

CRANE

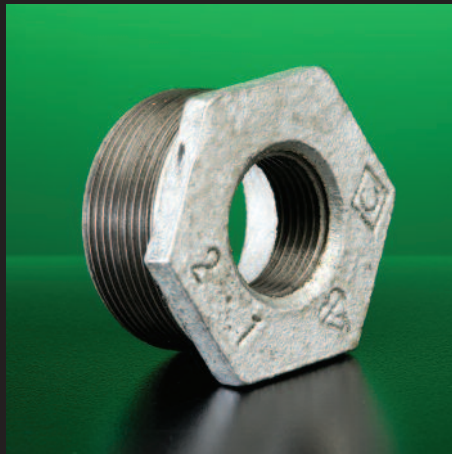
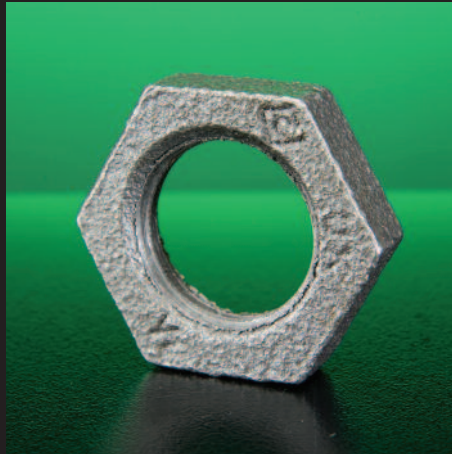
FLUID SYSTEMS



James J. Doherty Ltd.

SERVICING THE ENGINEERING INDUSTRY SINCE 1909

**MALLEABLE
PIPE FITTINGS**



OUR GENIUS IS PIPE FITTINGS

CRANE

BUILDING SERVICES & UTILITIES

Specification

Pipe Threads

The machined threads of Crane fittings are supplied to conform with the gauging requirements of BS EN 10226-2 and BS 21. Threads on all fittings are chamfered to assist assembly and avoid 'cross threading'. Female fittings have a chamber behind the thread, permitting the male thread to be assembled without restriction or 'bottoming'.

Design Standards

ISO 49:1994 is the international standard for 'Malleable cast iron fittings' threaded to ISO 7-1. This standard was revised in December 1994 and, compared with the 1983 edition, contained some technical revisions relating to use of alternative ferrous materials, hot dip zinc coatings, dispatch condition, pressure/temperature ratings, acceptance tests, marking and quality assurance.

BS EN 10242:1995 is the new British European Standard for 'Threaded pipe fittings in malleable cast iron' first published in August 1995 and very closely follows ISO 49:1994, the main difference being the inclusion of two informative annexes relating to 'Assessment of conformity' and the 'Relationship with the essential requirements of the Construction Products Directive (84/106/EEC)'.

All European Standards have to be adopted by the member countries of the EU and any conflicting national standards withdrawn. BS 143 and 1256:2000 has been retained to cover those fittings not in BS EN 10242. It should also be noted that BS EN 10242 details a number of fitting types and sizes which were not included in BS 143 & 1256 because they were not in regular demand and/or not available from UK manufacturers. BS 143 & 1256:2000 specifies requirements for the design and performance of 'Malleable cast iron and cast copper alloy threaded pipe fittings' and has developed over many years. BS 143 was first published in 1922 and BS 1256 in 1945, subsequently the two standards were combined in 1968. The BS 143 design requires fittings to have taper external threads and taper internal threads conforming to BS EN 10226 whereas the BS 1256 design has taper external threads and parallel internal threads. The 1986 revision was more closely related to ISO 49:1983 and more accurately reflected the ranges of fittings available from UK manufacturers. BS 143 & 1256 has always been technically more demanding than ISO 49 and consequently BS EN 10242.



BS 143 & 1256 were amended in August 1995 to delete those fittings now covered by BS EN 10242, so the scope of BS 143 & 1256 is now essentially:

- (a) BS 143 design and BS 1256 design fittings in malleable iron not covered by BS EN 10242,
- (b) BS 143 design fittings threaded to ANSI B1.20.1 (NPT)

Conformance of Crane Fittings

Both malleable iron and steel fittings have been verified by the British Standards Institute (BSI) as conforming to BS EN 10242 and BS 143 & 1256, as appropriate, and as such are permitted to bear the British Standards Kitemark Logo - Kitemark Licence No. KM00382.

Some small size fittings are manufactured in steel and will conform to BS EN 10241.

Crane malleable iron fittings also have the approval of the Loss Prevention Certification Board (LPCB) for use in sprinkler systems.

The Pressure Equipment Directive 97/23/EC (PED)

The Directive applies to the design, manufacture and conformity of pressure equipment and assemblies of pressure equipment with a maximum allowable pressure greater than 0.5 bar. Individual piping components, such as fittings, are excluded from the scope of the Directive and therefore cannot be CE marked. However, Crane pipe fittings are manufactured to the appropriate European standards and satisfy the essential safety requirements of the PED.

A 'Certificate of Incorporation for Pipe Fittings' can be accessed on the Crane website, or will be provided on request from Crane.

Specification

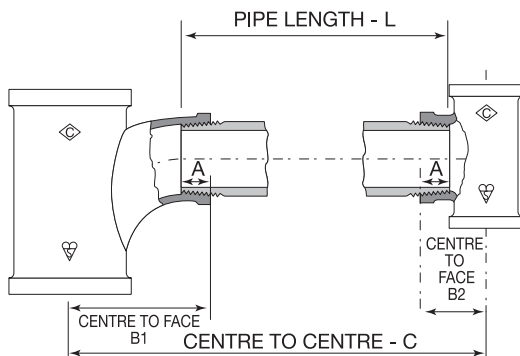
Piping Installation

The below information is compiled from British and International standards on Pipe Threads BS EN 10226 (supercedes BS 21) and Pipe Fittings standards BS EN 10242, BS 143 & 1256 and ISO 49.

Much unnecessary labour and creation of random lengths of pipe might be saved by the application of a few simple figures by the engineer when erecting the pipe line. Generally the pipeline, section by section, is either accommodated within fixed limits, usually the lines of building construction, or is fixed by prescribed dimensions. Except in the case of a continuous run of piping connected either by sockets or flanges, the engineer needs to know the length of pipe required to make up between fixed positions of fittings prior to cutting and threading.

The diagram below and table of 'A' dimensions indicates the length of thread engagement of BS EN 10226 taper pipe threads in nominal sizes 1/8 to 6 inch.

The approximate pipe length is calculated by using the expression $L = C - (B1 + B2) + 2A$.



