



## CVIMONITOR

V 1.6.2.X

### User manual



#### Software

CVI CONFIG 1 user  
CVI CONFIG 5 users  
CVI CONFIG 25 users

#### Part number

6159276990  
6159277000  
6159277010



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## Original instructions

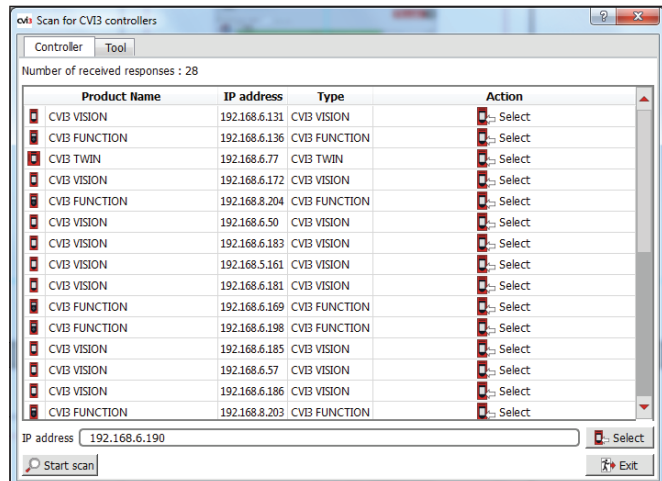
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## 1 - GETTING STARTED

### 1.1 - Running in standalone

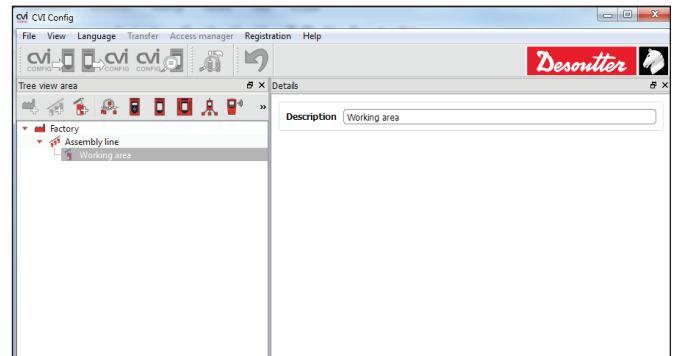
At program startup, a scan is automatically performed to detect the connected controllers.



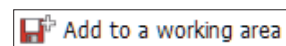
- If you already know the IP address of the controller you want to monitor, enter it and click "Select".
- If not, let the scan start and wait until all connected controllers are listed.
- Select the controller and click "Select" in the column action.

## 1.2 - Running with CVI CONFIG

- Launch CVI CONFIG.



- In the Tree view area, go to "Working area" and click this icon to start the scan.



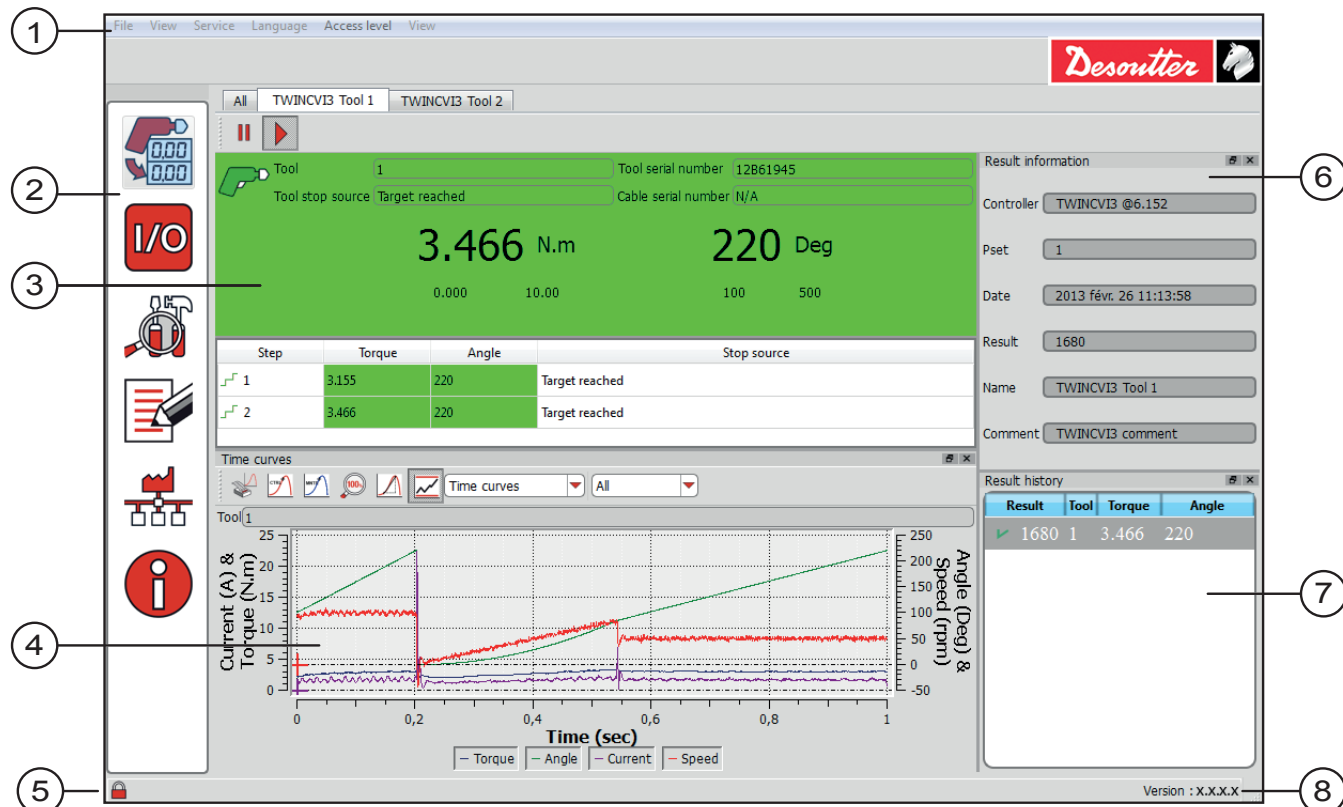
- Select the controller you want to connect and click this icon in the column "Action".



- Select the controller in the Tree view area and click this icon to launch CVIMONITOR.

## 2 - OVERVIEW

When you first launch CVIMONITOR, the following screen is displayed:



### Legend

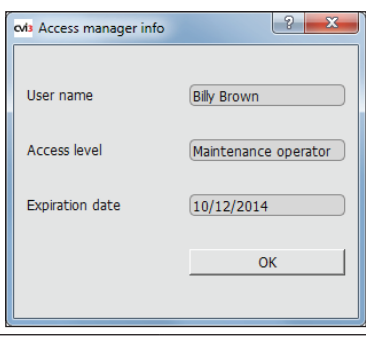
- 1 Menu area
- 2 Tool bar
- 3 Result monitoring
- 4 Curve
- 5 Access level
- 6 Result information
- 7 Result history
- 8 Software version



It is possible to rearrange the display as desired by anchoring / undocking the views of the main screen. To do it, use the view menu or open/close the windows.

## 2.1 - Menu area

On the top left of the screen, this area leads to:

|              |                                                                                                                                                                                                                                              |                                                                                                               |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| File         |  Exit                                                                                                                                                       | <ul style="list-style-type: none"> <li>Click "File" and then the icon to exit the program.</li> </ul>         |
| View         | <div>Monitoring</div> <div>IO monitoring</div> <div>User info</div>                                                                                                                                                                          | <ul style="list-style-type: none"> <li>Tick any of these views to have it displayed when required.</li> </ul> |
| Service      | <ul style="list-style-type: none"> <li>Select the torque unit :<br/>Nm / Kg.m / Kg.cm / ft.lb / in.lb / oz.in</li> </ul>                                                                                                                     |                                                                                                               |
| Language     | <ul style="list-style-type: none"> <li>Select the language.</li> </ul>                                                                                                                                                                       |                                                                                                               |
| Access level |                                                                                                                                                             | <p>By default, the function is not enabled. The padlock on the bottom left of the screen is closed.</p>       |
|              | <p>To activate the access level, you need to have a USB stick with the right profile (configured with the Desoutter CUIKEY software).</p> <ul style="list-style-type: none"> <li>If not, contact your CUIKEY manager for support.</li> </ul> |                                                                                                               |
|              | <ul style="list-style-type: none"> <li>Connect the USB stick to the PC.</li> <li>Click "Information".</li> </ul>                                           |                                                                                                               |
| View         | <ul style="list-style-type: none"> <li>Select the address format: <ul style="list-style-type: none"> <li>hexa</li> <li>decimal</li> </ul> </li> </ul>                                                                                        |                                                                                                               |

## 2.2 - Tool bar



Monitoring



I/O monitoring



Maintenance



User info



Fieldbus diagnostic



Software version

## 3 - RESULT MONITORING

This screen will show you:

- The result in real-time, global or detailed per step and with the reason for the stop.
- The results curves, information and history.



- Click this icon to display the screen.

