A Breakdown of the Components of a Girder Clamp

1. Standard Grade 8 Hex Nut
2. Standard Hardened Washer
3. Lindapter Clamp. This component could be one of several products dependent on the application itself. For example: A, B, AF, BR, LR, D2, and D3.
4. Packing Piece. These are used when the clamp requires packing to enable it to sit correctly on the beam.
5. Location Plate. This is an essential part of the girder clamp assembly that enables all the component parts to be located in the correct position. This is unique to every assembly as the hole centres and plate thickness are calculated to suit the application. (See note).
6. Lindapter Clamp. This can be of a similar type as 3, although certain products are designed to specifically work together. i.e. A + B.
7. Standard Grade 8.8 Hex Bolt

NB. When Lindapter supply a full Girder Clamp assembly it comes complete with all of the required, components and has a guaranteed Safe Working Load, however calculation sheets for Location Plates and bolt lengths can be supplied if required.

Loads/ Specification

The table beneath shows tensile and frictional load capabilities for a standard four bolt Girder Clamp using types A and B, at 90° crossover. Lindapter is only too pleased to carry out all design work for your connection, free of charge.

In most cases, all we need from you are the following details:

- Load per connection
- Size and type of both beams
- Angle of crossover.

<table>
<thead>
<tr>
<th>Bolt Size 8.8</th>
<th>M12</th>
<th>M16</th>
<th>M20</th>
<th>M24</th>
<th>M30</th>
<th>M36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Loads (kN)</td>
<td>23.2</td>
<td>29.2</td>
<td>59.0</td>
<td>78.8</td>
<td>150.0</td>
<td>250.0</td>
</tr>
<tr>
<td>Torque (Nm)</td>
<td>69</td>
<td>147</td>
<td>285</td>
<td>491</td>
<td>940</td>
<td>1715</td>
</tr>
<tr>
<td>Frictional Loads (kN)**</td>
<td>1.4</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>11.6</td>
<td>14.6</td>
</tr>
<tr>
<td>Minimum Location Plate Thickness*(mm)</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>15</td>
<td>20</td>
<td>40</td>
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</tbody>
</table>

* When using type LR the location plate thickness should be increased by a minimum of 50%.
** Frictional details for Type A, B, D2, D3 + LR only.

All Lindapter Girder Clamps are supplied to site ready for immediate assembly, including a full assembly diagram, and are performance guaranteed with a 5:1 factor of safety.

Use of any lower safety factor is at the customer’s discretion.

A form for the Girder Clamp that outlines all the information we require in order for Lindapter to be able to design an appropriate Girder Clamp for your requirements can be found on here.

NB. The location plate is an essential component of the Girder Clamp and must not be omitted.
Packing pieces may also be included to allow for variations in flange thickness of the beams being connected. These packings are outlined in detail further on in this section.

Corrosion Protection

Standard finish on Lindapter steelwork fixings is electro-zinc plating, although other coatings are available if required. Other components of the Girder Clamp can be supplied with a finish to meet your requirements.

Approvals

The Lindapter Girder Clamp assembly is covered by three rigorous product approvals:

![DIN V Normalised.png](image)

The DIBt approval applies to Girder Clamps using types A and B only, in sizes from M12 to M24. Further information is available upon request.
The diagram opposite shows a typical Girder Clamp assembly. The individual parts are labelled and described for your convenience. Depending on the application various versions of the Girder Clamp can be produced, this is determined by the different clamps (Items 3 and 6 on previous page) which are suited to the diverse applications. See the details below which outline the various clamping options. Please click here for the Girder Clamp enquiry form

The **types A and B** are used when the top and bottom beam flanges of the sections are of a known thickness. The type A is used to captivate the bolt head and stop it rotating whereas the type B has a flat top to allow a nut to be tightened onto it. See pages 12 and 13.

The **High Friction Clamp, type AF**, is for applications where high frictional loads are encountered. To be used specifically with special packing pieces and a high strength location plate. See page 15.

The **type BR** is a version of the traditional type B, it features an angled nose which enables the product to accommodate tapered beam flanges of up to 8° slope whilst still remaining at 90° to the bolt shank. See page 37.

**A manually adjusting clamp, the D2 and D3 type** clamps incorporate a set screw to accommodate a wide range of flange thicknesses. The difference between them being similar to the type A and B i.e. the D2 has a recessed head and the D3 has a flat top in order to rotate the nut or bolt head in order to tighten the assembly. See pages 18 and 19.

The **self adjusting clamp, type LR**, is suitable particularly where the flange thickness cannot be easily measured prior to installation or where a range of different thicknesses are to be encountered. It has a greater range of thicknesses covered than the manually adjusted clamps. See page 16.

The **hook nosed adapters, types C1 (recessed) and C2 (flat top)**, are designed for going over the edges of angles or the flanges of rolled steel sections. And for thick flanges the rib inside the nose of the type C can be removed. Neither of these clamps is recommended for frictional load conditions. See page 17.

The following table gives a breakdown of which accessory or packing is applicable to which clamp.

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>LR</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>C1</th>
<th>C2</th>
<th>E</th>
<th>BS</th>
<th>BS Long</th>
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<tbody>
<tr>
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<td>X</td>
<td>X</td>
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* = Suitable X=Not Suitable ■=Usable but not recommended