'A' Dimension Information

FITTING SIZE (inch)	A (mm)
1/8	7
1/4	10
3/8	10
1/2	13
3/4	15
1	17
1 1/4	19
1 1/2	19
2	24
2 1/2	27
3	30
4	36
5	40
6	40

Dimensions given do not allow for tapping or threading tolerances.

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Pipe Ends

Users are advised to ensure that the external threads on the pipe being screwed into Crane fittings are free from damage or any malformation and conform to the gauging requirements of BS EN 10226.

ISO - BS EN - BS Identification Symbols

SYMBOL	TYPE	CRANE FIG. NO. MALLEABLE
A1	Elbows	151
A1/45°		155
A4		152
B1	Tees	161
-		163
C1	Crosses	171
D1	Bends	193
D4		192
D4/45°		156
-		191
E1	Pitcher tees	199
E2	Twin elbows	197
Kb1	Return bends	213
-	Sockets	176
M2		177
M2		179
M3		180
N4	Bushes	140
N8	Nipples	144
N8		145
P4	Back nuts	150
T2	Caps	185
T8	Plugs	147
T8		148
T9		146
T11		149
U1	Unions	241
U11		256
U11		271
U11		289
U12		257
U12		272
UA11	Elbow	261
UA11	Unions	276
UA12		262
UA12		277

The symbols shown in the above table are those given in BS 143 & 1256, BS EN 10242 and ISO 49 for malleable iron fittings and in BS 143 & 1256 for copper alloy fittings, and relate to the identification of fitting types.

Specification

Designation of Fitting Size

The designation of fitting size for the fittings shown in this catalogue is as follows:

EQUAL FITTINGS: Equal fittings where all outlets are the same size are designated by that one size, irrespective of the number of outlets.

UNEQUAL FITTINGS: Unequal fittings (reducing or enlarging) are specified by the sizes of each outlet, the sequence being dependent on the number of outlets:

- (a) For fittings having two outlets, the larger outlet is specified first.

Example: Fig. No. 145 hexagon reducing nipple with one end threaded size 2 and other end threaded size 1, is designated 2 x 1.

- (b) For fittings having more than two outlets, Crane uses BS EN 10242 method (b) which gives the run as the first and second sizes of the designation and the branch as the third size of the designation.

This is in contrast to BS EN 10242 method (a) which gives the run as the first and third sizes of the designation and the branch as the second size of the designation. This method is used in certain international markets. (Please see the diagrams below for a visual explanation).

BS EN 10242 method (a) equivalents are specified in this catalogue where applicable.

UK method
BS EN 10242 and ISO 49
Method (b) as used by Crane.

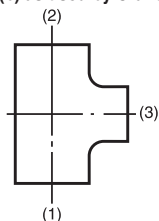


Fig. No. 161 tees

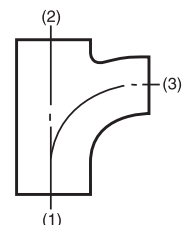


Fig. No. 199 pitcher tees

International method
BS EN 10242 and ISO 49
Method (a)

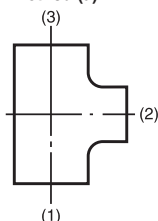


Fig. No. 161 tees

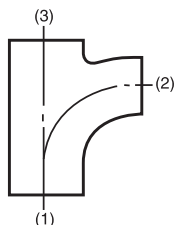


Fig. No. 199 pitcher tees

Malleable Cast Iron

Crane malleable iron is of the Blackheart type ideally suited to pipe fitting and manufacture and conforms to BS EN 1562 Designation EN-GJMB-300-6, ASTM A197 and ISO 5922.

Typical properties of Crane malleable iron are given in the table below, exceeding the requirements in the above BS EN, ASTM and ISO standards.

CHEMICAL COMPOSITION	TYPICAL	MECHANICAL PROPERTIES	TYPICAL
Total carbon	2.7%	Tensile strength (N/mm ²)	340
Silicon	1.75%	Elongation on 36mm (%)	12
Manganese	0.69%	Izod impact (room temp.) (J)	12
Sulphur	0.18%	Brinell hardness	125
Phosphorous	0.02%	Density (g/cm ³)	7.56

The close relationship between the physical properties of test bars and actual castings ensures design integrity and the preservation of high safety factors. Shock pressures within pipe systems can be tolerated with complete safety.

The corrosion resistance of Crane malleable iron is good when compared with grey cast iron and mild steel for most general applications including water, gas and steam.

Mild Steel

BS 143 and 1256 allow small size (³/₈" and smaller) straight fittings to be supplied in other ferrous materials eg. mild steel, as an alternative to malleable cast iron, providing the mechanical properties are at least equivalent to the specified grade of malleable iron.

Individual data pages state which Crane fittings are supplied in mild steel.

Galvanising

Where additional resistance to corrosion is required, malleable cast iron fittings can be hot-dip zinc coated (galvanised) prior to machining. This process involves coating the fittings with zinc which, in addition to its natural resistance to corrosion, provides electrochemical protection where the iron of the fitting is exposed by damage. Mild steel fittings can be supplied with a proprietary zinc-based coating.

The coating weight on Crane galvanised fittings conforms to the requirements of BS EN ISO 1461 1998 and ASTM 153 with a minimum coating of 610 g/m² (2oz/ft²) equal to a thickness of 86µm (0.0034 in). Average coatings are well in excess of this and exceed the requirements given in BS EN 10242 and ISO 49.

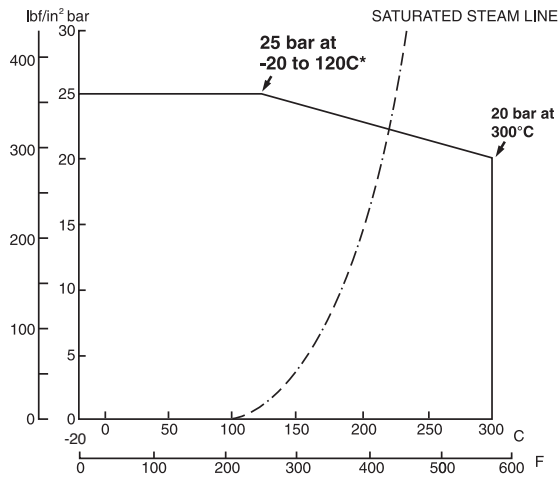
When ordering galvanised or zinc coated fittings add the suffix 'G' to the figure number.

Specification

Pressure/Temperature Ratings

BS 143 & 1256:1986 states that fittings are for general purposes for the transmission of fluids within the pressure and temperature ranges specified. The ratings given are updated from those in the 1968 edition, both for malleable cast iron and bronze fittings.