### 3.1 - View management

The view menu allows to adapt the display to your needs.

| View          | Service | Language | Access level                        | About              |
|---------------|---------|----------|-------------------------------------|--------------------|
| Monitoring    |         |          | <input checked="" type="checkbox"/> | Result information |
| IO Monitoring |         |          | <input checked="" type="checkbox"/> | Result history     |
| User info     |         |          | <input checked="" type="checkbox"/> | Result curves      |

- Tick the selected area or all areas to display the views at your convenience.

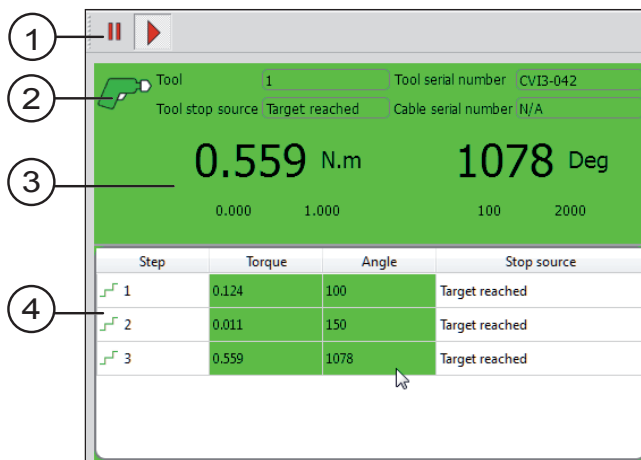
### 3.2 - Global result / Result per step

A global result is an aggregated result for all spindles/tools results. For example, a spindle can be OK while the global is NOK (because another spindle is NOK).

The tool status shows the result for one tool.

The step result shows the result for a specific step.

#### 3.2.1 - Example of report OK



#### Legend

- 1** Pause/start
- 2** Tool information
- 3** Global result and tolerances
- 4** Result per step



Disables the real-time refreshing



Enables the real-time refreshing



- To have the "Result per step" recorded in the tightening results, be sure you have previously ticked the box "Store results" in the general parameters of the step (CVI CONFIG).

### 3.2.2 - Tool information

|                     |                                                                                              |            |
|---------------------|----------------------------------------------------------------------------------------------|------------|
| Tool status         |                                                                                              | Report OK  |
|                     |                                                                                              | Report NOK |
| Tool number         | 1/2/51                                                                                       |            |
| Tool serial number  | Manufacturer data                                                                            |            |
| Tool stop source    | <ul style="list-style-type: none"> <li>- Target reached</li> <li>- Reason for NOK</li> </ul> |            |
| Cable serial number | Manufacturer data                                                                            |            |

### 3.2.3 - Result per step

|                  |                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                      |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Step status      |                                                                                                                                                                                                                                                                                                                                                      | Report OK                                                                                                            |
|                  |                                                                                                                                                                                                                                                                                                                                                      | Report NOK                                                                                                           |
| Step number      | Up to 15 different steps can be saved in a Pset.                                                                                                                                                                                                                                                                                                     |                                                                                                                      |
|                  |                                                                                                                                                                                                                                                                                                                                                      | Up to 100 steps can be saved with the results because some steps such as "Action on NOK" can be repeated many times. |
| Monitoring       | <p>For all control strategies, torque and angle are systematically monitored.</p> <p>The other monitorings are:</p> <ul style="list-style-type: none"> <li>- peak torque</li> <li>- final angle</li> <li>- current/check at end</li> <li>- slip off</li> <li>- stick slip</li> <li>- time</li> <li>- rundown angle</li> <li>- torque rate</li> </ul> |                                                                                                                      |
| Step stop source | <ul style="list-style-type: none"> <li>- Target reached</li> <li>- Reason for NOK</li> </ul>                                                                                                                                                                                                                                                         |                                                                                                                      |

### 3.2.4 - Workgroup

In the example below, the workgroup is composed of 3 tools.



- Maximize the screen format to view all the tiles.
- One tile shows the results of one tool.
- The color of the tile shows the tool status.
- The color of the background shows the general status.

When the tool is not part of the workgroup, the tile is grey.



The tool is disconnected.



The secondary controller is disconnected.

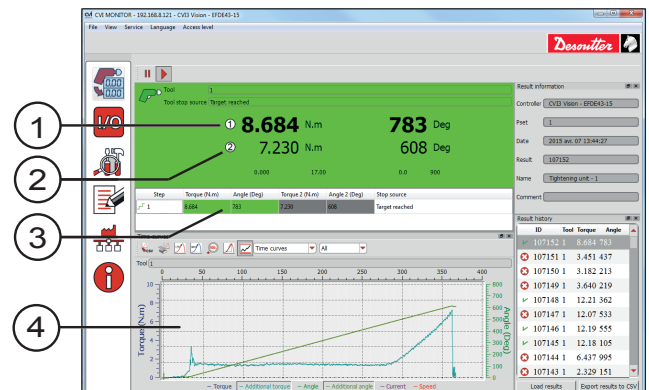


Any other locking reason.

### 3.3 - Additional transducer

When an additional transducer is detected on the tool, the display of the results and curves changes accordingly to the supervision mode set in "CVI CONFIG" software.

#### 3.3.1 - Consistency mode



In this example, the global result is declared "OK".

The drift between both transducers is within the tolerances set in "CVI CONFIG".

#### Legend

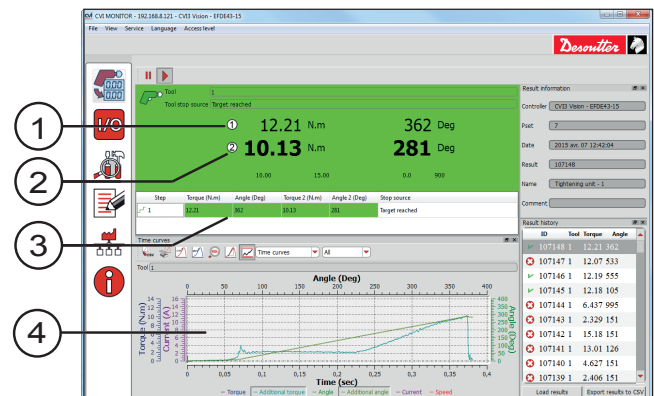
- 1 Embedded transducer
- 2 Additional transducer
- 3 Torque and angle values per step
- 4 Curves of additional torque and additional angle



The torque and angle values of the control transducer are in bold type.

In the consistency mode, there are no trends for the monitoring transducer: values are in grey.

#### 3.3.2 - Redundancy mode



In this example, the global result is declared "OK".

The drift between both transducers is within the tolerances set in "CVI CONFIG".

#### Legend

- 1 Embedded transducer
- 2 Additional transducer
- 3 Torque and angle values per step
- 4 Curves of additional torque and additional angle



The torque and angle values of the monitoring transducer are in bold type.

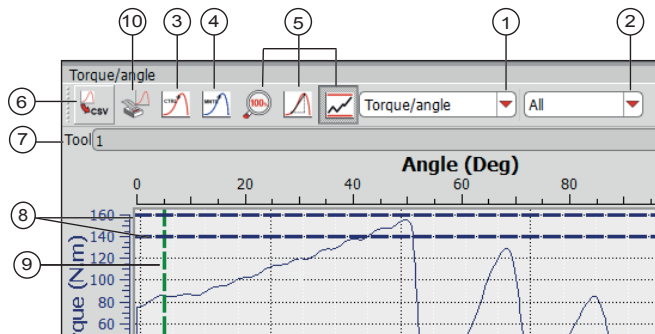
### 3.4 - Result curves

The result curves are the last 20 of the controller.

The OK/NOK curves distribution is depending on the configuration set either in the controller or in CVI CONFIG.



- Press the "Pause" icon before working on the curve.



#### Legend

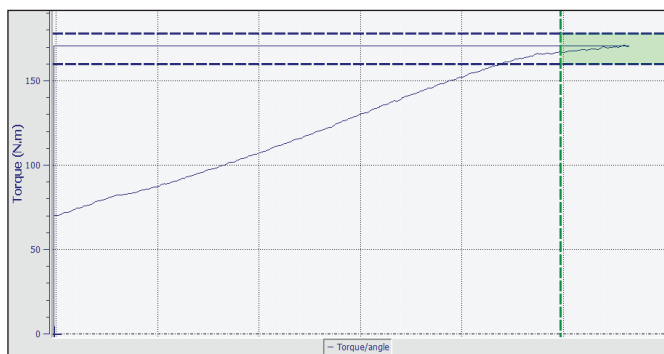
- 1 Type of curve
- 2 Step selection
- 3 Control markers
- 4 Monitoring markers
- 5 Zoom/Slope calculator/Clear
- 6 Export to .csv file
- 7 Tool number
- 8 Torque tolerances
- 9 Angle tolerances
- 10 Print curve

#### 3.4.1 - Types of curve

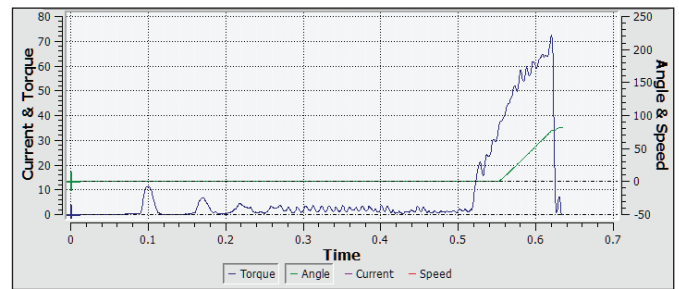
|                            |                                                                                               |
|----------------------------|-----------------------------------------------------------------------------------------------|
| Torque and angle           | This type is the most commonly used.                                                          |
| Torque/Overall angle curve | This type of curves is used to see the angle over several steps or from the tightening start. |
| Time curves                | see below.                                                                                    |

- Click the icons at the bottom of the screen to activate or not the curves display.

