OPERATOR'S MANUAL



TORQUE CERTIFICATION SYSTEM (TCS) For Use with TCS Software (Version 2.0.X)

Norber Torque Tools	Cal	ibratio ^{Calib} L	n Serv ration Stre .abtown L12 3AB	vices	Ltd			1/1
	Decla	n accordance Declarati	of Col with ISO 67 ion Num	nforn 189-1:2011 ber : 7	nance	9		
Customer : Address :	Tool Su Tool Str Tooltow TO13 4	ipplies reet m 5W						
Model :	11034		5	Serial No	:	32	2145	
Measurement Range :	1.000 -	20.000 N·m	1	nspector	:	J	Ж	
Date of Test : 08/08/2017 As Left		Min	Max	Direction :	Act	ual Readi	C	lockwise
occioique	1 000	0.960	1.040	0.942*	0.966	0 972	1 028	1 045*
	12 000	11 520	12 480	12 248	12 338	12 455	12 583*	12 422
	20.000	10.200	20,900	10.240	10.101*	10.725	20.005*	20 659
The maximum permissible The test was performed at than ±1°C during the test. Test carried out by : Calibr Quality Manager : JS MEASUREMENT SYSTEM	e deviation t an ambier The maxim ration Servi	of ±4% is in a at temperature hum relative h ces Ltd	accordance e between f numidity did	with ISO 18°C and not exce	6789-1:2 28°C and ed 90%	017 I did not f	luctuate b	y more
Measurement Device Mod Measurement Device Seri Measurement Device Cert	lel : 43258 al No : 903 tificate : 654	50 1984						
Transducer Model : 50772 Transducer Serial No : 123 Transducer Certificate : 32 The measurement system 6789-1:2017 Section 6.1	2.LOG 345 24567 used for th	is conforman	nce test con	nplies with	n the requ	irements	of ISO	
The maximum measureme permissible relative deviat	ent error of tion of the t	the measure orque tool	ment syster	n does no	ot exceed	1/4 of the	maximum	
The maximum measureme	ent error of	the measure	ment syster	n is 0.140	0%			
The measurement uncerta	ainty interva	I of the meas	surement sy	stem is 0	.409%			
The uncertainties are for a	confidence	e probability	of not less t	han 95%				
Laboratory No : 763								

Part Number 34370 | Issue 4 | Original Instructions (English)

CONTENTS

Introduction	3
Features and Functions	3
Installing TCS Windows [®] XP Windows [®] 7, 8.1, & 10	3 4 7
Connecting Norbar Torque Measuring Instruments to TCS RS232 to USB Convertor	9 10
Starting TCS	11
Departments (Customers) Rename Departments (Customers) Add Department (Customer) Rename Department (Customer) Delete Department (Customer) Set Name & Address for Department (Customer) Add Tool to a Department (Customer)	12 13 14 15 16 17
ToolsAdd ToolRename ToolChange Tool TemplateView Tool TemplateScrap ToolDelete ToolFind a ToolTools Lists	18 18 19 20 20 21 22 23
Tool Templates Add Tool Template Modify Tool Template Delete Tool Template	24 24 26 27
Transducers Add Transducer Edit Transducer Delete Transducer	28 28 29 29
Measurement Devices Add Measurement Device Edit Measurement Device Delete Measurement Device	30 30 31 32
Hand Torque Tool Classification	33
Calibration Menu Calibration Options List Tools Requiring Recalibration Calibrate (via RS232) Conformance (via RS232)	35 36 38 41
Certificates View Certificate Delete Certificate	44 44 45

Options	46
Change Certificate Language	46
Set Printer Margins	46
Database Backup Database Restore Database Reload Standard Templates	47 47 48 48
View	48
Window	49
Currently Open Windows	49
About TCS	50
Key to Shortcut Icons	51
Trouble Shooting	52
Uninstalling TCS	53

INTRODUCTION

The Torque Certification System (TCS) is PC software designed with a user friendly interface that will enable certificate generation and archiving for all types of torque tools.

Departments (or Customers) can be created and Tools added to them. The method of calibrating a Tool is defined in the Tool Template and each Tool must have a Tool Template attached to it. Norbar Tool Templates come as part of the software and non Norbar Tool Templates can be generated and then attached to Tools.

TCS uses a serial interface for connection to Norbar instruments with an RS232 output. Calibration Certificates can be generated as the values are sent from the instrument in real time.

Note: TCS can be used to generate Declarations of Conformance to ISO 6789-1:2017, but not Calibration Certificates to ISO 6789-2:2017.

FEATURES AND FUNCTIONS

- Norbar standard Tool Templates for N·m, lbf·ft, lbf·in & kgf·cm are supplied pre-loaded.
- Serial Port connection to Norbar instruments such as TTT, TST, Pro-Test & TruCheck[™] Plus with an RS232 output.
- Database for archiving of calibration certificates for Torque Tools.
- Multilingual Calibration Certificate (English / Finnish / French / German / Hungarian / Italian / Norwegian / Polish / Russian / Spanish).
- Declaration of Conformance templates to ISO 6789-1:2017
- Calibration certificate templates for PneuTorques, etc.
- Compatible with Windows[®] XP, 7, 8.1 & 10

INSTALLING TCS

NOTE: You may need administrative privileges to be able to install the software.

Download TCS from the Norbar website (<u>www.Norbar.com</u>). Go to the Products tab and click to select "Calibration Certificate Software" and then follow the on screen instructions.

Double left click on **SetupNorbarTCS20X** (where X represents the latest software revision number) in your installation directory and follow the on screen instructions.

TIP: Backup your database before uninstalling your old version of TCS. Use the restore database option after your new version of TCS has been installed. See page 45



Left click on Next.

🕏 Setup - Norbar TCS	
License Agreement Please read the following important information before continuing.	
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.	
IMPORTANT NOTICE: PLEASE READ CAREFULLY BEFORE INSTALLING THE SOFTWARE: This licence agreement (Licence) is a legal agreement between you (Licensee or you) and NORBAR TORQUE TOOLS LTD of BEAUMONT ROAD, BANBURY, OXON, OX16 1XJ (Licensor or we) for this Torque Data Management System software product (Software).	
 I accept the agreement ○ I do not accept the agreement 	
< <u>B</u> ack <u>N</u> ext >	Cancel

Read the Licence agreement and left click on **I accept the agreement** if you wish to proceed, then left click on **Next**.

🕫 Setup - Norbar TCS 📃 🗖 🔀
Select Destination Location Where should Norbar TCS be installed?
Setup will install Norbar TCS into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files\Norbar\TCS Browse
At least 11.0 MB of free disk space is required.
< <u>B</u> ack <u>N</u> ext > Cancel

NOTE: For 64 bit versions the destination location will be C:\Program Files (x86)\Norbar\TCS. Change location and \ or left click on Next.

🕏 Setup - Norbar TCS
Select Start Menu Folder Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
Norbar Browse
< <u>Back</u> <u>Next</u> Cancel

Change the folder name and / or left click on Next.

🕫 Setup - Norbar TCS	
Ready to Install Setup is now ready to begin installing Norbar TCS on your computer.	
Click Install to continue with the installation, or click Back if you want to review or change any settings.	
Destination location: C:\Program Files\Norbar\TCS Start Menu folder: Norbar	
3	
< <u>B</u> ack Install	Cancel

NOTE: For 64 bit versions the destination location will say C:\Program Files (x86)\Norbar\TCS. Left click on Install to install TCS onto your computer.

🕏 Setup - Norbar 1	rcs 📃 🗆 💌
	Completing the Norbar TCS Setup Wizard Setup has finished installing Norbar TCS on your computer. The application may be launched by selecting the installed icons. Click Finish to exit Setup. Run Norbar TCS
	Einish

Left click on the option required, and then left click Finish.

After Installation a TCS icon will be placed on the desktop.



Left click on Next.

Please read the following important info	rmation before continuing.	(
Please read the following License Agree agreement before continuing with the ir	ment. You must accept the terms of this installation.	
IMPORTANT NOTICE: PL BEFORE INSTALLING TH agreement (Licence) is a legal (Licensee or you) and NORB. BEAUMONT ROAD, BANBU (Licensor or we) for this Torques software product (Software).	EASE READ CAREFULLY E SOFTWARE: This licence agreement between you AR TORQUE TOOLS LTD of URY, OXON, OX16 1XJ ue Data Management System	·
I gccept the agreement I do not accept the agreement		

Read the Licence agreement and left click on **I accept the agreement** if you wish to proceed, then left click on **Next**.

