# 🔿 James Heal



# **QUICK START GUIDE**

Titan<sup>4</sup> Universal Strength Tester Model 110

TestWise™ Test Analysis Software

Covering Serial Numbers 110/12/1001 and upwards

James H. Heal & Co. Ltd. Halifax, England



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Setting the Standard

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#### **Un-packing Titan<sup>4</sup>**

**Titan<sup>4</sup>** is delivered on a wooden pallet with surrounding cardboard packaging. Inside the cardboard box, **Titan<sup>4</sup>** is attached to a Yellow Transport Frame which enables the instrument to be transported in the horizontal position (laying on its back).





# Read all of these instructions before beginning to un-pack the instrument.

Before un-packing, transport the box to the room where the instrument is to be located.

Remove the outer top cover to reveal the Accessories Tray.

Remove any additional internal packaging.

Then carefully remove the outer cardboard packaging to reveal the Yellow Transport Frame.



Before moving the instrument, remove the bolts (tools provided) which secure the Yellow Transport Frame to the wood pallet.

With the instrument still lying on its back, lift into the upright position. The 'curved heel' on the bottom lifting frame is designed to ease this lifting procedure.

Once raised into the upright position, the bottom Yellow Transport Frame can be removed from the base by unbolting the front cross member (unscrew the bolts on the left and right as indicated by the red circle).



♦ James Heal ©2012



Then unbolt the remaining left and right sides of the bottom frame from the base of the instrument.



# The top Yellow Transport Frame can now be removed from the instrument.

### **Connecting to Services**

**Titan**<sup>4</sup> requires a supply of electricity, compressed air and connection to a PC via a USB cable. The PC must be running Windows XP SP3 or above. Other operating systems or Windows running in a virtual machine are not supported.



On the right hand side of the **Titan**<sup>4</sup> instrument, connect the:

- 1. USB cable
- 2. compressed air supply (max 8 bar)
- 3. foot switch (push and lock)



On the right hand side of the **Titan**<sup>4</sup> instrument, prepare to connect the electricity supply:

- Check your supply voltage matches that indicated by the white arrow pointing to the white block.
- 2. Connect the electricity supply.
- 3. Switch on.

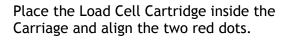
#### Changing the Load Cell and Fitting Pneumatic Jaws



This is the empty Carriage.

It shows:

- 1. Compressed air connection for pneumatic jaws
- 2. Load Cell connection
- 3. Red Dot for Load Cell alignment



Ensure the Load Cell cable is not trapped inside the Carriage.

Connect the Load Cell cable.







Secure the Load Cell to the Carriage using the Load Cell Nut.

Screw the top jaw to the Load Cell. T17 Pneumatic Jaws are shown here.

If the jaws are pneumatic, connect the compressed air pipe (black pipe) between **Titan** and the Jaw.



Screw the bottom jaw to the base of Titan.

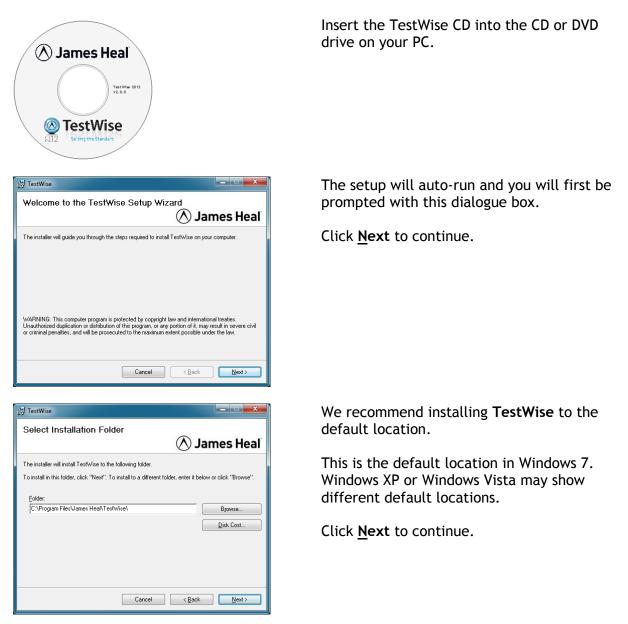
Jaw Faces are held only by magnets and no tools are required when changing.

