

# TENTEC BOLT TIGHTENING SOFTWARE (BTS)

Takes the complexity out of bolt tightening calculation.

Atlas Copco

The screenshot displays the Tentec Bolt Tightening Software (BTS) interface on a tablet. The software is titled "Tentec BOLTING SOLUTIONS" and includes a menu bar with "File" and "Help".

**Project List Table:**

Flange Rating	Config 1	Config 2	Joint Id	Bolt Dia	Tool	Bolt Mat
6 x 900 ANSI	WN-RTJ	WN-RTJ NEW ...	1.1/8"-8UN	CTST-02	ASTM A	
2.9/16 x 2000-Tyros-6B	WN	WN NEW ...	3/4"-10UN	CTST-01	ASTM A	
3.1/8 x 5000-68 (API-6A)	WN	WN NEW ...	1.1/8"-8UN	CTST-01	ASTM A	
42" x 900 Vector SPO	WN	WN NEW ...	2.1/2"-8UN	CTST-05	ASTM A	
10 x 900 ANSI	WN-RTJ	WN-RTJ NEW ...	1.3/8"-8UN	CTST-02	ASTM A	
12 x 900 ANSI	WN-RTJ	WN-RTJ NEW ...	1.3/8"-8UN	CTST-02	ASTM A	
6" x 7800 Vector SPO	WN	WN SPO ...	1.1/4"-8UN	CTST-02	ASTM A	
24 x 900 ANSI	WN-RTJ	WN-RTJ NEW ...	1.1/4"-8UN	CTST-05	ASTM A	

**Configuration Panel:**

- Joint ID: NEW APPLICATION
- Flange 1 Config: WN, Clamp Length: 192.00 mm
- Gasket: SEAL RING, Gasket Gap: 10 mm
- Flange 2 Config: WN, Clamp Length: 192.00 mm
- Bolt Thread: 2-1/2"
- Units: mm
- Apply
- Residual Bolt Stress: 75777 psi

**Tensioning Sequence:**

Pass	Tensioner	Bolt #	Pump Pressure psi	Se
Pass 1		1	20933	1443
Pass 2				
Pass 3				
Pass 4				
Checking Pass				
Pass 1				
Pass 1				

**Bolt Information:**

- Bolt Material: ASTM A193 - B7
- Bolt Yield Strength: 105152ksi
- Tensile Stress Area: 4.450in<sup>2</sup>
- Bolt Length: 23.39in

**Tensioning Pressures:**

- Pressure A: 20933psi
- Pressure B: 20933psi
- Detensioning: 20933psi

**Torque Information:**

- Torque: 1671 lb-ft
- Coefficient of Friction used: [value]

# TENTEC BOLT TIGHTENING SOFTWARE (BTS)

Tentec Bolt tightening software allow users to manage and rapidly calculate bolt tightening pressures. The software has been designed with the philosophy of minimal input, maximum output. Documentation for multiple bolted joint projects can be created very quickly with minimal operator input. The software package contains data for the following standard bolted flanges:-

- ANSI B16.5**
- ANSI B16.47 Series A**
- MSS SP-44**
- API 6A**
- API 17SV**
- Vector SPO Compact Flanges**
- Norsok L-005**

## Individual Flange Documents

BTS creates the following information...

- **Recommended Tentec tensioning tool to use**
- **Recommended residual bolt stress**
- **Recommended pressures to achieve residual bolt stress.**
- **Recommended bolt lengths for use with Tentec Bolt Tensioning Tools**
- **Recommended torque values, with variable lubrication factors**
- **Gives a graphical representation of predicted bolt stress path over time.**
- **Tensioner sequence information**

