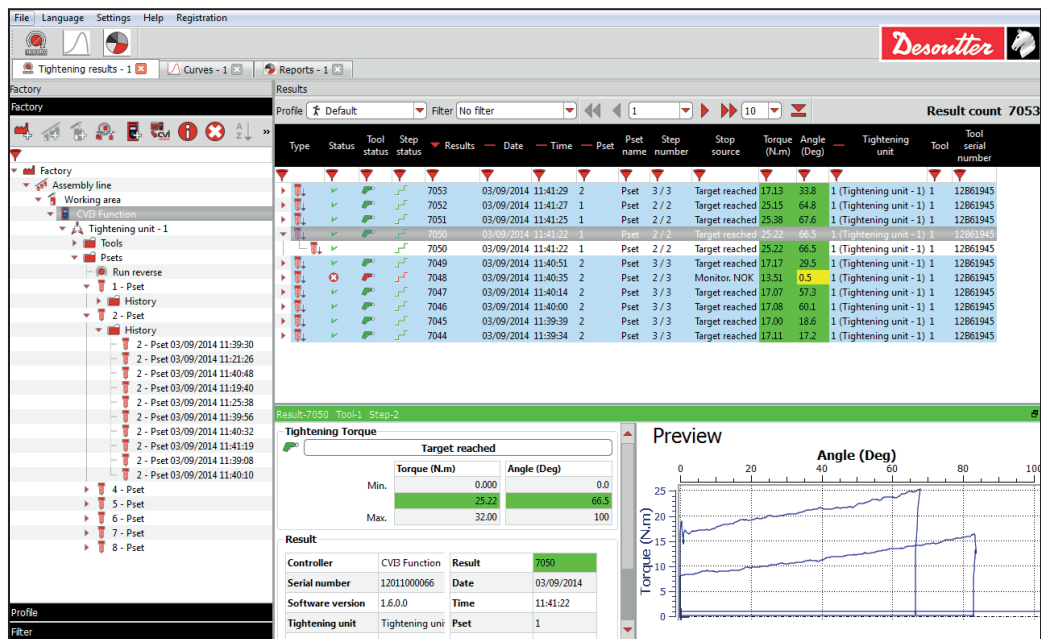


CVI ANALYZER

V 1.2.0.X

User manual



Software

CVI ANALYZER 1 user
CVI ANALYZER 5 users
CVI ANALYZER 25 users

Part number

6159276960
6159276970
6159276980

TABLE OF CONTENTS

1 - OVERVIEW 4

2 - FIRST SETTINGS 5

2.1 - Language 5

2.2 - Torque unit..... 5

2.3 - Date and time format..... 5

3 - CREATE YOUR ARCHITECTURE 6

3.1 - Factory tool bar 6

3.2 - Managing items 6

4 - UPLOAD RESULTS AND CURVES 7

4.1 - Scanning the network..... 7

4.2 - Adding a controller 7

4.3 - Adding a battery nutrunner..... 7

4.4 - Uploading a controller database..... 8

5 - TIGHTENING RESULTS DISPLAY 9

5.1 - Tree view 9

5.2 - Multi-step..... 10

5.3 - Multi-tool..... 10

6 - PROFILE 11

7 - FILTER 11

7.1 - Create your own filters 11

7.2 - Use standard filters 12

7.2.1 - Factory / Assembly line / Working area /
Controller..... 12

7.2.2 - Controller type..... 12

7.2.3 - Filter on type of tightening result 12

7.2.4 - Filter on status..... 12