The graph below shows the BS pressure temperature ratings. Crane malleable iron fittings are suitable for use at these new ratings with the exception of certain unions (see note Ø below), but such use is dependent on the suitability of the connecting pipe material, the threaded joint and any thread sealants used. Due consideration should also be given to any applicable codes of practice. Pressures stated are maximum non-shock gauge.



*Hot dip zinc coated (galvanised) fittings should not be used below -10°C (14°F).

Ø Figure No. 241 unions are limited to 230°C maximum.

Figure Nos. 271, 272, 276, 277 and 289 unions are limited to 208°C maximum.

Dimensions given do not allow for tapping or threading tolerances.

Testing


Production testing: Meets requirements of BS EN 10242 or BS 143 and 1256 as applicable. Type testing: In addition to production testing, all pressure containing fittings are required by BS EN 10242, BS 143 & 1256 and ISO 49 to be designed to withstand specified design test pressures and to be type tested accordingly - 100 bar (1450 lbf/in²) for sizes 4 and smaller malleable iron fittings and 64 bar (928 lbf/in²) for sizes 5 and 6 malleable iron.

Tests carried out show that production fittings have safety margins well in excess of the BS requirement. Some typical burst tests on Crane fittings illustrate their capabilities - size 1/2 figure no. 193 bend tested to 550 bar (8000 lbf/in²) without failure; size 1 figure no. 241 flat seat union tested to 248 bar (3600 lbf/in²) without failure and size 6 figure no. 151 elbow tested to 190 bar (2750 lbf/in²) without failure.

Finish

All malleable iron fittings are given an oil finish as protection against rust while in stock or during transit and after installation prior to plant commissioning. Finished fittings are free of any polycyclic aromatic hydrocarbons.

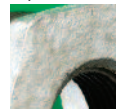
Marking

All Crane fittings are marked with the  logo and where size permits, the fitting size and Kitemark symbol. In addition, some castings also display a pattern identification number. This is normally located next to the band of the fitting.

This number is used during the manufacturing process as part of the rigorous quality control procedures to ensure consistent high-quality castings. The number is not of relevance to the end user of the product.

Malleable Iron

Options:

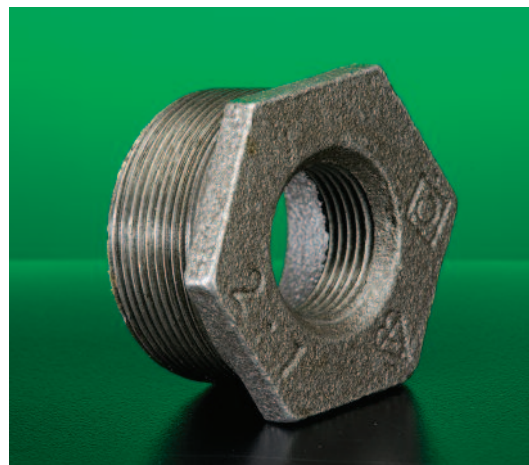
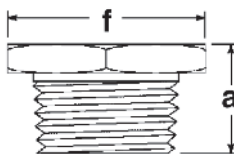


Galvanised



Black

140 Hexagon Bush PN25



FITTING SIZE (inch)	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	f	
1/4 x 1/8	14	16	1.14
*3/8 x 1/8	19	19	2.51
*3/8 x 1/4	19	19	1.60
1/2 x 1/8	24	24	4.40
*1/2 x 1/4	24	24	3.74
1/2 x 3/8	24	24	3.20
3/4 x 1/8	26	30	7.70
3/4 x 1/4	26	30	7.07
3/4 x 3/8	26	30	6.50
3/4 x 1/2	26	30	5.30
1 x 1/4	29	36	11.80
1 x 3/8	29	36	12.18
1 x 1/2	29	36	10.60
1 x 3/4	29	36	8.20
1 1/4 x 1/4	31	46	17.72
1 1/4 x 3/8	31	46	19.42
1 1/4 x 1/2	31	46	20.24
1 1/4 x 3/4	31	46	17.70
1 1/4 x 1	31	46	14.00
1 1/2 x 1/4	31	52	23.72
1 1/2 x 3/8	31	52	23.96
1 1/2 x 1/2	31	52	25.40
1 1/2 x 3/4	31	52	24.20
1 1/2 x 1	31	52	21.00
1 1/2 x 1 1/4	31	52	14.30

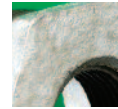
FITTING SIZE (inch)	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	f	
2 x 3/8	35	64	40.42
2 x 1/2	35	64	36.90
2 x 3/4	35	64	37.40
2 x 1	35	64	40.30
2 x 1 1/4	35	64	35.40
2 x 1 1/2	35	64	29.98
2 1/2 x 1/2	40	79	62.36
2 1/2 x 3/4	40	79	59.74
2 1/2 x 1	40	79	61.40
2 1/2 x 1 1/4	40	79	63.00
2 1/2 x 1 1/2	40	79	66.29
2 1/2 x 2	40	79	49.50
3 x 1/2	44	93	85.28
3 x 3/4	44	93	85.49
3 x 1	44	93	87.10
3 x 1 1/4	44	93	87.60
3 x 1 1/2	44	93	92.49
3 x 2	44	93	92.30
3 x 2 1/2	44	93	63.00
4 x 1	51	118	149.30
4 x 1 1/4	51	118	146.62
4 x 1 1/2	51	118	148.40
4 x 2	51	118	158.43
4 x 2 1/2	51	118	161.72
4 x 3	51	118	144.25
5 x 4	58	144	208.20
6 x 2	61	171	352.70
6 x 3	61	171	369.67
6 x 4	61	171	352.80

*Supplied in mild steel.

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:

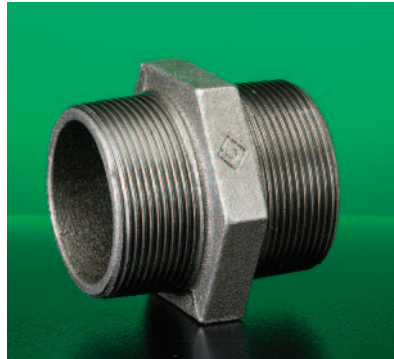
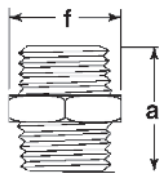


Galvanised



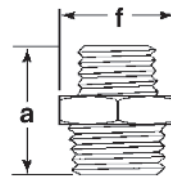
Black

144 Octagon Nipple PN25



FITTING SIZE (inch)	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	f	
*1/4	33	15	2.50
*3/8	35	18	3.91
1/2	44	23	6.50
3/4	49	28	9.90
1	53	36	15.60
1 1/4	57	46	23.80
1 1/2	59	52	31.10
2	68	64	49.80
2 1/2	80	77	107.90
3	89	101	166.10
4	102	124	247.60
6	114	172	492.34

