	1.38 35.10	0.39 9.90	0.75 19.10
1.25	32	2.25 57.20	2.62 66.60	1.31 33.30	1.75 44.50		0.81 20.60	1.75 44.50	1.81 46.00	0.49 12.50	0.81 20.60
1.5	40	2.50 63.50	3.13 79.50	1.56 39.70	1.75 44.50	1.02 25.90	0.81 20.60	2.00 50.80	1.97 50.10	0.63 16.00	0.81 20.60
2	50	3.00 76.20	3.38 85.90	1.69 43.00	1.88 47.80	1.06 27.00	0.88 22.40	2.50 63.50	2.44 62.00	0.67 17.10	0.88 22.40
2.5	65	3.62 92.00	3.62 92.00	1.81 46.00	2.38 60.50	1.61 40.90	1.06 27.00	3.00 76.20	2.99 76.00	0.75 19.10	1.06 27.00
3	80	4.25 108.00	4.25 108.00	2.13 54.10	2.56 65.10	1.65 42.00	1.12 28.50	3.50 88.90	3.70 94.00	0.81 20.60	1.12 28.50
4	100	5.50 139.70	4.75 120.70	2.38 60.50	2.69 68.50	1.77 45.00	1.25 31.80	4.62 117.40	4.65 118.20	1.00 25.40	1.25 31.80



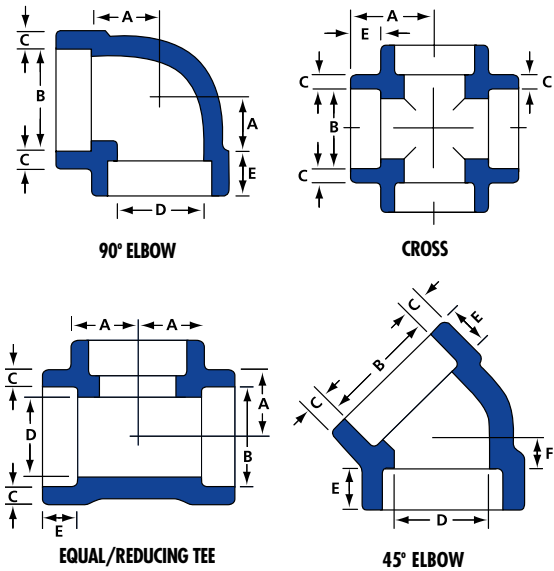
Fittings available either Hot Dipped Galvanised or Electro plated to BS1706

Threaded fittings are available either Threaded to ANSI B1.20(NPT) or Screwed BS21 Taper Thread (BSP)

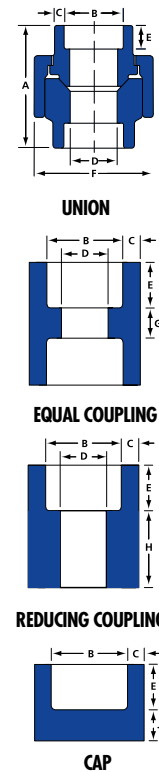
Quality Tube Forged Steel Fittings

BS3799/ANSI B16.11 SOCKET WELD

Nominal pipe size inches	Nominal pipe size mm	A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	F inches mm
0.125	6	0.44 11.20	0.42 10.67	0.125 3.20	0.239 6.10	0.38 9.70	0.31 7.90
0.25	8	0.44 11.20	0.555 14.10	0.13 3.30	0.334 8.50	0.38 9.70	0.31 7.90
0.375	10	0.53 13.50	0.69 17.53	0.138 3.50	0.463 11.80	0.38 9.70	0.31 7.90
0.5	15	0.62 15.80	0.859 21.80	0.161 4.10	0.592 15.00	0.38 9.70	0.44 11.20
0.75	20	0.75 19.10	1.065 27.10	0.168 4.30	0.794 20.20	0.50 12.70	0.50 12.70
1	25	0.88 22.40	1.33 33.80	0.196 4.90	1.019 25.90	0.50 12.70	0.56 14.20
1.25	32	1.06 26.90	1.675 42.50	0.208 5.30	1.35 34.30	0.50 12.70	0.69 17.50
1.5	40	1.25 31.80	1.915 48.60	0.218 5.50	1.58 40.10	0.50 12.70	0.81 20.60
2	50	1.50 38.10	2.406 61.10	0.238 6.00	2.037 51.70	0.62 15.70	1.00 25.40
2.5	65	1.62 41.15	2.706 68.70	0.302 7.70	2.409 61.20	0.62 15.70	1.12 28.50
3	80	2.25 57.20	3.535 89.80	0.327 8.30	3.068 77.90	0.62 15.70	1.25 31.80
4	100	2.62 66.60	4.545 115.40	0.368 9.30	3.966 100.70	0.75 19.10	1.62 41.20



Nominal pipe size inches	Nominal pipe size mm	A inches mm	B inches mm	C inches mm	D inches mm	E inches mm	F inches mm	G inches mm	H inches mm	J inches mm
0.125	6	1.46 37.10	0.42 10.70	0.125 3.20	0.239 6.10	0.38 9.70	1.26 32.00	0.25 6.40	0.62 15.70	0.16 4.10
0.25	8	1.46 37.10	0.555 14.10	0.13 3.30	0.334 8.50	0.38 9.70	1.26 32.00	0.25 6.40	0.62 15.70	0.28 7.10
0.375	10	1.46 37.10	0.69 17.50	0.138 3.50	0.463 11.80	0.38 9.70	1.42 36.10	0.25 6.40	0.69 17.50	0.28 7.10
0.5	15	1.50 38.10	0.855 21.70	0.161 4.10	0.592 15.00	0.38 9.70	1.69 42.90	0.38 9.70	0.88 22.40	0.31 7.90
0.75	20	1.81 45.90	1.065 27.10	0.168 4.30	0.794 20.20	0.50 12.70	1.97 50.00	0.38 9.70	0.96 24.40	0.39 9.90
1	25	2.05 52.10	1.33 33.80	0.196 4.90	1.019 25.90	0.50 12.70	2.36 59.90	0.50 12.70	1.12 28.50	0.43 10.90
1.25	32	2.13 54.10	1.675 42.60	0.208 5.30	1.35 34.30	0.50 12.70	2.76 70.10	0.50 12.70	1.19 30.20	0.51 12.90
1.5	40	2.20 55.90	1.915 48.60	0.218 5.50	1.58 40.10	0.50 12.70	3.07 77.90	0.50 12.70	1.25 31.80	0.55 13.90
2	50	2.68 68.10	2.406 61.10	0.238 6.10	2.037 51.80	0.62 15.70	3.74 94.90	0.75 19.10	1.62 41.20	0.71 18.00
2.5	65	3.50 88.90	2.906 73.80	0.302 7.70	2.409 61.20	0.62 15.70	4.92 124.90	0.75 19.10	1.69 42.90	0.83 21.10
3	80	3.78 96.00	3.535 89.80	0.327 8.30	3.068 77.90	0.62 15.70	3.51 139.90	0.75 19.10	1.75 44.50	0.94 23.90
4	100	6.25 158.80	4.545 115.40	0.368 9.40	3.966 100.70	0.75 19.10	7.50 190.50	0.75 19.10	1.88 47.80	0.95 24.10



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