7.2.5 - Filter on Pset 12

7.2.6 - Filter on date 12

7.3 - One-shot filtering 13

8 - PSET HISTORY 14

9 - CURVES DISPLAY 15

10 - REPORTS DISPLAY 16

11 - BACKUP / EXPORT 16

11.1 - Save a database..... 16

11.2 - Load a backup 16

11.3 - Purge database 16

11.4 - Recent files..... 16

11.5 - Export to CSV file 17

12 - INFORMATION 17

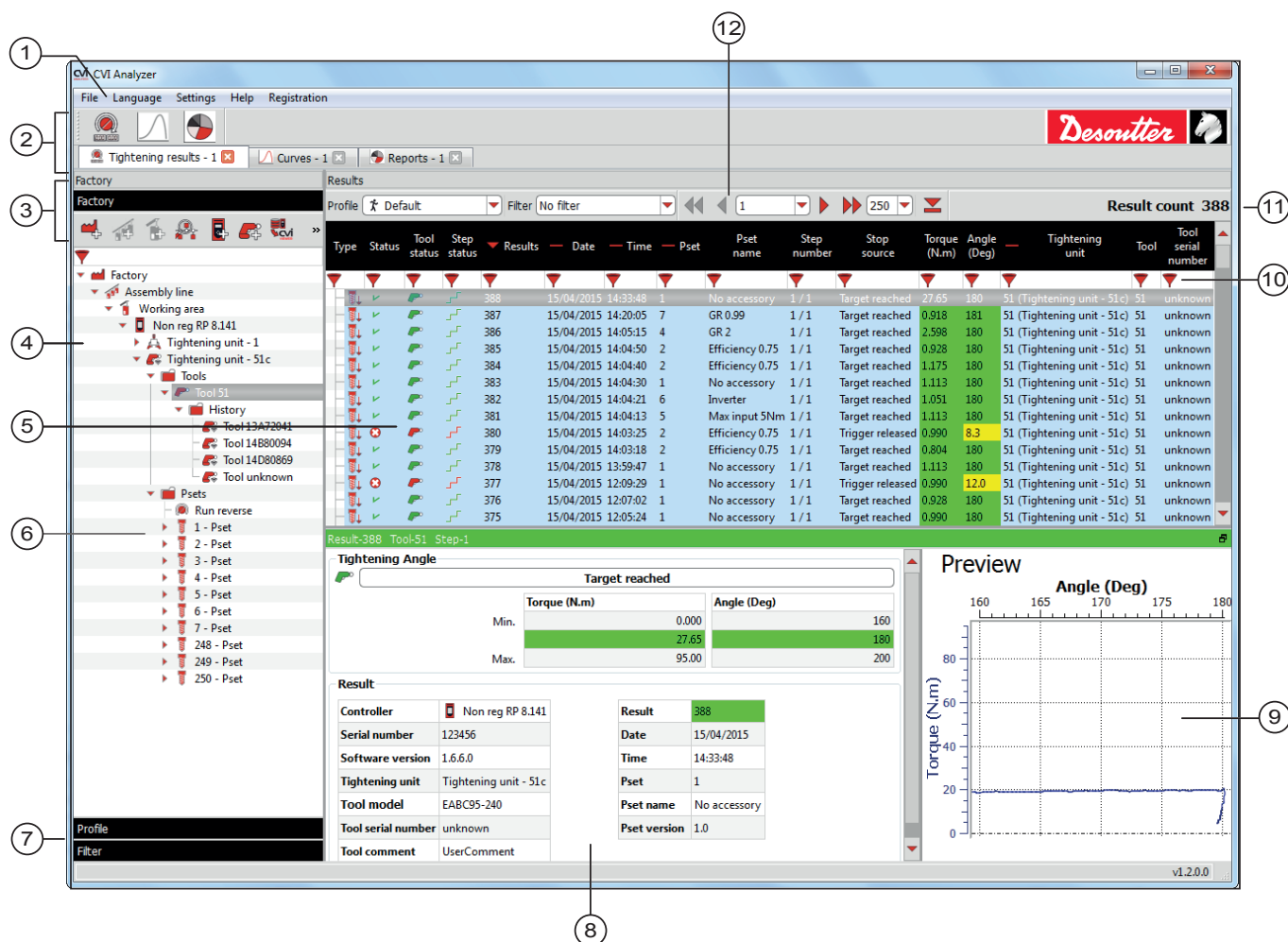
12.1 - Controller..... 17

12.2 - Factory / Assembly line / Working area 17

13 - SOFTWARE VERSION..... 18

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1 - OVERVIEW



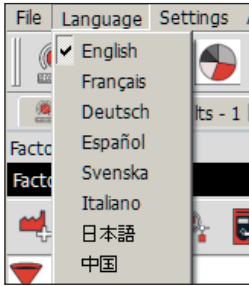
Legend

- 1 Menu
- 2 Icons and tabs for Results/Curves/Reports
- 3 Factory tool bar
- 4 Tree view
- 5 Results display
- 6 Pset history
- 7 Profile and filter areas
- 8 Details per result
- 9 Curve display
- 10 Filter icon
- 11 Number of available results
- 12 Results tool bar

2 - FIRST SETTINGS

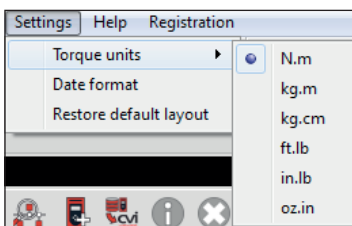
2.1 - Language

The language by default is "English".



