

# 32 GDS Helpsheet



World Leaders in Computer Controlled Testing  
Systems for Geotechnical Engineers and Geologists

Hardware

VIS Axial Loading System

Tightening and Un-Tightening Top Beam Clamping Bolts

100kN, 250kN or 400kN machines

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## 1. Introduction

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The top beam of the VIS Axial Loading System is clamped in position by means of clamping bolts on each side. The number of bolts on each system are as follows:

100kN = 3 or 4 bolts on each pillar (depending on the model)

250kN = 5 bolts on each pillar

400kN = 8 bolts on each pillar (4 front, 4 back)

***The sequence and extent of doing up and undoing these bolts is critical to the proper performance of the VIS machine.***

## 2. Tightening Bolts

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### **100kN VIS**

The sequence is *centre, top then bottom* at **250 N-m**. (note; there may be 2 bolts in the centre depending on the model, if there are, these 2 bolts should be tightened in the sequence upper centre then lower centre). Then repeat sequence at **300 N-m** (ensure that at 300 N-m a clean click occurs in one swing of the torque wrench - if not repeat the whole procedure).

### **250kN VIS**

The sequence is *upper centre, lower centre, top then bottom* at **300 N-m**. Then repeat sequence at **350 N-m** (ensure that at 350 N-m a clean click occurs in one swing of the torque wrench - if not repeat the whole procedure).

### **400kN VIS**

The sequence is *top front, bottom front, top back, bottom back, upper centre front, lower centre front, upper centre back* then *lower centre back* all at **300 N-m**. Then repeat sequence at **350 N-m** (ensure that at 350 N-m a clean click occurs in one swing of the torque wrench - if not repeat the whole procedure).

### 3. Un-Tightening Bolts

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Sequence is the same as for tightening.

First slacken off through 30 degrees on each bolt, then 90 degrees, then completely release.

Position beam and then do the bolts up again. Then ensure that the beam positioning wheel is at its neutral position.

Note: It is good practice to test bolt tightening by loading up to full load using a steel block "test specimen" to ensure that the beam is properly fixed and will not slip during a real test.

**WARNING !!!!**

***Failure to observe these procedures may result in overstressing of the bolts or of the threads in the beam or of both with resulting damage and loss of function.***