

Handrail Catalogue



Handrail Applications

FastClamp® is the safe and simple solution to build many different types of lightweight tubular structures, the applications are only limited by your imagination and the following are just a small selection that can be constructed.

- Handrailing
- Guardrailing
- Tyre racks
- Car ports
- Polytunnels
- Fruit cages



Handrailing



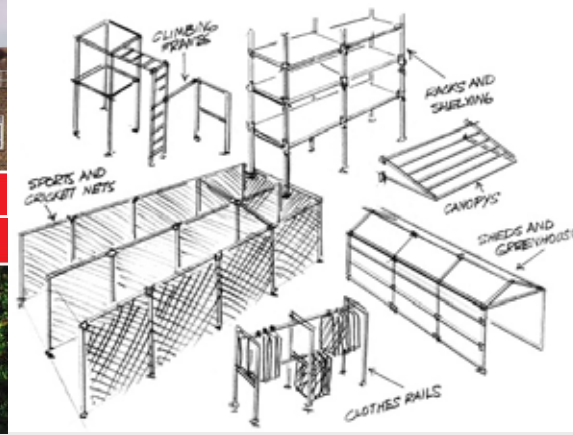
Trolley Parks

- Garment racks
- Greenhouses
- Barriers
- Disabled ramps
- Sheds
- Roof edge protection



Roof Edge Protection

Fruit Cages



Stables

Guardrailing



Boat Racks

Storage Racks



- Frames
- Canopies
- Market stalls
- Storage racks
- Work benches
- Exhibition stands



- Cattle pens
- Cricket screens
- Security screens
- Stables
- Climbing frames
- Goalposts

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Handrail Guidelines

Racking And General Structures

Racking and general structures can be constructed using FastClamp fittings. Care must be taken to ensure that the tube size selected is adequate for the loads anticipated. To help with the selection of the correct tube, Table 1 Horizontal tube load capacity provides the uniformly distributed loads that can be supported between upright posts assuming that the load is supported by two tubes. These loads are calculated based on the maximum bending movement for the tube.

NB. When designing structures care must be taken to ensure that the load on any one grub screw does not exceed 900kg.

For further help in designing structures using FastClamp please contact our technical department.

Table 2 Vertical tube load capacity provides the load capacity for single upright posts with various unsupported lengths. These loads are based on the compression strength and buckling loads of the CHS tube.

Handrail

Handrail is the most common form of structure that is built with FastClamp fittings and requires careful consideration to meet required design loadings. Design loads are usually specified, however if unsure BS 5395 and BS 4592 are good reference documents.

The loading capacity of any handrail structure is determined principally by the diameter, thickness and frequency of its Uprights.

Table 3 contains our recommendations to safely meet the stated design loads based on the maximum permissible bending moment of the upright tube.

Horizontal Tubes Load Capacity

Uniformly distributed load in Kg using two horizontal tubes

Span (metres)	Tube Ø and Grade					
	33.7 x 3.2mm Grade S275	42.4 x 3.2mm Grade S275	42.4 x 4.0mm Grade S275	48.3 x 3.2mm Grade S275	48.3 x 4.0mm Grade S275	48.3 x 5.0mm Grade S355
0.5	1257	2108	2490	2818	3347	4910
0.6	1047	1757	2075	2349	2789	4092
0.7	898	1506	1778	2013	2391	3507
0.8	785	1317	1556	1761	2092	3069
0.9	698	1171	1383	1566	1859	2728
1.0	628	1054	1245	1409	1673	2455
1.1	571	958	1132	1281	1521	2232
1.2	524	878	1037	1174	1394	2046
1.3	483	811	958	1084	1287	1888
1.4	449	753	889	1007	1195	1754
1.5	419	703	830	939	1116	1637
1.6	393	659	778	881	1046	1534
1.7	370	620	732	829	984	1444
1.8	349	586	692	783	930	1364
1.9	331	555	655	742	881	1292
2.0	314	527	622	705	837	1228
2.1		502	593	671	797	1169
2.2		479	566	641	761	1116
2.3		458	541	613	728	1067
2.4		439	519	587	697	1023
2.5		422	498	564	669	982
2.6			479	542	644	944
2.7			461	522	620	909
2.8			445	503	598	877
2.9			429	486	577	847
3.0			415	470	558	818

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Handrail Guidelines

Table 1

Vertical Strut Load Capacity

Vertical load in Kg per strut						
Tube Ø and Grade						
Strut Length (metres)	33.7 x 3.2mm Grade S275	42.4 x 3.2mm Grade S275	42.4 x 4.0mm Grade S275	48.3 x 3.2mm Grade S275	48.3 x 4.0mm Grade S275	48.3 x 5.0mm Grade S355
0.3	2876	3803	4657	4437	5410	9244
0.4	2688	3669	4493	4314	5296	8967
0.5	2438	3482	4263	4190	5107	8551
0.6	2084	3240	3935	3975	4842	7996
0.7	1729	2892	3509	3697	4502	7118
0.8	1417	2571	3083	3389	4086	6148
0.9	1167	2223	2623	3050	3632	5223
1.0	959	1901	2263	2650	3178	4484
1.1	813	1634	1935	2342	2800	3790
1.2	688	1419	1672	2034	2421	3236
1.3	583	1232	1443	1787	2119	2773
1.4	521	1071	1246	1571	1854	2450
1.5	458	937	1115	1387	1665	2172
1.6	396	830	984	1232	1475	1895
1.7	354	750	853	1109	1324	1664
1.8	313	670	787	986	1173	1525
1.9	292	589	689	894	1059	1387
2.0	229	536	623	801	984	1387

Table 2

Handrail is the most common form of structure that is built with FastClamp fittings and requires careful consideration to meet required design loadings. Design loads are usually specified, however if unsure BS 5395 and BS 4592 are good reference documents.

The loading capacity of any handrail structure is determined principally by the diameter, thickness and frequency of its Uprights.

This table contains our recommendations to safely meet the stated design loads based on the maximum permissible bending moment of the Upright tube.

Handrail Load Capacity








Maximum Upright Centres (mm)						
Tube Ø and Grade						
900 mm high						
Design Load	33.7 x 3.2mm Grade S275	42.4 x 3.2mm Grade S275	42.4 x 4.0mm Grade S275	48.3 x 3.2mm Grade S275	48.3 x 4.0mm Grade S275	48.3 x 5.0mm Grade S355
360 N/m	814	1369	1595	1828	2584	3052
740 N/m	Not Suitable	666	776	889	1257	2229
1500 N/m	Not Suitable	Not Suitable	Not Suitable	439	620	1100
1000 mm high						
360 N/m	732	1232	1435	1645	2326	2930
740 N/m	Not Suitable	599	698	800	1131	2006
1500 N/m	Not Suitable	Not Suitable	Not Suitable	Not Suitable	558	990
1100 mm high						
360 N/m	666	1120	1305	1496	2114	2778
740 N/m	Not Suitable	545	635	728	1028	1824
1500 N/m	Not Suitable	Not Suitable	Not Suitable	Not Suitable	507	900

Table 3

Rails need only be 3.2mm thick and the same diameter as the upright.