# BOLT TIGHTENING SOLUTIONS

Visit

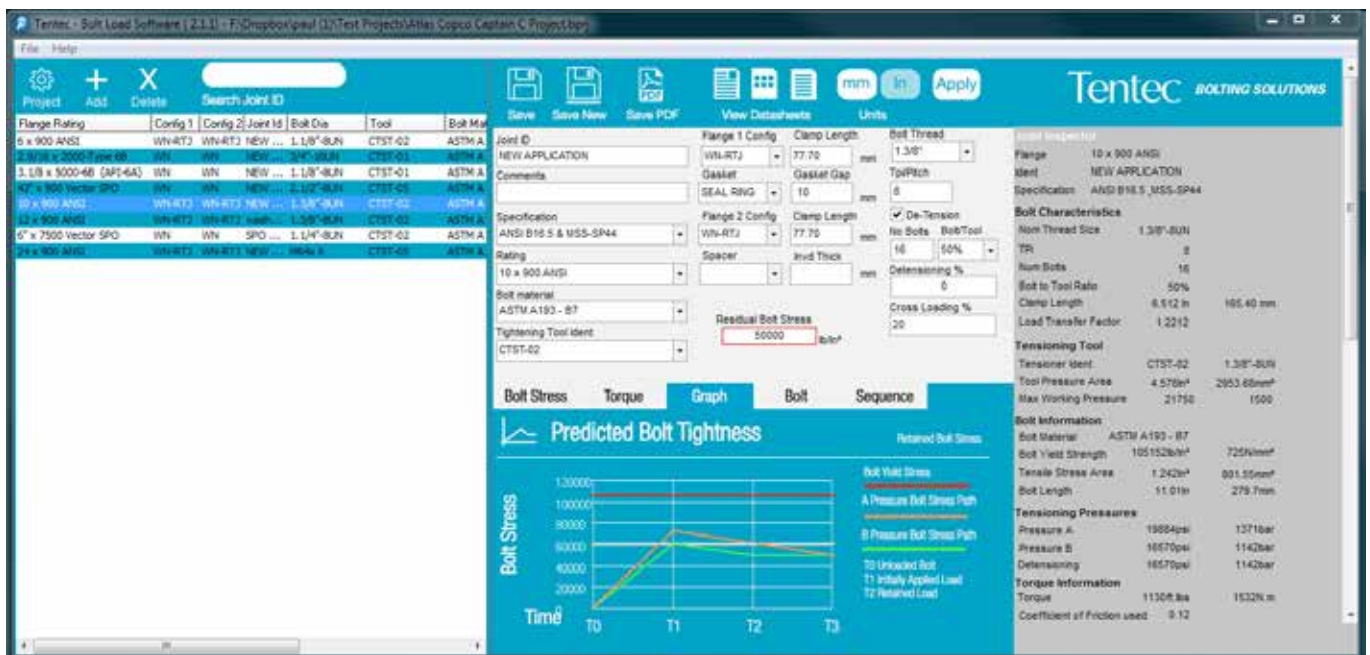
[www.bolttighteningsolutions.com](http://www.bolttighteningsolutions.com)  
To register for your free copy of Tentec BTS

Tentec BTS software contains data for all of Tentec standard tool ranges and also offers the ability to create a user definable special tools library.

Another useful feature offered by the software is “Manual Mode”, here the user can define a special bolted joint that is not a standard flanged joint. The software can handle both special “Blind Threaded” bolted joints as well as the conventional “Through Bolt” type joints.

The software is ideal for use by bolt tightening service companies who have to submit bolted joint tensioner data sheets to their customers. The output documentation can be easily re-branded to display the service companies name and logo.

The documentation package that the software produces consists of a summary sheet which provides an overall list and core information of all applications covered in the project and individual detailed application sheets for every single joint contained in the project.



BTS software predicts the bolt tightness load path



## BOLT TIGHTENING SOLUTIONS

### Why Use BTS Software?

#### Bolt Management

build up and manage a "project" of multiple different bolted joints on your plant

#### Pre-Defined Bolted Joints

BTS software contains bolt tightening data for 1000's of standard flange configurations

#### Bolting Documentation

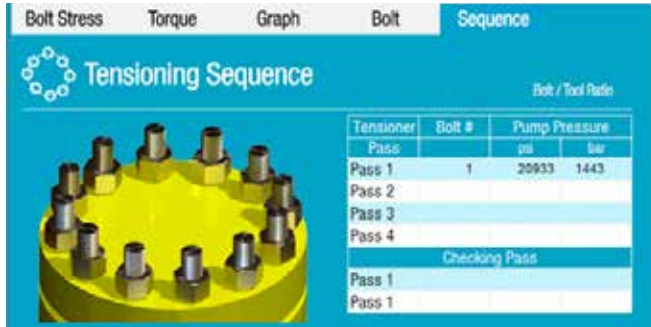
Quickly create bolting documentation which gives all the information tensioning technicians need to complete the job

## TORQUE OR TENSION

The software calculates both bolt torque and bolt load. Bolt tightness can be defined as..

- Bolt Load
- Bolt Stress
- Torque
- % Bolt Strength

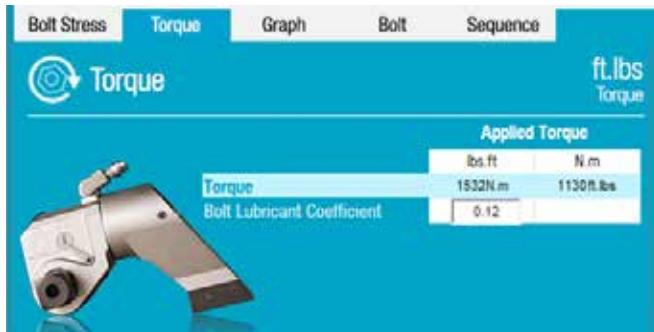
# BTS TAKES THE COMPLEXITY OUT OF BOLT TIGHTENING CALCULATION.



Tensioning sequence information.



Bolt Stress window, displays bolt stress, bolt load and % of bolt yield.



Torque window, displays torque and defines coefficient of friction



Load Graph window, displays bolt stress over a 3 stage time period

## TENTEC BOLT TIGHTENING SOLUTIONS



COMMITTED TO SUSTAINABLE PRODUCTIVITY

www.bolttighteningsolutions.com

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