145 Hexagon Nipple PN25



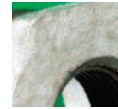
FITTING SIZE (inch)	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	f	
*1/4 x 1/8	30	15	2.13
*3/8 x 1/4	35	18	4.02
1/2 x 1/4	41	23	6.20
1/2 x 3/8	41	23	6.50
3/4 x 3/8	48	28	9.50
3/4 x 1/2	49	28	9.80
1 x 1/2	56	35	16.80
1 x 3/4	56	35	15.43
1 1/4 x 1/2	64	44	25.03
1 1/4 x 3/4	64	44	25.54
1 1/4 x 1	64	44	21.50
1 1/2 x 1	64	50	31.28
1 1/2 x 1 1/4	64	50	28.12
2 x 1	69	61	49.30
2 x 1 1/4	69	61	45.50
2 x 1 1/2	71	62	46.70
2 1/2 x 2	77	77	72.00
3 x 2	86	90	101.90
3 x 2 1/2	85	90	100.10

*Supplied in mild steel.

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:

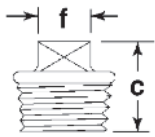


Galvanised



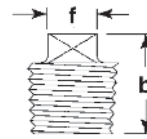
Black

146 Beaded Plug - Solid PN25



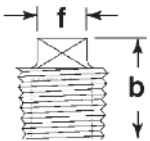
FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	c	f	
3/8	28	11	3.40
1/2	33	13	7.27
3/4	36	14	12.50
1	41	19	22.10
1 1/4	47	23	38.42
1 1/2	49	23	49.70
2	56	28	90.17

148 Plain Plug - Solid PN25



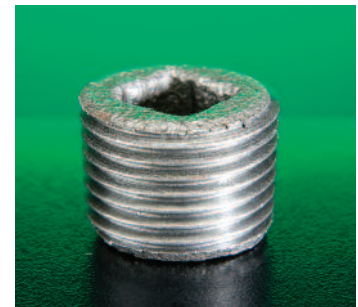
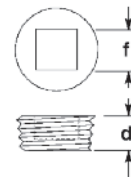
FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	b	f	
*1/8	14	7	0.72
*1/4	20	10	1.67
3/8	20	11	2.80
1/2	23	12	4.17
3/4	26	14	7.10
1	28	17	12.92
1 1/4	33	24	22.80
1 1/2	35	29	31.40
2	41	32	56.00

147 Plain Plug - Hollow PN25



FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	b	f	
1/2	23	12	3.60
3/4	26	14	5.10
1	29	18	8.27
1 1/4	34	25	14.22
1 1/2	36	30	21.31
2	41	34	32.58
2 1/2	43	36	47.60
3	50	38	73.50
4	59	46	122.90

149 Countersunk Plug PN25



FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	d	f	
1/2	16	9	2.59
3/4	16	14	4.50
1	22	19	8.33
1 1/4	22	20	15.40
1 1/2	21	20	21.40
2	27	26	43.88

*Supplied in mild steel.

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:



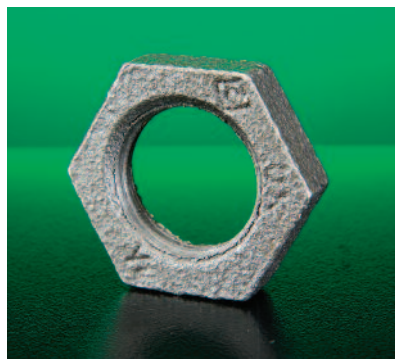
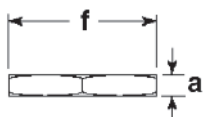
Galvanised



Black

150 Backnut PN25

Parallel thread to
BS 2779 (ISO 228-1)

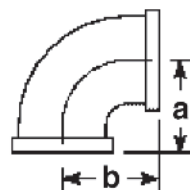


FITTING SIZE (inch)	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	f	
*1/4	7	22	1.12
3/8	8	26	1.90
1/2	8	31	2.36
3/4	9	38	4.19
1	10	45	6.64
1 1/4	11	55	10.05
1 1/2	12	63	13.60
2	13	76	23.40
2 1/2	13	98	29.30
3	21	109	60.71

*Supplied in mild steel.

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

151 Elbow PN25



FITTING SIZE (inch)	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	b	
Equal			
1/8	19	19	3.28
1/4	21	21	5.10
3/8	25	25	8.40
1/2	28	28	8.40
3/4	33	33	13.50
1	38	38	22.40
1 1/4	45	45	34.88
1 1/2	50	50	44.10
2	58	58	71.26
2 1/2	69	69	138.40
3	78	78	190.60
4	96	96	353.20
5	115	115	552.80
6	131	131	764.00
Reducing			
3/8 x 1/4	23	23	5.47
1/2 x 1/4	25	25	8.00
1/2 x 3/8	26	26	9.10
3/4 x 1/2	30	31	13.20
1 x 1/2	32	34	18.64
1 x 3/4	35	36	22.00
1 1/4 x 1/2	36	41	26.80
1 1/4 x 3/4	36	41	24.70
1 1/4 x 1	42	46	32.00
1 1/2 x 3/4	39	44	32.00
1 1/2 x 1	42	46	39.68
2 x 1	44	51	48.70
2 x 1 1/2	52	55	69.90

*Supplied in mild steel.

Malleable Iron

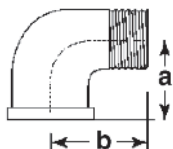
Options:



Galvanised

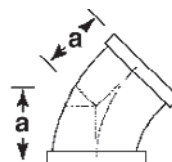
Black

152 Male & Female Elbow PN25



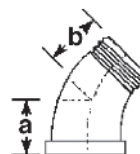
FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	b	
Equal			
1/8	19	25	2.60
1/4	21	28	4.03
3/8	25	32	6.10
1/2	28	37	8.99
3/4	33	43	13.37
1	38	52	23.00
1 1/4	45	60	35.10
1 1/2	50	68	48.42
2	58	74	78.08
2 1/2	69	88	115.60
3	78	98	164.70
4	96	118	293.00
Reducing			
3/4 x 1/2	30	40	10.50
1 x 1/2	32	51	16.20
1 x 3/4	35	46	21.40

155 45° Elbow PN25



FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a		
1/4	19		4.36
3/8	20		5.44
1/2	22		8.10
3/4	25		11.50
1	28		17.70
1 1/4	33		29.90
1 1/2	36		40.22
2	43		65.31
2 1/2	50		94.50
3	55		158.00
4	66		249.60
6	88		591.50

