



# MH3D NEWS

## New TESA STAT-EXPRESS software option

Sébastien Granges, 16.06.2014

### Purpose



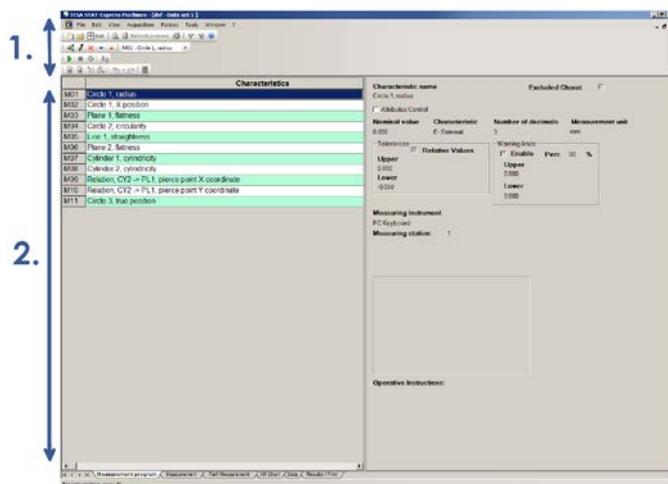
TESA STAT-EXPRESS MACHINE software version has been updated to match closely with the user-friendliness and the intuitiveness that describe the TESA-REFLEX philosophy.

Dedicated to the use of the software along with a CMM, a new function was developed and considerably decreases the global required time when setting up the software prior to any measurement.

### What is STAT-EXPRESS?

TESA STAT-EXPRESS is a SPC (Statistical Process Control) software. It provides different possibilities as real-time statistics calculation or automatic reports.

Once one has entered manually and described the different characteristics (radius, diameter, position, length,...) which are going to be measured, the software knows in which sequence data are coming in. Step by step it calculates the new statistical values once a new value has been received.



#### 1. Options

Buttons and setting zone

#### 2. Program

Each line correspond to a new characteristic corresponding to dedicated measuring values

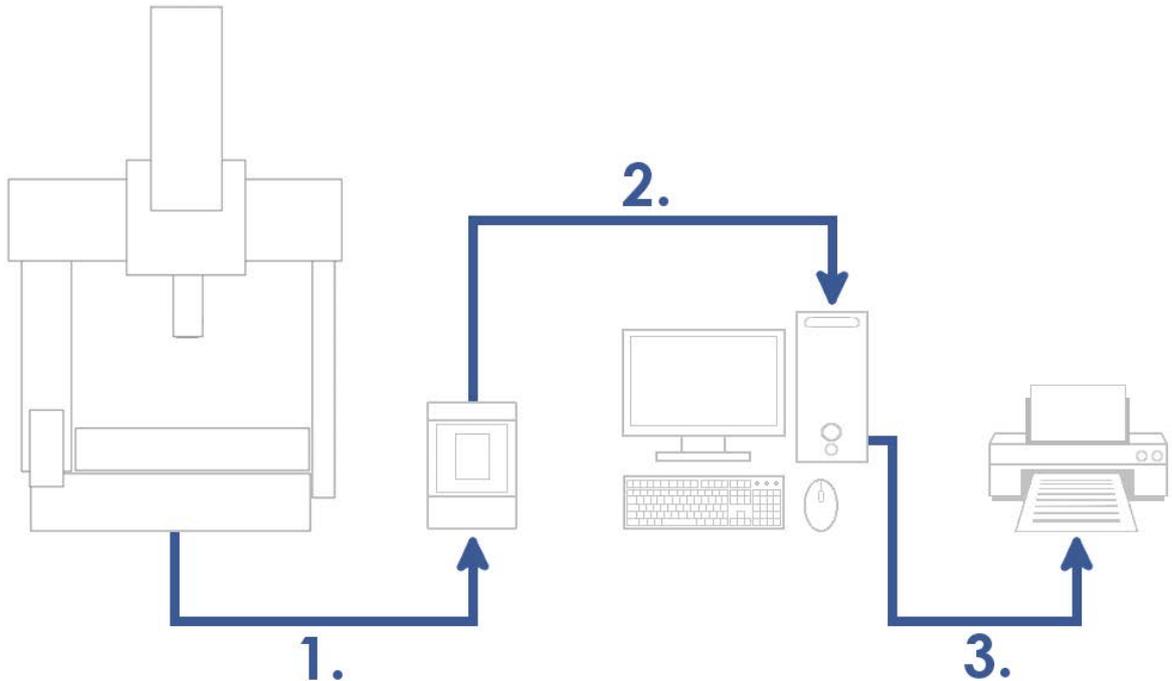
#### 3. Characteristic setting

View of the selected characteristic settings.