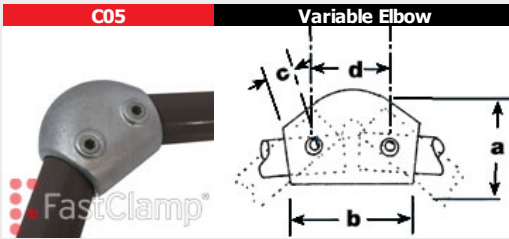
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Handrail Fittings

	CA03 Add On Short Tee	Type	Tube Size	A	B	Kg
		CA03G32	42.4	60	55	0.60
		CA03G40	48.3	68	60	0.71
<p>The Add On short Tee allows existing structures to be added to without the need for any dismantling. Tubes must not be joined within this fitting.</p>						
	CA40 Add On 90° Crossover	Type	Tube Size	A	B	Kg
		CA40G32	42.4	49	46	0.65
		CA40G40	48.3	55	50	0.73
<p>The Add On 90° Crossover allows existing structures to be added to without the need for any dismantling. This fitting is designed to give a 90° offset crossover joint. Tubes must not be joined within this fitting.</p>						
	C00 Sleeve Joint	Type	Tube Size	A	Kg	
		C00G20	26.9	76	0.33	
		C00G25	33.7	89	0.39	
		C00G32	42.4	102	0.49	
		C00G40	48.3	100	0.54	
C00G50	60.3	120	1.14			
<p>The Sleeve Joint is designed to provide an in line joint between two tubes of the same diameter.</p>						
	C01 Expanding Connector	Type	Tube Size	A	B	Kg
		C01G25	33.7	75	19	0.25
		C01G32	42.4	75	19	0.35
		C01G40	48.3	75	19	0.45
<p>The expanding Connector is designed to provide an in line joint between tubes of the same diameter, and a wall thickness of 3.2mm. It fits flush with the tube surface and can be located inside other fittings. It must not be used as a load-bearing joint, in these applications use a FastClamp type C00.</p>						
	C02 90° Elbow	Type	Tube Size	A	Kg	
		C02G20	26.9	40	0.28	
		C02G25	33.7	48	0.39	
		C02G32	42.4	60	0.55	
		C02G40	48.3	67	0.65	
C02G50	60.3	86	1.04			
<p>The 90° Elbow is designed to provide a joint between two tubes at right angles to each other. Often used for railing ends and corners.</p>						
	C03 Short Tee	Type	Tube Size	A	B	Kg
		C03G20	26.9	40	36	0.19
		C03G25	33.7	48	48	0.32
		C03G32	42.4	60	57	0.44
		C03G40	48.3	67	63	0.58
C03G50	60.3	86	75	0.76		
<p>The Short Tee is designed to provide a butt joint between two tubes at right angles to each other. Often used for railing ends and tops. If tubes need to be joined inside the fitting then a C04G type should be used.</p>						
	C04 Long Tee	Type	Tube Size	A	B	Kg
		C04G20	26.9	40	80	0.35
		C04G25	33.7	48	96	0.56
		C04G32	42.4	60	120	0.75
		C04G40	48.3	67	134	0.91
C04G50	60.3	86	172	1.40		
<p>The Long Tee is designed to provide a butt joint between two tubes at right angles to each other. Often used for railing ends and tops. It allows the through tube to be joined inside the fitting. An alternative is the C03G type fitting.</p>						

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Handrail Fittings

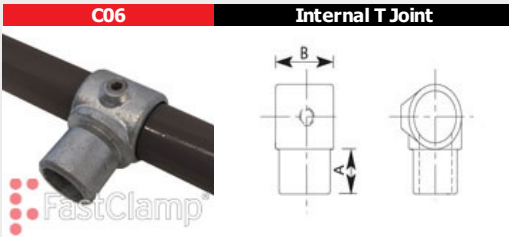


C05

Variable Elbow

Type	Tube Size	A	B	C	D	Kg
C05G25	33.7	65	60	13	50	0.41
C05G32	42.4	80	66	16	55	0.68
C05G40	48.3	95	75	17	55	0.89

The Variable Elbow is designed to make joints at an angle of between 15° and 60°.



C06

Internal T Joint

Type	Tube Size	A	B	Kg
C06G25	33.7	34	45	0.39
C06G32	42.4	40	54	0.58
C06G40	48.3	44	60	0.66

The Internal T joint is designed to provide an angled joint between a tube and a FastClamp fitting when used in conjunction with C02G and C03G type fittings. Often used for railing tops and midrails to accommodate a slope as offset railing.

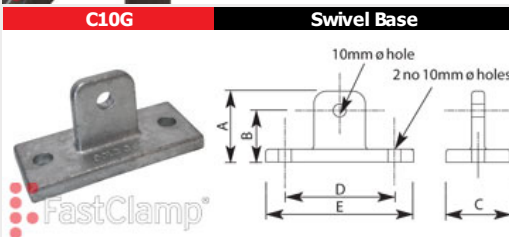


C07

45° Tee

Type	Tube Size	A	Kg
C07G25	33.7	45	0.49
C07G32	42.4	54	0.69
C07G40	48.3	60	0.91

The 45° Tee is used as a bracing and strut component for strengthening structures.

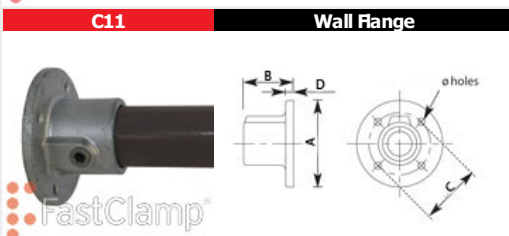


C10G

Swivel Base

Type	Tube Size	A	B	C	D	E	Kg
C10G	N/A	50	40	50	81	111	0.35

The Swivel Base is designed to provide a base fixing. It is usually used in conjunction with a C36G type fitting to make a C46G type base swivel combination. This fitting does not provide sufficient rigidity to be used as a railing base without other means of support.

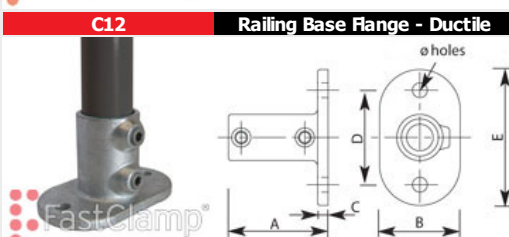


C11

Wall Flange

Type	Tube Size	A	B	C	D	Ø	Kg
C11G20	26.9	86	42	57	4	9	0.32
C11G25	33.7	89	45	64	6	9	0.41
C11G32	42.4	102	50	76	6	9	0.51
C11G40	48.3	114	57	89	6	9	0.64
C11G50	60.3	127	64	95	6	9	1.10

The Wall Flange is designed to provide a positional wall or base fixing. It is not recommended to use this fitting as a structural railing base.