156 Elbow PN25



FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	f	
1/4	19	19	3.19
3/8	21	21	4.79
1/2	22	28	7.31
3/4	29	29	12.08
1	35	35	16.60
1 1/4	42	42	28.00
1 1/2	48	48	38.00
2	55	55	62.00
2 1/2	61	61	106.80
3	68	68	139.00
4	87	87	287.60

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:

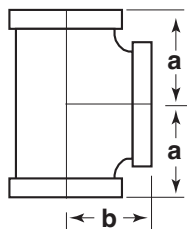


Galvanised



Black

161 Tee PN25



FITTING SIZE (inch) BS EN 10242		DIMENSIONS (mm)		WEIGHT (kg)
Method (b)	Method (a)	a	b	per 100 pieces
Equal				
1/8	-	19	19	3.95
1/4	-	21	21	6.20
3/8	-	25	25	8.89
1/2	-	28	28	11.63
3/4	-	33	33	18.86
1	-	38	38	29.34
1 1/4	-	45	45	45.00
1 1/2	-	50	50	69.07
2	-	58	58	93.95
2 1/2	-	69	69	189.40
3	-	78	78	271.90
4	-	96	96	469.30
5	-	115	115	651.99
6	-	131	131	1023.00

FITTING SIZE (inch) BS EN 10242		DIMENSIONS (mm)		WEIGHT (kg)
Method (b)	Method (a)	a	b	per 100 pieces
Reducing on branch				
3/8 x 1/4	-	23	23	10.00
1/2 x 1/4	-	24	24	12.00
1/2 x 3/8	-	26	26	12.40
3/4 x 1/4	-	26	27	12.20
3/4 x 3/8	-	28	28	17.70
3/4 x 1/2	-	30	31	20.30
1 x 1/4	-	28	31	18.89
1 x 3/8	-	32	35	23.70
1 x 1/2	-	32	34	21.70
1 x 3/4	-	35	36	31.54

FITTING SIZE (inch) BS EN 10242		DIMENSIONS (mm)		WEIGHT (kg)
Method (b)	Method (a)	a	b	per 100 pieces
1 1/4 x 1/2	-	34	38	30.14
1 1/4 x 3/4	-	36	41	43.20
1 1/4 x 1	-	40	42	42.16
1 1/2 x 1/2	-	36	42	45.40
1 1/2 x 3/4	-	38	44	42.60
1 1/2 x 1	-	42	46	50.72
1 1/2 x 1 1/4	-	46	48	61.50
2 x 1/2	-	38	48	56.06
2 x 3/4	-	40	50	70.40
2 x 1	-	44	52	68.27
2 x 1 1/4	-	48	54	73.70
2 x 1 1/2	-	52	55	93.50
2 1/2 x 1/2	-	41	57	103.80
2 1/2 x 3/4	-	44	59	109.90
2 1/2 x 1	-	47	60	120.80
2 1/2 x 1 1/4	-	52	62	130.80
2 1/2 x 1 1/2	-	55	63	139.80
2 1/2 x 2	-	61	66	154.60
3 x 1/2	-	51	68	147.50
3 x 3/4	-	-	-	147.19
3 x 1	-	-	-	143.10
3 x 1 1/4	-	55	70	169.70
3 x 1 1/2	-	58	71	177.60
3 x 2	-	64	73	190.70
3 x 2 1/2	-	72	76	228.60
4 x 1	-	56	81	199.90
4 x 1 1/4	-	61	83	273.90
4 x 1 1/2	-	64	84	279.20
4 x 2	-	70	86	242.80
4 x 2 1/2	-	77	89	365.70
4 x 3	-	84	92	302.50
6 x 3	-	92	121	676.71
6 x 4	-	105	125	745.20

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

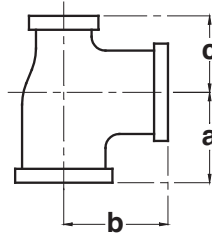
Options:



Galvanised

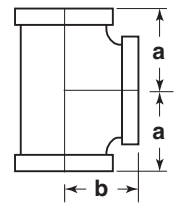
Black

161 Tee PN25



FITTING SIZE (inch) BS EN 10242		DIMENSIONS (mm)			WEIGHT (kg) per 100 pieces
Method (b)	Method (a)	a	b	c	
Reducing on run					
1/2 x 1/4 x 1/2	1/2 x 1/2 x 1/4	28	28	25	9.70
3/4 x 1/2 x 3/4	3/4 x 3/4 x 1/2	33	33	31	22.00
1 x 1/2 x 1	1 x 1 x 1/2	38	38	34	31.80
1 x 3/4 x 1	1 x 1 x 3/4	38	38	36	26.71
1 1/4 x 1/2 x 1 1/4	1 1/4 x 1 1/4 x 1/2	45	45	38	44.30
1 1/4 x 3/4 x 1 1/4	1 1/4 x 1 1/4 x 3/4	45	45	41	43.77
1 1/4 x 1 x 1 1/4	1 1/4 x 1 1/4 x 1	45	45	42	46.89
1 1/2 x 1/2 x 1 1/2	1 1/2 x 1 1/2 x 1/2	50	50	44	58.00
1 1/2 x 3/4 x 1 1/2	1 1/2 x 1 1/2 x 3/4	50	50	44	49.50
1 1/2 x 1 x 1 1/2	1 1/2 x 1 1/2 x 1	50	50	46	55.69
2 x 1/2 x 2	2 x 2 x 1/2	58	58	52	81.99
2 x 3/4 x 2	2 x 2 x 3/4	58	58	52	88.60
2 x 1 x 2	2 x 2 x 1	58	58	52	92.80
2 x 1 1/2 x 2	2 x 2 x 1 1/2				102.60
2 1/2 x 1 1/2 x 2 1/2	2 1/2 x 2 1/2 x 1 1/2	69	69	64	125.70
3 x 2 x 3	3 x 3 x 2	78	78	73	191.20
Reducing on run & branch					
1/2 x 3/8 x 3/8	1/2 x 3/8 x 3/8	26	26	25	9.34
3/4 x 1/2 x 1/2	3/4 x 1/2 x 1/2	30	31	28	19.80
1 x 3/4 x 1/2	1 x 1/2 x 3/4	32	34	30	20.20
1 x 3/4 x 3/4	1 x 3/4 x 3/4	35	36	33	30.20