骨 Setup - Norbar TCS
Select Destination Location
Where should Norbar TCS be installed?
Setup will install Norbar TCS into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\Program Files\Vorbar\TCS Browse
At least 11.0 MB of free disk space is required.
< <u>B</u> ack Next > Cancel

NOTE: For 64 bit versions the destination location will say C:\Program Files (x86)\Norbar\TCS. Change location and / or left click on Next.

🕞 Setup - Norbar TCS	
Select Start Menu Folder Where should Setup place the progra	m's shortcuts?
Setup will create the program	n's shortcuts in the following Start Menu folder.
To continue, click Next. If you would h	ike to select a different folder, dick Browse.
	bjowse
	< <u>Back Next > Cancel</u>

Change the folder name and / or left click on Next.

Ready to Install		
Setup is now ready to begin i	nstalling Norbar TCS on your c	omputer.
Click Install to continue with t change any settings.	he inst <mark>a</mark> llation, or click Back if y	ou want to review or
Destination location: C:\Program Files\Worbar	(TCS	*
Start Menu folder: Norbar		
4		•

NOTE: For 64 bit versions the destination location will say C:\Program Files (x86)\Norbar\TCS. Left click on Install to install TCS onto your computer.

After installation a TCS icon will be placed on the desktop.

CONNECTING NORBAR TORQUE MEASURING INSTRUMENTS TO TCS

Norbar instruments such as TTT, TST, & Pro -Test can be connected to TCS with an RS232 interface cable (part no 39264). The TruCheck Plus must use RS232 interface cable (part no 39297). These cables are included with the Instruments when purchased new from Norbar.

Instruments manufactured before 2005 that were not supplied with a serial data lead will require a 'Serial Data Lead Kit' part number 60248.

RS232 to USB Convertor

PC's without an RS232 interface connector can be connected to instruments with an RS232 connector using a commonly available RS232 to USB converter (not supplied). After installation of the converters driver software on your PC, navigate to the device manager to view the Com Port that has been assigned to the converter as shown below.

 nbw001013 Computer Disk drives Display adapters DVD/CD-ROM drives Human Interface Devices 				
 IDE ATA/ATAPI controllers Keyboards Mice and other pointing devices Monitors Network adapters Ports (COM & LPT) Communications Port (COM1) USB Serial Port (COM6) Processors Sound, video and game controllers System devices Universal Serial Bus controllers 				

The same Com Port must be specified in the TCS calibration options as shown below. For more information on Calibration Options, see page 35.

Text(8)			Text(9)			Text(10)				
General	Serial	Recalibra	ation	Text(1)	Text(2)	Text(3)	Text(4)	Text(5)	Text(6)	Text(7
	Se Ba	erial Port aud Rate :	COM 9600	1	 Port m 8 da Outpu the va 	ust be set f ta bits and t must be s lue, units a line fee	or no parity, 1 stop bit. et to deliver nd a trailing d.	-		

STARTING TCS

1) Start TCS by double left clicking on the desktop icon.



2) The Initializing TCS message box will be shown. Wait until initialization has finished.



3) Screen shown on power up with Sample Department and Tools added.



TIP: Left click ICON on shortcut bar for quick selection of Tool Templates etc.

TCS comes with a Sample Department, Sample Tool & Sample Tool Template already created. These are for information only and should be deleted when not required. Norbar standard Tool Templates for N·m, lbf·ft, lbf·in & kgf·cm are also pre-loaded.

TIP: Delete or rename the Sample Department if it is not required.

DEPARTMENTS (CUSTOMERS)

After installation of TCS, the default name is "Departments".

Rename Departments (Customers)

Departments can be renamed to anything you choose, but this has been primarily designed to be customers. Typical applications may be to use "Departments" for a single Factory environment and use "Customers" for a Calibration lab environment.

🖲 Nor	bar Torque Certification System
i <u>D</u> efine	<u>Calibration Options Database View Window Exit</u>
2	🖻 🏪 🖻 🛱 🍐 🛱 🍐 🖥 🗉 🗉 🗉 🚺 🤇
8	View Certificate
	Add Department
	Rename Department
	Delete Department
	Set Department <u>N</u> ame & Address
2	Add Tool
~	Rename T <u>o</u> ol
	Change Tool Te <u>m</u> plate
	Vie <u>w</u> Tool Template
\times	Delete Tool
Q	Eind a Tool
Ē	Certify
B	Rename "Departments"
	Delete Certificate

- 1) Left click on the **Departments** icon.
- 2) Right click on Rename Departments.

🜻 Rename	"Departments"	×
Singular :	Customer	
Plural :	Customers	
	K Cancel	

3) Enter required text and click **OK**.

Add Department (Customer)

- 1) Right click on the **Departments (Customers)** icon to show the drop down menu.
- 2) Left click on Add Department (Add Customer) from the drop down menu.





3) Type in your required Department (Customer) name or identification and press Return.





TIP: Departments (Customers) can also be added by right clicking on an existing Department (Customers) icon and selecting Add Department (Add Customer) from the drop down menu.

Rename Department (Customer)

1) Right click on the required Department (Customer) you wish to rename, and then left click on **Rename Department (Rename Customer)** on the drop down menu.



2) Type in the new Department (Customer) name or identification and press return.





Delete Department (Customer)

1) Right click on the required Department (Customer) you wish to delete.

Norbar Torque Certification	Sy 🗣 Nor	bar	Тог	que C	ertifi	icatio	n Sy
[;] <u>D</u> efine <u>Calibration</u> <u>O</u> ptions Data <u>b</u> ase <u>V</u> iew	Wine Define	⊆alib	ration	Options	Data <u>b</u> a	ise <u>V</u> iew	Wind
! 🗙 🗶 📮 🏪 🖻 🛍 🍐 🛍 🍐 🗟 🖃	I 🗆 🛛 I 🐼 🦧		4	e 🐴 (= m
Departments <u>View Certificate</u> <u>Add Department</u> <u>Rename Department</u>		ustom	ers View C Add Cu Rename	ertificate stomer e Customer			
Delete Department		ĺ	Delete	Customer			
Set Department Name & Address		4	5et Cus	tomer <u>N</u> am	ne & Addre	ess	
Add <u>T</u> ool		*	Add <u>T</u> o	ol			

2) Left click on **Delete Department (Delete Customer)** on the drop down menu.

If a Department (Customer) has Tools & data associated with it, you will see the following message.

Norbar	Torque Certification System
No An	ote: this Department has tools within it. If you delete the Department then all tools and their data will also be deleted. In you sure you want to delete this Department?
	Yes No Cancel

3) Left click on the required option Yes, No or Cancel as required.

Set Name & Address for Department (Customer)

This will be added to any calibration certificates created for a Tool for that Department (Customer).

1) Right click on the Department (Customer) you wish to add an Address for.



2) Left click on **Set Department (Customer) Name & Address** on the drop down.

Name :	New Department	 Name :	New Customer	
Address :		Address :		<u>^</u>
				>

3) Click in the Address space and type required text, then press **OK**.

Add Tool to a Department (Customer)

1) Right click on a Department (Customer) and left click on **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from the drop down menu or left click on the **Add Tool** from th



2) Enter the **Tool Serial Number** which could be entered with a bar code reader (not supplied).

🗣 Add Tool	
Serial Number : Tool Template : 11034	S 💌
ок	Cancel

3) Choose a **Tool Template** for the drop down menu to assign to that tool.