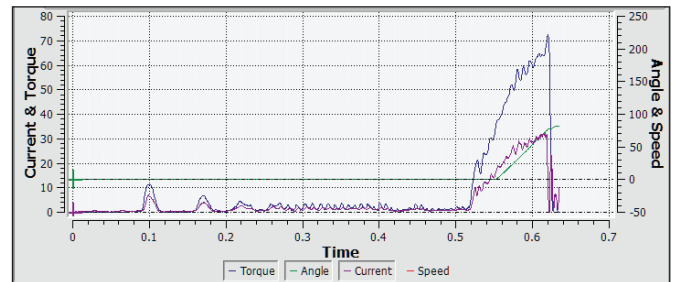
#### Torque and angle



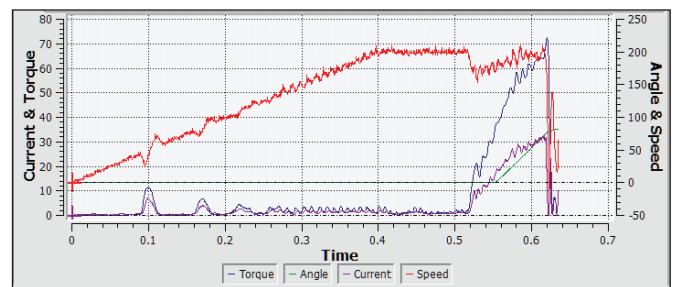
#### Torque and angle versus time



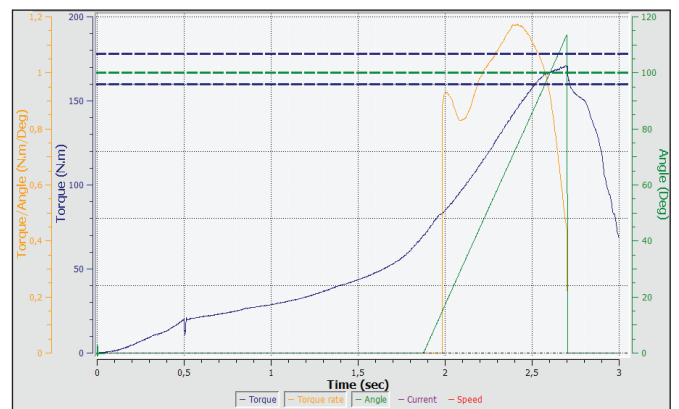
#### Torque, angle and current versus time



#### Torque, angle, current and speed versus time



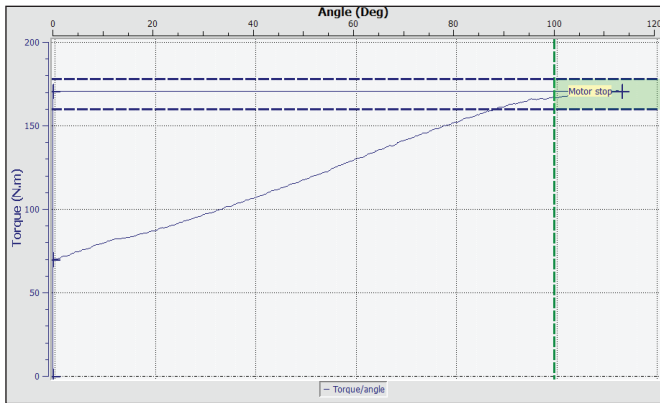
#### Torque rate versus time



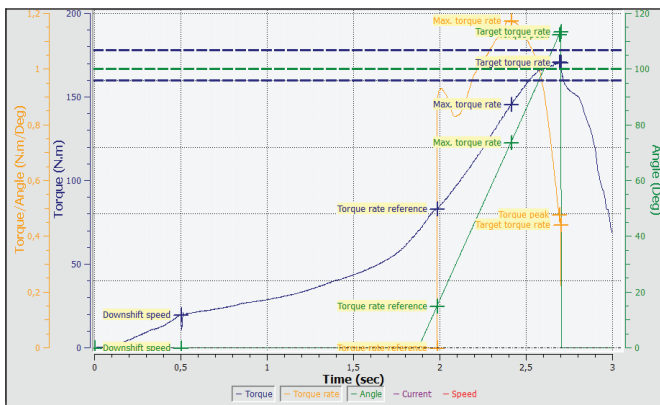
#### 3.4.2 - Step selection

- Select to display the curve for all steps or for a specific step.

### 3.4.3 - Control and monitoring markers



**Monitoring markers** For example:  
- Motor stop

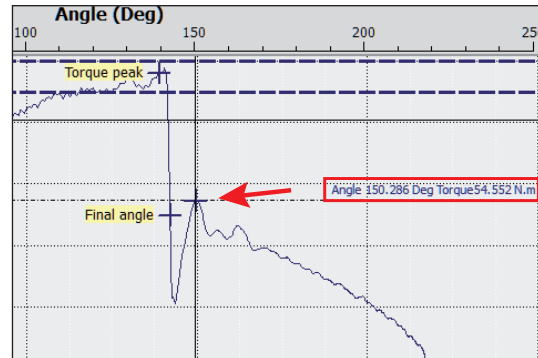


**Control markers** For example:  
- Torque peak  
- Final angle  
- Target torque rate

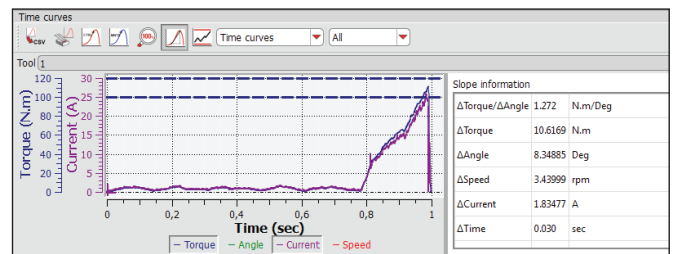
### 3.4.4 - Zoom



- Use the mouse to click and draw the area.
- Use the right click of the mouse to come back to the previous view.
- Use the mouse to follow the points and mark a specific area:



### 3.4.5 - Slope calculator



Slope information is shown on the right side of the curve.



- Use the mouse to draw the area.
- Click this icon to clear the Zoom or Slope display.

Example of information:

| Slope information                        |         |         |
|------------------------------------------|---------|---------|
| $\Delta\text{Torque}/\Delta\text{Angle}$ | 1.272   | N.m/Deg |
| $\Delta\text{Torque}$                    | 10.6169 | N.m     |
| $\Delta\text{Angle}$                     | 8.34885 | Deg     |
| $\Delta\text{Speed}$                     | 3.43999 | rpm     |
| $\Delta\text{Current}$                   | 1.83477 | A       |
| $\Delta\text{Time}$                      | 0.030   | sec     |

### 3.4.6 - Export to .csv file



- Click this icon to export the curve to a file named "Curves.csv" by default in the folder "C:\Program Files\Desoutter\CVI CONFIG\cvi3monitor" by default.

### 3.4.7 - Printing the curve



- Click this icon to print the curve.

### 3.5 - Result information

This screen enables you to monitor the tightening process in real-time.

Example of screen:

The following details can be displayed:

- Controller name
- Pset number
- Assembly Process number
- Batch count
- Vin number
- Result date and time
- Result number
- Result name
- Comment
- Tightening Unit name
- Identifier name (up to 10 different identifiers can be scanned by a barcode or sent via Open Protocol/Fieldbus/CVILOGIX).

### 3.6 - Result history

This screen shows the overview of the last 100 results.

|   | ID   | foo | Torque | Angle |
|---|------|-----|--------|-------|
| ✓ | 8423 | 51  | 17.00  | 356   |
| ✗ | 8422 | 51  | 17.08  | 357   |
| ✓ | 8421 | 51  | 17.00  | 371   |
| ✗ | 8420 | 51  | 17.12  | 401   |
| ✗ | 8419 | 51  | 17.31  | 368   |
| ✓ | 8418 | 51  | 17.00  | 343   |
| ✗ | 8417 | 51  | 17.09  | 327   |

The information is displayed as follows:

|                 |               |                                                                                     |            |
|-----------------|---------------|-------------------------------------------------------------------------------------|------------|
| Result ID       | Result status |  | Result OK  |
|                 |               |  | Result NOK |
|                 | Result number |                                                                                     |            |
| Tool number     |               |                                                                                     |            |
| Measured values |               |                                                                                     |            |

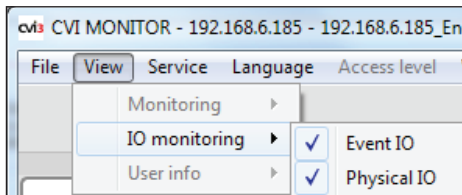
|                       |                                                                                                                                                                        |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Load results          | <p>This function is used to view earliest results.</p> <ul style="list-style-type: none"> <li>Click this icon to upload the last 100 results from the tool.</li> </ul> |
| Export results to CSV | <ul style="list-style-type: none"> <li>Click this icon to save a "Results.csv" file in C:\Program Files\Desoutter\CVILauncher.</li> </ul>                              |

## 4 - I/O MONITORING

This screen shows the real-time status of the I/O and events of the connected controller/tightening unit/tool.

