

# FastClamp DDA09 Adjustable Bend

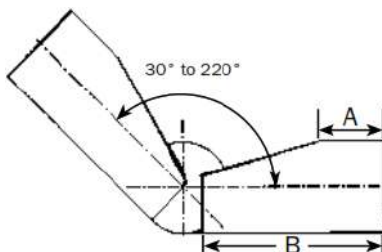


Fitting for creating an adjustable bend between the horizontal and the vertical.



Made of ductile iron  
HDG Galvanised finish (BS EN ISO 1461:2009)  
Suits 1 1/4" (42.4mm) OD steel pipe  
Installation with 8mm Allen key

## Weight & Dimensions



| Type  | A  | B  | Kg   |
|-------|----|----|------|
| DDA09 | 31 | 86 | 0.61 |

All values are approximate. E&OE

## The DDA Range

## Handrailing for the disabled

Under the terms of the Equality Act 2010 (previously the Disability Discrimination Act), reasonable adjustments need to be made to public and commercial buildings to overcome physical barriers which prevent disabled access.

The Building Regulations recommend an outside diameter tube size for installations of between 40mm-45mm. Our DDA range has been designed to meet these requirements by providing a non-discriminatory handrail solution that complies with the Equality Act and Part 'M' of the Building Regulations. The range allows construction of a smooth continuous handrail of 42.4mm diameter.

DDA fittings are supplied Hot dip Galvanised as standard but can be supplied in a powder coated finish to RAL standard colours (subject to quantity and availability from the coaters). In cold temperatures a powder coated finish will give the impression of being warmer to the touch.

# The safe clamping system for circular hollow section tube

Access Technologies Limited was established in 1995 to manufacture access equipment for the Construction Industry. The **FastClamp** brand followed as a natural progression four years later and has since grown to become one of the premier ranges of slip on tubular fittings available today.

**FastClamp** is a range of fittings manufactured from Malleable Iron to BS EN 1562 or Ductile Iron (where noted in the fittings description) to BS EN 1563. **FastClamp** fittings are used to construct lightweight tubular steel structures and are manufactured to suit five different tube sizes.

**FastClamp** fittings require no welding, drilling or special tools, simply use a hexagon key to tighten the special setscrews that embed into the tube. **FastClamp** fittings will support an axial load of up to 900 kg when tightened to a torque of 39Nm.

## FINISHES AVAILABLE

**FastClamp** castings are Hot dip Galvanised to BS EN ISO 1461 as standard. **FastClamp** fittings can also be supplied in a powder coated finish to RAL standard colours, subject to quantity and availability from the coaters.

## FASTCLAMP SELECTION

**FastClamp** fittings are suitable for use with steel tubes to BS EN 10255 with a minimum wall thickness of 3.2mm, however please note that internal fitting types: C01, C06, C65, DDA-02 & DDA-06 are only designed for use with 3.2mm thick tube.

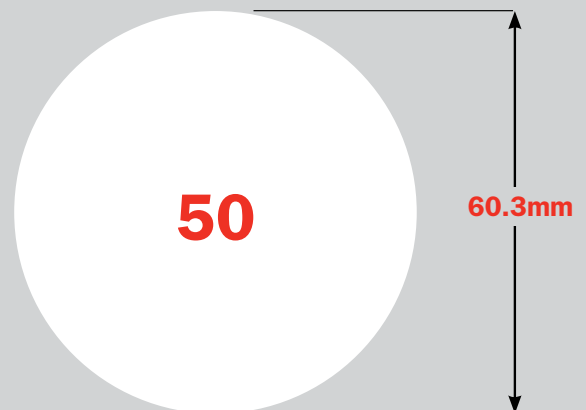
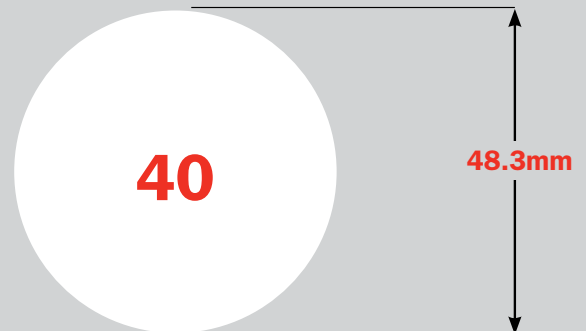
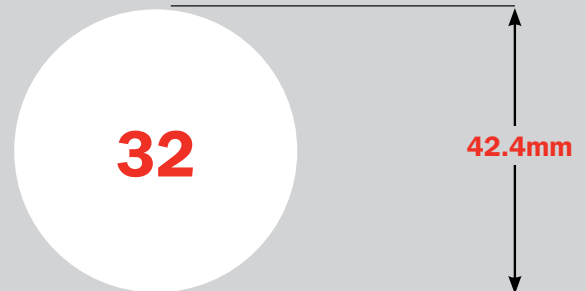
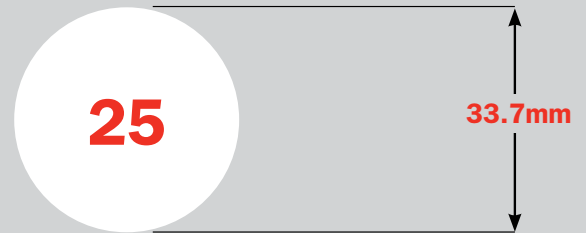
Product codes are constructed as follows:

- C** = FastClamp
- No.** = FastClamp type
- G** = Galvanised
- P** = Plastic
- S** = Stainless Steel
- No.** = Tube size

Example: **C00G20** is a FastClamp, type 00, galvanised and suitable for 26.9mm diameter tube.

| Fitting | Tube size $\varnothing$ | Nominal bore of tube |          |
|---------|-------------------------|----------------------|----------|
|         |                         | Metric               | Imperial |
| 20      | 26.9mm                  | 20                   | 3/4"     |
| 25      | 33.7mm                  | 25                   | 1"       |
| 32      | 42.4mm                  | 32                   | 1 1/4"   |
| 40      | 48.3mm                  | 40                   | 1 1/2"   |
| 50      | 60.3mm                  | 50                   | 2"       |

**Important Note:** The Tube Size  $\varnothing$  should be the first consideration as this is the primary structural component for any FastClamp structure. The application guidelines on the next page will help the design of Racking, General Structures and Handrail.



# 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 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 moment for the tube.

Table 2 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 circular hollow section (CHS) 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 using **FastClamp** please contact our sales office.

## Horizontal tubes load capacity

Uniformly distributed load in kg using two horizontal tubes

| Table 1  | Tube Ø       |              |              |              |              |
|----------|--------------|--------------|--------------|--------------|--------------|
|          | 26.9mm x 2.6 | 33.7mm x 3.2 | 42.4mm x 3.2 | 48.3mm x 3.2 | 60.3mm x 3.6 |
| Span (m) |              |              |              |              |              |
| 0.5      | 540          | 1060         | 1750         | 2380         | 4000         |
| 0.6      | 435          | 850          | 1407         | 1870         | 3250         |
| 0.7      | 375          | 730          | 1207         | 1595         | 2760         |
| 0.8      | 330          | 645          | 1063         | 1385         | 2420         |
| 0.9      | 295          | 579          | 946          | 1230         | 2160         |
| 1.0      | 265          | 525          | 850          | 1110         | 1950         |
| 1.1      | 240          | 478          | 770          | 1013         | 1775         |
| 1.2      | 219          | 438          | 705          | 930          | 1625         |
| 1.3      | 202          | 403          | 651          | 858          | 1497         |
| 1.4      | 187          | 373          | 604          | 796          | 1387         |
| 1.5      | 175          | 347          | 564          | 741          | 1290         |
| 1.6      | -            | 325          | 529          | 693          | 1205         |
| 1.7      | -            | 306          | 499          | 650          | 1129         |
| 1.8      | -            | 290          | 472          | 613          | 1061         |
| 1.9      | -            | 277          | 448          | 581          | 999          |
| 2.0      | -            | 268          | 427          | 553          | 987          |
| 2.1      | -            | -            | 408          | 528          | 944          |
| 2.2      | -            | -            | 391          | 505          | 855          |
| 2.3      | -            | -            | 376          | 485          | 818          |
| 2.4      | -            | -            | 362          | 467          | 785          |
| 2.5      | -            | -            | 349          | 450          | 755          |
| 2.6      | -            | -            | -            | 434          | 728          |
| 2.7      | -            | -            | -            | 419          | 703          |
| 2.8      | -            | -            | -            | 405          | 680          |
| 2.9      | -            | -            | -            | -            | 659          |
| 3.0      | -            | -            | -            | -            | 639          |
| 3.1      | -            | -            | -            | -            | 620          |
| 3.2      | -            | -            | -            | -            | 603          |
| 3.3      | -            | -            | -            | -            | 588          |
| 3.4      | -            | -            | -            | -            | 575          |
| 3.5      | -            | -            | -            | -            | 564          |