🗣 Add Tool			
Serial Number :	123456		
Tool Template :	11034	S 💌	
	12012.01 12012.01.lbfft	5AR 1" 700-1500 N·m Industrial Torque Wrench 5AR 1" 300-1000 bf:ft Industrial Torque Wrench	^
OK	12012.lbfft	5AR 3/4" 300-1000 lbf+ft Industrial Torque Wrench	
	13002.lbfin 13003.kgfcm	Model 5 1/4" 10-50 lbf in Torque Wrench Model 5 1/4" 10-50 kgf cm Torque Wrench	
	13004 13005.lbfin 13006.lbfin	Model 5 P Type 1/4" 1-5 Nim Torque Wrench Model 5 P Type 1/4" 10-50 lbf in Torque Wrench Model 5 P Type 1/4" 10 Collection Torque Wrench	
	13006.kgrcm 13010 13010.lbfft	Model 5 P 1996 114 10-30 kgr (m 10rque Wrench Model 60 3/8" 8-60 N/m Torque Wrench Model 60 3/8" 5-45 lbf (f Torque Wrench	
	13011	Model 60 1/2" 8-60 N·m Torque Wrench	~

- 4) Press **OK** to add the Tool to the Department (Customer).
 - TIP: Tools and their associated certificates can be moved between Departments (Customers) by clicking on the Tool and holding down the left hand mouse button and dragging from one Department (Customer) to another, then releasing the left hand mouse button.

TOOLS

Expand the Departments (Customers) tree and right click on the required **Tool** and select the required option from the drop down menu. Alternatively left click on the short cut icon \checkmark on the TCS tool bar to Add a Tool.



Add Tool

The procedure for adding a tool is specified on page 17.

Rename Tool

- 1) Right click on the **Tool** you wish to **Rename** in the left hand tree structure.
- 2) Left click on Rename Tool on the drop down menu.



3) Type in required serial number and press Enter.



Change Tool Template

1) Right click on a **Tool** you wish to change the **Tool Template** for, to select that Tool.



2) Left click on **Change Tool Template** on the drop down menu.

🗣 Change Too	l Templa	te 🔀	
Serial Number :	14002		
Tool Template :	14002.lbfft	M 💌	
OK	14002.lbfft 14003 14003.lbfft 14004 14004.lbfft 14005 14005	Model 1000 3/4" 220-750 lbf ft Torque Wrench Model 1000 1" 300-1000 N'm Torque Wrench Model 1000 1" 220-750 lbf ft Torque Wrench Model 1500 3/4" 500-1500 N'm Torque Wrench Model 1500 3/4" 370-1100 lbf ft Torque Wrench Model 1500 1" 500-1500 N'm Torque Wrench Model 1500 1" 500-1500 N'm Torque Wrench	^
	14005.lbrrt 14006 14006.lbfft 14007 14007.lbfft 14008	Model 1500 1 370-1100 lorrer forque wrench Model 550 F Type 3/4" 110-550 Nrm Torque Wrench Model 550 3/4" 80-400 lbfrft Torque Wrench Model 1000 P Type 3/4" 220-750 lbfrft Torque Wrench Model 1000 P Type 3/4" 220-750 lbfrft Torque Wrench Model 1000 P Type 3/4" 220-000 Nrm Torque Wrench	*

- 3) Left click on the Tool Template drop down I, then left click on the required **Tool Template** to select it.
- 4) Press **OK** to finish.

View Tool Template

- 1) Right click on a **Tool** you wish to view the **Tool Template** for.
- 2) Left click on View Tool Template on the drop down menu.
- 3) Press **OK** to finish.

Scrap Tool

1) Right click the **Tool** in the left hand tree structure to show the drop down menu.



2) Select Scrap Tool and the tool will appear greyed out



 The tool will no longer be included in any lists (e.g. Tools requiring Recalibration list), but any tool data will be kept for future reference.

A tool can be 'Un-Scrapped' by selecting Scrap Tool from the drop down menu again.

Delete Tool

1) Right click on a **Tool** you wish to **delete** to select that Tool.



2) Left click on **Delete Tool.** The screen below will be shown if you have previously created certificates for that Tool.

Norb	ar Tor	que Certif	icatio 🔀
2	Deleting th	nis tool will delete a	ll test data for it.
Ŷ	Are you su	ire you want to del	lete this tool?
	<u>Y</u> es	No	Cancel

3) Left click on Yes, No or Cancel as required.

Find a Tool

1) Right click on Departments in the left hand tree structure, and then left click on **Find** on the drop down



2) Enter the **Tool Serial Number** and left click on **OK**.

🗣 Find a Tool	×
Tool Serial Number : 123456	
OK Cancel	

3) The required Tool will be highlighted in the left hand tree structure.



Tool Lists

1) Right click the **Departments** in the left hand tree structure to show the drop down menu.



2) Select List Tools and the Tool List will be displayed in the right pane.

🛄 Define Calibration Optio	ns Data <u>b</u> ase <u>V</u> iew	<u>W</u> indow E <u>x</u> it		
- 🐴 Departments	A Depart	Tool Serial Number	Model #	Description
Calibration	Calibration	23324	11066	SL1 Steel Knob 3/8" 8-54 N·m Torque Wrench
23324 (11066)	Calibration	34456	13053	Model 100 P Type 3/8" 20-100 N m Torque
34456 (13053)	Calibration	65587	16097	PT 1A 1200 N·m 1* sq.dr.
65587 (16097)	Production	12345	11034	SLO Steel Knob 3/8" 1-20 N·m Torque Wrench
Production	Production	56789	11035	SLO Steel Knob 3/8" Fixed Head 1-20 N·m To
44774 (18028)	Production	44774	18028	PT 5500 1 1/2" sq.dr.

3) The Tool List can be printed or copied.

Individual Department Tool Lists can be produced by right clicking the individual Department name and again selecting **List Tools**.

TOOL TEMPLATES

There are 2 variants of Tool Template – 'ISO 6789' for Torque Wrenches and Torque Screwdrivers and 'Other' Type Tool Templates for PneuTorques etc.

The Tool Template defines how the Conformance test or Calibration is to be performed i.e. how many set points and the number of readings at each set point.

TIP: To reduce the number of Tool Templates you have to scroll through, delete the ones you do not require.

Add Tool Template

 Left Click on the **Define** tab on the main title bar to show the dropdown menu and then left click on **Tool Templates**. Alternatively left click on the short cut icon on the TCS tool bar. The Tool Templates will be listed in the right hand pane.



2) The list of Tool Templates is shown below.

🝺 Norbar Torque Certifica	tion System - [To	ool Templates]		
Define Calibration Opti	ons Database !	View Window Exit	2	
Test Lab	11034 11034 inlb	Add Template	Insert]
654321 (11085)	11035 11035.inlb 11036	Modify Template Delete Template	Enter Delete	Wrench Jue Wrench
	11036.inlb	Refresh	F5	

3) Right click in the stored Tool Templates window and left click on the **Add Template** from the drop down menu.

Model # :	1					
Description :	-					
ТооІ Туре	ISO 6789	9 Type I Cla	ass A	•		
Rated Capacity :	0.000	N*n	n	•		
Set Points (%)	20	60	100	0	0	Default
Number of Tests	5					
Upper Limit	6	%				
Lower Limit	6	%				
End fitting length :		n	าท	•		
pected measurement	error		-			

- 4) From the 'Tool' tab enter the **Model #** and **Description** for the new tool
- 5) Select the **Tool Type** drop down **I** and select the Tool Template.

ISO 6789 Type I Class A 🛛 💌
ISO 6789 Type I Class A
ISO 6789 Type I Class B
ISO 6789 Type I Class C
ISO 6789 Type I Class D
ISO 6789 Type I Class E
ISO 6789 Type II Class A
ISO 6789 Type II Class B
ISO 6789 Type II Class C
ISO 6789 Type II Class D
ISO 6789 Type II Class E
ISO 6789 Type II Class F
ISO 6789 Type II Class G
Other

See page 33 for definition of ISO 6789 Hand Tool classes.

- 6) Enter the Rated Capacity and torque units.
- 7) Click in each of the Set Point (%) to change if required. The value can be up to 3 decimal places i.e. 26.087 for ISO 6789 & Other type Tool Templates. These must be entered incrementing from the smallest to the largest.
- 8) Enter **Number of Tests**. This is the number of readings taken at each Target value. This is greyed out for 'ISO 6789' Tool Types.
- 9) Enter **Upper Limit**. This is the Upper Calibration Limit and is a percentage of reading at each Set Point. This is greyed out for 'ISO 6789' Tool Types.
- 10) Enter **Lower Limit**. This is the Lower Calibration Limit and is a percentage of reading at each Set Point. This is greyed out for 'ISO 6789' Tool Types.
- 11) If the tool uses an interchangeable end fitting, enter the effective **End Fitting Length** and **Units** (mm or inch)
- Enter Expected measurement error. This is the expected maximum percentage error of reading for this model of tool. This is greyed out for 'Other' Tool Type.
- 13) Left click **OK** when finished.