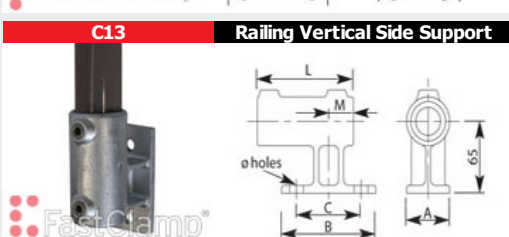


C12

Railing Base Flange - Ductile

Type	Tube Size	A	B	C	D	E	Ø	Kg
C12G20	26.9	76	65	8	76	114	11	0.65
C12G25	33.7	89	76	9	89	128	14	1.01
C12G32	42.4	89	80	10	102	140	14	1.41
C12G40	48.3	89	89	10	114	152	14	1.61
C12G50	60.3	128	88	9	127	165	18	1.80

The Railing Base is designed to provide a base for railings and other structures. It is recommended that this fitting be used in accordance with FastClamp maximum post centre dimensions, see table 3 on our Technical Page



C13

Railing Vertical Side Support

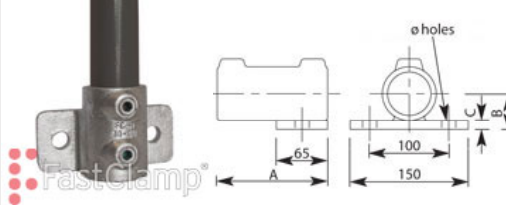
Type	Tube Size	A	B	C	M	L	Ø	Kg
C13G25	33.7	45	96	67	25	104	14	0.91
C13G32	42.4	50	109	72	30	114	14	1.20
C13G40	48.3	60	123	86	40	120	14	1.50

The Railing Vertical Side Support is designed to provide a base for railings and other structures that need a side mounted fixing. It is recommended that this fitting be used in accordance with FastClamp maximum post centre dimensions, see table 3 on our Technical Page.

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Handrail Fittings

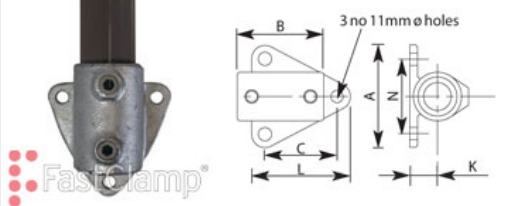
C14 Railing Horizontal Side Support



Type	Tube Size	A	B	C	Ø	Kg
C14G25	33.7	90	30	12	18	0.92
C14G32	42.4	90	35	12	18	1.41
C14G40	48.3	90	41	15	18	1.53

The Railing Horizontal Side Support is designed to provide a base for railings and other structures that need a side mounted fixing. It is recommended that this fitting be used in accordance with FastClamp maximum post centre dimensions, see table 3 on our Technical Page.

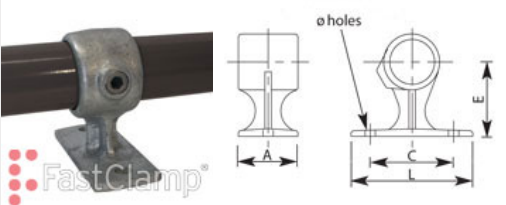
C15 Side Palm Fixing



Type	Tube Size	A	B	C	K	L	N	Kg
C15G25	33.7	97	76	63	26	89	71	0.65
C15G32	42.4	108	84	72	31	98	82	0.82
C15G40	48.3	112	92	78	34	104	86	0.86

The Side Support is designed to provide a base for railings and other structures that need a side mounted xing. It is recommended that this fitting be used in accordance with FastClamp maximum post centre dimensions, see table 3 on our Technical Page.

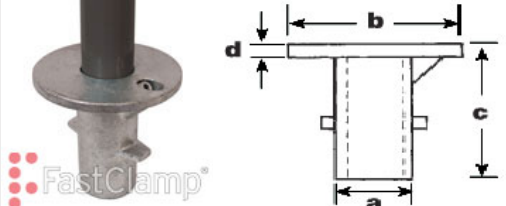
C16 Handrail Bracket



Type	Tube Size	A	C	E	L	Ø	Kg
C16G20	26.9	44	57	55	78	9	0.45
C16G25	33.7	44	63	57	82	11	0.49
C16G32	42.4	44	76	63	102	11	0.60
C16G40	48.3	48	85	67	108	11	0.63

The Handrail Bracket is designed to secure handrail tube to a wall. It can also be used on top of walls as a xing for a low rail.

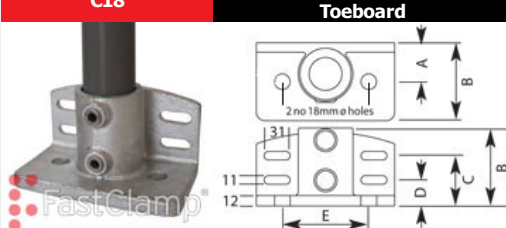
C17 Ground Support



Type	Tube Size	A	B	C	D	Kg
C17G25	33.7	60	140	130	4.5	1.42
C17G32	42.4	60	140	130	4.5	1.42
C17G40	48.3	60	140	130	4.5	1.42

The Ground Socket is designed to provide a base that can be cast into the ground to support a post. The post is removable. It is recommended that this fitting be used in accordance with FastClamp maximum post centre dimensions, see table 3 on our Technical Page.

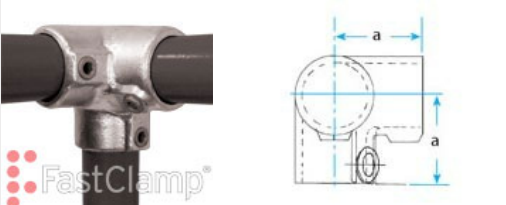
C18 Base Flange - Intergrated Toeboard



Type	Tube Size	A	B	C	D	E	Ø	Kg
C18G32	42.4	45	90	58	30	100	18	2.00
C18G40	48.3	45	90	58	30	100	18	2.12

The Base Flange with Integrated Toeboard is ideal for guardrailing and balustrading applications where the addition of a toeboard is required. The side plates have slotted holes to allow for a degree of sideways movement for ease of installation. It is recommended that this fitting be used in accordance with FastClamp maximum post centre dimensions, see table 3 on our Technical Page.

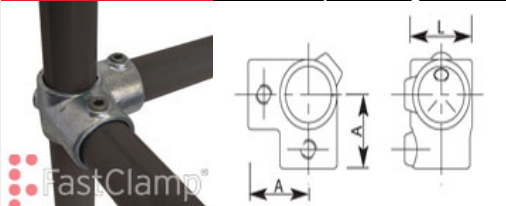
C20 3 Way 90° Elbow



Type	Tube Size	A	Kg
C20G20	26.9	40	0.37
C20G25	33.7	48	0.53
C20G32	42.4	61	0.80
C20G40	48.3	67	1.02
C20G50	60.3	84	1.82

The 3 way 90° Elbow is designed to provide a neat corner for the upper rail of guardrail or frames.

C21 Corner C/W Through Tube

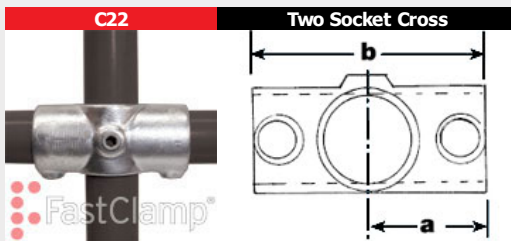


Type	Tube Size	A	L	Kg
C21G20	26.9	40	36	0.26
C21G25	33.7	48	48	0.43
C21G32	42.4	60	57	0.58
C21G40	48.3	67	63	0.69
C21G50	60.3	86	75	1.70

The Corner Complete with through tube is designed to provide a 90° corner for the intermediate rail of guardrail or frames.