Grade: BS EN 10255 (ISO 65)

## Vertical strut load capacity

Vertical load in kg per strut

| Table 2    | Tube Ø       |              |              |              |              |
|------------|--------------|--------------|--------------|--------------|--------------|
|            | 26.9mm x 2.6 | 33.7mm x 3.2 | 42.4mm x 3.2 | 48.3mm x 3.2 | 60.3mm x 3.6 |
| Length (m) |              |              |              |              |              |
| 0.3        | 1720         | 2950         | 4038         | 4783         | 7044         |
| 0.4        | 1435         | 2617         | 3703         | 4446         | 6661         |
| 0.5        | 1150         | 2284         | 3368         | 4109         | 6278         |
| 0.6        | 910          | 1951         | 3033         | 3772         | 5895         |
| 0.7        | 725          | 1618         | 2690         | 3435         | 5512         |
| 0.8        | 590          | 1348         | 2363         | 3098         | 5129         |
| 0.9        | 480          | 1128         | 2028         | 2761         | 4746         |
| 1.0        | -            | 948          | 1752         | 2424         | 4363         |
| 1.1        | -            | 798          | 1524         | 2134         | 3980         |
| 1.2        | -            | -            | 1340         | 1884         | 3597         |
| 1.3        | -            | -            | 1188         | 1668         | 3253         |
| 1.4        | -            | -            | 1066         | 1484         | 2951         |
| 1.5        | -            | -            | -            | 1328         | 2681         |
| 1.6        | -            | -            | -            | -            | 2441         |
| 1.7        | -            | -            | -            | -            | 2226         |
| 1.8        | -            | -            | -            | -            | 2032         |
| 1.9        | -            | -            | -            | -            | 1857         |
| 2.0        | -            | -            | -            | -            | 1697         |

Grade: BS EN 10255 (ISO 65)

## Guardrail

Guardrail 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 6399 and BS 6180 are good reference documents.

The loading capacity of any guardrail structure is determined principally by the diameter, thickness and frequency of its Uprights. The table below contains our recommendations to safely meet the stated design loads based on the maximum permissible bending moment of the Upright tube.

| Table 3      | Tube Ø                       |              |              |              |              |              |
|--------------|------------------------------|--------------|--------------|--------------|--------------|--------------|
|              | 33.7 x 3.2mm                 | 42.4 x 3.2mm | 42.4 x 4.0mm | 48.3 x 3.2mm | 48.3 x 4.0mm | 48.3 x 5.0mm |
| Design Load  | Maximum Upright Centres (mm) |              |              |              |              |              |
| 900 mm high  |                              |              |              |              |              |              |
| 360 N/m      | 814                          | 1369         | 1595         | 1828         | 2584         | 3052         |
| 740 N/m      | 396                          | 666          | 776          | 889          | 1257         | 2229         |
| 1500 N/m     | 195                          | 329          | 383          | 439          | 620          | 1100         |
| 1000 mm high |                              |              |              |              |              |              |
| 360 N/m      | 732                          | 1232         | 1435         | 1645         | 2326         | 2930         |
| 740 N/m      | 356                          | 599          | 698          | 800          | 1131         | 2006         |
| 1500 N/m     | 176                          | 296          | 345          | 395          | 558          | 990          |
| 1100 mm high |                              |              |              |              |              |              |
| 360 N/m      | 666                          | 1120         | 1305         | 1496         | 2114         | 2778         |
| 740 N/m      | 324                          | 545          | 635          | 728          | 1028         | 1824         |
| 1500 N/m     | 160                          | 269          | 313          | 359          | 507          | 900          |

Grade: BS EN 10255 (ISO 65)  
Rails need only be 3.2mm thick and the same diameter as the Upright.