Modify Tool Template

1) Left Click on the **Define** tab on the main title bar to show drop down menu, then left click on **Tool Templates**. Alternatively left click on the short cut icon (S) on the TCS tool bar.

Norbar Torque Certifica	ation Sy	ystem - [T	00	l Templates]		
i 🗙 Define Calibration Options Databa i 🗙 🦧 🚛 🎧 🕼 🙆 🛱 🍥	ase <u>V</u> iew	<u>W</u> indow E <u>x</u> it	17			
🖃 🆄 Departments	Model	# Descript	tion			_
□··· i j Daz □··· 2 123456 (13016)	11034 11034.inlb	SLU St SLU St	÷	<u>A</u> dd Template	Insert	
E Certificates	11035 11035 jplb	SLO Sto		<u>M</u> odify Template	Enter	Wr
	11036	SL0 16		<u>D</u> elete Template	Delete	uc
2009/259850 (13013)	11036.inlb	SLO 16	สไ	Refresh	E5	

- 2) Right click on the **Tool Template** you wish to modify and left click on **Modify Template** from the drop down menu to show the 'Modify Tool Template' screen.
- 3) See Add Tool Template on page 24 for more information.
- 4) Make necessary changes and left click **OK**.

Delete Tool Template

- Left Click on the **Define** drop down on the main title bar and then left click on **Tool Templates**.
 Alternatively left click on the short cut icon in the TCS tool bar.
- 2) Right click on the **Tool Template** you wish to delete to show the drop down menu and left click on **Delete Template**.

Norbar Torque Certific	ation System - [Too	l Templates]
Contraction Options Data	oase <u>Vi</u> ew <u>W</u> indow E <u>x</u> it	
A Departments Departments	▲ Model # Description 13015.lbft Model 300 45 13016.lbft ▲dd Template	-220 lbf+ft Torque Wrend Insert Wrend
2009/259849 (13001) 2009/259850 (13013)	13017 Image: Constraint of the second seco	e Enter ^{Wrench} Wrenc Delete n Torqu
	13018.lbfl 13019 8 Refresh	F5 F ¹ F ¹ F ¹ F ¹

3) Left click on Yes, No or Cancel as required.



4) If a Tool Template has been assigned to a Tool, you will see the following message.



In this case you will have to delete the Tool first, see page 21 for more information.

TRANSDUCERS

Any transducers used for ISO 6789-1:2017 Conformances or non-ISO Calibrations should be added to the Transducer register.

Add Transducer

1. Select **Define** menu then select **Transducers** (or select).

Transducers are shown in the right hand pane.



A S...

Model Details Add Transducer Edit Transducer Delete Transducer

Norbar Torque Certification System - [Transducers]

Departments Sample Tool Supples 2115 (11034) Certificates Sample 32145 (11034) Certificates Sample 337951 (16011)

🛄 Define Calibration Options Database View Window Exit

2. Right click on a **Transducer** to show the drop down menu.

3. Select Add Transducer.

Fill in:-
Serial Number
Model
Calibration Certificate No./s
Capacity
Units
Transducer Uncertainty
Transducer Uncertainty Interval

The 2 uncertainty values should be the highest 'Expanded Uncertainty' and 'Uncertainty Interval' values from the certificate/s

Coviel Number	
Serial Number	55432
Model	50593.LOG
Calibration Certificate (CW)	544213
Calibration Certificate (CCW)	
Capacity :	100 N·m 🔻
Transducer Uncertainty :	0.24
Transducer Uncertainty Interval :	0.36

Edit Transducer

- 1. Select the **Define** menu then select **Transducers** (or select **[]**). Transducers are shown in the right hand pane.
- 2. Right click on a **Transducer** to show the drop down menu.
- 3. Select Edit Transducer.



4. The Edit Transducer screen is shown.

See Add Transducer section for more information.

Make required changes then select $\ensuremath{\text{OK}}$

Delete Transducer

1. Select the **Define** menu then select **Transducers** (or select **)**. Transducers are shown in the right hand pane.



- 2. Right click on a **Transducer** to show the drop down menu.
- 3. Select Delete Transducer.



4. Select Yes, No or Cancel.

MEASUREMENT DEVICES

Any measurement devices used for ISO 6789-1:2017 Conformances or non-ISO Calibrations should be added to the Measurement Device register.

Note: A measurement device can be a display instrument (e.g. a T-Box XL[™]), which connects to external transducers listed in the transducer register and can also be a self-contained device with its own display and integral transducer.

Add Measurement Device

1. Select **Define** menu then select **Measurement Devices**

(or select 📕).



Measurement devices are shown in the right hand pane.

2. Right click on the **Right Pane** to show the drop down menu.



3. Select Add Measurement Device.

Display devices (e.g. T-Box XL):-Fill in:-Serial Number Model Device Certificate number Device Uncertainty

All other fields should be left blank

Measurement Device	X
Serial Number	90350
Model	43258
Device Certificate :	445512
Device Uncertainty :	0.14
Integrated Transducer Certificate (CW)	
Integrated Transducer Certificate (CCW)	
Transducer Uncertainty :	0
Transducer Uncertainty Interval :	0
ок	Cancel

Display device with an integral transducer:-

(e.g. TST - Torque Screwdriver Tester) Fill in:-Serial Number Model Device Certificate number Device Uncertainty Integrated Transducer Certificates Number/s Transducer Uncertainty Transducer Uncertainty Interval

Neasurement Device	X
Serial Number	65478
Model	43213
Device Certificate :	213546
Device Uncertainty :	0.14
Integrated Transducer Certificate (CW)	654887
Integrated Transducer Certificate (CCW)	
Transducer Uncertainty :	0.21
Transducer Uncertainty Interval :	0.32
ОК	Cancel

Integrated System (e.g. Pro-Test):-Fill in:-Serial Number Model Integrated Transducer Certificates Number/s Transducer Uncertainty Transducer Uncertainty Interval

Measurement Device	X
Serial Number	54784
Model	43218
Device Certificate :	
Device Uncertainty :	0
Integrated Transducer Certificate (CW)	547214
Integrated Transducer Certificate (CCW)	
Transducer Uncertainty :	0.26
Transducer Uncertainty Interval :	0.38
ОК	Cancel

Edit Measurement Device

- Select the **Define** menu then select **Measurement Devices** (or select **I**). Measurement Devices are shown in the right hand pane.
- 2. Right click on a **Measurement Device** to show the drop down menu.
- 3. Select Edit Measurement Device.



4. The Edit Measurement Device screen is shown.

See Add Measurement Device section for more information.

Make required changes then select OK

Delete Measurement Device

- 1. Select the **Define** menu then select **Measurement Devices** (or select **I**). Measurement Devices are shown in the right hand pane.
- 2. Right click on a Measurement Device to show the drop down menu.



3. Select Delete Measurement Device.

Norbar Torque Certific	cation System	n 📒	X
Are you sure you	want to delete th	iis Measurement Devi	ce?

4. Select Yes, No or Cancel.

HAND TORQUE TOOL CLASSIFICATION

The TCS tool templates conform to ISO 6789-1:2017 classifications for hand torque tools. A summary of the classifications are given below; for full details please refer to the ISO standard.

Tool Type I: Indicating torque tools (The torque exerted is indicated on scale, dial or display). Tool Type II: Setting torque tools (A signal is given when the pre-set torque value is met).

Туре	Class	Description	Example
	A	Wrench, torsion or flexion bar	
	В	Wrench, rigid housing, with scale or dial or display	
I	С	Wrench, rigid housing and electronic measurement	
	D	Screwdriver, with scale or dial or display	
	Е	Screwdriver, with electronic measurement	
	A	Wrench, adjustable, graduated or with display	
	В	Wrench, fixed adjustment	
II	С	Wrench, adjustable, non- graduated	
	D	Screwdriver, adjustable, graduated or with display	
	Е	Screwdriver, fixed adjustment	
	F	Screwdriver, adjustable, non- graduated	
	G	Wrench, flexion bar, adjustable graduated	

Each TOOL TYPE has several classes to determine the measurement points, number of measurements & permissible deviation.