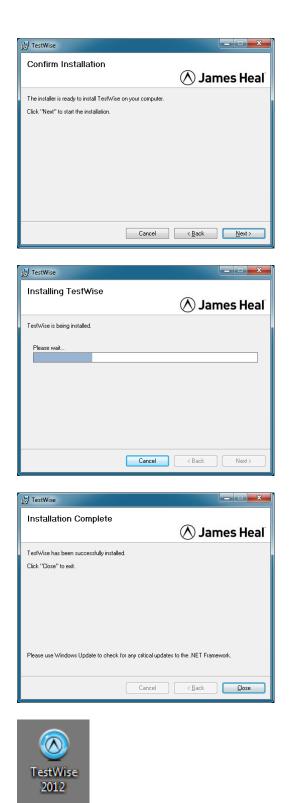
#### Installing TestWise Test Analysis Software

**TestWise** is the name of the software used to control and view results from the **Titan** instrument. It is installed from one CD. The Titan instrument cannot be used without TestWise.

The PC must be running Windows XP SP3, Windows Vista or Windows 7. Other operating systems or Windows running in a virtual machine are not supported. **TestWise** is optimised for Windows 7.

Before installing **TestWise** ensure your dotNET Framework is up to date using the Windows Update service.





The setup procedure is now ready to install TestWise on you PC.

Click <u>Next</u> to continue.

TestWise is being installed, please wait.

TestWise has been successfully installed.

Click <u>Close</u>.

Before attempting to run **TestWise**, please use the Windows Update service to check for any critical updates to the dotNET Framework.

You will now see an icon on your Windows Desktop which looks like this.

### **Configuring TestWise**

Before using **Titan** and **TestWise** together you must configure **TestWise** with Load Cell and Jaws Schemes data. This is a simple process which takes only a few minutes and is required only once.



Ensure the electrical power is connected and switched on and that the USB cable is connected to the PC and the Titan instrument.

Double-click the **TestWise** icon on your Windows Desktop to start TestWise.

While the **TestWise** application loads, the following splash screen displayed.

This is the first run screen. Once this procedure is completed you will not see this again.

Click the **Start Upload** button to begin the upload of configuration data from **Titan**.

Click the **Continue** button to begin using **TestWise**.

Contraction of the local division of the loc	A 4 4		TestWise 2012 - Test Analysis Software	
lle Test	and Appendix	TestWise Options		
Save Save As	1. Select Standard	General	& Edit the people allowed to use TestWise	
S Open	List filtered by	Graph Jaw Schemes	All Users	
5 Citre	Group	Load Cells		New User
Isfo	Favourites	Titan Settings		
Recent	Built-in	Titles	Operator	Operator
	Custom	Users	Administrator	Administrator
News	Test Type	Firmware		
Standards	Tensile		Peter Goodwin  Credentials	Administrator •
Print	Tear/Peel/Adhesion		Username: Peter Goodwin	
	Seam		Password: +++++++	
Verification	Attachment		Confirm Password: +++++++	
Debug	Compression			X ×
Options Exit	Stretch/Recovery			
	Material			
	Woven			
	Nonwoven			
	Coated/Laminated			
	Leather			
	Yam/Thread			

**TestWise** creates a new user called "Admin" using a password of "password".

We recommend you add at least one user with Administrator level and one user with Operator level.

To manage users, go to File > Options > Users.

Click the green tick when finished editing a user, and Apply and OK when finished all user editing.

### Changing the TestWise Language

() TestWise Options	
General Graph	General options for working with TestWise
Jaw Schemes	Communications
Load Cells	Version: 2.0.8.0
Titan Settings	Serial Port: COM98 🔹 🔲 Offline
Users	Sample Freq (Test): 50 ms
Manual	Sample Freq (Other): 200 ms
Firmware	
	Test Files
	Default Path:
	Languages
	Use operating system language English
	Licensing
	TestWise Version: 2.0.8.0
	Serial Number: 110/11/1001
	Licensee: James Heal
	Licensee: James real
	Apply OK Cancel

ion: 2.0.8.0

er: 110/11/100

Erec (Tert)

req (Other): 200

Serial Port: COM98 - Offline

Graph Jaw Schen Load Cells

Titan Se

Titles

Users

The language used by TestWise is the Windows Operating System language, which at the time of writing, can be selected from English, Turkish, Chinese, Italian, Spanish or French.

If the operating system language is not in this list, TestWise will default to the English language.

Changing the language in TestWise will not affect your Windows settings or language settings in any other applications.

It is possible to manually override the automatic language selection.

From the File > Options > General menu, UNcheck the "Use operating system language" box and select the required language from the list.

