The Teconnex V Clamp
V Clamps (also known as V Band Clamps) consist of a series of profiled segments welded within an outer strap and are of fabricated construction. Teconnex V Clamps are used to pull together and connect two circular flanges. They are designed and manufactured from both standard and non-standard components to create a range of final products configured to meet specific application requirements. By selecting from the wide choice of design and closure mechanisms, we are confident our V Clamps can operate reliably and safely under conditions of stress, vibration, and corrosion and temperature variation. Teconnex has a vast portfolio of over 5000 V Clamp part numbers to call on, we are able to provide the best technical and commercial solution for every application.

With numerous benefits over conventional flanged and solid clamp connections, V Clamps are used within diverse markets including Aerospace, Automotive, Ducting/Air Conditioning, Materials Handling and many more. To meet the demands of these markets, Teconnex clamps are made from traceable material stocks. A jointing system that utilises clamp technology will always require less working space and provide a reduction in overall weight when compared to traditional bolted flange systems. Clamp technology reduces system assembly time in initial build programs and during future maintenance.

Where a clamp is likely to need to be removed on a regular basis there are several methods of achieving this without having to undo the bolt or nut. The most popular are the quick coupler, bolted latch, and lever styles.
Technical Specifications

- Size varying from 35mm to 1500mm with other diameters available on request
- Temperature rating of up to 1100 degree Celsius (Gas Temperature)
- Pressure rating of up to 200 bar.

<table>
<thead>
<tr>
<th>Diameter (inches)</th>
<th>Diameter (mm)</th>
<th>Maximum design pressure (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>10</td>
<td>250</td>
<td>90</td>
</tr>
<tr>
<td>20</td>
<td>500</td>
<td>25</td>
</tr>
<tr>
<td>30</td>
<td>750</td>
<td>11</td>
</tr>
</tbody>
</table>

- Wide array of available materials including Stainless Steel 300 & 400 series (304, 316, 409, 441) as well as Inconel (A286, 625, 718). Other materials available on request.

- We offer both straight and cranked bolting in the following standard sizes:

<table>
<thead>
<tr>
<th>Imperial (UNF)</th>
<th>Metric (mm)</th>
<th>Rec. maximum Torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>6</td>
<td>10Nm</td>
</tr>
<tr>
<td>5/16</td>
<td>8</td>
<td>20Nm</td>
</tr>
<tr>
<td>3/8</td>
<td>10</td>
<td>27Nm</td>
</tr>
<tr>
<td>1/2</td>
<td>12</td>
<td>42Nm</td>
</tr>
</tbody>
</table>

- Teconnex portfolio includes a wide variety of V Clamp Segment Profiles suitable for flanges with a tip width of between 4mm to 22mm as well as a depth range of between 3.5mm to 20mm. More and bespoke profiles are available upon request.

- Teconnex offers over 50 different closure mechanisms to cover every spectrum of application requirements and design/manufacturing constraints. We can also provide clamps with multiple closure mechanisms as well as hinged clamps. Depicted below are 5 of the most commonly used closure mechanisms.

  ![T13 STYLE Standard T-Bolt](image1)
  ![Q13 STYLE Quick Coupler](image2)
  ![L13 STYLE Toggle Lever](image3)
Where higher clamp loads or flexibility of assembly are required, multiple fasteners can be used. The use of 2 or more fasteners reduces the bolt stress and therefore higher clamp loads can be achieved. Each fastener point also acts as a hinge or linkage, giving the clamp greater flexibility when installing on larger systems or in confined spaces.

To further simplify the assembly of our clamps and to give the customer more flexibility for maintenance Teconnex Ltd also offers hinged clamps as pictured below.
As mentioned before Teconnex offers a wide range of V-segments and retainer profiles. The most commonly used ones are depicted below:

**Installation and maintenance instructions**

**Installation**
1. Before fitting clamps ensure flanges and sealing surfaces are clean.
2. If fitting a seal, seat it in position and ensure that the flanges assemble freely.
3. Fit the clamps “V” sections over the flange profile.
4. Engage the T-Bolt(s) through the trunnions and locate nut(s) onto the T-Bolt(s).
5. Tighten the nut(s) evenly. Where 2 or more T-Bolts are used keep the adjustment gaps equal on each side of the clamp.
6. Tap the outside of the clamp with a soft faced hammer to ensure that the “V” sections are seated correctly on the flanges.
7. Tighten the nuts to appropriate setting torque as per table on page 2, unless stated otherwise on the particular application (marked on the clamp).
8. Repeat tapping and tightening procedure until the recommended torque is achieved on all nuts.
Disassembly
When the clamp is used on a pressure bearing housing make sure the assembly is vented to ensure safety of the operator disassembling the clamp. Similarly ensure the components on either side of the joint are supported when removing the clamp.

1. Undo the nut(s) from the clamp equally.
2. Tap the clamp to free the “V” section from the flanges and to remove it.

How to move forward

Our Sales Department will be pleased to quote for any specification or application. If you require assistance our Technical Department with its long experience of clamp design will also gladly be of help in advising you on applications and design of bespoke clamps. When making enquiries for a V Clamp the following information will be useful:

- Flange dimensions
- Fastening style
- Adjustment requirements
- Material
- Application
- Space constraints
- Pressure
- Temperature

Alternatively, you can find a specific Application Data Sheet in the download-section of our website.

You can contact Teconnex Ltd personally with the following details:

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