		Number of	Number of	Permissible D	eviation (+/-%)
Туре	Class	Set Points	Measurements (at each point)	Max Torque Value <=10N⋅m	Max Torque Value >10N⋅m
	Α	3	5	6	6
	В	3	5	6	4
I	С	3	5	6	4
	D	3	5	6	6
	E	3	5	6	4
	А	3	5	6	4
	В	1	10	6	4
	С	1	10	6	4
П	D	3	5	6	6
	Е	1	10	6	6
	F	1	10	6	6
	G	3	5	6	6

TCS automatically calculates the limits to ISO 6789-1:2017 by the following method:

Example -

100 N·m Type II Class B with Permissible Deviation = $\pm 4\%$

Lower Limit = 96.0 N⋅m	(96 – 100)/100	= - 4%
Upper Limit = 104.0 N⋅m	(104 – 100)/100	= +4%

CALIBRATION MENU

Calibration Options

- Select Calibration menu then select Options (or select icon).
- 2. Select the **General** tab, this contains header information for all certificates.

The **Next Certificate Number** is generated automatically.

The **Standard** can be entered. This will be included on non-ISO certificates.

The **Company Name** and address (shown as **Header Line 1**, **2** and **3**) can be entered, these will appear at the top of the certificate.

The Quality Manager can be entered.

The **Always show signature text on certificate** will add "Signature" and an area to be signed.

The Laboratory Number can be added.

The Certificate Logo can be changed and position altered.

The **Accept Low Results as valid** option will allow a calibration certificate with low calibration results to be created.

3. Select the Serial tab.

This information is required to perform calibrations or conformances via RS232.

Select Serial Port to match the torque instrument.

Select Baud Rate to match the torque instrument.



-	<u>D</u> efine	Calib	ration	Opt	ions	Data <u>b</u> as	e <u>V</u> ie	w <u>W</u> i	ndow	Exit
R	r 🖳		Calibra	te (via	RS232) (Ctrl+T	1		== 🗆
	Depart		Confo	mance	e (via RS	5232)		ion		
E	San		Option	s		C	trl+0	c 330 1	/2" 25-2	50 lbf•ft
		×	List To	ols req	uiring <u>R</u>	ecalibrati	ion	c 50 3/8	3" 5-50 I 3" 4-40 I	V·m 915 bf·ft 915
		-		405			No. of Colors of			
				435	05		Nortron	nic 50 1/2	2" 5-50 1	V.m 912
				435	05 05.lbfft		Nortro	nic 50 1/2 nic 50 1/2	2" 5-50 2" 4-40	bf•ft 915
				435	05.lbfft		Nortron	nic 50 1/2 nic 50 1/2	2* 5-50 2* 4-40	vm 915 bf•ft 915
alibratio	on Options			435	05.lbfft		Nortron	nic 50 1/2 nic 50 1/2	2" 5-50 2" 4-40	bf•ft 915
alibratio	on Options Text(8)			435	05.lbfft Text(9)	Nortron	nic 50 1/2 nic 50 1/2	2" 5-50 2" 4-40 ext(10)	915 bf•ft 915

Company Name Test House Calibrations

Always show signature text on Certificate Accept Low Results as valid

Change Preview

Position from top left of box (in centimetres) : From Left 0.10 X From Top 0.10

Width : 4.00

OK Cancel

Header Line 1 : New Street

Header Line 2 : New Town Header Line 3 : Northamptonshire Quality Manager : JDK

Laboratory Number : 54321

Certificate Logo : Not Set 4. Select the Recalibration tab.

Select **Recalibration Frequency** to set specific value for the tool.

Select **Warn on recalibration required at** to set value for recalibration warning.



5. Select the **Text(1)** tab.

Use **Text(1)** to **Text(10)** to enter extra details that will appear on the calibration certificate.

Use the **Include This** option to include / exclude text as required.



List Tools Requiring Recalibration

Tools requiring re-calibration will be preceded by a warning symbol in the left hand tree structure) 🔔.

This symbol will only appear if the Recalibration Frequency has been specified in the Calibration Options settings and the last time the Tool was calibrated is less than the number specified on Warn on recalibration required at on the Calibration Options (see previous section).

- 1) Left click on the Calibration tab.
- 2) Left click on List Tools requiring Recalibration_on the drop down.



3) Double left click on a Tool in the right hand pane to highlight that Tool in the left hand pane.

Norbar Torque Certific	ation System	ı - [Tools	Requiri	ng Recalibration]
: 🛄 Define Calibration Options Datab	ase <u>V</u> iew <u>W</u> indow	E <u>x</u> it		
	Tool Serial Number	Department	Model #	Last Calibrated
□ □ Daz □ ↓ 123456 (13016) □ ↓ 2009/259849 (13001) □ ↓ 2009/259850 (13013) □ ↓ 2009/259850 (13013) □ ↓ 2009/259851 (14005) □ ↓ Property 1000000000000000000000000000000000000	123456 14002 2009/259849 2009/259850 2009/259851 model 1500 pt14 pt2700 pt72/1500	Daz Norbar Daz Daz Daz Norbar Norbar Norbar Norbar	13016 14002.lbfft 13001 13013 14005 14004.lbfft 16045.lbfft 18027 18021.lbfft	13/04/2011 08:22:06 19/04/2011 08:19:33 07/04/2011 14:57:52 11/04/2011 12:44:34 13/04/2011 14:48:26 19/04/2011 08:21:12 19/04/2011 08:27:04 19/04/2011 08:24:40 19/04/2011 08:22:34

TIP: The $^{\frown}$ symbol disappears when a certificate is generated.

4) If a recalibration period has been defined and some tools require recalibration you will see the following message when starting TCS.



5) Click OK to continue.

Calibrate (via RS232)

This option is for generation of non-ISO calibration certificates via the RS232 interface. Ensure the Calibration Options are set up correctly. Calibrate (via RS232) is only available for non-ISO tool types.

1. Select the tool to be calibrated, then select **Calibrate (via RS232)** from the right mouse button menu

	Readings			
Tool				
Serial Number	357951			
Type :	16011		•	
Rated Capacity :	680	N'm		
Measurement Range :	160.00 - 680.00 N·m			
Certificate				
Inspector :	JDK	•		
Alternation of	(leave	blank to use the next		
Number			ot Specified	
Direction :	Clockwise Cour	nter Clockwise 💿 No		
Direction : Temperature	Clockwise Cour Cour Cour	iter Clockwise 🔘 No		
Direction : Temperature Certificate Text :	Clockwise Cour Cour Cour As Found	nter Clockwise 🔘 No		
Number Direction : Temperature Certificate Text :	Clockwise Cour Cour Cour As Found	tter Clockwise ○ Nc		



- 2. Select or Enter an **Inspector** (this must be entered).
- 3. Enter Certificate Number (if required).
- 4. Select **Direction** required
- 5. Enter the **Temperature** (in degrees C) that the calibration was performed (this must be entered).
- 6. Enter Certificate Text

Choose either **As Found** or **As Left** from the drop down or enter your own text.

7. If the same tool has other calibration data to put on the same certificate, press Select Results

This feature allows clockwise & anti-clockwise as well as 'as found' & 'as left' results to be included on the same certificate.

To add another calibration to the same certificate double click on the required results.

8. Select Equipment tab

Select the Measurement / Display Device Serial Number from the drop down list.

Select the Transducer Serial Number from the drop down list.

Note: If using the Measurement Devices integral transducer, leave Transducer Serial Number blank.

Check the current certificate numbers are correct and that the uncertainty values are correct. If not, correct them in the Measurement Device and Transducer registers.

ertificate Equipment	Readings		
easurement / Display D	evice		
Serial Number	90350	•	
Model	43258	•	
Certificate :	112233		
Expanded Uncertainty :	0.14		
ransducer			
Serial Number	12345	•	
Model	50593.LOG	•	
Certificate :	222222		
Expanded Uncertainty :	0.25		
Uncertainty Interval :	0.37		

9. Select Readings tab

Press 'Start RS232 Capture' button

Perform calibration, sending readings via RS232

A reading can be deleted by pressing the 'Delete Last Reading' button

erenedee	Equipment	Readings					
eadings							
Torqu	ue						
1	60.00 N·m	0.00	0.00	0.00	0.00	0.00	
6	80.00 N°m	0.00	0.00	0.00	0.00	0.00	
St	op RS232 Ca	pture	elete Last Rea	iding			
St	op RS232 Ca	pture	elete Last Rez	ading			
St	op RS232 Ca	pture D	elete Last Rea	ading			

If the entered temperature is below 18°C or above 28°C the following message will appear:-



Press 'Yes' to continue with the calibration or 'No' to abort the calibration.