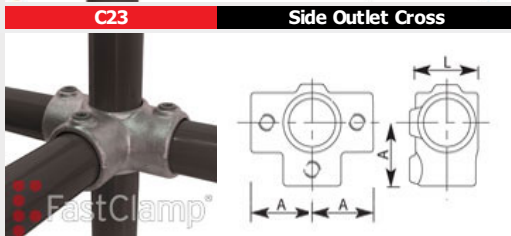
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Handrail Fittings



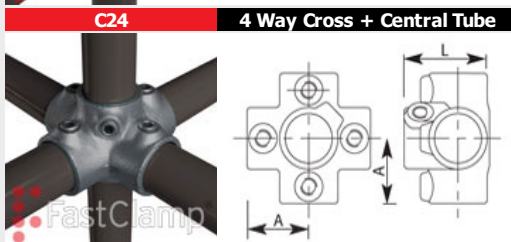
Type	Tube Size	A	B	Kg
C22G20	26.9	40	80	0.36
C22G25	33.7	48	95	0.43
C22G32	42.4	60	120	0.62
C22G40	48.3	67	134	0.71
C22G50	60.3	86	172	1.50

The Two Socket Cross fitting provides the midrail joint for handrail and other structures. It is recommended that the handrail post is continuous through the fitting.



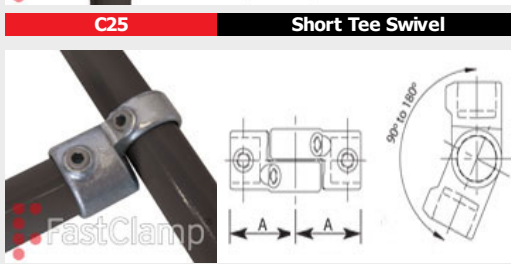
Type	Tube Size	A	L	Kg
C23G20	26.9	40	44	0.42
C23G25	33.7	48	48	0.49
C23G32	42.4	60	57	0.94
C23G40	48.3	67	63	0.88
C23G50	60.3	86	75	1.67

The Side Outlet Tee fitting provides a three way midrail joint for handrail and other structures. It is recommended that the handrail post is continuous through the fitting.



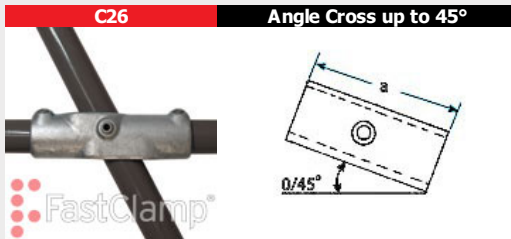
Type	Tube Size	A	L	Kg
C24G20	26.9	41	59	0.60
C24G25	33.7	48	65	0.84
C24G32	42.4	60	80	1.21
C24G40	48.3	67	85	1.20
C24G50	60.3	86	90	2.50

The 4 Way Cross fitting provides a four way midrail joint for handrail and other structures. It is recommended that the handrail post is continuous through the fitting. This fitting may also be used for the top rail with the centre post capped with a C65 Plastic Stop End.



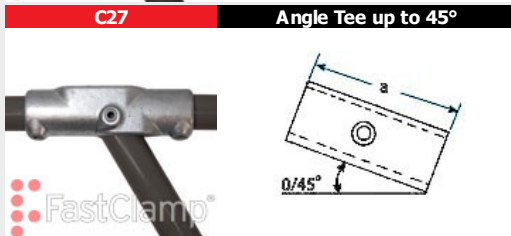
Type	Tube Size	A	Kg
C25G20	26.9	65	0.31
C25G25	33.7	66	0.32
C25G32	42.4	73	0.45
C25G40	48.3	81	0.49
C25G50	60.3	110	1.14

Short Tee Swivel fittings are normally used in pairs to facilitate corner angles of 90° to 180°, it is also used on staircases with a C02 and C03 fittings in conjunction with a short piece of tube and a C65 Plastic Stop End in landing areas. When ordering please specify the number of fittings required, not the number of pairs.



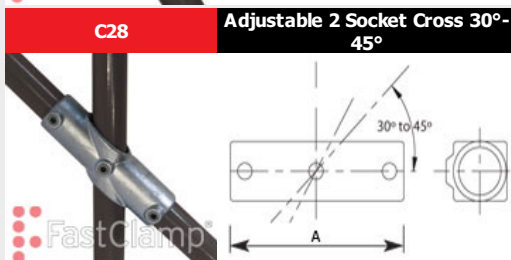
Type	Tube Size	A	Kg
C26G25	33.7	162	0.87
C26G32	42.4	190	1.20
C26G40	48.3	218	1.51

Typically used for Guardrail when connecting the mid or lower rails to uprights. The upright tube must remain continuous with the mid and lower rails cut to suit. The C26 is normally used in conjunction with a C27. Fittings are stocked as blanks and are machined to the customer's specified angle between 0° and 45°.



Type	Tube Size	A	Kg
C27G25	33.7	162	0.91
C27G32	42.4	190	1.31
C27G40	48.3	218	1.63

Typically used for Guardrail when connecting top rails to uprights. The C27 is normally used in conjunction with a C26. Fittings are stocked as blanks and are machined to the customer's specified angle between 0° and 45°.

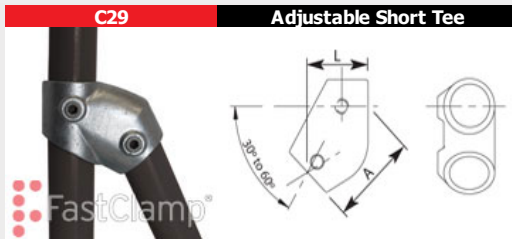


Type	Tube Size	A	Kg
C28G25	33.7	162	0.82
C28G32	42.4	190	1.17
C28G40	48.3	218	1.50

The Adjustable 2 Socket Cross fitting will accommodate any rake angle from 30° to 45°. This fitting is not recommended as the top fitting on a guardrail or balustrade system, use the C29 Adjustable Short Tee.

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Handrail Fittings

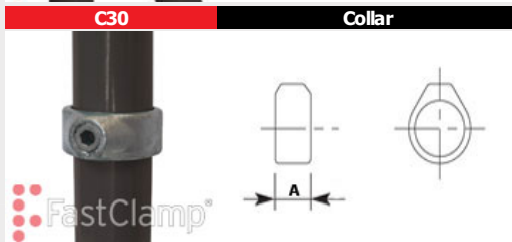


C29

Adjustable Short Tee

Type	Tube Size	A	L	Kg
C29G25	33.7	74	54	0.58
C29G32	42.4	85	63	0.87
C29G40	48.3	102	68	0.90

The Adjustable Short Tee fitting will accommodate any rake angle from 30° to 60°. This fitting is commonly used for the top rail of handrail to accommodate the rake angle on slopes. It can also be used for any Tee Joint that needs to mate at an angle of between 30° and 60° for light weight structures.