	Apply OK Can	cel
		_
TestWise Options		
General	General options for working with TestWise	
Graph Jaw Schemes		
Jaw Schemes	Communications	
Titan Settings	Version: 2.0.8.0	
Titles	Serial Port: COM98	
Users	Sample Freq (Test): 50	m
Manual	Sample Freq (Other): 200	m
Firmware	Samporred (ener) 200	
	Test Files	
	Default Path:	
	Languages	
	Use operating system language Türk/Turkish	
	The new language will not be available until TestWise restarts	I,
	Licensing	
	TestWise Version: 2.0.8.0	
	Serial Number: 110/11/1001	
	Licensee: James Heal	

To complete the manually override of the language, TestWise must be restarted.

Click OK and Exit TestWise. Restart TestWise and Login.

Kullanıcı:	
Şifre:	Giriş
	<u>Çıkış</u>

Apply OK Cancel

#### Before You Begin Testing !

Before you begin testing there are some Options which you should check are to your liking. File > Options

General	General options for working with TestWise
Graph	
Jaw Schemes	Communications
Load Cells	Serial Port:
Titan Settings	
Titles	
Users	Sample Freq (Test): 50 ms
Firmware	Sample Freq (Other): 200 ms
	Test Files
	Default Path: C:\Users\pg\Documents\James Heal\TestWise
	Commissioning
	Commissioning
	Commissioning Serial Number:
	Serial Number:



Set the preferred path to save test files.

Browse using the ... button.

Click Apply when finished.

TestWise Options		×	J
General Graph Jaw Schemes Changes to settings	: hall only apply to new	why created tests	
Load Cells Pretension Speed:		mm/min 💌	
These Cathlese	100.00	mm/min •	
Titles Home Speed:		mm/min -	
Users Firmware Click Threshold:	500	ms	
Hold Threshold:	2000	ms	
Air Pressure (Soft):	2.00	bar	
Air Pressure (Test):	7.00	bar	
Gravity (Local):	9.80665	m/s <sup>2</sup>	
		Apply OK Cancel	

 > Titan Settings

If you know your Local Gravity value, enter it here, followed by Apply.

If you don't know your Local Gravity Value, do not change this value.

> Titles

These are perhaps the most important settings as they are used in the Test Report.

The Titles are used to describe the sample. For example, you may want to change Test Name to Batch Number or Job Number.

Try to decide these Titles before you begin testing.

When finished click Apply followed by OK.

#### **Using Search Filters to Find a Standard**

	(a. a. a. b	Test	Vise 2012 - Test Analysis
e Test			
Save As	1. Select Standard		
Open	List filtered by	Refine your results	Search
Cose of Cose of Cose ecent tandards rint rint reinfication rebug	Group Favourites Built-in Custom Test Type Tensile Tesr/Peel/Adhesion Seam Attachment Compression Stretch/Recovery	AATCC/ASTM TS-010 AATCC/ASTM TS-015 adidas® 4.10 Version 02 adidas® 4.11 Version 02 adidas® 4.13 Version 01 adidas® 4.13 Version 02 adidas® 4.14 Version 02 adidas® 4.15 Version 01 adidas® 4.27 Version 03 ASTM D1683-11n	a U
Exit	Material Woven Nonwoven Coated/Laminated Leather Yam/Thread Knitted	ASTM D2061-07 (10.1) ASTM D2061-07 (19.3) ASTM D2061-07 (19.1) ASTM D2061-07 (19.3) ASTM D2061-07 (19.3) ASTM D2061-07 (19.4) ASTM D2061-07 (19.5) ASTM D2061-07 (27.3)	

**TestWise** uses a variety of search filters which enable you to quickly find the standard you need.

You can simply search or use any of the special filters.

Special filters reduce the standards list by Group (se Favourites later), by Test Type or by Material.

The filters can be used in combination.



Search Box

For example, to find all the standards associated with the UK retailer Next plc, type **next** followed by pressing the enter key or clicking Search.

To clear a search filter click the blue cross.

By also selecting other filters you can narrow your search.

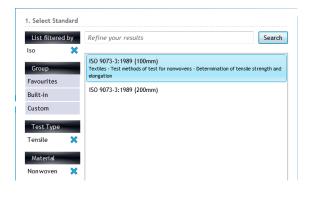
For example, clicking Tear/Peel/Adhesion yields just one standard.

When you point to a standard it is highlighted and the standard title is also displayed.