FITTING SIZE (inch) BS EN 10242		DIMENSIONS (mm)			WEIGHT (kg) per 100 pieces
Method (b)	Method (a)	a	b	c	
1 1/4 x 1 x 1 1/2	1 1/4 x 1/2 x 1	36	41	35	36.20
1 1/4 x 1 x 3/4	1 1/4 x 3/4 x 1	36	41	35	31.80
1 1/4 x 1 x 1	1 1/4 x 1 x 1	40	42	38	44.60
1 1/2 x 1 x 1	1 1/2 x 1 x 1	42	46	38	42.11
1 1/2 x 1 1/4 x 1/2	1 1/2 x 1/2 x 1 1/4	37	43	33	45.60
1 1/2 x 1 1/4 x 1	1 1/2 x 1 x 1 1/4	42	46	40	56.90
1 1/2 x 1 1/4 x 1 1/4	1 1/2 x 1 1/4 x 1 1/4	46	48	45	64.00
2 x 1 1/2 x 1/2	2 x 1/2 x 1 1/2	44	51	41	51.40
2 x 1 1/2 x 3/4	2 x 3/4 x 1 1/2	44	51	41	70.40
2 x 1 1/2 x 1	2 x 1 x 1 1/2	44	51	41	64.60
2 x 1 1/2 x 1 1/4	2 x 1 1/4 x 1 1/2	48	54	46	67.40
2 x 1 1/2 x 1 1/2	2 x 1 1/2 x 1 1/2	52	55	50	85.50



FITTING SIZE (inch) BS EN 10242		DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
Method (b)	Method (a)	a	b	
Increasing on branch				
1/2 x 3/4	-	31	30	18.24
3/4 x 1	-	36	35	26.10
1 x 1 1/4	-	42	40	43.60
1 x 1 1/2	-	46	42	42.75
1 1/4 x 2	-	54	48	75.10
1 1/2 x 2	-	55	52	89.80
2 x 2 1/2	-	66	61	120.50

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:

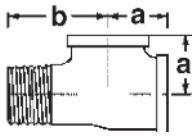


Galvanised



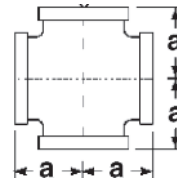
Black

163 Male & Female Tee PN25



FITTING SIZE (inch)	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	b	
1/2	29	41	12.30
3/4	33	48	19.60
1	38	54	29.70

171 Cross PN25



FITTING SIZE (inch)	DIMENSIONS (mm)	WEIGHT (kg) per 100 pieces
	a	
1/4	21	7.08
3/8	25	9.75
1/2	28	15.10
3/4	33	22.20
1	38	36.04
1 1/4	45	73.60
1 1/2	50	81.00
2	58	119.10
2 1/2	69	160.90
3	78	232.50
4	96	447.43

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:

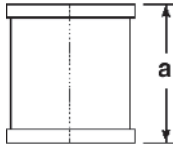


Galvanised



Black

176 Socket PN25

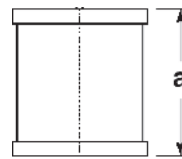


Parallel thread to
BS 2779 (ISO 228-1)



FITTING SIZE (inch)	DIMENSIONS (mm) a	WEIGHT (kg) per 100 pieces
*1/8	24	2.11
*1/4	27	3.57
*3/8	30	4.53
1/2	34	7.89
3/4	39	12.03
1	42	18.32
1 1/4	49	28.45
1 1/2	54	30.50
2	64	48.20
2 1/2	73	73.00
3	81	98.50
4	94	178.60

177 Socket PN25



FITTING SIZE (inch)	DIMENSIONS (mm) a	WEIGHT (kg) per 100 pieces
1/4	27	3.20
3/8	30	4.00
1/2	34	8.32
3/4	39	12.30
1	42	19.95
1 1/4	50	22.10
1 1/2	55	31.10
2	65	50.20
2 1/2	73	94.80
3	81	128.25
4	94	215.00
6	121	454.64

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:

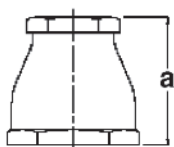


Galvanised



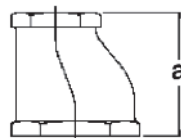
Black

179 Reducing Socket PN25



FITTING SIZE (inch)	DIMENSIONS (mm) a	WEIGHT (kg) per 100 pieces
*3/8 x 1/4	29	4.71
1/2 x 1/4	32	7.60
1/2 x 3/8	32	8.40
3/4 x 1/4	37	12.70
3/4 x 3/8	37	7.62
3/4 x 1/2	37	14.35
1 x 1/4	43	11.14
1 x 3/8	43	18.23
1 x 1/2	45	14.75
1 x 3/4	43	19.80
1 1/4 x 1/2	52	24.91
1 1/4 x 3/4	52	26.97
1 1/4 x 1	50	20.60
1 1/2 x 1/2	59	33.85
1 1/2 x 3/4	59	33.60
1 1/2 x 1	59	37.76
1 1/2 x 1 1/4	55	27.30
2 x 1/2	71	48.40
2 x 3/4	71	48.90
2 x 1	71	54.10
2 x 1 1/4	65	43.10
2 x 1 1/2	71	57.81
2 1/2 x 1/2	83	62.58
2 1/2 x 1	83	77.50
2 1/2 x 1 1/4	83	78.60
2 1/2 x 1 1/2	83	83.58
2 1/2 x 2	83	88.68
3 x 1	94	97.80
3 x 2	94	110.10
3 x 2 1/2	94	108.60
4 x 2	111	194.40
4 x 2 1/2	111	196.30
4 x 3	111	202.70
6 x 4	149	443.93

180 Eccentric Socket PN25

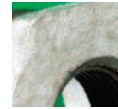


FITTING SIZE (inch)	DIMENSIONS (mm) a	WEIGHT (kg) per 100 pieces
3/4 x 1/2	37	12.92
1 x 1/2	43	17.33
1 x 3/4	43	18.92
1 1/4 x 1/2	52	19.34
1 1/4 x 3/4	52	25.39
1 1/4 x 1	52	25.28
1 1/2 x 1/2	59	34.60
1 1/2 x 3/4	59	28.82
1 1/2 x 1	59	37.08
1 1/2 x 1 1/4	59	46.67
2 x 1/2	71	57.01
2 x 3/4	71	57.85
2 x 1	71	56.42
2 x 1 1/4	71	54.91
2 x 1 1/2	71	53.30
2 1/2 x 1/2	83	86.40
2 1/2 x 1 1/2	83	96.66
2 1/2 x 2	83	139.90
3 x 2	94	115.70
3 x 2 1/2	94	197.00

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:

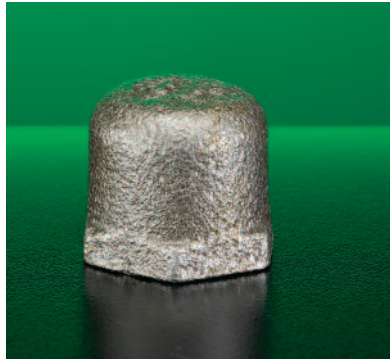
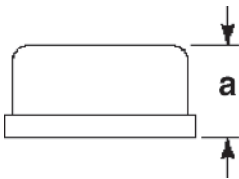


Galvanised



Black

185 Cap PN25



FITTING SIZE (inch)	DIMENSIONS (mm) a	WEIGHT (kg) per 100 pieces
*1/4	17	3.21
*3/8	19	4.94
1/2	26	7.50
3/4	27	7.39
1	32	15.10
1 1/4	32	20.20
1 1/2	33	26.00
2	38	43.29
2 1/2	41	66.18
3	44	92.20
4	52	177.46

*Supplied in mild steel.