- Tick your language.

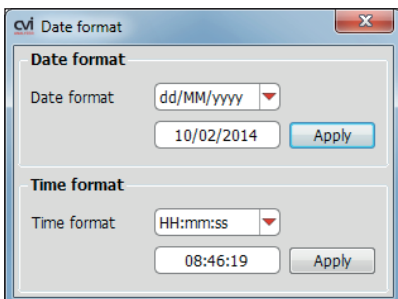
2.2 - Torque unit



- Select the format.




2.3 - Date and time format

- Select one format in the list below and click "Apply" to update the results.















3 - CREATE YOUR ARCHITECTURE

- Create your own architecture by sorting the controllers in a tree view that match their physical position in the factory.

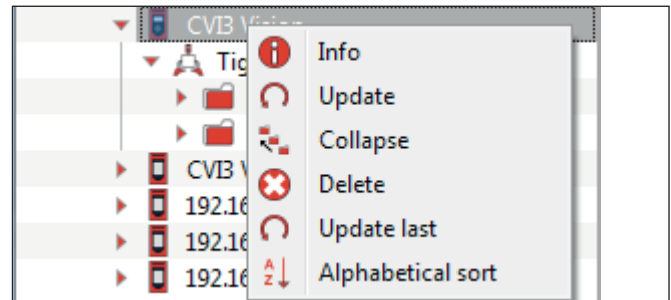
	A factory is a group of assembly lines
	An assembly line is a group of working areas
	A working area is a line segment where a specific assembly action is done. It is composed of controllers.







3.1 - Factory tool bar

	to create a factory.	<ul style="list-style-type: none">• Double-click the item to rename it.• Create as many items as you want.	
	to add an assembly line.		
	to add a working area.		
	to scan the network. All CVI3 controllers present in the network will be listed.		
	to add any type of controller.	 A controller is identified by its IP address.	
	to add a stand-alone battery nutrunner (EABA or EPBA models).		
	to add results from a database.		
	to view information about the item.		
	to delete the selected item.		
	to sort the items in alphabetical order.		
	to filter per factory and/or component of the factory.		

3.2 - Managing items

- Right-click any item in the tree view area.



	Info		to view information about the item.
	Update	F5	to update the results and curves of the selected item.
	Collapse		to view the main items only.
	Delete		to delete the selected item.
	Update last		to update the last 10,000 results and curves of the selected item.
	Alphabetical sort		to sort the items in the tree view area.

4 - UPLOAD RESULTS AND CURVES

Tightening results and curves can be collected:

- by scanning the network
- by adding a controller or a battery nutrunner via its type of connection (IP address or COM port)
- by uploading a controller database via a USB stick
- by loading a CVI ANALYZER backup

When the maximum size of the database is reached, a pop-up will show up asking you to backup the database.