## How does it work?



### 1. Machine

When measuring touch trigger probe and encoders (machine position) signals are sent to the panel.

### 2. TESA-REFLEX panel

The panel processes received data and helps the user following the measuring program (if manual CMM) or manages the automatic measurement (if Dual CMM). Once “send through serial port” commands are reached in the measuring program, data are sent to the computer.

### 3. TESA STAT-EXPRESS

Data sent from the panel are automatically received by STAT-EXPRESS and statistics calculation can be performed and displayed in real time. At the end of a measuring cycle, it is possible to create automatically a measuring report and either sent in to a printer to have it in hardcopy or gets a \*.pdf of it.



## Why a new function?

Previous STAT-EXPRESS releases required the need of a manual program creation which was time consuming and made the process more complex doubling the user work. Indeed, two programs had to be created:

1. In TESA-REFLEX panel, this is the measuring program
2. In STAT-EXPRESS, for data management

The screenshot shows the TESA STAT-Express Machines software interface. The title bar reads "TESA STAT-Express Machines - [dsf - Data set 1]". The menu bar includes File, Edit, View, Acquisition, Folders, Tools, and Window. Below the menu bar is a toolbar with icons for List, Refresh preview, and other functions. A dropdown menu shows "M01 - Circle 1, radius". The main area contains a table with the following data:

Characteristics	
M01	Circle 1, radius
M02	Circle 1, X position
M03	Plane 1, flatness
M04	Circle 2, circularity
M05	Line 1, straightness
M06	Plane 2, flatness
M07	Cylinder 1, cylindricity
M08	Cylinder 2, cylindricity
M09	Relation, CY2 -> PL1, pierce point X coordinate
M10	Relation, CY2 -> PL1, pierce point Y coordinate
M11	Circle 3, true position

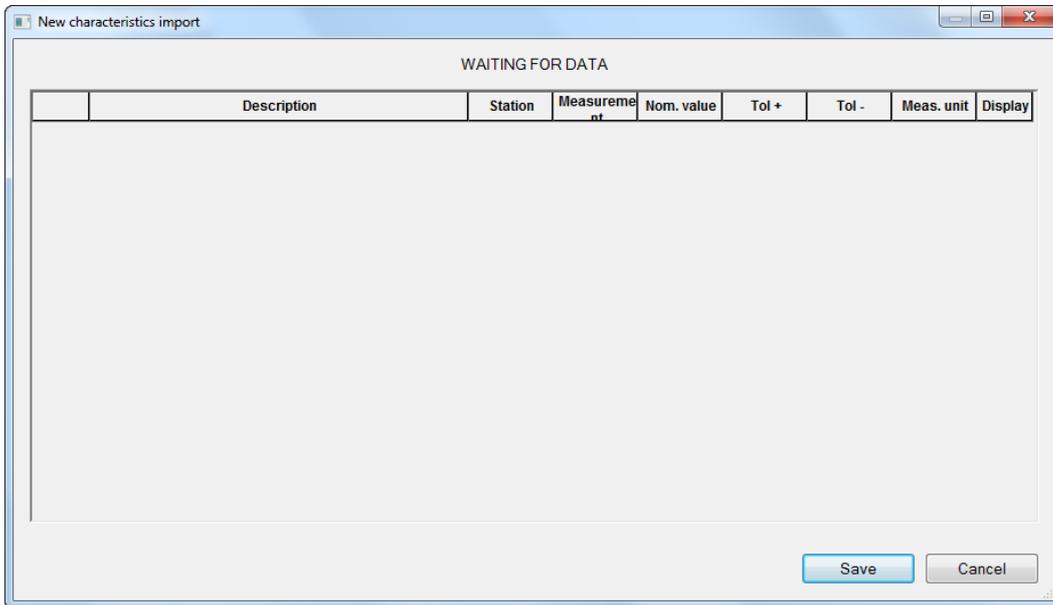
STAT-EXPRESS program example

The new function simplifies STAT-EXPRESS program creation prior to any data management and calculation from received measured values.

## What is this new function?

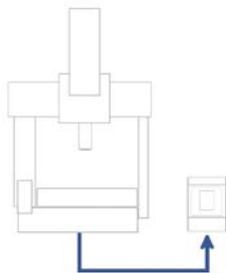
The principle is kept as simple as possible. The user gets a unique window (in STAT-EXPRESS) from which different parameters can be inserted manually and are always editable as:

- Characteristic's name
- Nominal value
- Upper and lower tolerance



STAT-EXPRESS « Import/edit value from MH3D » new window

The innovative aspect lies in the way characteristics are being created.