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:

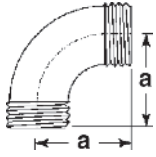


Galvanised



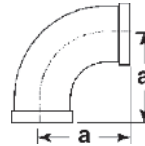
Black

191 Male Bend PN25



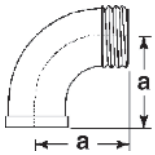
FITTING SIZE	DIMENSIONS (mm) a	WEIGHT (kg) per 100 pieces
1/2	45	10.21
3/4	50	13.20
1	63	23.13
1 1/4	76	41.50
1 1/2	85	57.68
2	102	97.28

193 Bend PN25



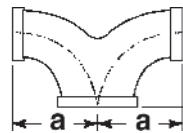
FITTING SIZE	DIMENSIONS (mm) a	WEIGHT (kg) per 100 pieces
1/4	30	6.32
3/8	36	8.84
1/2	45	13.42
3/4	50	19.15
1	63	31.82
1 1/4	76	61.70
1 1/2	85	79.26
2	102	126.57
2 1/2	114	166.70
3	127	252.50
4	165	485.30
5	-	761.17
6	229	1176.26

192 Male & Female Bend PN25



FITTING SIZE	DIMENSIONS (mm) a	WEIGHT (kg) per 100 pieces
1/4	30	4.19
3/8	36	6.97
1/2	45	10.10
3/4	50	16.00
1	63	26.70
1 1/4	76	50.50
1 1/2	85	69.61
2	102	108.60
2 1/2	114	158.80
3	127	239.60
4	165	467.50
6	229	1125.79

197 Twin Elbow PN25

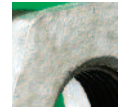


FITTING SIZE	DIMENSIONS (mm) a	WEIGHT (kg) per 100 pieces
1/2	45	19.00
3/4	50	29.40
1	63	48.30
1 1/4	76	87.34
1 1/2	85	117.29
2	102	172.50
2 1/2	114	313.94
3	127	409.12

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:

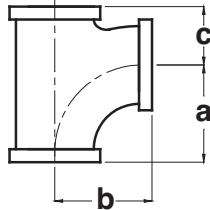


Galvanised



Black

199 Pitcher Tee PN25



FITTING SIZE (inch) BS EN 10242		DIMENSIONS (mm)			WEIGHT (kg)
Method (b)	Method (a)	a	b	c	per 100 pieces
Equal					
1/2		45	45	24	20.24
3/4		50	50	28	26.00
1		63	63	33	40.80
1 1/4		76	76	40	73.55
1 1/2		85	85	43	101.17
2		102	102	53	145.70
2 1/2		114	114	61	255.00
3		127	127	70	352.10
4		165	165	87	591.00
Reducing on branch					
3/4 x 1/2		47	48	25	22.53
1 x 1/2		49	51	28	32.77
1 x 3/4		53	56	30	34.26
1 1/4 x 1/2		51	56	30	43.69
1 1/4 x 3/4		55	58	33	48.80
1 1/4 x 1		66	68	36	60.70
1 1/2 x 1/2		52	58	29	51.50
1 1/2 x 3/4		55	61	33	56.50
1 1/2 x 1		66	71	36	72.34
1 1/2 x 1 1/4		77	79	41	90.01
2 x 1/2		54	64	32	75.93
2 x 3/4		58	67	35	82.75
2 x 1		70	77	40	96.30
2 x 1 1/4		80	85	45	111.70
2 x 1 1/2		91	94	48	138.28

FITTING SIZE (inch) BS EN 10242		DIMENSIONS (mm)			WEIGHT (kg)
Method (b)	Method (a)	a	b	c	per 100 pieces
2 1/2 x 1/2		60	75	37	115.88
2 1/2 x 3/4		60	75	37	115.22
2 1/2 x 1		72	85	40	129.20
2 1/2 x 1 1/4		83	93	45	145.10
2 1/2 x 1 1/2		94	103	48	175.30
2 1/2 x 2		104	109	54	221.80
3 x 1 1/2		96	109	50	231.80
3 x 2		106	116	56	261.20
4 x 2 1/2		121	133	69	454.70
4 x 3		132	139	75	493.37
Reducing on run & branch					
3/4 x 1/2 x 1/2	3/4 x 1/2 x 1/2	47	48	24	20.20
1 x 3/4 x 1/2	1 x 1/2 x 3/4	49	51	25	26.00
1 x 3/4 x 3/4	1 x 3/4 x 3/4	53	54	28	30.10
Reducing on run					
3/4 x 1/2 x 3/4	3/4 x 3/4 x 1/2	50	50	27	24.30

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:

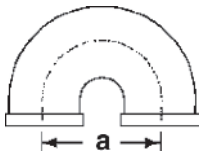


Galvanised



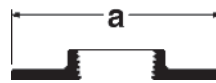
Black

213 Return Bend PN25



FITTING SIZE (inch)	DIMENSIONS (mm) a	WEIGHT (kg) per 100 pieces
1/2	38	17.87
3/4	51	35.71
1	64	52.22
1 1/4	76	92.37
1 1/2	89	115.21
2	102	146.36

233 Round Flange PN25

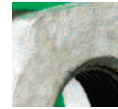


FITTING SIZE (inch)	DIMENSIONS (mm) a	WEIGHT (kg) per 100 pieces
Undrilled and unfaced		
1/2	95	25.75
3/4	102	34.03
1	114	47.90
1 1/4	121	53.02
1 1/2	133	73.13
2	152	105.27
2 1/2	165	124.22
3	184	161.50
4	216	252.35

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:



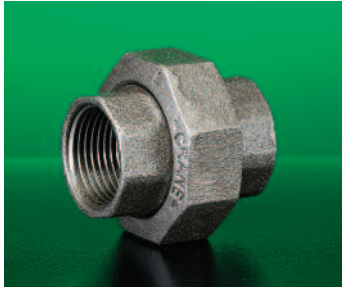
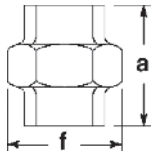
Galvanised