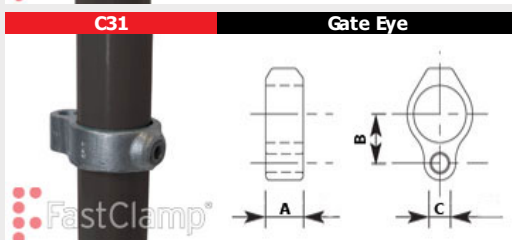


C30

Collar

Type	Tube Size	A	Kg
C30G20	26.9	22	0.15
C30G25	33.7	25	0.15
C30G32	42.4	25	0.18
C30G40	48.3	25	0.21
C30G50	60.3	40	0.31

The Collar fitting can be used to support the C03 fitting when the latter is used as a hinge. It can also be used to increase the load capacity of another fitting when used together. This fitting can be used as a stop for a sliding tube.

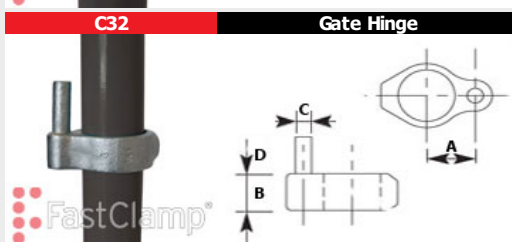


C31

Gate Eye

Type	Tube Size	A	B	C	Kg
C31G20	26.9	25	30	15	0.21
C31G25	33.7	25	33	15	0.23
C31G32	42.4	25	38	15	0.25
C31G40	48.3	25	41	15	0.29

This fitting is designed as a gate eye for light weight gates. If a heavy gate is being used we recommend that C03 and C30 type fittings are used to support the gate.

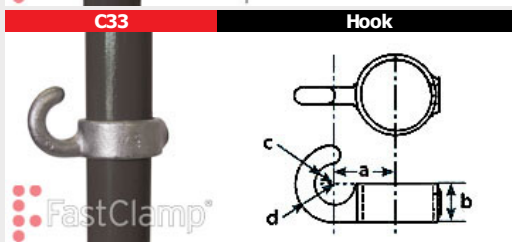


C32

Gate Hinge

Type	Tube Size	A	B	C	D	Kg
C32G20	26.9	30	25	13	38	0.24
C32G25	33.7	33	25	13	38	0.27
C32G32	42.4	38	25	13	38	0.30
C32G40	48.3	41	25	13	38	0.33

This fitting is designed as a gate hinge for light weight gates. If a heavy gate is being used we recommend that C03 and C30 type fittings are used to support the gate.

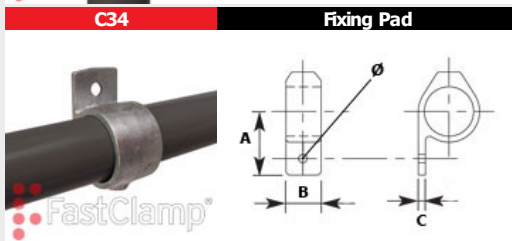


C33

Hook

Type	Tube Size	A	B	C	D	Kg
C33G20	26.9	32	25	10	25	0.17
C33G25	33.7	34	25	13	21	0.25
C33G32	42.4	39	25	13	25	0.25
C33G40	48.3	41	25	13	25	0.30

The fitting is designed to provide an attachment for chain.

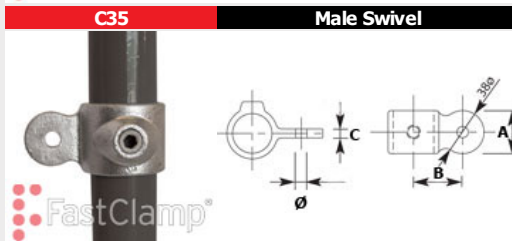


C34

Fixing Pad

Type	Tube Size	A	B	C	Ø	Kg
C34G25	26.9	45	25	5	6	0.18
C34G32	33.7	53	40	5	11	0.34
C34G40	42.4	56	40	5	11	0.37

The fitting is designed to provide an attachment for flat sheets or board. It may also be used as a gate stop. An alternative fitting for the attachment of boards is the C35 type.



C35

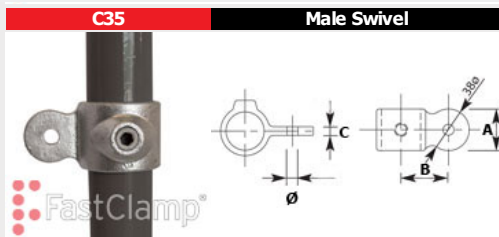
Male Swivel

Type	Tube Size	A	B	C	Ø	Kg
C35G20	26.9	32	38	5	6	0.18
C35G25	33.7	32	42	5	6	0.20
C35G32	42.4	32	47	5	6	0.21
C35G40	48.3	32	50	5	6	0.24
C35G50	60.3	48	60	5	6	0.53

The Male Swivel can be used on its own for use with a shackle and chain or with the C36 female swivel to mount rails at any angle for slopes. It can also be used for attaching flat sheets or boards to a structure and is available assembled with the C36 fittings as a C45 single swivel combination.

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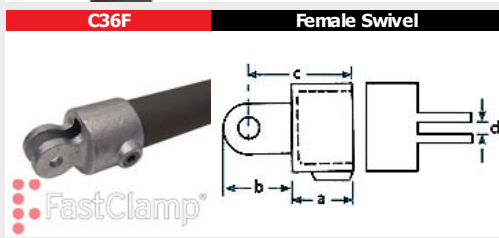
Handrail Fittings



C35 Male Swivel

Type	Tube Size	A	B	C	Ø	Kg
C35G20	26.9	32	38	5	6	0.18
C35G25	33.7	32	42	5	6	0.20
C35G32	42.4	32	47	5	6	0.21
C35G40	48.3	32	50	5	6	0.24
C35G50	60.3	48	60	5	6	0.53

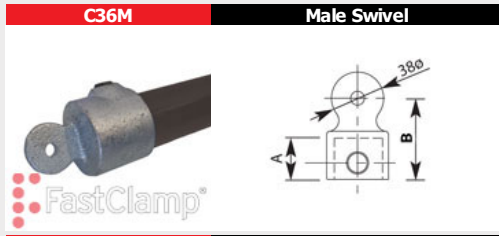
The Male Swivel can be used on its own for use with a shackle and chain or with the C36 female swivel to mount rails at any angle for slopes. It can also be used for attaching flat sheets or boards to a structure and is available assembled with the C36 fittings as a C45 single swivel combination.



