

**Tube Connecting Joints**

**Material:** Unique formula, comprising Nylon 6 base material, glass-filled fibre strand and an impact modifier. Joints are injection moulded and comprise a central solid core and hollow right-angled arms.

**Finish:** Smooth, satin finish, in black or light grey material.

**Features:**

- Impact resistant plastic joint.
- The range of seven connecting joints

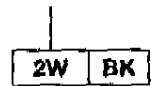
provide all right angle configurations for the assembly of tube structures.

- The tube cut lengths are tapped into place over the arms leaving only the 25mm square core of the joint visible.
- Joints are single piece components, ready for immediate use, and do not require the fitting of inserts or other parts.
- Manufactured to a quality management system conforming to ISO 9001.

**Part Number System**

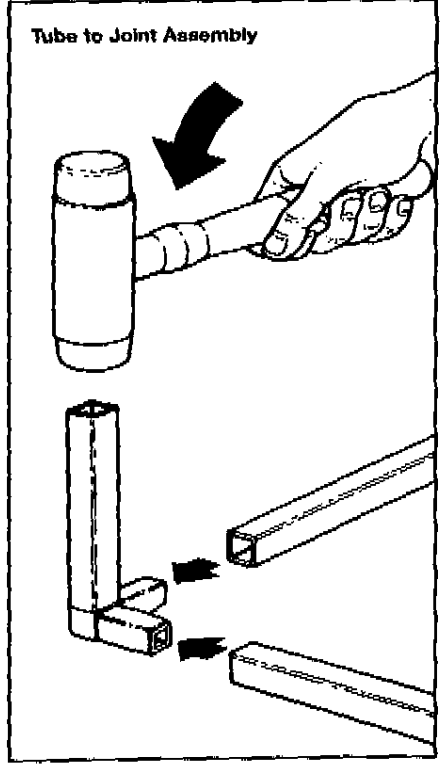
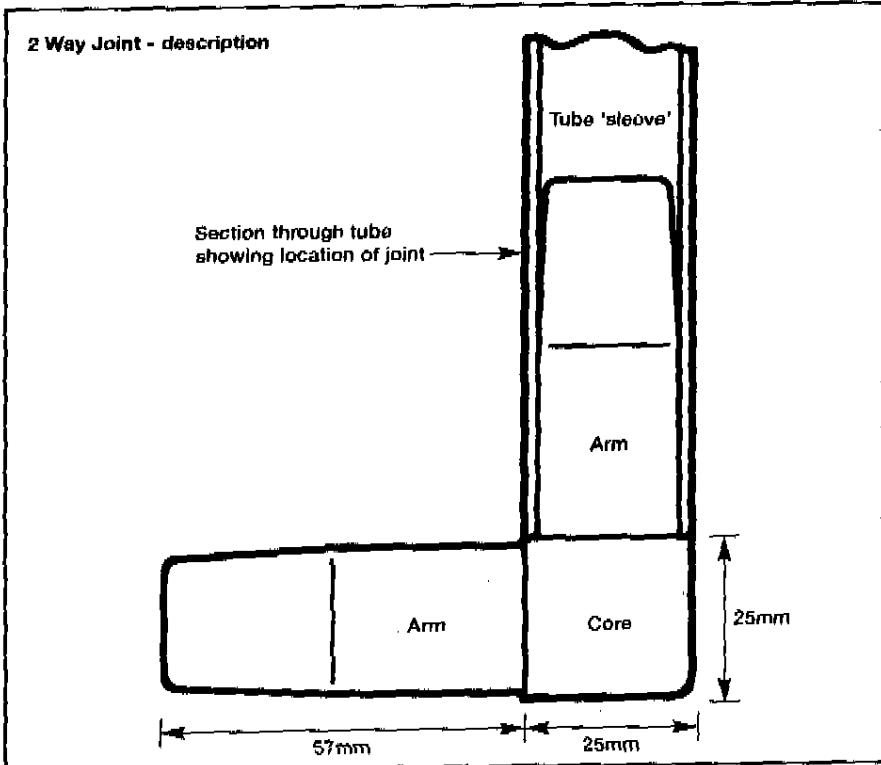
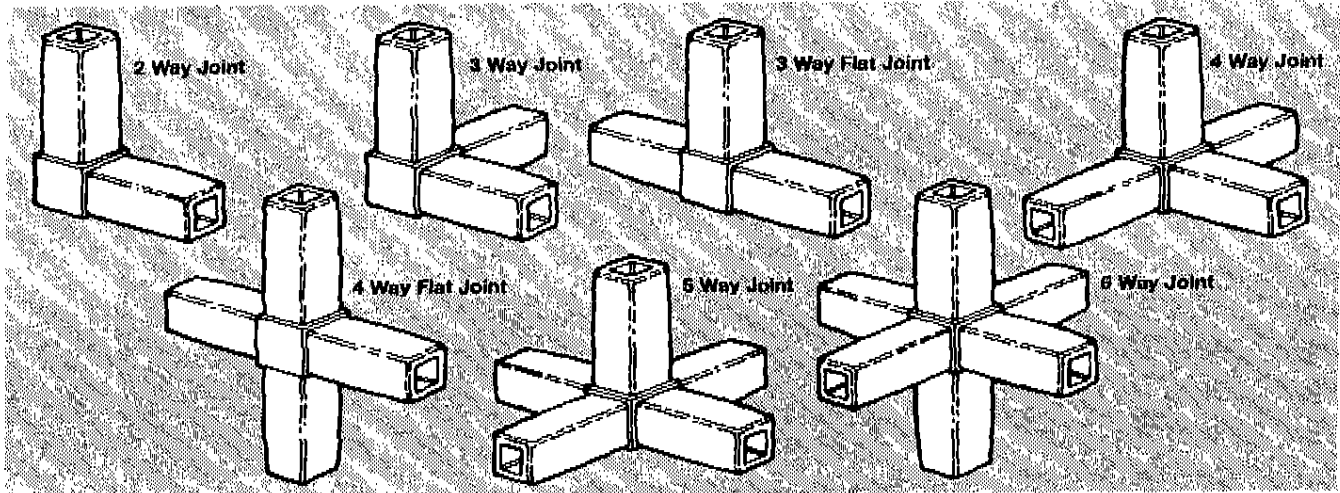
Tube Joint, types:

- 2W = 2 way    3W = 3 way    3WF = 3 way flat
- 4W = 4 way    4WF = 4 way flat
- 5W = 5 way    6W = 6 way



Finish

- BK = black    GY = light grey
- Note: 6-way joint available in black only.



## Section D Design - Square/Handy Tube Design Manual

### Design Rules for Loading and Stability

#### Upright & Beam Loads

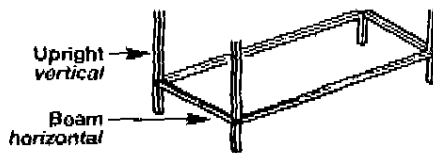
- When designing tube structures - shelving in particular - care should be taken to ensure that the structure will safely support the anticipated loads.
- Reference should be made to the load tables below to ensure that the load bearing capacity of Tube uprights and beams is not exceeded. Where load bearing is a critical aspect of the design, shorter beams and uprights should be incorporated.

- Loads quoted are for maximum safe uniformly distributed loads - i.e. where the load is evenly distributed across the supporting shelf or surface, and distributed equally between all of the shelves or levels in a unit. Point loads should be avoided.
- As a general rule, the span between uprights supporting load-bearing shelves should not exceed 1000mm.

- Often the safe loading limitation will be imposed by the nature of the material used for shelving or cladding and care should be taken to ensure that such materials are fit to support the anticipated load.
- Steel Tube only should be used for load-bearing shelving. Aluminium Tube should be used where supported loads will be incidental or light - in display shelving, for example.

#### Steel Tube Loads

Loads are given for steel tube (plain or perforated) used as 'uprights' or 'beams'.



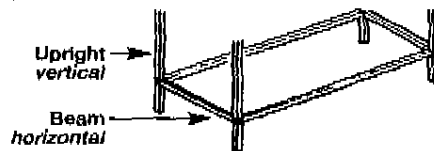
Length (span*)	Max. load per pair, kg
600mm	275
900mm	180
1200mm	110
1500mm	70
1800mm	45

Length (height*)	Max. load, kg
600mm	885
900mm	660
1200mm	455
1500mm	320
1800mm	250

\*Note: Sizes given as 'span' and 'height' are the length of a single section of Tube, i.e. the distance between the connecting joints.

#### Aluminium Tube Loads

Note: Loads are given for aluminium tube (plain or fin) used as 'uprights' or 'beams'.



Length (span)	Max. load per pair, kg
600mm	135
900mm	65
1200mm	35
1500mm	25
1800mm	15

Length (height)	Max. load, kg
600mm	440
900mm	330
1200mm	225
1500mm	160
1800mm	115

#### Stability Loads

- Load carrying structures - and in particular shelving units or bays - must be designed with consideration to the effects loading will have on the stability of the structure. In general, the shorter the upright lengths (and thus the less the space - or 'pitch' - between shelves) then the stronger and more stable the structure will become.
- The accompanying table gives examples of maximum load carrying capacities for Tube structures as shelving units (bays). Stability loads for intermediate heights may be interpolated from these examples.
- In all instances, the load capacity of the shelves must not exceed that of the supporting uprights.

Overall height of structure	Length of uprights/distance between joints	Max. load kg
1000mm	1000mm (top & base shelf)	270
1000mm	500mm (top, base & intermediate shelf)	380
1500mm	1500mm (top & base shelf)	180
2000mm	2000mm (top & base shelf)	155
2000mm	500mm (top, base & 3 intermediate shelves)	1000
2000mm	1000mm (top, base & intermediate shelf)	250
3000mm	1500mm (top, base & intermediate shelf)	135

- It can be seen that when heavier loads are to be supported, then the number of shelf levels should be increased and the length of the intermediate uprights reduced to increase overall stability.
- Structures with wide, deep shelves supported by tall uprights should be avoided.

Note: Stability load tests were made according to the Storage Equipment Manufacturers Association (SEMA) code of practice for 'Low-Rise Static Steel Shelving'. Steel Tube uprights were used, supporting chipboard shelves, 1000mm wide x 450mm deep, on shelf clips.