Continue taking readings until the calibration is complete

Certificate	Equipment	Readings	
Readings			
Torqu	ie		
1	60.00 N°m	167.30 167.70 168.40 167.50 167.50	
6	80.00 N°m	717.20 716.20 715.40 714.80 713.20	
Sta	nrt RS232 Ca	pture Delete Last Reading	
Sta	art RS232 Ca	pture Delete Last Reading	
Sta	art RS232 Ca	pture Delete Last Reading	

10. Press 'Create Certificate' button

Note: Calibrate (via RS232) can only be used for non-ISO (Other) tool types.

		Certifica		er:1				
Model :	16011		S	erial No :		35	7951	
Maximum Capacity :	680.0 N	m	Ir	spector :		JD	K	
Date of Calibration : 08/08 As Found	8/2017							
Set Torque		Min	Max		Act	ual Readir	ngs	
	160.0	152.0	168.0	167.3	167.7	168.4*	167.5	16
3	680.0	646.0	714.0	717.2*	716.2*	715.4*	714.8*	71
MEASUREMENT SYSTE Measurement Device Mod Measurement Device Seri Measurement Device Cert Transducer Model : 50772 Transducer Serial No : 122	Mi03ED kel:43258 al No:90350 ificate:654984 LLOG 345							
MEASUREMENT SYSTE Measurement Device Mod Measurement Device Seri Measurement Device Cert Transducer Model : 50772 Transducer Serial No : 122 Transducer Certificate : 32 The measurement uncerta	MIOSED MaiNo:90360 Micate:654984 LLOG 345 24567 mintv:interval of th	ne measureme	nt svstem is	0.409%				
MEASUREMENT SYSTE Measurement Device Mod Measurement Device Seri Measurement Device Cert Transducer Model : 50772 Transducer Serial No: 142 Transducer Certificate : 32 The measurement uncerta The uncertainties are for a	lel:43258 al No:90360 ificate:654984 LOG 345 44567 inty interval of the confidence protection	ne measureme babilty ofn ot k	nt system is ess than 95%	0.409%				
MEASUREMENT SYSTE Measurement Device Mod Measurement Device Cert Transducer Model: 507/2 Transducer Serial No. 122 Transducer Certificate: 32 The measurement uncerta The uncertainties are for a	kel : 43258 al No : 90350 ificate : 654984 2LOG 345 34567 inity interval of the confidence prot	ne measureme sability of not k	nt system is ess than 95%	0.409%				
MEASUREMENT SYSTE Measurement Device Seri Measurement Device Seri Tanaducer Model: S0772 Transducer Serial No: 122 Transducer Certifeate: 32 The measurement uncerta The uncertainties are for a	M 052D lei : 43258 al No : 90360 dificate : 654984 2LOG 345 345 545 confidence prot	ne measureme bability of not k	nt system is ess than 95%	0.409%				
MEASUREMENT SYSTE Measurement Device Nor Measurement Device Seri Tansducer Model: 50772 Tansducer Serial No: 12 Tansducer Certificate: 32 The measurement uncerta The uncertainties are for a	M 052D iel : 43258 al No : 90360 ificate : 654984 LOG 345 345 34567 inity interval of the confidence prot	ne measureme bability of not le	nt system is ess than 95%	0.409%				
MEASUREMENT SYSTE Measurement Device Nori Measurement Device Cert Transducer Model: 50772 Transducer Serial No: 112 Transducer Certificate: 32 The measurement uncerta The uncertainties are for a	M 052D al No : 9026 0 dificate : 654984 2LOG 345 345 345 7 confidence prot	ne measureme xability ofn ot k	nt system is ess than 95%	0.409%				
MEASUREMENT SYSTE Measurement Device Stef Measurement Device Cert Transducer Model : 50772 Transducer Serial No : 12 Transducer Serial No : 12 Transducer Serial No : 12 The measurement uncerta The uncertainties are for a	661-34258 al No : 90250 dificate : 654984 2LOG 345 345 345 confidence prot	ne measureme xability of nαt le	nt system is ess than 95%	0.409%				
MEASUREMENT SYSTE Measurement Device Nort Measurement Device Cert Transducer Model : 50772 Transducer Serial No: 112 Transducer Serial No: 112 Transducer Serial No: 112 The measurement uncerta The uncertainties are for a	MI 052D al No. 90360 dficate: 654984 LLOG 145 4567 inity interval of th confidence prot	ne measureme xability ofnot le	nt system is ess than 95%	0.409%				

Conformance (via RS232)

This option is for generation of declarations of conformance via the RS232 interface. Ensure the Calibration Options are set up correctly. Conformance (via RS232) is only available for ISO 6789 tool types.

1. Select the tool to be calibrated, then select

Conformance (via RS232) from the right mouse button menu

	Readings			
ool				
Serial Number	32145			
Type :	11034		-	
Rated Capacity :	20	N·m	•	
Measurement Range :	1.000 - 20.000 N°m			
Certificate				
Inspector :	JDK	-		
Number	(leave	blank to use the next		
Direction :	Clockwise Coun	ter Clockwise 🔘 N	lot Specified	
	20 °C			
Temperature				
Temperature Certificate Text :	As Found	-		
Temperature Certificate Text :	As Found	•		



- 2. Select or Enter an Inspector (this must be entered).
- 3. Enter Certificate Number (if required).
- 4. Select Direction required
- 5. Enter the **Temperature** (in degrees C) that the conformance test was performed (this must be entered).
- 6. Enter Certificate Text

Choose either **As Found** or **As Left** from the drop down or enter your own text.

7. If the same tool has other conformance data to put on the same certificate, press Select Results

This feature allows clockwise & anti-clockwise as well as 'as found' & 'as left' results to be included on the same certificate.

To add another conformance test to the same certificate double click on the required results.

8. Select Equipment tab

Select the Measurement / Display Device Serial Number from the drop down list.

Select the Transducer Serial Number from the drop down list.

Check the current certificate numbers are correct and that the uncertainty values are correct. If not, correct them in the Measurement Device and Transducer registers.

Certificate	Equipment	Readings		
Measurem	ent / Display	Device		
S	erial Number	90350	•	
	Model	43258	•	
	Certificate	112233		
Expanded	Uncertainty :	0.14		
Transduce	r			
S	erial Number	12345	-	
	Model	50593.LOG	•	
	Certificate	222222		
Expanded	Uncertainty :	0.25		
Uncerta	inty Interval	0.37		

9. Select Readings tab

Press 'Start RS232 Capture' button

Perform conformance test, sending readings via RS232

A reading can be deleted by pressing the 'Delete Last Reading' button

Readin	nas						
-	Forguo						
Ê	1.000 N°m	0.000	0.000	0.000	0.000	0.000	
Ē	12.000 N·m	0.000	0.000	0.000	0.000	0.000	
Ē	20.000 N·m	0.000	0.000	0.000	0.000	0.000	
				-4			

If the measurement device and transducers uncertainty values are too high, the following message will appear:-

Norbar Torque Cert	ification System	X
The measuren	ent systems measurement error is too high to test this torque tool	to ISO6789-1:2017
	QK	

Check the measurement device and transducer uncertainty values are correct.

The measurement systems maximum relative error can be no greater than ¹/₄ of the tools maximum permissible relative deviation.

The measurement systems maximum relative error is calculated by taking the transducers expanded uncertainty value from its uncertainty interval value.

The tools maximum permissible relative deviation uses the 'Expected measurement error' in the tool template. If this value is blank or is greater than the default maximum permissible relative deviation defined in ISO6789-1:2017 (section 5.1.5), the 'Upper Limit' and 'Lower Limit' values in the tool template will be used.

If the temperature entered is below 18°C or above 28°C the following message will appear:-



Check the correct temperature was entered.