### 4.1 - View management

The view menu allows to adapt the display to your needs.



- Tick the selected area or all areas to display the views at your convenience.

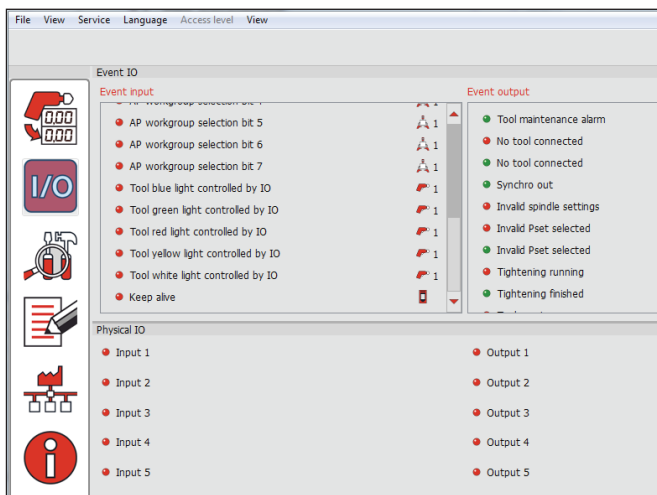
### 4.2 - Events and physical I/O

Events IO are IO functions that can be assigned to a physical input or output.

Physical IO are hardware 24V inputs or outputs.



- Click the icon to display the screen.



● I/O or event ON

● I/O or event OFF

Events can be sorted as follows:



by controller



by tightening unit



by tool

### 4.3 - How to test the outputs



**When testing the outputs, the user must make sure that the forced output is NOT connected to an actuator that may hurt the operator.**

This function is available only if the CVIKEY profile service is used.

- Contact your CVIKEY administrator for support.
- If available, click "Unforce outputs" to return to the original state.
- Click the physical output to force or unforce the relays.

## 5 - MAINTENANCE

This chapter will enable you to:

- read the counters of the tools, controller and cables
- set preventive maintenance alarms
- reset the counters and alarms
- monitor the cable serial number
- read all data related to the tool cable
- read all data related to the tool
- read all data related to the additional transducer
- read the definitions of the trigger and the fixed accessories
- declare the tool barcode reader
- test the LEDs and the triggers
- test and align the motor
- test the embedded or additional transducer
- calibrate the tool
- maintain and check cord or wireless battery tools
- check the network connection
- set up the ExBX Wi-Fi parameters



- Do not run tests or actions at the same time.



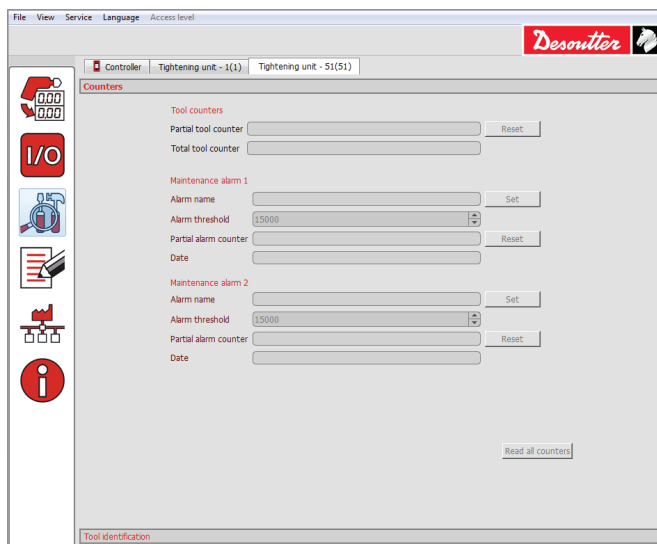
- To change the settings, you will need to plug your USB key supplied by your CVIKEY manager. The padlock at the left bottom of the screen will be then unlocked.
- Refer to chapter "Menu area" at the beginning of this manual.



- Maintenance screens are not displayed in real-time.



- Click this icon to display the screen.



- On the top of the screen, click the tab of the controller or the tool you want to view. The name of the tab is made of the tightening unit name followed by the tool number into brackets.

Maintenance settings may be different per Tightening Unit.



Screens may be different depending on the type of tool (cord/wireless/CVI II range/CVI3 range) and/or depending on the tool configuration (removable accessories, tool barcode reader, etc...).

### 5.1 - More features with CVIKEY service

With CVIKEY service, you are allowed to:

- write to tool
- reset partial counters
- run the tool tests
- Contact your Desoutter representative for support.

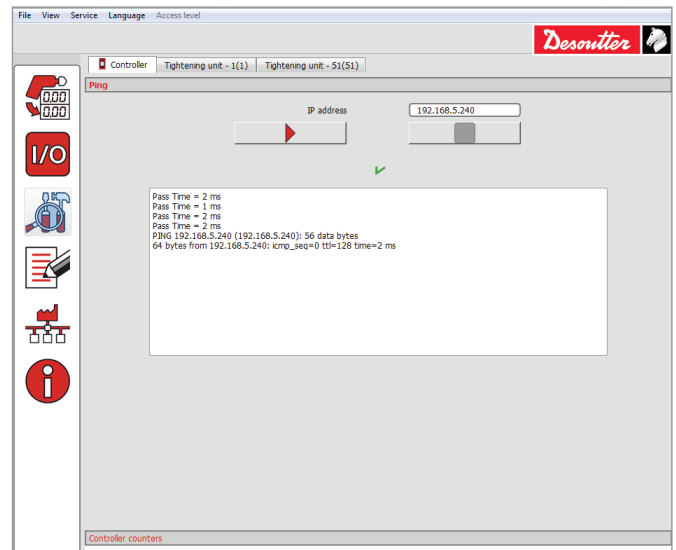
### 5.2 - Controller

#### 5.2.1 - Ping

This function is used to check the network connection with any device connected on the network.

- Select the IP address to ping.

There are 4 attempts.

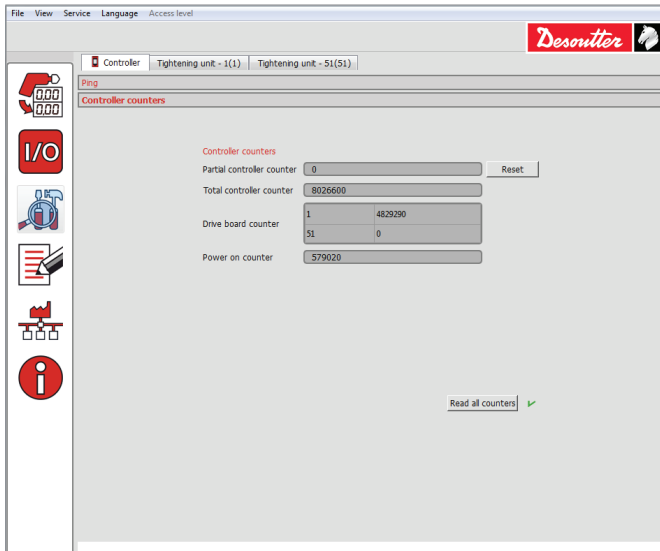


- Click this icon to start the process.



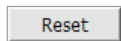
- Click this icon to stop the process.

## 5.2.2 - Counters



The following information is displayed:

- Partial controller counter.

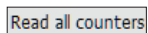


- Click this icon to reset the counter. A green tick will be then displayed.

For reading only:

- Total controller counter
- Drive board counter
- Power on counter

- Click this icon to refresh the display.



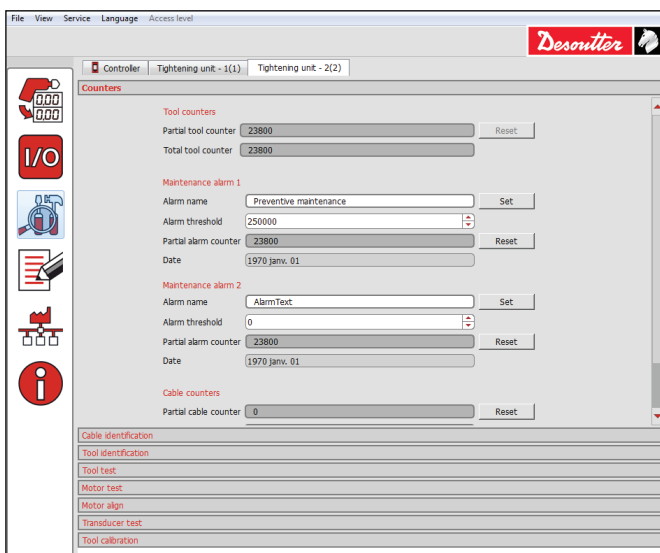
When OK, a green tick is displayed.