Test Type

Material

Tear/Peel/Adhesion💥



Another example. Imagine you want to find an ISO standard for the tensile strength of nonwoven fabrics:

Type "iso" in the search box and press enter. Click Tensile Click Nonwoven

#### Favourites - Your Favourite Standards in One-Click

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List filtered by	Refine your results		Search
Group	EN ISO 11644:2009 (IUF 470)		
Favourites Built-in	EN ISO 13934-1:1999 (100mm)		
Custom	EN ISO 13934-1:1999 (200mm)		٢
Test Type Tensile	EN ISO 13934-2:1999 (100mm) EN ISO 13934-2:1999 (75mm)		
Tear/Peel/Adhesion	EN ISO 13935-1:1999		
Seam	EN ISO 13935-2:1999 Textiles - Seam tensile properties of fabric	s and made-up textile article	
Attachment	2: Determination of maximum force to	Add to favourites	od
Compression	EN ISO 13936-1:2004	Remove from favourites	
Stretch/Recovery	EN ISO 13936-2:2004		Γ
Material	EN ISO 13936-3:2007 (Apparel)		1
macenta	EN ICO 40007 0-0007 /U-E-I-E		
Material	, , ,		
List filtered by	Refine your results		Search

EN ISO 13934-1:1999 (200mm)

EN ISO 13936-3:2007 (Apparel)

EN ISO 13935-2:1999

EN ISO 13936-1:2004

EN ISO 13937-3:2000

You can group a selection of standards into a selection known as Favourites. Each user can create their own individual Favourites.

To add a standard to your Favourites list, simply right-click on the standard and then select Add to Favourites.

Favourites are always shown in bold and with a star.

To show only your Favourites, click the Favourites group filter.

You can add or remove Favourites at any time.

Grou

Favourites

Test Type

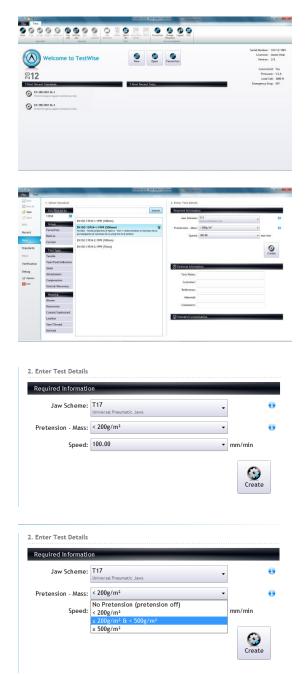
Tear/Peel/Adhesion

Tensile

Seam Attachment Compression Stretch/Recovery Material

#### Example Test Using TestWise

The following section will guide you quickly through the simple steps of carrying out a tensile test.



Login to TestWise.

Click the New button.

Use the search filters to locate the Standard you require.

For this example we will select EN ISO 13934-1 with a 200mm Jaw Separation.

Select a suitable Jaw Scheme, in this case T17.

It is important that the selected Jaw Scheme matches the Jaws actually fitted to Titan. If they do not match then the Jaw Separation will be incorrect.

If required, select the required Pretension force, determined by the weight of the fabric.

2. Enter Tes	t Details				
Required I	nformati	on			
Jaw	Scheme:	T17 Universal Pneuma	tic Jaws	•	0
Pretensio	n - Mass:	< 200g/m <sup>2</sup>		•	•
	Speed:	100.00		• mm/	min
		20.00			
					Create
Optiona	-	ation Job 12.053			
		ABC Textiles	nle		
		P0987654321	pic		
		CP6302 After Washin			
) <u>                                    </u>				1	festWise 2012 · Test Analy
File Test	Results				
Save	Test De	etails			
Save As	Test N		Job 12.053		-
G Close	Custor Refere		ABC Textiles plc P0987654321		<b>SC</b>
	Materi	ial:	CP6302		Apply
Info	Comm Standa		After Washing (5 x 5A) EN ISO 13934-1:1999 (200mm)		Cancel
Recent	Specin		5		
New		red Directions: cheme:	T17		
Standards		eparation: lure Details	200.00 mm		
Print					
VedBarks		Detection:	5 %		
Verification	Preter		force to the material		
Debug		sion: 5.00 N			
P Options	Pull Te	o Load Cell Max	imum		
🔀 Exit	Pulls t	he material unti	il the operator stops the test or the	load cell lir	nitis

Select the Speed required.

In this case, the common default speed is 100 mm/min. However, some tests require a slower speed of 20 mm/min.

Enter details which describe the sample. This information will be stored with the test results and printed on the Test Report.

These fields can be left blank and populated at any time via File > Info > Edit. See below.

This information can be edited at any time.

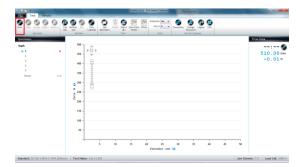
However, once a specimen has been tested and Accepted, the "Required Information" cannot be changed.

After making any changes, click Apply. To exit without saving changes, click Cancel.

To commence the test, click Create.