10. Continue taking readings until the conformance test is complete

Certific	ate Equipment	Readings					
Readir	igs	-					
т	orque						
Γ	1.000 N·m	1.008	1.013	1.019	1.028	1.057	
Ē	12.000 N·m	12.026	12.030	12.044	11.862	11.720	
-	20.000 N°m	19.136	19.324	20.437	20.763	21.035	
C	Start RS232 Capl	ure	Delete Last Re	ading			

11. Press 'Create Certificate' button

Customer :								
	Calibrat	ion Lab						
Model : Measurement Range :	11034 1.000 - :	20.000 N·m	1	Serial No		35 JD	07951 0K	
Date of Test : 18/07/2017			t	Direction :			С	lockwis
Set Torque		Min	Max	Actu		tual Readings		
	1.000	0.960	1.040	1.008	1.013	1.019	1.028	1.057
1:	2.000	11.520	12.480	12.026	12.030	12.044	11.862	11.72
20	000	19 200	20,800	10 136*	19 324	20.437	20 763	21 034
The test was performed at an	ambien	t temperature	e between	18°C and	28°C and	did not fi	uctuate b	y more
The test was performed at an than ±1°C during the test. The Quality Manager : JDK	ambien maxim	t temperature um relative h	e between umidity did	18°C and not exce	6789-1:20 28°C and ed 90%	did not fi	uctuate b	y more
The test was performed at an than ±1°C during the test. The Quality Manager : JDK MEASUREMENT SYSTEM US Measurement Device Model : Measurement Device Serial N Measurement Device Certifica	ambien e maxim SED 43258 lo : 9038 ate : 112	t temperature um relative h 50 233	e between umidity did	18°C and not exce	6789-1:20 28°C and ed 90%	did not fl	uctuate b	y more
The test was performed at an than ±1°C during the test. The Quality Manager : JDK MEASUREMENT SYSTEM US Measurement Device Model : Measurement Device Certifica Measurement Device Certificate : 250593.LO Transducer Model : 50593.LO Transducer Certificate : 22222 The measurement system use 7898-1:2017 Section 6.1	ambien e maxim SED 43258 lo : 9038 ate : 112 G 22 ed for th	t temperature um relative h 50 233 is conforman	ce test con	nplies with	o 789-1:21 28°C and ed 90%	i did not fi	uctuate b	y more
The test was performed at an than ±1°C during the test. The Quality Manager : JDK MEASUREMENT SYSTEM US Measurement Device Serial N Measurement Device Certifica Transducer Model : 50593.LO Transducer Serial No : 12345 Transducer Certificate : 22225 The measurement system use \$789-1:2017 Section 6.1 The maximum measurement et permissible relative deviation	ambien maxim SED 43258 lo : 9038 ate : 112 G 22 ed for th error of the to	t temperature um relative h 50 233 is conforman the measure orque tool	e between uumidity did ce test con ment system	nplies with m does no	a the request exceed	irements % of the r	uctuate b of ISO maximum	y more
The test was performed at an than ±1°C during the test. The Quality Manager : JDK MEASUREMENT SYSTEM US Measurement Device Model : Measurement Device Certifica Transducer Model : 50593.LO Transducer Certificate : 22222 The measurement system us 7589-1:2017 Section 6.1 The maximum measurement 4 permissible relative deviation The maximum measurement 4	ambien e maxim SED 43258 lo : 9038 ate : 112 G 22 ed for th error of of the to error of	t temperature um relative h 50 233 is conforman the measure rque tool the measure	e between uumidity did ce test con ment system	nplies with m does no m is 0.120	the request the request to the reque	irements % of the r	uctuate b of ISO maximum	y more
The test was performed at an than ±1°C during the test. The Quality Manager : JDK MEASUREMENT SYSTEM US Measurement Device Model : 50593.LO Transducer Model : 50593.LO Transducer Certificate : 22222 The measurement system use 7898-1:2017 Section 6.1 The maximum measurement (permissible relative deviation The maximum measurement the measurement uncertainty)	ambien e maxim SED 43258 lo : 903 ate : 112 of error of error of error of interva	t temperature um relative h 50 233 is conforman the measure the measure to of the measure	ce test con ment system urment system	nplies with m does no m is 0.120 /stem is 0	the required to the required to the required to the required to the texceed of the required to the texceed of texce	irements ¼ of the r	uctuate b of ISO maximum	y more

CERTIFICATES

View Certificate

1) Click the + in front of the Certificate icon under a Tool on the left hand pane to expand the view and double left click the required Certificate icon to view that certificate. Alternatively select required

certificate in the left hand pane and left click the 🗾 icon on the TCS toolbar.



2) Left click on View Certificate on the drop down menu.

There are 2 types of certificate:-

- a. ISO 6789-1:2017 Declaration of Conformance
- b. Non-ISO Certificate of Calibration

They are formatted differently and contain different information depending on their requirements.

An ISO 6789 tool can only contain declarations of conformance under its 'certificates' folder. A Non-ISO 'Other' type tool can only contain non-ISO certificates of calibration under its 'certificates' folder.

ISO 6789-1:2017 Declarations of Conformance have additional statements which are required by the standard.

Norbar Torque Tools	Cal	ibratio ^{Calib} L	n Serv ration Stre abtown L12 3AB	ices et	Ltd			1/1
	Certificate of Calibration Certificate Number : 3							
Model : Maximum Capacity :	16011 680.0 N∘r	n	S	ierial No : Ispector :		35 JC	7951 X	
Date of Calibration : 08/08/20 As Found	017							
Set Torque		Min	Max		Act	ual Readi	ngs	
	160.0	152.0	168.0	163.6	163.6	173.2*	168.6*	167.0
	680.0	646.0	714.0	701.8	702.1	714.4*	709.6	705.3
MEASUREMENT SYSTEM Measurement Device Sarial Measurement Device Sarial Measurement Device Sarial Measurement Device Cartific Transducer Sarial No: 12434 Transducer Cartificate : 32454 The measurement uncertainty The uncertainties are for a co Laboratory No: 763	USED : 43258 No : 90360 ate : 654984)G 67 y interval of th infidence proba	e measureme ability of not lo	nt system is ess than 95%	0.409%				

3) Left click on the Certificate to enlarge the view, press and hold down the CTRL key and left click on the certificate to reduce the view.

Delete Certificate

1) Click the + in front of the Certificate icon under a Tool on the left hand pane to expand the view and double left click the required Certificate icon to view that certificate. Alternatively select required

certificate in the left hand pane and left click the 尾 icon on the TCS toolbar.

🖲 Norbar Torq	ue Certification Syst	tem - [Certific	ate 14]	
Entry	<u>O</u> ptions Data <u>b</u> ase <u>V</u> iew <u>W</u>	indow E <u>x</u> it		
🔇 🥕 📮 🔛 📓	1 🛱 🌢 🛱 🌢 🗮 🗖 🗉 :	🗋 🚯 👘		
■ A Departments ■ 0 Daz ■ 0 123456 (1 ■ 0 Employed Control	.3016) icates			,
	Yiew Certificate	Norbar	Torque Tools	
	Delete Department			Certii c∉
□- <u>1</u> 14002 □- <u>-</u> □ □- □- □- □- □- □- □- □- □- □- □- □-	Add <u>T</u> ool Rename T <u>o</u> ol Change Tool Te <u>m</u> plate	Customer : Address :	Daz More Dave	ton Pinkne <u>)</u> ntry
	Vie <u>w</u> Tool Template Delete Too <u>l</u>	Model :	North NN1 ⁻ 1301	nants 1 3SF 6
Q E	Eind a Tool	Maximum Capac Inspector :	city : 330.0 DRG	00 N.m
	Rename Delete Certificate	Set Tor	que Min	м

2) Left click on **Delete Certificate** on the drop down menu.



3) Left click on Yes, No or Cancel as required.

OPTIONS

Change Certificate Language



This will change the language for all New and Archived Calibration Certificates.

- 1) Right click on **Options** on the TDMS tool bar.
- 2) Right click on Certificate Language.
- 3) Right click on the **desired language**.
 - TIP: Certificates that were opened to view before changing the Certificate Language will be shown in the language prior to the change. Close the certificate window and re-open to view the certificate in the chosen language.

Set Printer Margins

To ensure compatibility with different printers where printouts of certificates do not fit on the page:-

- 1) Left Click the **Options** tab.
- 2) Left click Set Printer Margins.