- If not, try once again because the tool can be busy.

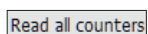
## 5.3 - Tool counters



- Click this icon to display the screen.



- Click this icon to refresh the display.



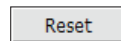
When OK, a green tick is displayed.

- If not, try once again because the tool can be busy.

## 5.3.1 - Partial and total counters

Partial and total counters are displayed per tool.

The total tool counter cannot be reset.



- Click this icon to reset the partial counter. A green tick will be then displayed.

## 5.3.2 - Maintenance alarms

Two different maintenance alarms are possible per tool.

- Customize the text in "Alarm name".
- Enter the number of tightenings in "Alarm threshold".
- Click "Set" to validate. A green tick is displayed.
- Once the maintenance is performed, click "Reset" to reset the alarm counter and the date.

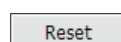


- When set at 0, the maintenance alarm is not activated.

## 5.3.3 - Cable counters

Partial and total counters are displayed per tool.

The total cable counter cannot be reset.



- Click this icon to reset the partial counter. A green tick will be then displayed.

## 5.4 - Cable identification



- Click this icon to display the screen.

|                             |                    |
|-----------------------------|--------------------|
| <b>Cable identification</b> |                    |
| Cable identification        |                    |
| Cable serial number         | 29081100022 Set    |
| User comment                | User comment Set ✓ |
| Application version         | 2.2.0              |
| Boot loader version         | 3.3.33             |
| Production date             | 30/05/2013         |
| Warranty date               | 01/01/1970         |

- Enter the cable serial number and the user comment.
- Click "Set" to validate. A green tick is displayed.

For reading only:

- Application version
- Boot loader version
- Production date
- Warranty date

## 5.5 - Tool identification (read-only)

### Tool identification

- Click this icon to display the screen.

|                              |                                                    |                                                 |                               |                                         |
|------------------------------|----------------------------------------------------|-------------------------------------------------|-------------------------------|-----------------------------------------|
| Identification               | Serial number                                      | 12C65405                                        | Boot loader version           | 1.1.2                                   |
|                              | Model                                              | EAD32-900                                       | HW Version                    | 2                                       |
|                              | User comment                                       | UserComment                                     | Tool family                   | CVB3                                    |
|                              | Production date                                    | 10/05/2012                                      | Motor type                    | EB4                                     |
|                              | Warranty date                                      | 01/01/2010                                      | Tool type                     | Anglehead                               |
|                              | Tool max. torque                                   | 32.00 N.m                                       | Gear ratio                    | 28.5938                                 |
|                              | Tool max. speed                                    | 900 rpm                                         |                               |                                         |
|                              | Manufacturer name                                  | Desoutter                                       |                               |                                         |
|                              | Application version                                | 2.3.1                                           |                               |                                         |
|                              | Tool release                                       | 39                                              |                               |                                         |
| Transducer                   | Calibration value                                  | 32.00 N.m                                       | Torque last calib. date       | 01/01/2010                              |
|                              | Initial calibration value                          | 32.00 N.m                                       | Torque next calib. date       | 01/01/2010                              |
|                              | Tightenings since last calibration                 | 112724314                                       | Torque/current factor         | 2.47516                                 |
| Temperature                  | Motor temp. limit                                  | 70 °C                                           | Alarm temp release limit      | 60 °C                                   |
| Trigger definition           | <input checked="" type="checkbox"/> Handle trigger | <input type="checkbox"/> Front trigger          |                               |                                         |
| Fixed accessories definition | <input checked="" type="radio"/> None              | <input type="radio"/> Crowfoot                  | <input type="radio"/> Tubenut | <input type="radio"/> Torque multiplier |
| eLBNK modules definition     | <input type="radio"/> None                         | <input checked="" type="radio"/> Barcode reader |                               |                                         |

Read from tool Write to tool Read from file

- Click this icon refresh the display. When OK, a green tick is displayed.
- If not, try once again because the tool can be busy.



**Modifications are available for Desoutter technicians only.**

## 5.6 - Additional transducer identification (read-only)

When the tool is equipped with an additional transducer, a new tab is automatically displayed.

|                |                                    |             |
|----------------|------------------------------------|-------------|
| Identification | Serial number                      | 1234567890  |
|                | Model                              | CVB3-ST443  |
|                | User comment                       | UserComment |
|                | Production date                    | 01/01/1970  |
|                | Warranty date                      | 01/01/2010  |
|                | Tool max. torque                   | 50.00 N.m   |
|                | Tool max. speed                    | 2000 rpm    |
|                | Application version                | 2.3.1       |
|                | Tool release                       | 39          |
| Transducer     | Calibration value                  | 23.01 N.m   |
|                | Initial calibration value          | 32.45 N.m   |
|                | Tightenings since last calibration | 20          |

Read from 2nd sensor

|                         |            |
|-------------------------|------------|
| Boot loader version     | 1.1.2      |
| Gear ratio              | 1.2864     |
| Torque last calib. date | 07/04/2015 |
| Torque next calib. date | 06/04/2016 |



**Modifications are available for Desoutter technicians only.**

## 5.7 - Tool upgrade firmware

### Upgrade Firmware

- Click this icon to display the screen.

☒ Rescue mode

**Tool information**

Serial number

Tool model

Application version

**Cable info**

Serial number

Application version

Boot loader version

Read from tool Write to tool Read from file

Data displayed in this screen are for information only.



The "Rescue mode" can be checked in case of first upgrade of firmware failure and when the tool is not recognized by CVI MONITOR.



**Modifications are available for Desoutter technicians only.**

## 5.8 - Tool test

### Tool test

- Click this icon to display the screen.

**Led/Trigger test**

Main trigger ☒

Reverse trigger ☐

Front start trigger ☐

Middle course trigger ☐

Start Led/Trigger test

**Temperature measurement**

Motor temperature 25.2 °C

Electronic temperature 42.0 °C

The LED test lit the tool LEDs to check that the hardware is correctly working.

A green tick will show which trigger is active.

- Click "Start Led/Trigger test" to start/stop testing.

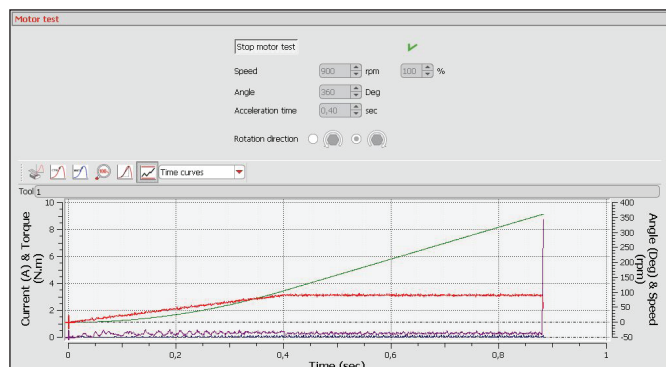
## 5.9 - Motor test

### Motor test

- Click this icon to display the screen.

This screen enables you to easily test the tool motor speed instead of running a Pset. The speed can then be controlled by an external tachometer.

- Select the test condition values.
- Click "Start motor test" to start.



The tool will run at the selected speed.

- Click "Stop motor test" to stop.
- If required, restart the test with another speed selection.

## 5.10 - Motor align

### Motor align

- Click this icon to display the screen.



**For CVI3 range only !**  
**Available for Desoutter technicians only.**  
**It is mandatory to calibrate the tools after they have been modified.**

The Motor align procedure is normally not needed as the tools are tuned in production.

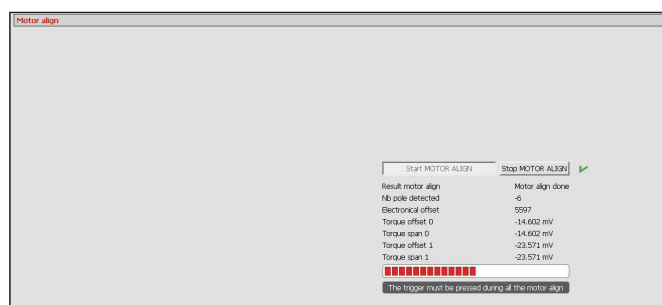
However, it is recommended to tune the motor in case of:

- motor change or disassembly
- transducer change
- tool circuit board change
- tool equipped with an additional transducer



**Warning!**  
**Before starting, press the trigger and KEEP IT PRESSED DURING THE COMPLETE PROCESS:**  
**if not, the tool could be severely damaged.**

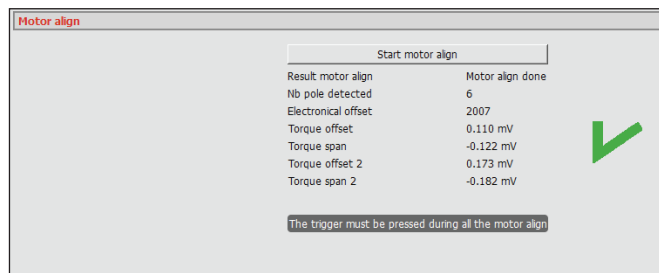
- Press the trigger.
- Click "Start MOTOR ALIGN" to start the process.