Speed: 100.00 mm/min



Click the Start button on screen or press F9 on the keyboard.

If **Titan** has been switched off, then you will be prompted to set the Reference Position. Click OK and the Carriage will move to the Home Position (the top of the column) and then return to the required Jaw Separation.

Fig. Test Desilts	Test Wise 2112 - Test Wayso Software	
	The second secon	
Contractions web 2 3 4 5 5 5 6 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8		
Standard: EN ISO 13934-1:1999 (200m)	Extension - ann 😗	# Scheme: T17 Load Cel: 3100 N

Place the specimen centrally in the top jaw. Close the top jaw by any of these methods:

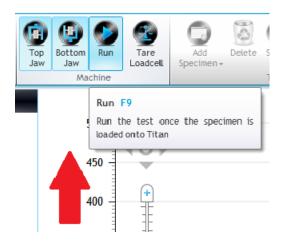
- Clicking Top Jaw on screen
- Pressing F2 on the keyboard
- Pressing the Titan Start Button once
- Pressing the Foot Pedal (if connected)

Place the specimen centrally in the bottom jaw and without tensioning the specimen, close the bottom jaw by any of these methods:

- Clicking Bottom Jaw on screen
- Pressing F3 on the keyboard
- Pressing the Titan Start Button once
- Pressing the Foot Pedal (if connected)

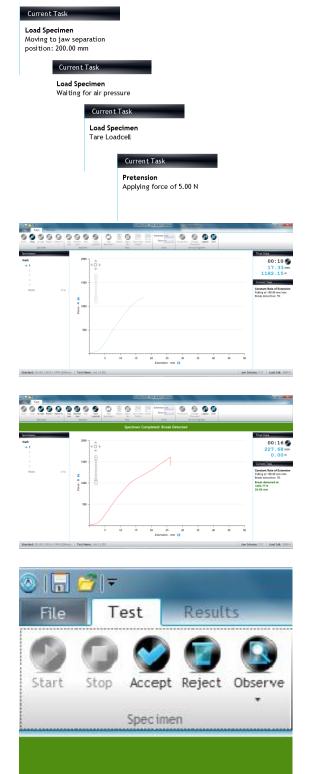
If while loading the specimen into the jaws you make a mistake (for example, the specimen is not central) you can open the jaw by clicking the appropriate button on screen, pressing F2 or F3 on the keyboard.

Alternatively, if you press and hold the Titan Start Button or the Foot Pedal for 2 seconds or more then the last jaw action will be undone.



Click Run or press F9 on the keyboard to start the test.

Note that the function of the Function Keys changes dependent upon the task being undertaken.



On the right hand side of the **TestWise** screen you will see a notifications of the Current Task.

Throughout the test this can change many times and these are some of the more common examples.

This is the first specimen in progress.

If the plot goes off scale on either axis then the graph will rescale in real time.

You can also see an area called Titan Data. This is displaying elapsed time, extension and force. The units are dictated by the Standard.

In this example of a tensile strength test we are using the Break Detection feature.

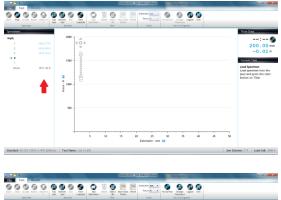
This means the specimen break is detected automatically. When this occurs the test will end and if pneumatic jaws are being used, they will open.

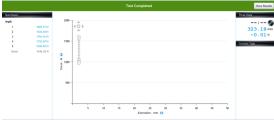
The Current Task now shows the Force and Extension (green text).

The user now decides to Accept or Reject the test.

Accept saves the data and then moves on ready for the next specimen.

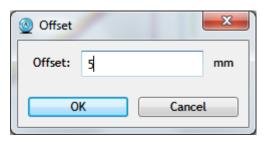
Reject irreversibly deletes the test data for that specimen.











As you proceed through the test specimens you will see the test results accumulating on the left hand side of the **TestWise** screen. For convenience the mean (average) result is also shown.

When all specimens have been completed, the green banner advises you "Test Completed".

To see the Results, click the View Results button in the green banner.

You can also click the Results tab.

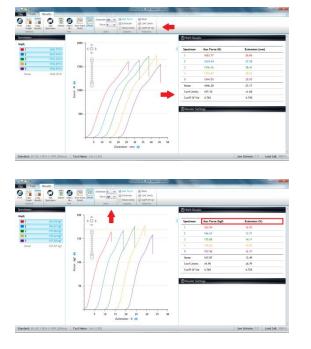
Each specimen is assigned a colour as shown here. For example, the red graph corresponds to the red results.