C36F Female Swivel

Type	Tube Size	A	B	C	D	Kg
C36G20F	26.9	39	35	53	10	0.28
C36G25F	33.7	41	35	60	10	0.35
C36G32F	42.4	44	35	63	10	0.41
C36G40F	48.3	50	35	70	10	0.49
C36G50F	60.3	70	40	95	10	0.88

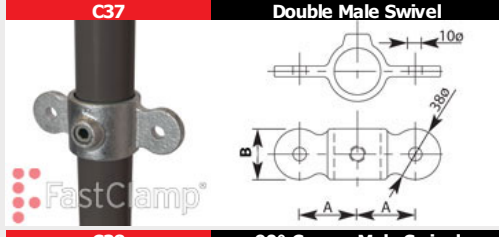
The Female Swivel is designed as part of the swivel combination group of fittings. It can be used with the C10, C35, C37, C38 or C39 male swivel fittings.



C36M Male Swivel

Type	Tube Size	A	B	Kg
C36G25M	33.7	30	60	0.36
C36G32M	42.4	40	70	0.48
C36G40M	48.3	45	75	0.58

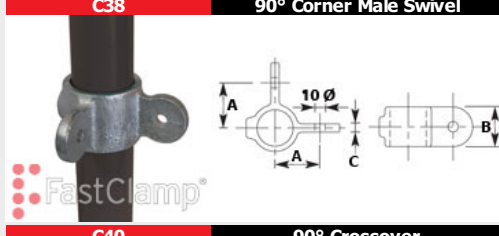
The Male Swivel is designed as part of the swivel combination group of fittings. It can be used with C36F fittings.



C37 Double Male Swivel

Type	Tube Size	A	B	Ø	Kg
C37G20	26.9	40	32	10	0.27
C37G25	33.7	44	32	10	0.28
C37G32	42.4	49	32	10	0.34
C37G40	48.3	52	32	10	0.35
C37G50	60.3	63	50	10	0.63

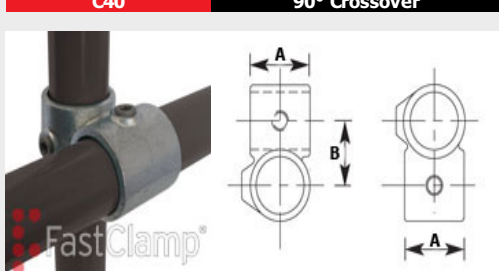
The Double Male Swivel is designed as part of the swivel combination group of fittings. It can be used with two C36 female swivel fittings. The double swivel combination is also available assembled as a type C47 fitting.



C38 90° Corner Male Swivel

Type	Tube Size	A	B	C	Ø	Kg
C38G20	26.9	40	39	8	10	0.28
C38G25	33.7	44	38	8	10	0.30
C38G32	42.4	49	48	8	10	0.34
C38G40	48.3	53	48	8	10	0.38

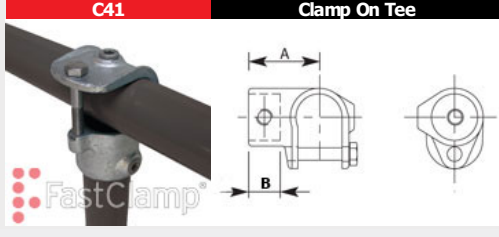
The 90° Corner Male swivel is designed as part of the swivel combination group of fittings. It can be used with two C36 female swivel fittings to make a corner connection fitting which is also available assembled as a type C48 type fitting.



C40 90° Crossover

Type	Tube Size	A	B	Kg
C40G20	26.9	36	35	0.20
C40G25	33.7	40	40	0.36
C40G32	42.4	45	50	0.41
C40G40	48.3	51	56	0.56
C40G50	60.3	61	64	1.06
C40G25-32	33.7 / 42.4	45	45	0.46
C40G25-40	33.7 / 48.3	51	48	0.50
C40G32-40	42.2 / 48.3	51	52	0.59

The 90° Crossover connects two rails at 90° to each other and is often used for the handrailing when continuous standard lengths of tube are used. Please note that tube joints should use the C00 or C01 type fitting and not the C40 type fitting.



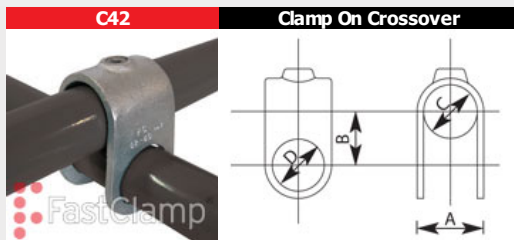
C41 Clamp On Tee

Type	Tube Size	A	B	Kg
C41G20	26.9	50	25	0.35
C41G25	33.7	53	25	0.45
C41G32	42.4	67	35	0.65
C41G40	48.3	77	35	0.70
C41G50	60.3	90	45	1.20

The Clamp on Tee is designed to allow a new tube to be joined to an existing structure. **Torque maximum 15N\m**. This uses an M10 stainless steel bolt

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Handrail Fittings

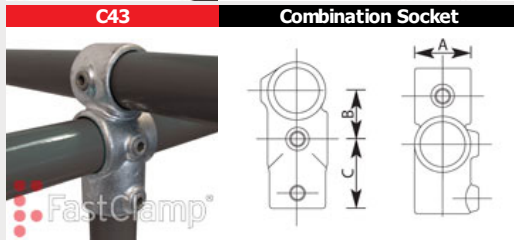


C42

Clamp On Crossover

Type	Tube Size	A	B	C	D	Kg
C42G20	26.9	37	28	27	27	0.18
C42G25	33.7	44	34	34	34	0.30
C42G32	42.4	53	43	43	43	0.47
C42G40	48.3	58	49	49	49	0.65
C42G50	60.3	70	62	61	61	0.81

The Clamp on Cross over is designed to allow a new tube to be joined to an existing structure.

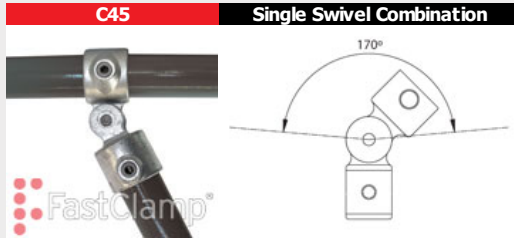


C43

Combination Socket

Type	Tube Size	A	B	C	Kg
C43G20	26.9	31	35	40	0.30
C43G25	33.7	42	40	48	0.57
C43G32	42.4	54	50	60	0.79
C43G40	48.3	60	56	67	0.96
C43G50	60.3	72	68	86	1.65

The Combination Socket is designed for racking and similar systems to allow a crossover to be combined with a cross tie.

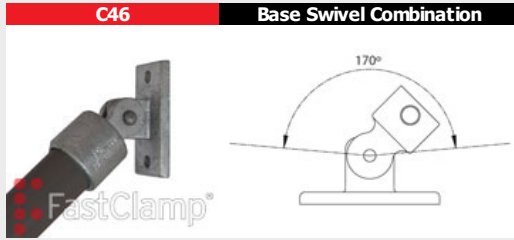


C45

Single Swivel Combination

Type	Tube Size	Kg
C45G20	26.9	0.48
C45G25	33.7	0.60
C45G32	42.4	0.71
C45G40	48.3	0.86
C45G50	60.3	1.47

The Single Swivel Combination is designed to provide an angled tee between two tubes. It can be used to construct sloping handrail and for providing bracing struts to structures.