The process will run during around 1 min. and will stop automatically.

| Torque offset/span values |                       |
|---------------------------|-----------------------|
| 0                         | embedded transducer   |
| 1                         | additional transducer |

- Click "Stop MOTOR ALIGN" to stop the process before the end.
- Release the trigger.



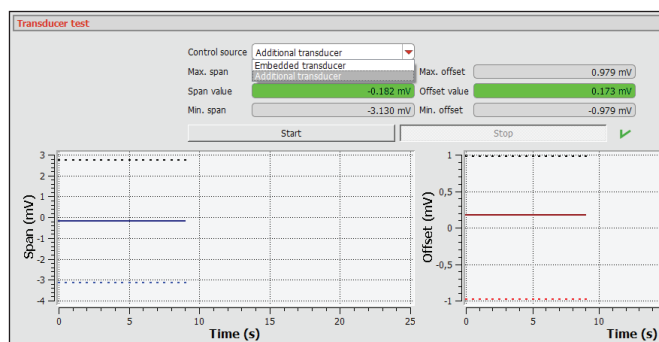
## 5.11 - Embedded or additional torque transducer test

This screen allows to test the status of the embedded or additional torque transducer (depending on the tool).

### Transducer test

- Click this icon to display the screen.

- Select which transducer to test.



### 5.11.1 - Torque span test

The purpose is to monitor the drift of the torque transducer and amplifier line gain. An unbalance is applied to the torque transducer. The measurement is compared to a reference value.

If the measurement is out of min. and max. limits, there is a "Span failure" and the tool cannot start.

### 5.11.2 - Torque offset test

The purpose is to verify the zero drift of the torque transducer. The torque transducer being stress-free, the transducer zero is measured.

If the measurement is out of min. and max. limits, there is an "Offset failure" and the tool cannot start.



Both tests are run at each Pset start.

They are also performed when the option "Torque transducer offset and span check" in CVI CONFIG is checked at "yes".

- Click "Start" to launch both tests.
- Click "Stop" to stop the process before the end.

### 5.12 - Tool calibration

**Tool calibration**

- Click this icon to display the screen.



- Check that the serial port parameters are the same in CVI CONFIG software and Delta measuring unit.

#### 5.12.1 - Standard tool

- Select the tool calibration mode:



The tool target torque reached must be measured by the Desoutter Delta measuring unit.

#### 5.12.2 - Tool and fixed accessory

The process is the same than with a standard tool.

Two conditions must be checked:

- The tool has to be calibrated with its accessory mounted.
- The tool must be ready to use (the actual efficiency coefficient is taken into account during the calibration operation).

### 5.12.3 - Removable accessory



Before starting, be sure that the tool is correctly calibrated.

- Select a Pset configured with a removable accessory.
- Select then the associated removable accessory.

- Start the calibration.

#### 5.12.4 - Tool with additional transducer

The process is the same than with a standard tool.

- Select which transducer to calibrate:
  - embedded transducer
  - additional transducer
  - both transducers

#### 5.12.5 - Manual mode

- 1 - Click "Update Pset list" to get the latest Psets stored in the controller.
- 2 - Click "Pset selection" and select either an "Automatic Pset" or a customized Pset.
- 3 - Select the number of tightenings to perform (5 by default, 32 as a maximum). According to the test bench use, the tightening may be preceded by a loosening.
- 4 - Click "Start calibration".
- 5 - Start performing the first loosening / tightening operation. The operation must be successful. If not, Click "Start calibration" and re-start the operation.
- 6 - At the end of each operation, read the measured torque value on the Delta unit and type it on the screen.
- 7 - When all the tightenings are performed, click "Calculate" to determine the new calibration value.

### 5.12.6 - Manual and Delta mode

The procedure is the same as for the manual mode up to paragraph 5.

- 6 - At the end of each operation, the measured torque value is automatically transmitted by the measuring unit to the controller and then displayed on the screen.
- 7 - When all the tightenings are performed, the new calibration value is automatically determined and displayed on the screen.

### 5.12.7 - Autostart and Delta without loosening

In this mode, the Pset is automatically selected.

There is no loosening to perform before a tightening and it is recommended to use a dynamic joint simulator bench.

The number of tightenings is performed automatically by the controller.

- Select the number of tightenings to perform (5 by default, 32 as a maximum).
- Click "Start calibration".

Each measured torque value is automatically transmitted by the Delta unit to the controller and then displayed.

When all the tightenings are performed, the new calibration value is automatically determined and displayed.

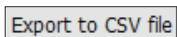
### 5.12.8 - Autostart and Delta with loosening

The procedure is the same as for the "Autostart and Delta without loosening" mode excepting that the loosening operations are mandatory.



In this mode, the calibration process stops if not started by a tightening. If not, it is mandatory to perform manually a loosening before restarting the automatic calibration.

### 5.12.9 - Export to .csv file



- Click this icon to export the calibration values to a file named "Calibration values.csv" by default in the folder "C:\Program Files\Desoutter\CVILauncher" by default.

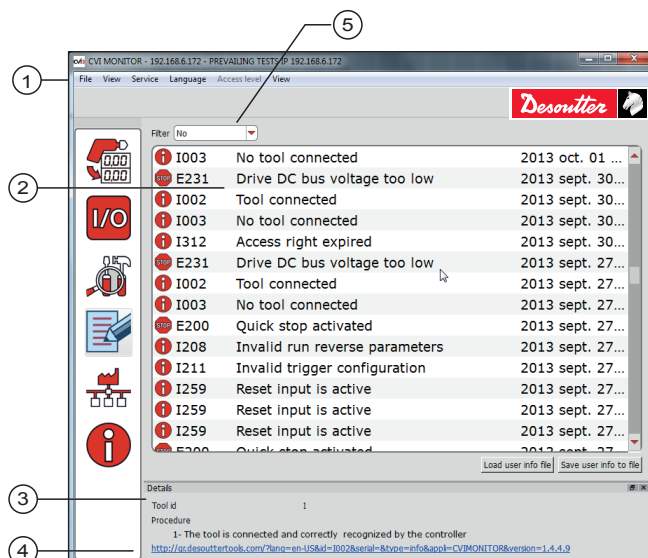
## 6 - USER INFORMATION

This screen will show you the user logs history of the connected controller.

A problem solving guidance is displayed for each main issue.



- Click this icon to display the screen.



### Legend

- Menu area
- Logs display
- Log details
- Link to Desoutter support
- Filter list

Load user info file

- Click this icon to upload an existing user info file from C:\Program Files\Desoutter\CVILauncher by default.

There are two different types of files:

- The file named "\*.txt" has been created by CVI MONITOR (see below).
- The file named "\*.zip" has been saved by the function "Save Log" in the controller.
- Click this icon to save a "User info\_year\_month\_day.txt" file in C:\Program Files\Desoutter\CVILauncher by default.

Save user info to file

### 6.1 - Types of logs



Information



Warning



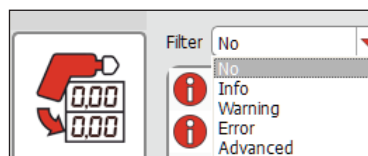
Error



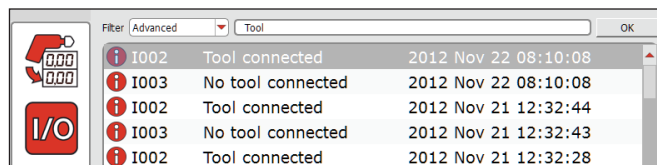
Refer to the "Appendix - User info codes" in CVI CONFIG user manual to get more information.

### 6.2 - Logs filtering

- Click the "Filter list" to display the following screen:

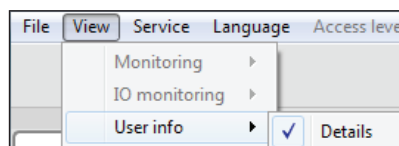


- Select one of the filters.
- Select "Advanced" to sort the logs as you like. Enter the text and click OK. For example:

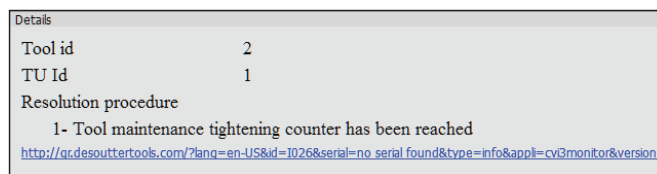


### 6.3 - Details

- Tick "Details" in the view menu to display the log details.