Up to ten (10) colours can be defined. If you have more than ten (10) specimens, the colours start again from the beginning.

Here are the same results with the graphs offset. This is useful when comparing the shape of the plot.

Click Offset on the Ribbon and this dialog is shown. Type in a suitable value.

To cancel the Offset, click Offset again.



To display any additional Statistics, check the boxes in the Ribbon. As soon as the box is check (or unchecked) the statistics will update.

You can also change the Force and/or Extension units if required. Any changes are applied immediately.

Extension	%	•
Force	kgf	•
Un	its	

To view the Test Report, click Print. This will take you to the Print Preview.



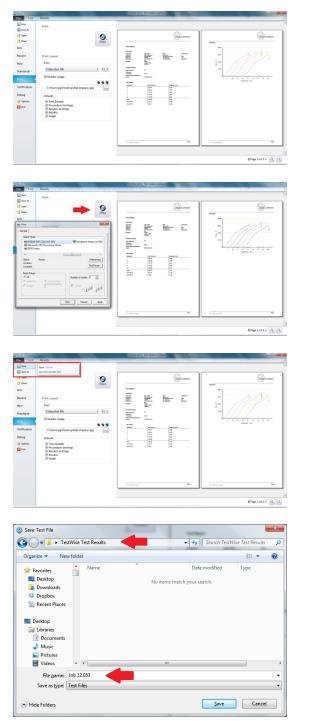
 Image: Second secon

 Image: Section of the section of t

You can change:

- the default font and size
- add a logo
- choose the details in the Test Report
- change the view
- print a hard copy

Another view.



#### Another view.

Clicking Print will now bring up the Windows Print dialog.

To Save the test data, select Save or Save As from the File menu.

The Save dialog is displayed.

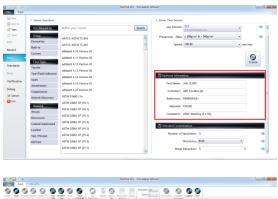
If a Default Path is defined (see Before You Begin Testing !) then this folder will be opened.

If required, edit the File Name, and then click Save.

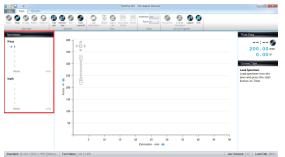
Congratulations - you have now completed your first test using **Titan**<sup>4</sup> and **TestWise**.

#### Making Changes During the Test

During a test it is sometimes necessary to change some of the details. This could be changing the number of specimens to be tested, deleting a specimen, adding a specimen, changing the break detection setting or changing the sample description or references (titles). This section shows how these changes can be made.



The Optional Information (or titles) can be added either at the start of the test or any time after.



By default, the selected Standard requires 5 specimens to be tested in each direction.

Die le	Results	TestWise 2012 - Test Analysis Software	C
		O         O	
Specimens Warp 1 2 3 •• 4 5	452.57 N 472.33 N 463.22 N		Titan Data : 200.00 m 0.00 M Current Task
Mean 1 2 3 4 5 Mean	462.70 N a/a		Laad Spectreen into the Jand period into the Jand and period the start button on Titan
		50	100

Jaw Scheme: T17 Loa

What if you need to change the number of specimens to 3.

Click the Stop button.

I III III      III       III       IIII       III       III	TextWise 2012 - Text Analysis Software	- C -
Start Services	Constant in the second se	
Base 15:		
	Extension - mm 🤫	
Standard: EN ISO 13934-1:1999 (200m	s) Test Name: Job 12.03 Ja	aw Scheme: T17 Load Cell: 600 N

. © 0 0 Click on File > Info. The test details will be displayed.

Change the number of specimens to 3. You can also edit other details on this screen.

When finished, click Apply.

To begin testing again, click Start.

Notice the number of specimens in each direction has changed to 3.

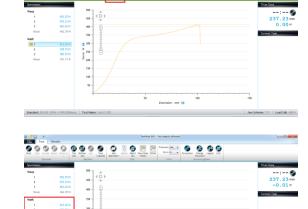
To add a specimen, click the Add Specimen button. You can add specimens to just one direction or both directions.

In this case, we are showing specimens being added to the weft direction.

An additional specimen has been added to the weft direction.

Test the additional specimen. The warp direction now has 3 specimens tested and the weft direction has 4 specimens tested.

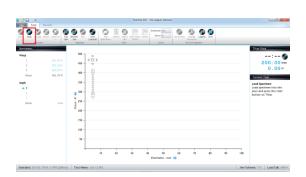
The number of specimens tested in each direction does not have to be equal.