Black

241 Union PN25

FLAT SEAT



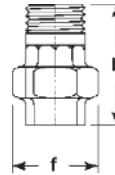
FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	f	
1/2	49	42	20.44
3/4	53	49	30.39
1	58	57	41.22

299 Gasket for Fig. 241

FITTING SIZE	WEIGHT (kg) per 100 pieces
1/2	-
3/4	-
1	-

(compressed non-asbestos fibre)

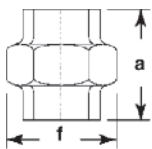
257 Male & Female Union PN25



FITTING SIZE	DIMENSIONS (mm)			WEIGHT (kg) per 100 pieces
	b	a	f	
1/4	57	32	†	11.95
3/8	61	36	†	16.07
1/2	68	56	42	25.85
3/4	74	74	49	36.77
1	82	57	57	50.63
1 1/4	91	68	†	74.26
1 1/2	95	76	†	99.95
2	104	92	†	147.70
2 1/2	116	111	†	232.78
3	131	125	†	324.66

256 Union PN25

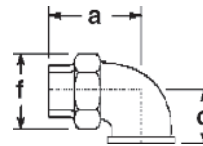
SPHERICAL SEAT - Iron to Iron



FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	f	
1/4	42	32	11.14
3/8	45	36	13.75
1/2	49	42	20.70
3/4	53	49	30.08
1	58	57	40.75
1 1/4	64	68	60.67
1 1/2	68	76	78.49
2	75	92	119.89
2 1/2	84	111	187.05
3	92	125	248.33
4	107	155	426.52

261 Elbow Union PN25

SPHERICAL SEAT - Iron to Iron



FITTING SIZE	DIMENSIONS (mm)			WEIGHT (kg) per 100 pieces
	a	c	f	
1/2	56	28	42	25.72
3/4	64	33	49	37.31
1	72	38	57	54.38

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:



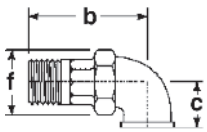
Galvanised



Black

262 M & F Elbow Union PN25

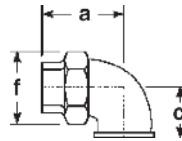
SPHERICAL
SEAT -
Iron to Iron



FITTING SIZE	DIMENSIONS (mm)			WEIGHT (kg) per 100 pieces
	b	c	f	
1/2	78	28	42	29.89
3/4	86	33	49	44.44
1	98	38	57	62.88

276 Elbow Union PN25

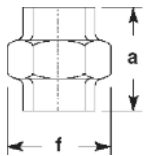
SPHERICAL
SEAT -
Bronze to Iron



FITTING SIZE	DIMENSIONS (mm)			WEIGHT (kg) per 100 pieces
	a	c	f	
1/2	56	28	42	25.63
3/4	64	33	49	37.27
1	72	38	57	55.00

271 Union PN25

SPHERICAL
SEAT -
Bronze to Iron

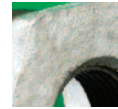


FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	f	
1/8	42	32	12.26
1/4	42	32	11.03
3/8	45	36	14.54
1/2	49	42	20.69
3/4	53	49	30.33
1	58	57	40.79
1 1/4	64	68	59.64
1 1/2	68	76	77.87
2	75	92	120.10
2 1/2	84	111	187.15
3	92	125	247.81
4	107	155	432.60

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

Malleable Iron

Options:



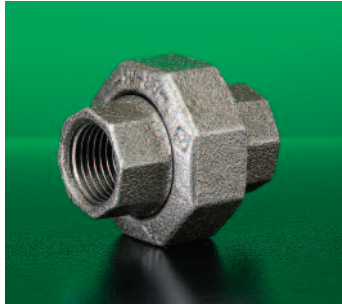
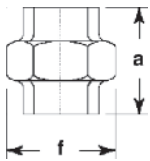
Galvanised



Black

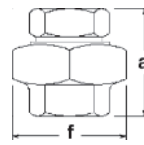
289 Union PN25

SPHERICAL
SEAT -
Bronze to Bronze



FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	f	
1/4	42	32	10.91
3/8	45	36	14.98
1/2	49	42	20.97
3/4	53	49	30.44
1	58	57	40.99
1 1/4	64	68	61.13
1 1/2	68	76	79.78
2	75	92	121.54
2 1/2	84	111	187.72
3	92	125	248.02

290 Union PN25

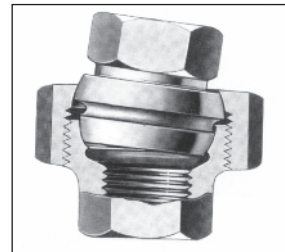


FITTING SIZE	DIMENSIONS (mm)		WEIGHT (kg) per 100 pieces
	a	f	
1/2	49	44	22.96
3/4	52	48	28.66
1	57	55	37.44
1 1/4	67	67	60.00
1 1/2	78	76	94.48
2	87	90	134.79

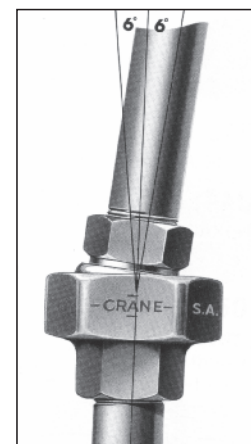
The Crane SA (Self Aligning Union)

The Crane SA Union is made with double spherical seats. Pipes which are not in alignment can be securely connected at any angle up to 6° of arc from centre line of the union, thus avoiding the need for offsets. The union provides a pressure tight joint without the use of gaskets or washers.

- Self aligning (SA) Union
- Double spherical seats
- Iron to iron seating
- Taper threads to BS 21 (ISO 7-1)
- Black or Galvanised



SA Union - female



6° out of alignment and still pressure tight

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Ltd assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.



To visit our Video Library go to:
www.youtube.com/user/CraneBSU



CRANE

FLUID SYSTEMS



FM311
ISO 9001

CRANE HOUSE, EPSILON TERRACE
WEST ROAD, IPSWICH
SUFFOLK IP3 9FJ
TELEPHONE: +44 (0)1473 277300
FAX: +44 (0)1473 277301
EMAIL: enquiries@cranefs.com

www.cranefs.com

- Designed and manufactured under quality management systems in accordance with BS EN ISO 9001-2008

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane Fluid Systems assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within this publication and reserves the right to change without notice. We hope that our communications have an impact on you, but not on the environment. We have taken steps to ensure this leaflet is printed on FSC material and the paper is made by a totally chlorine free process.

CFS_MPF_08_2015

OUR GENIUS IS PIPE FITTINGS

CRANE

BUILDING SERVICES & UTILITIES

www.cranesbu.com