3) Click in each box and type in desired value.

Printer Margins	×
If your printer is printing over adjust these values. All va	er the edge of the page, Ilues are in millimetres.
Extra left margin :	۵
Extra right margin :	0
Extra top margin :	0
Extra bottom margin :	0
OK	Cancel

DATABASE



Backup Database

All data can be backed up to a location specified by left clicking Database and then left clicking Backup. Type in the backup file name and left click save.



TIP: It is recommended that you regularly back up your database.

Restore Database

NOTE: If the database being restored is from a previous version of TCS (e.g. TCS version 1.1.1), it is important to Reload Standard Templates after the database is restored so that the Set Points are corrected for ISO 6789-1:2017.

Data can be restored from that location by left clicking Database and then left clicking Restore, select the backup file and then left click open. The following message will be displayed:-

Norbar Torque Certification	on System 🛛 🔀
Are you sure you want to restore the	database from file "C:\TCS backups\Norbar103.backup"? This will completely replace existing data.
	Yes No Cancel

NOTE: Clicking on Yes will overwrite the current database and all unsaved data will be lost.

Reload Standard Templates

Use this option to reload the Standard Norbar Tool Templates into TCS. These are built into TCS and this option can be particularly useful if a Tool Template has been deleted and is now required, or if you are restoring a database from an older version of TCS.

To Reload Standard Templates select Reload Standard Templates from the Database menu

VIEW



- 1) Left click **Refresh** to redraw the current window.
- Copy the data in the right hand pane and paste into another application such as Microsoft[®] Excel[®] or Word[®] etc. using Copy to Clipboard or Copy Selection to Clipboard by highlighting the required data.
- 3) The User can print data in the right hand pane using **Print** or **Print Selection** by highlighting the required data.

WINDOW

Left click the **Window** tab on the TCS toolbar, and then left click on desired window option. These options are intended for use when multiple windows are open so that they can be viewed simultaneously. These options can also be selected directly from the TCS toolbar.



CURRENTLY OPEN WINDOWS

This is shown on the bottom right of TCS.



Click on icon to go to currently open window

ABOUT TCS

Left click on the 10 icon on the TCS shortcut bar.

This will show the version number of the software.

		Norbar Torque Certification System
	Enrhar [®]	Version 2.0.2
	Norbar Torque Tools	Copyright © 2009-2017 Norbar Torque
\sim		Tools, all rights reserved.
		This software is based in part on the work
	1 mar 1 and 1 mar 1	of the Independant JPEG group and of the

Left click **OK** to cancel.

Left click Database File... to show where the TCS database is stored. Left click OK to exit.



This is in a different location for Windows XP as shown below.



NOTE: For 64 bit versions, this may be shown as C:\ProgramData(x86)\TCS\NorbarTCS.sqlite

KEY TO SHORTCUT ICONS

These can be used for quick selection from the shortcut bar.

lcon	Shortcut To
2	Define Tool Templates (Ctrl+E)
Ê	Define Transducers (Ctrl+D)
9	Define Measurement Devices
*	Add Tool
a	Calibration (via RS232) (Ctrl+T)
2	Conformance (via RS232)
×	Calibration Options (Ctrl+O)
ø	Refresh (F5)
Ē	Copy All to Clipboard
-	Print All
â	Copy Selection to Clipboard
3	Print Selection
	Cascade Windows
	Tile Windows Horizontally
	Tile Windows Vertically
==	Arrange Iconized Windows
	Close All Windows
0	About TCS
67	Exit TCS

TROUBLE SHOOTING

Problem	Likely Solutions
Calibrate and Conformance options are always greyed out	a) No valid Comm port has been selected in Calibration Options.
Norbar Torque Certification System - [Certificate 5]	 b) Newer computers may not be equipped with an RS232 port and this option will always be greyed out.
Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Second Science Image: Science Image: Science Image: Science Image: Science Image: Science Image: Science Image: Science Image: Science Image: Science Image: Science <	In this case you can use an additional RS232 to USB converter. When you have installed the driver on your computer, use the Device Manager to confirm which COM port has been allocated to you converter. Select the same COM port (Serial Port) in the TCS Calibration Options. See page 10.
Calibration error message Norbar Torque Certification System Image: Constraint of the state of the sta	If this message box appears, change the set up options of the connected Instrument to remove the Time and Date from the serial output.
Calibration error message	If this message box appears, the connected Instrument's measurement units are different to the tool being calibrated
Norbar Torque Certification System Image: Control of the system Image: Wrong Units - you have said they are N.m but the data is returning "I". Image: OK	
COM port error Norbar Torque Certif X Unable to open serial port COM12.	Ensure your RS232 to USB converter is still plugged in and active.

UNINSTALLING TCS

Go to Control Panel – Programs and Features– Select Norbar TCS version X.X.X – Click 'Uninstall'

For Windows XP go to the control panel – Add or Remove Programs – select Norbar TCS Version x.x – click 'Remove' NOTE:

Control Panel Home View installed updates Turn Windows features on or	Uninstall or change a program To uninstall a program, select it from the list and then	click Uninstall, Change, or Repair.					
Install a program from the network	Organize 🔻 Uninstall						
	Name	Publisher	Installed On	Size	Version		
	Adobe Flash Player 10 ActiveX Adobe Reader 9.1.3 DeskUpdate 4.11 Microsoft .NET Framework 4 Client Profile Microsoft .NET Framework 4 Extended Microsoft Silverlight Microsoft Visual C++ 2005 Redistributable Microsoft Visual C++ 2008 Redistributable - KB24671	Adobe Systems Incorporated Adobe Systems Incorporated Fujitsu Technology Solutions Microsoft Corporation Microsoft Corporation Microsoft Corporation Microsoft Corporation Microsoft Corporation	27/04/2011 27/04/2011 27/04/2011 27/04/2011 27/04/2011 27/04/2011 04/05/2011 27/04/2011	6.00 MB 203 MB 3.25 MB 38.8 MB 51.9 MB 14.9 MB 2.62 MB 598 KB	10.2.159.1 9.1.3 4.11.0074 4.0.30319 4.0.30319 3.0.40624.0 8.0.59193 9.0.30729.5570		
	Microsoft Visual C++ 2008 Redistributable - x86 9.0.3	Microsoft Corporation	27/04/2011	596 KB	9.0.30729.4148		
	Realtek High Definition Audio Driver	Realtek Semiconductor Corp. Fujitsu Technology Solutions	27/04/2011 27/04/2011	20.1 MB	6.0.1.6069 3.02.0010		
	Norbar Torque Tools Ltd. Product version	m : 1.0					

Left click 'Yes' to confirm you want to un-install TCS.

Norbar TCS Uninstall	
Are you sure you want to completely remove Norbar TCS and all of its components?	
<u>Y</u> es <u>N</u> o	
Norbar TCS Uninstall Norbar TCS was successfully removed from your computer.	
ОК	



NORBAR TORQUE TOOLS LTD

Wildmere Road, Banbury, Oxfordshire, OX16 3JU UNITED KINGDOM Tel + 44 (0)1295 270333 Email enquiry@norbar.com



NORBAR TORQUE TOOLS 45–47 Raglan Avenue, Edwardstown, SA 5039 AUSTRALIA Tel + 61 (0)8 8292 9777 Email enquiry@norbar.com.au



NORBAR TORQUE TOOLS INC 36400 Biltmore Place, Willoughby, Ohio, 44094 USA

Tel + 1 866 667 2279 Email inquiry@norbar.us



NORBAR TORQUE TOOLS PTE LTD

194 Pandan Loop #07-20 Pantech Business Hub SINGAPORE 128383 Tel + 65 6841 1371 Email enquires@norbar.sg



NORBAR TORQUE TOOLS (SHANGHAI) LTD

91 Building-7F, No.1122 North Qinzhou Rd, Xuhui District, Shanghai CHINA 201103 Tel + 86 21 6145 0368 Email sales@norbar.com.cn



NORBAR TORQUE TOOLS INDIA PVT. LTD

Plot No A-168, Khairne Industrial Area, Thane Belapur Road, Mahape, Navi Mumbai – 400 709 INDIA Tel + 91 22 2778 8480 Email enquiry@norbar.in

www.norbar.com