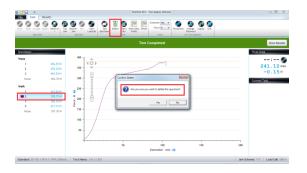
. mm 🖬

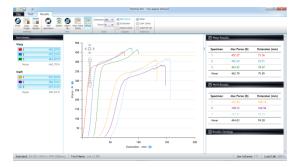
9 0 0

0



Apply





To delete a specimen, first select the specimen or specimens and then click the Delete button.

You will be prompted with a message asking for confirmation. The default response is No, do not delete. To delete, click Yes.

Note: once the specimen is deleted it cannot be restored.

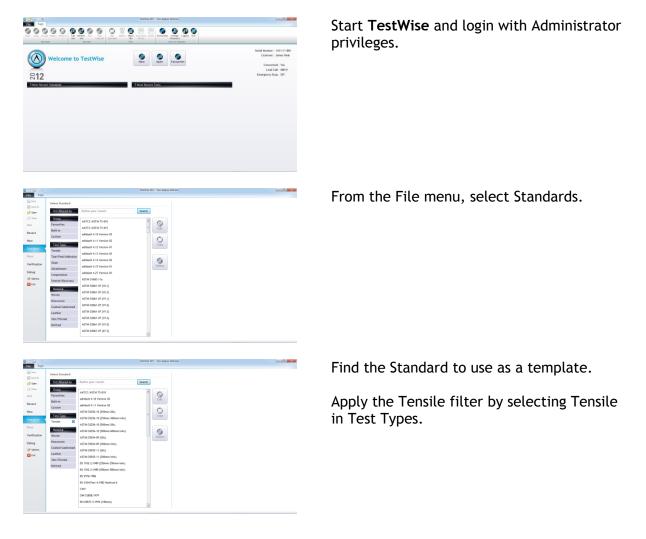
The final results.

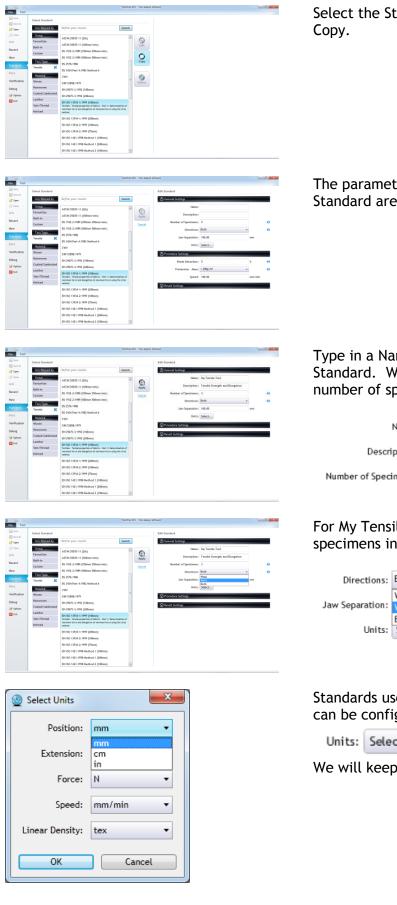
## **Creating Custom Standards**

You can create a Custom standard (or "user-defined standard) by copying an Built In standard. Built In Standards are those which are supplied by James Heal and installed with **TestWise**. You can Copy Built In Standards but you cannot edit them. Once a Custom Standard is created, you can edit or copy it.

Creating a Custom Standard is useful for creating both simple and complex standards. The system relies on editing a pre-existing Standard, therefore, Standards cannot be created from a blank template. This means you must choose a Standard which most resembles what you want to do and then use this as your template. In cases where this is not possible, please contact James Heal for help and advice.

In the following example we are going to create a new tensile test.





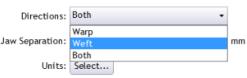
Select the Standard from the list and click

The parameter settings for the selected Standard are displayed.

Type in a Name and Description for the new Standard. We have also reduced the number of specimens from 5 to 3.

Name:	My Tensile Test
Description:	Tensile Strength and Elongation
Number of Specimens:	3

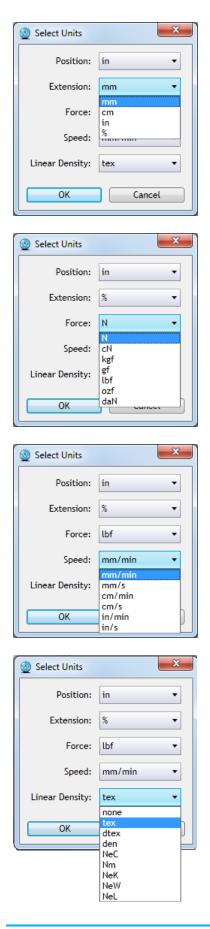
#### For My Tensile Test, I only want to test specimens in the weft direction.