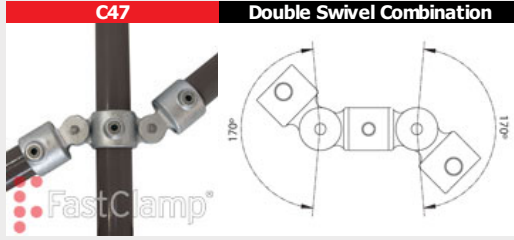


C46

Base Swivel Combination

Type	Tube Size	Kg
C46G20	26.9	0.64
C46G25	33.7	0.77
C46G32	42.4	0.94
C46G40	48.3	0.98
C46G50	60.3	1.29

The Base Swivel Combination is designed to provide an angled wall or floor mounting. This fitting should not be used as a railing base without suitable support.

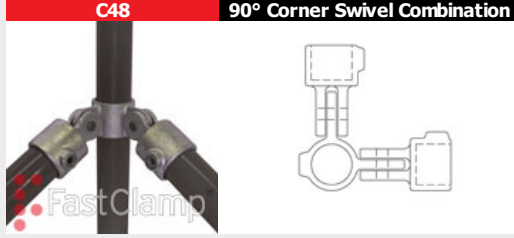


C47

Double Swivel Combination

Type	Tube Size	Kg
C47G20	26.9	0.90
C47G25	33.7	1.06
C47G32	42.4	1.25
C47G40	48.3	1.45
C47G50	60.3	2.50

The Double Swivel Combination is designed to provide an in line angled joint as a post, this is suitable for the mid rail of a sloping handrail or to provide bracing to a structure.



C48

90° Corner Swivel Combination

Type	Tube Size	Kg
C48G20	26.9	0.90
C48G25	33.7	1.06
C48G32	42.4	1.29
C48G40	48.3	1.50

The 90° Corner Swivel Combination is designed to provide an angled joint at a post, this is suitable for the mid rail of sloping handrail or to provide bracing to a structure.



C50

Slope Elbow 0° to 11°

Type	Tube Size	A	Kg
C50G32	42.4	60	0.87
C50G40	48.3	67	1.02

The Slope Elbow is designed to provide an elbow for use on ramps. The variable angle allows the fitting to accommodate slopes up to 11°.

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Handrail Fittings

C51 Short Slope Tee 0° to 11°

Type	Tube Size	A	B	Kg
C51G32	42.4	68	60	0.62
C51G40	48.3	72	68	0.76

The Slope Short Tee is designed to provide a T joint between two tubes for use on ramps. The variable angle allows the fitting to accommodate slopes up to 11°.

C52 Slope Long Tee 0° to 11°

Type	Tube Size	A	B	Kg
C52G32	42.2	144	60	1.02
C52G40	48.3	159	67	1.01

The Slope Long Tee is designed to provide a T joint between two tubes for use on ramps. The variable angle allows the fitting to accommodate slopes up to 11°.

C53 Slope Base 0° to 11°

Type	Tube Size	A	B	C	D	E	Ø	Kg
C53G32	42.2	91	140	79	102	10	14	0.90
C53G40	48.3	96	152	80	114	10	14	1.40

The Slope Base is designed to provide a base for use on ramps. The variable angle allows the fitting to accommodate slopes up to 11°.

C54 Slope 2 Socket Cross 0° to 11°

Type	Tube Size	A	B	Kg
C54G32	42.4	144	72	0.93
C54G40	48.3	158	79	1.00

The Slope 2 Socket Cross is designed to provide a joint for the midrail for use on ramps. The variable angle allows the fitting to accommodate slopes up to 11°.

C55 27½° Ridge Fitting

Type	Tube Size	A	B	Kg
C55G40	48.3	67	89	0.96

A four way socket fitting used to construct the ridge of a roof structure.

C56 27½° Eaves Fitting

Type	Tube Size	A	B	C	D	Kg
C56G40	48.3	67	89	83	51	1.19

A four way socket fitting used to construct the eaves of a roof structure.








C60 Spare Screws

Type	Tube Size
C60S25	26.9 & 33.7
C60S32/40	42.4, 48.3 & 60.3

Spare screws come in two sizes, 1/4" BSP for the 20 and 25nb range and 3/8" BSP for the 32, 40 and 50 rangess.

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Handrail Fittings

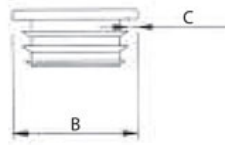
 <p>FastClamp®</p>	C61	Allen Keys	Type	Tube Size					
			C61S25	26.9 & 33.7	C61S32/40	42.4, 48.3 & 60.3	Allen keys are available in two sizes, the first is suitable for the 20 and 25nb fitting and the other for the 32, 40 and 50nb fittings..		
 <p>FastClamp®</p>	C62R	Ratchet Keys	Type	Tube Size					
			C62R	ALL SIZES	The ratchet driver and dual keys are also available to speed assembly. The ratchet driver will also allow tightening to the correct torque.				
 <p>FastClamp®</p>	C65P	Plastic End Cap	Type	Tube Size	Kg				
			C65P20	26.9	0.08				
			C65P25	33.7	0.10				
			C65P32	42.4	0.10				
			C65P40	48.3	0.16				
			C65P50	60.3	0.24	Plastic End Caps are available for finishing plain end tubes. Available in grey plastic they will fit medium and heavy gauge tube.			
 <p>FastClamp®</p>	C65G	Metal End Cap	Type	Tube Size	Kg				
			C65G20	26.9	0.05				
			C65G25	33.7	0.10				
			C65G32	42.4	0.12				
			C65G40	48.3	0.17				
			C65G50	60.3	0.29	This metal plug is hard to remove once it has been driven in. Note this metal insert can only be used in conjunction with tube with a wall thickness of 3.2mm. There is an alternative plastic version, look at our C65P above.			
 <p>FastClamp®</p>	C66	Single Mesh Clip	Type	Tube Size	A	B	C	Kg	
			C66G20	26.9	27	26	58	0.06	
			C66G25	33.7	30	26	61	0.07	
			C66G32	42.4	33	26	64	0.08	
			C66G40	48.3	38	26	68	0.09	
			C66G50	60.3	44	26	75	0.09	
 <p>FastClamp®</p>	C67	Double Mesh Clip	Type	Tube Size	A	B	C	Kg	
			C67G20	26.9	27	26	58	0.09	
			C67G25	33.7	30	26	61	0.12	
			C67G32	42.4	33	26	64	0.13	
			C67G40	48.3	38	26	68	0.13	
			C67G50	60.3	44	26	75	0.14	
 <p>FastClamp®</p>	C68	Weather Cowl	Type	Tube Size	A	B	H	Kg	
			C68G20	33.7	140	25	125	0.25	
			C68G25	42.4	150	25	150	0.30	
			C68G40	48.3	166	25	150	0.35	
			The Weather Cowl is designed to cover the Railing base and provides a weather proof seal when used with a suitable flexible sealant.						

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Handrail Fittings



Square Plastic End Cap

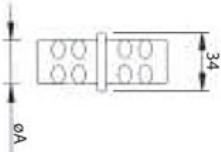


Type	Tube Size	B	C	Kg
C69P40X40	40x40SHS	40	3.2	0.01
C69P50X50	60X60SHS	50	3.2	0.01
C69P70X70	70X70SHS	70	3.2	0.02

The Plastic End Caps are available for finishing plain end square tubes. Available in grey plastic they will fit medium and heavy tube gauges.