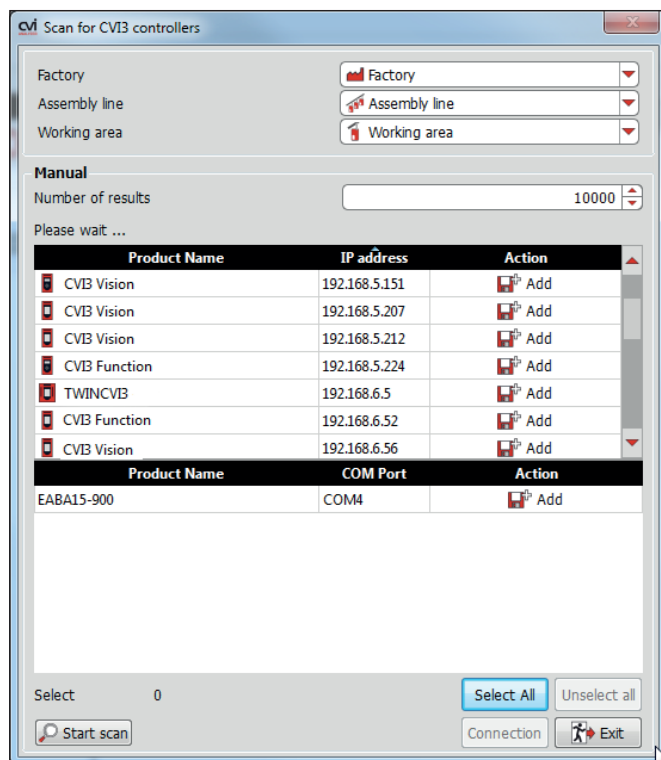


- Click "Purge the database" in the menu area. Results and curves will be automatically saved in a database in the software directory "C:\Program Files (x86)\Desoutter\CVIAnalyzer" but controllers will stay in the same place.

4.1 - Scanning the network



- Click to start the scan.



- Select where to add the product: factory/assembly line/working area.
- Enter the number of results to upload (10,000 by default per tightening unit).

The products are sorted according to their type of connection: IP address or COM port.



- Click to add the product to the working area.



- Click to update the results.

- Click "Select all" to have them all in the tree view.

- Click "Connection" to start.
- Click "Start scan" to start a new scan.
- Click "Exit" to quit the screen.

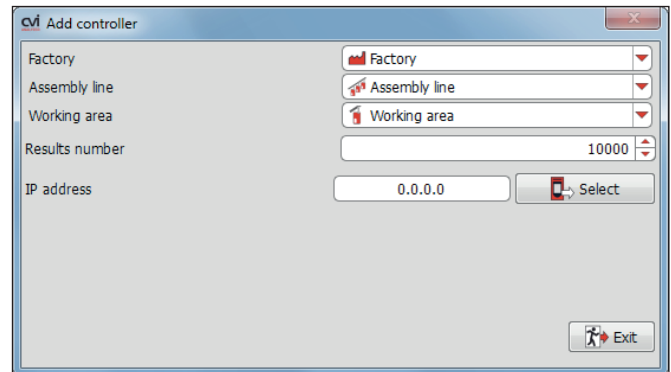


The COM port is automatically displayed by the system.

4.2 - Adding a controller



- In the factory tool bar, click this icon to add any type of controller.



- Select where to add the product: factory/assembly line/working area.
- Enter the maximum number of results to upload (10,000 by default per tightening unit).
- Enter a valid controller IP address.
- Click "Select" to start.
- Click "Exit" to quit the screen.

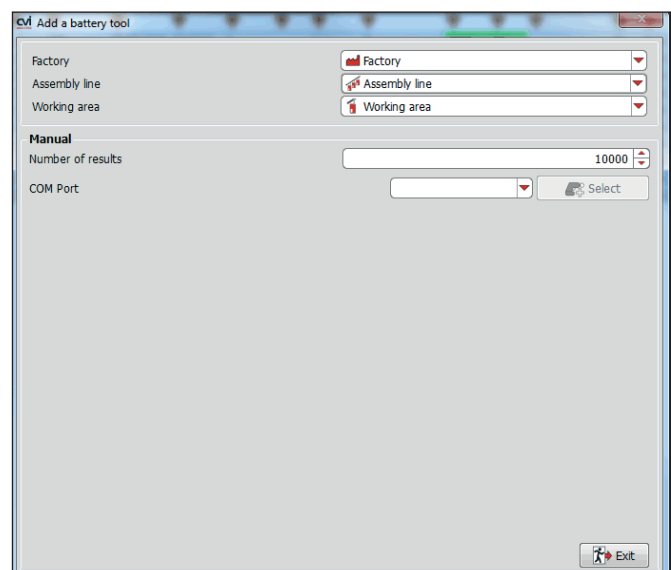
4.3 - Adding a battery nutrunner



- In the factory tool bar, click this icon to add the battery nutrunner which is connected to the PC via the e-DOCK..



- Wake up the tool by pressing the trigger or by pressing the "Reverse/Validation" button on the top of the tool.



- Select where to add the product: factory/assembly line/working area.