- Click a result to display its details:

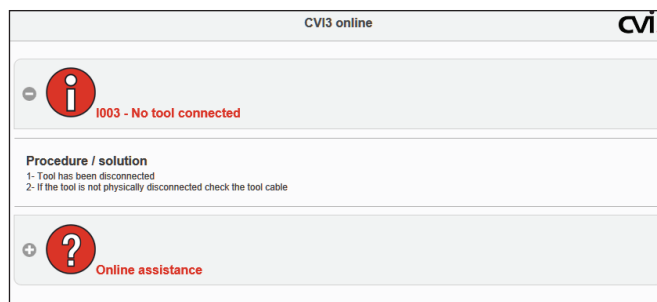


|         |                        |
|---------|------------------------|
| Tool id | tool number            |
| TU Id   | tightening unit number |

### 6.4 - Resolution procedure

If existing, the problem solving guidance is displayed.

- Follow the instructions.
- Click the link to get more information about the resolution procedure. You will be redirected to the "Desoutter online support" website.



|  |                                             |
|--|---------------------------------------------|
|  | Click this icon to expand more information. |
|  | Click this icon to hide the information.    |


**Online assistance**

By validating the form below, you will allow our technical support to help you find the solution to your problem.

---

Error number

Error type

Serial number

---

---

☐ Please contact me

By e-mail

By telephone

Comments

- Fill in the form and press "Send".



- If any problem, contact your Desoutter representative for support.

**CVI3 on the web**

- Click this icon to go through our "Desoutter Tools Mobile Catalogue".

**www.desouttertools.com**

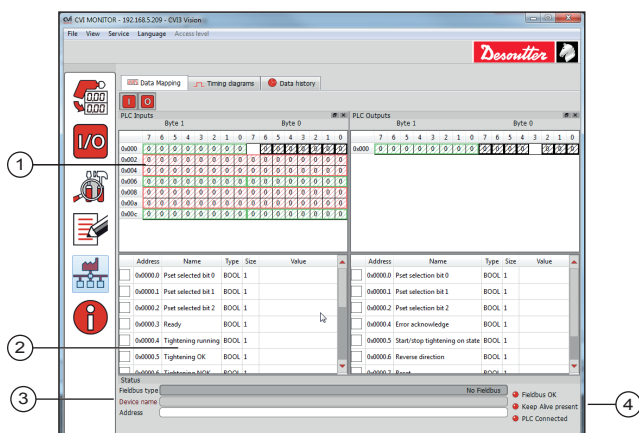
- Click this icon to visit our website.

## 7 - FIELDBUS DIAGNOSTIC

This function will help you to analyze the exchanges made between the PLC and the controller via Fieldbus.

## 7.1 - Data mapping

The following screen shows the data mapping stored in the controller.



### Legend

- 1 Reading of the data mapping (bit format)
- 2 Reading of the variables values
- 3 Information about the Fieldbus module
- 4 Communication status



to display/hide the PLC inputs mapping.



to display/hide the PLC outputs mapping.

### Information about the Fieldbus module

|                |                                                                                |
|----------------|--------------------------------------------------------------------------------|
| Fieldbus type  | This is the type of Fieldbus module installed in the controller.               |
| Device name    | Both fields depend on the type of Fieldbus module installed in the controller. |
| Device address |                                                                                |

### Communication status



Communication is "on".

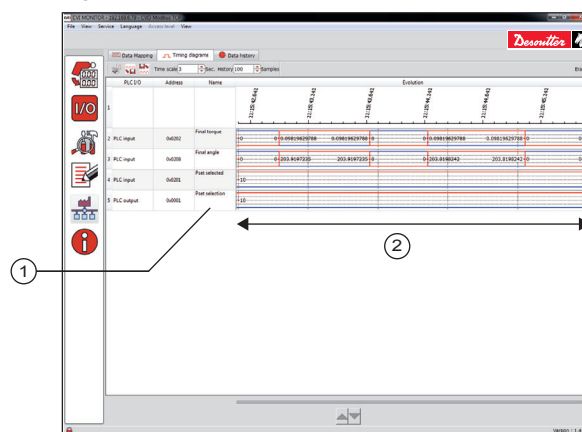


Communication is "off".

## 7.2 - Timing diagrams

The following screen shows the exchanged data in real-time. The graph is refreshed each time a variable value changes.

The variables shown here have been selected in the "Data mapping" screen.



### Legend

- 1 List of variables**  
**2 Time scale in seconds (3 by default)**



to print the timing diagrams



to export to a .xml file



to import from a .xml file

- Enter a value "x" in samples (100 by default). The x last variables change states will be stored in memory and the oldest results are overwritten by the last ones.

### 7.3 - Data history

Each row shows the state of the variables at a given time.  
History is updated at each variable change.

[illegible]

## 8 - ExBX CONNECTION SET UP

### 8.1 - Pre-requisite



#### **Warning!**

**Be sure that the battery tool is not running.**

- Insert a fully-loaded battery pack and plug in the eDOCK.
- Connect the eDOCK to the PC USB port. A new serial port is created.
- Refer to the tool user manual to properly connect the eDOCK to the tool.



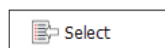
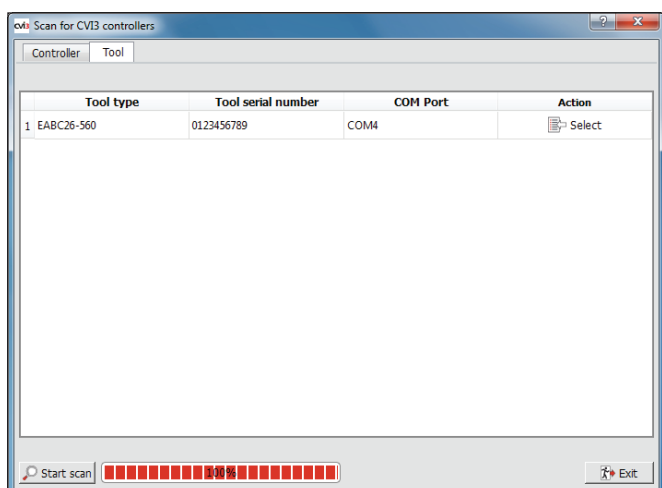
- Do not use a USB hub.

### 8.2 - Getting started



It may happen that the tool switches off during the configuration. The communication will then be stopped and an error message will be displayed.

- Press the tool trigger once and briefly to re-establish the communication.
- Launch CVI MONITOR.
- Click the "Tool" tab at the top of the screen.



- Click this icon to select the wireless battery tool to configure.

## 9 - ExBX MAINTENANCE

### 9.1 - Tool identification



- Click this icon to display the screen.

**Tool identification**

|                                                                                                                                            |             |                          |            |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------|------------|
| Serial number                                                                                                                              | 13A72041    | Boot loader version      | 0.4.7      |
| Model                                                                                                                                      | EABC95-240  | HW Version               | 7          |
| User comment                                                                                                                               | UserComment | Tool family              | ExBCom     |
| Production date                                                                                                                            | 01/01/2010  | Motor type               | EB6 36V    |
| Warranty date                                                                                                                              | 20/11/2014  | Tool type                | Anglehead  |
| Tool max. torque                                                                                                                           | 95.00 N.m   | Gear ratio               | 48.5833    |
| Tool max. speed                                                                                                                            | 240 rpm     |                          |            |
| Manufacturer name                                                                                                                          | Desoutter   |                          |            |
| Application version                                                                                                                        | C4.8.0      |                          |            |
| Tool release                                                                                                                               | 39          |                          |            |
| <b>Transducer</b>                                                                                                                          |             |                          |            |
| Calibration value                                                                                                                          | 89.75 N.m   | Torque last calib. date  | 10/09/2015 |
| Initial calibration value                                                                                                                  | 95.00 N.m   | Torque next calib. date  | 10/09/2016 |
| Tightenings since last calibration                                                                                                         | 2632        | Torque/current factor    | 0          |
| <b>Temperature</b>                                                                                                                         |             |                          |            |
| Motor temp. limit                                                                                                                          | 70 °C       | Alarm temp release limit | 60 °C      |
| <b>Trigger definition</b>                                                                                                                  |             |                          |            |
| <input checked="" type="checkbox"/> Handle trigger <input type="checkbox"/> Front trigger <input type="checkbox"/> Push start              |             |                          |            |
| <b>Fixed accessories definition</b>                                                                                                        |             |                          |            |
| <input checked="" type="radio"/> None <input type="radio"/> Crowfoot <input type="radio"/> Tubenut <input type="radio"/> Torque multiplier |             |                          |            |
| <b>eLINK modules definition</b>                                                                                                            |             |                          |            |
| <input checked="" type="radio"/> None <input type="radio"/> Barcode reader                                                                 |             |                          |            |
| <input checked="" type="checkbox"/> Front light                                                                                            |             |                          |            |
| Read from tool  Write to tool Read from file                                                                                               |             |                          |            |

Read from tool

- Click this icon to refresh the display. When OK, a green tick is displayed.
- Click this icon to re-establish the connection:
  - after a tool change
  - after the tool wakeup.



#### 9.1.1 - Trigger

- Select the triggers which will start the tightening operation.

Write to tool

- Click this icon to write the new settings in the tool memory. When OK, a green tick is displayed.

#### 9.1.2 - Fixed accessories

- Declare the fixed accessory which is mounted on the tool.

Write to tool

- Click this icon to write the new settings in the tool memory. When OK, a green tick is displayed.