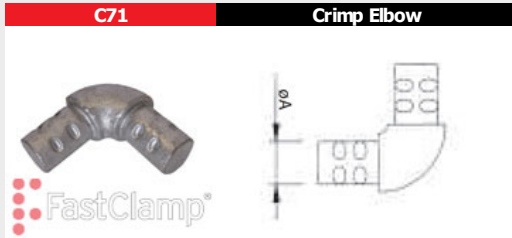


Crimp Straight

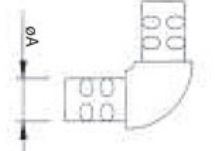


Type	Tube Size	AØ	B	Kg
C70G25	33.7	26.0	34.0	0.27

Straight Crimp Joints provide a permanent in-line connection for 33.7mm diameter x 3.2mm thick tube, a crimping tool is necessary and these are available for hire or purchase.

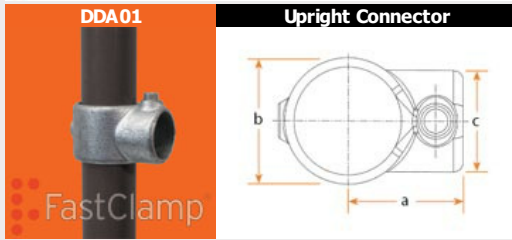


Crimp Elbow

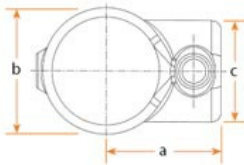


Type	Tube Size	AØ	Kg
C71G25	33.7	26.0	0.47

Crimp Elbow's provide a permanent 90° connection for 33.7mm diameter x 3.2mm thick tube, a crimping tool is necessary and these are available for hire or purchase.

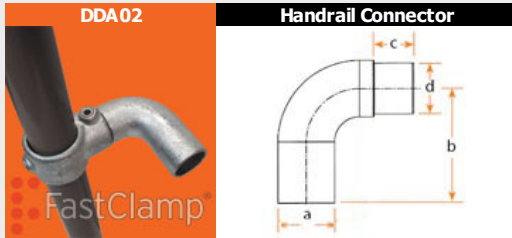


Upright Connector

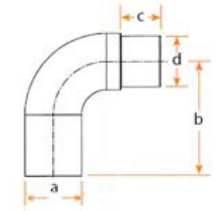


Type	Tube Size	A	B	C	Kg
DDA01		55	48.3	40	0.38

A connector used in conjunction with types DDA02 and DDA04 to provide a connection to the upright tube.

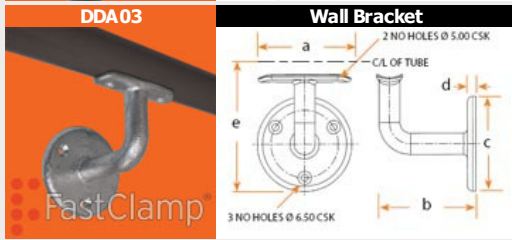


Handrail Connector

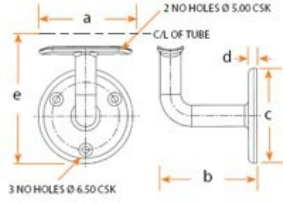


Type	Tube Size	A	B	C	D	Kg
DDA02		51	86	30	38	0.48

When terminating handrailing at an end upright this connector is used in conjunction with types DDA01 and DDA07.

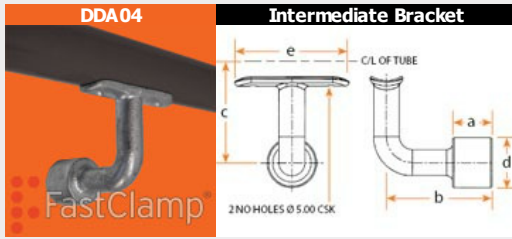


Wall Bracket

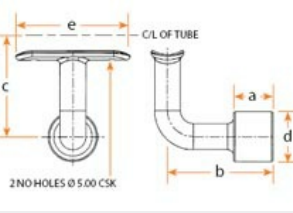


Type	Tube Size	A	B	C	D	E	Kg
DDA03	42.4	88	82	90	8	84	0.62

This wall mounted cradle bracket has two holes to secure the handrail suitable for self tapping screws or pop rivets, and three wall fixing holes suitable for 6mm diameter countersunk screws.



Intermediate Bracket

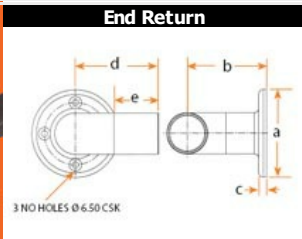


Type	Tube Size	A	B	C	D	E	Kg
DDA04	42.4	30	81	84	38	88	0.44

This upright mounted cradle bracket has two holes to secure the handrail suitable for self tapping screws or pop rivets, used in conjunction with type DDA01.

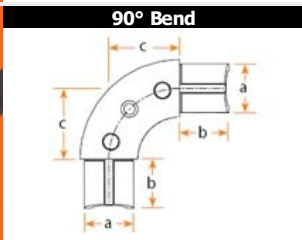
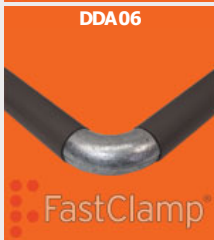
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Handrail Fittings



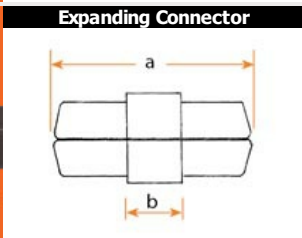
Type	Tube Size	A	B	C	D	E	Kg
DDA05	42.4	90	82	8	86	46	0.64

A bracket suitable for terminating handrailing back to a wall with three 6mm diameter countersunk screws, used in conjunction with type DDA07



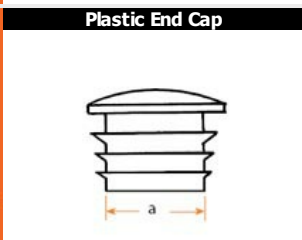
Type	Tube Size	A	B	C	Kg
DDA06	42.4	33.7	35	50	0.93

An elbow used to create a 90° change of direction whilst retaining a smooth continuous line.



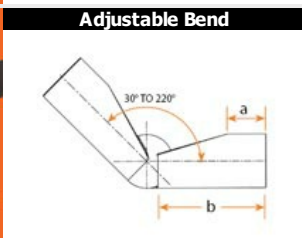
Type	Tube Size	A	B	C	Kg
DDA07	42.4	75	19		0.35

Type DDA07 provides an inline handrail joint whilst retaining a smooth continuous line.



Type	Tube Size	A	Kg
DDA08		48.3	0.016

This fitting caps the open end top of each upright.



Type	Tube Size	A	B	Kg
DDA09		31	86	0.61

An adjustable elbow which creates variable direction changes whilst retaining a smooth continuous line, used in conjunction with type DDA07.

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