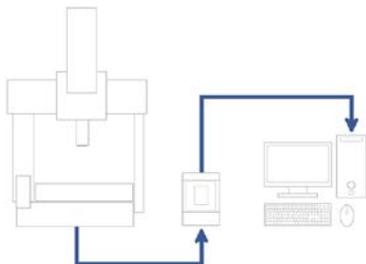
#### **Creating a measuring sequence**

- The user creates his program and stores it in his USB stick.
- The measuring sequence must include “send through serial port” commands.



#### **Setting STAT-EXPRESS**

- The new import window is enabled and ready to receive data.



#### **Recalling measuring program**

- The measuring sequence is recalled and run (manually or automatically)
- Once reaching “send through serial” commands, data are automatically sent to the computer where new characteristics lines are automatically created in STAT-EXPRESS.



New characteristics import

WAITING FOR DATA

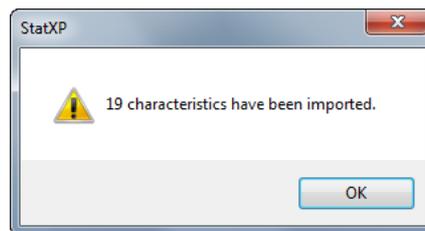
	Description	Station	Measurement	Nom. value	Tol +	Tol -	Meas. unit	Display
M01	Location Y, Point (8)	1	-36.4851	-36.6000	0.1000	-0.1000	mm	<input checked="" type="checkbox"/>
M02	3D Distance, Point (8)	1	82.9936	83.0000	0.0000	0.0000	mm	<input checked="" type="checkbox"/>
M03	Location Y, Point (12)	2	41.5402	41.4000	0.1000	-0.1000	mm	<input checked="" type="checkbox"/>
M04	3D Distance, Point (12)	2	87.3705	87.3000	0.0000	0.0000	mm	<input checked="" type="checkbox"/>
M05	Location X, Circle (16)	3	25.3934	25.4000	0.1000	-0.1000	mm	<input checked="" type="checkbox"/>
M06	Location Y, Circle (16)	3	-5.2787	-5.4000	0.0000	0.0000	mm	<input checked="" type="checkbox"/>
M07	Inside Diameter, Circle (16)	3	11.9866	12.0000	0.0000	0.0000	mm	<input checked="" type="checkbox"/>
M08	Roundness, Circle (16)	3	0.0000	0.0000	0.0000	0.0000	mm	<input checked="" type="checkbox"/>
M09	Radius, Circle (16)	3	5.9933	6.0000	0.0000	0.0000	mm	<input checked="" type="checkbox"/>
M10	Polar Radius, Circle (16)	3	25.9363	25.9677	0.0000	0.0000	mm	<input checked="" type="checkbox"/>
M11	Parallelism, Circle (16)	3	-11.743	-12.002	0.000	0.000	mm	<input checked="" type="checkbox"/>
M12	Inside Diameter, Circle (16)	3	11.9866	12.0000	0.0000	0.0000	mm	<input checked="" type="checkbox"/>
M13	Radius, Circle (16)	3	5.9933	6.0000	0.0000	0.0000	mm	<input checked="" type="checkbox"/>
M14	Roundness, Circle (16)	3	0.0000	0.0000	0.0000	0.0000	mm	<input checked="" type="checkbox"/>
M15	Inside Diameter, Circle (16)	3	11.9866	12.0000	0.0000	0.0000	mm	<input checked="" type="checkbox"/>

Save Cancel

STAT-EXPRESS « Import/edit value from MH3D » window with characteristics

In the above picture, the first red rectangle shows the nominal-tolerance values area. This is the location where these values can be changed at any time.

The second rectangle shows an important option. In order to gain time, no characteristics are normally removed (or hidden) in the TESA-REFLEX panel program directly. This implies that all characteristics of a results page will be sent to STAT-EXPRESS when running the program. Nevertheless, this option is the mean for a user to define whether a characteristic is to be kept or not. By un-ticking a line (and clicking on save button), this characteristic will be totally removed from the corresponding STAT-EXPRESS program.



Message example after running a program and un-ticking characteristics

Once tolerance have been set, STAT-EXPRESS is now ready to be used along with a TESA CMM and the corresponding measuring program in the TESA-REFLEX panel.



## Where can I find information?

### 1. STAT-EXPRESS GENERAL USER MANUAL

This file includes all details related to STAT-EXPRESS. This document is global and describes all STAT-EXPRESS options.

Document is downloadable from [here](#).

### 2. STAT-EXPRESS AND TESA CMM, USER MANUAL

User guide describing the steps required to use a TESA CMM (TESA-REFLEX panel) along with STAT-EXPRESS.

Document is downloadable from [here](#).

### 3. STAT-EXPRESS AND TESA CMM, VIDEO TUTORIAL

This is the video tutorial of the new option settings and use.

Document is downloadable from [here](#).