#### 9.1.3 - Barcode reader/Front light

- Declare the accessories which are mounted on the tool.

Write to tool

- Click this icon to write the new settings in the tool memory. When OK, a green tick is displayed.

## 9.2 - Upgrade firmware



**Available for Desoutter technicians only.**

**Tool identification**

**Upgrade Firmware**

**Tool information**

|                     |            |
|---------------------|------------|
| Serial number       | 13A00006   |
| Tool model          | EPBCB-1800 |
| Application version | C3.2.5     |

Connected

Tool test

Motor align

- Contact your Desoutter representative for support.

### 9.3 - Tool test



**Available for Desoutter technicians only.**

**Tool identification**

**Upgrade Firmware**

**Tool test**

Led/Trigger test

Main trigger

Start tool test

Start audio test

Temperature measurement

Electronic temperature ..... °C

Motor align

- Contact your Desoutter representative for support.

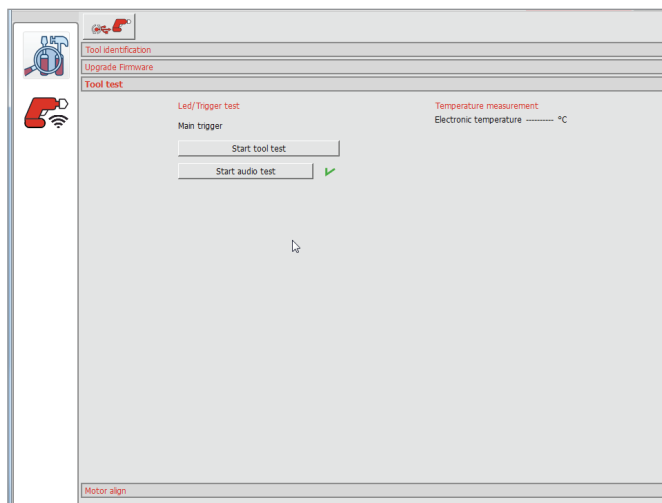
### 9.3.1 - Speaker



- Check that the feature "Keypad beep enabled" is ticked in the controller "User interface" menu.

- Click "Start audio test".

When the test is successful, the tool beep can be heard and a green tick appears on the screen.



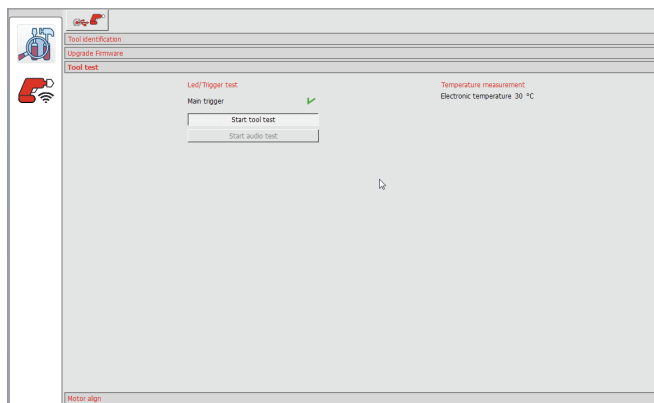
### 9.3.2 - LED and main trigger

- Click "Start tool test".

The LEDs of the tool are blinking.

- Press the main trigger.

When the trigger is recognized, a green tick appears on the screen.



### 9.3.3 - Temperature

The electronic temperature is displayed.

### 9.4 - Motor align

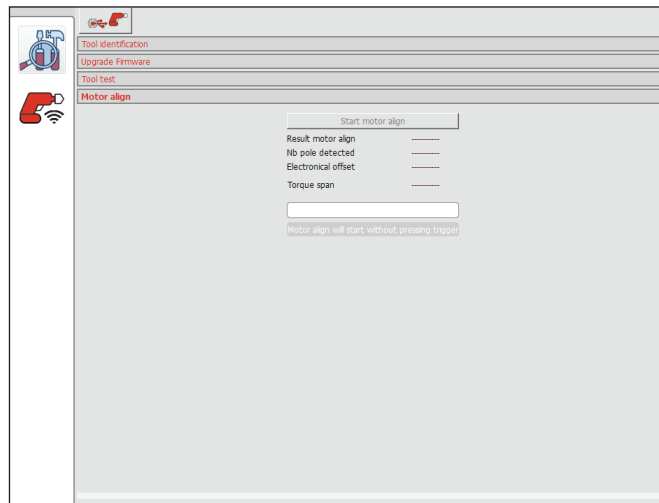


**Available for Desoutter technicians only.**



#### **Warning!**

**Before starting, press the trigger and KEEP IT PRESSED DURING THE COMPLETE PROCESS: if not, the tool could be severely damaged.**



- Contact your Desoutter representative for support.

## 10 - ExBC WI-FI CONFIGURATION



- Click this icon to display the screen.



- Click this icon to re-establish the connection:
  - after a tool change
  - after the tool wakeup.



- Click this icon to display the current configuration.

| Parameters                       | Factory settings  | Possible values |
|----------------------------------|-------------------|-----------------|
| <b>Network configuration</b>     |                   |                 |
| Allocation method for IP address | Static IP address | -               |
| Controller IP address            | 192.168.5.212     | -               |
| Tool IP address                  | 192.168.5.221     | -               |
| Communication port               | 7477              | 1024-65535      |
| Subnet mask                      | 255.255.255.0     | -               |
| Gateway                          | 192.168.5.221     | -               |
| Tool MAC address                 | -                 | -               |

| Parameters                 | Factory settings                                                          | Possible values                                                                                                                                                                                                                |
|----------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Security</b>            |                                                                           |                                                                                                                                                                                                                                |
| Security type              | WPA/WPA2 PSK                                                              | Open<br>Shared secret<br>LEAP<br>PEAP                                                                                                                                                                                          |
| Encryption type            | AES/CCMP                                                                  | none<br>WEP64<br>WEP168<br>TKIP<br>AES/CCMP                                                                                                                                                                                    |
| Certificates (.p12)        | -                                                                         | <ul style="list-style-type: none"> <li>Browse your PC to select the certificate file.</li> </ul>                                                                                                                               |
| Security key               | mydesoutter_1                                                             | String of 255 characters                                                                                                                                                                                                       |
| User name                  | -                                                                         | String of 255 characters                                                                                                                                                                                                       |
| <b>Wireless parameters</b> |                                                                           |                                                                                                                                                                                                                                |
| Network name (SSID)        | Desoutter_1                                                               | String of 255 characters                                                                                                                                                                                                       |
| Regulatory domain          | Worldwide                                                                 | - Worldwide<br>- FCC (America)<br>- ETSI (Europe)<br>- TELEC (Japan)                                                                                                                                                           |
| Radio band                 | 2.4 GHz                                                                   | 1 2.412 GHz                                                                                                                                                                                                                    |
|                            |                                                                           | 2 2.417 GHz                                                                                                                                                                                                                    |
|                            |                                                                           | 3 2.422 GHz                                                                                                                                                                                                                    |
|                            |                                                                           | 4 2.427 GHz                                                                                                                                                                                                                    |
|                            |                                                                           | 5 2.432 GHz                                                                                                                                                                                                                    |
|                            |                                                                           | 6 2.437 GHz                                                                                                                                                                                                                    |
|                            |                                                                           | 7 2.442 GHz                                                                                                                                                                                                                    |
|                            |                                                                           | 8 2.447 GHz                                                                                                                                                                                                                    |
|                            |                                                                           | 9 2.452 GHz                                                                                                                                                                                                                    |
|                            |                                                                           | 10 2.457 GHz                                                                                                                                                                                                                   |
|                            |                                                                           | 11 2.462 GHz                                                                                                                                                                                                                   |
|                            |                                                                           | 12 2.467 GHz                                                                                                                                                                                                                   |
|                            |                                                                           | 13 2.472 GHz                                                                                                                                                                                                                   |
|                            | 5 GHz                                                                     | U-NII band 1 (5.15-5.25GHz)                                                                                                                                                                                                    |
|                            |                                                                           | U-NII band 2 (5.25-5.35GHz)                                                                                                                                                                                                    |
|                            |                                                                           | U-NII band 2 ext (5.47-5.725GHz)                                                                                                                                                                                               |
|                            |                                                                           | U-NII band 3 (5.725-5.825GHz)                                                                                                                                                                                                  |
| Data rate                  | 54 Mbit                                                                   | 1-54 Mbit                                                                                                                                                                                                                      |
| Link adaptation            | Off by default.<br>The set data rate will be used when transmitting data. | <ul style="list-style-type: none"> <li>Tick the box to activate the function.</li> </ul> The data rate used will be automatically adjusted depending on the operation environment. The data rate already set will not be used. |



The security key is always hidden for security reasons.



- Click this icon to write the modifications into the battery tool memory.



- Enter the security key before exporting the configuration.
- Click "Export" to store the configuration in a "wifi\_config.txt" file located in "C:\Program Files\Desoutter\CVILauncher" by default.



- Click this icon to browse files and to import a configuration file (.txt file) from "C:\Program Files\Desoutter\CVILauncher" by default.

## 11 - VERSIONS



- Click this icon to display the controller information and software versions.

# More Than Productivity