Standards use a variety of units and these can be configured using:

Units: Select...

We will keep millimetres for the position.



#### For Extension select %.

For Force, select lbf (pounds force).

For Speed, keep mm/min.

Linear Density is only used in Yarn Tensile tests. If a linear density is specified the results are expressed as tenacity. If no linear density is specified, the results are expressed directly as force.

est					
	Select Standard				Edit Standard
	Ust filtered by	Refine your results	Search		🕐 General Settings
	Group Tayouttes	ASTM-05035-11 (28s)	۲	ADDA	Name: My Tendo Test
	Built-in	ASTM.05035-11 (300mm/min) 05 1932-2:1989 (250mm/250mm/min)			Description: Tessile Strength and Dongation Nambur of Specimens: 3
	Cestore	85 1932 2:1989 (500nm 500nm/min)		Cencel	Directions: Weft • 0
4	Tenste X	85 2576:1986 85 3424:Part 4:1982 Method 6			Jaw Separation: 10.00 in
ſ	Materia	BS 34245/wrt 4:1182 Method 6 CWV			Units: Select
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	Coated/Laninated				@ Result Settings
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	TestType	85 1932-2:1989 (500nm 500nm/min) 85 2576:1986			Pretension - Mass: < 200g/m <sup>3</sup> • No Pretension (pretension off) < 200g/m <sup>3</sup> • 200g/m <sup>3</sup> mm/min
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	Nonwoven	D IN 53858:1979 EN 29073-3:1992 (100mm)			
	Coated/Laminated				
	Tarn/Thread	EN ISO 13934-1: 1999 (100mm) Textiles - Textile properties of fabrics - Part 1: Deter	relation of		
	Kaitted		ng the strip		
		EN 50 13934-1:1999 (200mm) EN 50 13934-2:1999 (100mm)			
		EN ISO 13934-2:1999 (75mm)			
		EN ISO 1421:1998 Method 1 (100mm)			
		EN ISO 1421:1998 Nethod 1 (200mm) EN ISO 1421:1998 Nethod 2 (100mm)	×		
			TeilWise 30	912 - Test Analysis Sc	free C
	Select Standard				Edit Standard
	Ust filtered by	Refine your results	Search		© General Settings
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Enter a Jaw Separation (also known as Gauge Length or Gage Length). In this example we are setting a value of 10 inches.

Jaw Separation:	10.00	in
Units:	Select	

Select a Pretension value if required. Pretension is important when Elongation is being calculated. In this example, we are going to change the default to 200-500  ${\rm gm}^{-2}$  range.

Pretension - Mass:	< 200g/m <sup>2</sup>	•	
Speed:	No Pretension (pretension off) < 200g/m <sup>2</sup>		mm/min
	≥ 200g/m² & < 500g/m²		
	≥ 500g/m <sup>2</sup>		

Change the Speed, to 300 mm/min in this example.

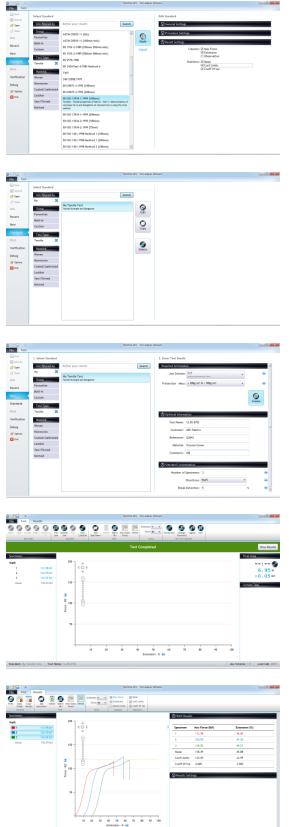
Break Detection:	5	%
Pretension - Mass:	≥ 200g/m² & < 500g/m² •	
Speed:	300	mm/min

To collapse or expand a Settings group, just click on the bar.

Check or uncheck any of the boxes as required.

Columns: V Max Force Extension Observation

Statistics: ♥ Mean ♥ Conf Limits ♥ Coeff Of Var



Click Apply to save the new Standard.



Search for the new Standard and select it. You can see that it is possible to edit or copy this Standard because it is User-Defined.

Create a test using the new Standard.

As normal, go to File > New and search for the Standard.



#### When the Test is Completed, click on the

shortcut to automatically select all the specimens and view the results.

View Results

Results of the new Standard "My Tensile Test".

Graphs shown with offset for clarity.