# Siemens Gamesa - SG Training Web

## SE-P-50530

## SGTT - (EN,ES,PT,CN,AR) Bolt Tightening Training eLearning

### Purpose

The purpose of this eLearning is to provide the participant with introductory knowledge of the procedures for bolt tightening using manual and hydraulic tools. Additionally, the course will also introduce the participant to the applicable procedures for shimming tower flanges. The e-learningserves as a theoretical basis, before practical training in a Training Center or at site.

### Who should attend?

The course is intended for Siemens Gamesa employees, customers and 3rd parties who perform tasks using hydraulic tools to perform torque as well as tensioning of bolts.

### Objectives

Recall the purpose of bolt tightening
List the bolt tightening procedure
Describe the difference between torque and tension
Recall the correct use of torque tools
Recall how to use tension tools correctly
Identify what distances are necessary when mounting the tool
Recognize when tools need calibrating
Identify where to find documentation associated with bolt tightening and how to fill it out
Identify when it is necessary to shim tower flanges
State the consequences of not shimming
List the steps in the shimming procedure
State how to measure the gap using a feeler gauge
Identify the information necessary to fill in the checklist correctly
Upon completion of the course the participant have obtained the following competencies:
Basic knowledge of Siemens Gamesa's procedures for bolt tightening and tensioning, including the associated manual and hydraulic tools.
Basic knowledge if Siemens Gamesa's method and procedure for shimming tower flanges.

### Prerequisites

Read and understand English.
**Recommended:**
Due to the nature of the content and the learning purpose it is recommended that the participant has the competence acquired on the following training modules, prior to course commencement.
SE-P-50410 GWO BTT Mechanical
SE-P-50430 GWO BTT Hydraulic AND SE-P-50420 GWO BTT Electrical OR SE-P-06000 SWP Basic Turbine Electricity And Hydraulics

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### Contents

The following topics are covered:
- Introduction
- Purpose of bolt tightening
- Bolt tightening theory
- Manual tightening tools
- Hydraulic torqueing tools
- Hydraulic tensioning tools
- Applicable documentation
- Shimming theory and procedures
- How to shim tower flanges

### Notes

Course is available in English, Spanish, Chinese & Portuguese languages - choice of language is inside the course

**Validity**
No Expiry

**System requirements needed to run this e-learning:**
System course duration: The time shown below is pure system time for the course.
Operating System: Windows 7 and above
Processor: Dual Core 2 GHz
RAM: 4 GB
Hard Disk: 1GB of free disk space
Sound Card and Speakers (headphones recommended)
Screen Resolution: 1920 x 1080 pixel minimum for optimal viewing (24Bit)
Internet Connection: 2Mbps Broadband connection (or equivalent)*
Internet Browser: Internet Explorer 11+, Google Chrome (latest version), Firefox (latest version), Edge
Internet Browser Requirements:
- JavaScript enabled
- Pop-ups enabled
- Cookies enabled

### Export control

AL-Number: N
ECCN: EAR99