- Select the "Com port" in the list.
- Enter the number of results to upload (10,000 by default).

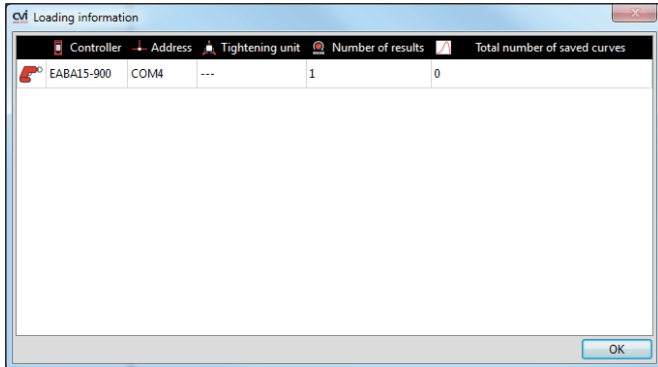


- Click to add the product to the working area.



- Click to update the results.

- Click "Select all" to have them all in the tree view.
- Click "Connection" to start.

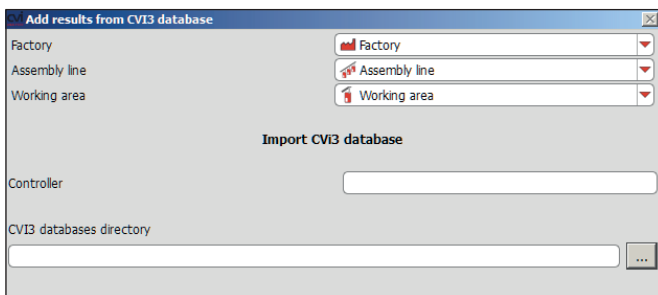


4.4 - Uploading a controller database

- Plug the USB stick into the PC.



- In the factory tool bar, click this icon to start.



- Select where to add the new controller: factory/assembly line/working area.
- Enter the controller name (40 characters).



- Click to display the directory where you have saved the database.

- Press OK to validate.

5 - TIGHTENING RESULTS DISPLAY

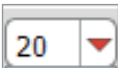
5.1 - Tree view

The tightening results are displayed in a tree view.



- Click to create a new tab (up to 5 different tabs).

The screenshot shows the CVI Analyzer software interface. On the left is a tree view of the factory structure, including 'Factory', 'Assembly line', 'Working area', 'CVB Vision', 'Tightening unit - 1', 'Tools', and 'Psets'. The main area displays a table of tightening results. The table has columns for Type, Status, Tool, Step status, Results, Date, Time, Pset, Pset name, Step number, Stop source, Torque (N.m), Angle (Deg), Tightening unit, and Tool. The results are listed for various steps, including 2361, 2360, 2359, 2358, 2357, 2356, 2355, 2354, 2353, and 2352. The 'Stop source' column indicates 'Target reached' for most steps and 'Trigger released' for steps 2356 and 2352. The 'Torque' and 'Angle' columns show values for each step. The 'Tightening unit' column shows '1 (Tightening unit - 1)' for all steps. The 'Tool' column shows '1' for all steps. The 'Results' column shows '2361' for step 2361, '2360' for step 2360, '2359' for step 2359, '2358' for step 2358, '2357' for step 2357, '2356' for step 2356, '2355' for step 2355, '2354' for step 2354, '2353' for step 2353, and '2352' for step 2352. The 'Status' column shows green checkmarks for steps 2361, 2360, 2359, 2358, 2357, 2355, 2354, and 2353, and red crosses for steps 2356 and 2352. The 'Step status' column shows green checkmarks for steps 2361, 2360, 2359, 2358, 2357, 2355, 2354, and 2353, and red crosses for steps 2356 and 2352. The 'Date' column shows '14/04/2015' for all steps. The 'Time' column shows '08:21:03' for step 2361, '08:21:02' for step 2360, '08:21:00' for step 2359, '08:20:59' for step 2358, '08:20:57' for step 2357, '08:20:56' for step 2356, '08:20:55' for step 2355, '08:20:53' for step 2354, '08:20:52' for step 2353, and '08:20:51' for step 2352. The 'Pset' column shows '1' for all steps. The 'Pset name' column shows 'Pset' for all steps. The 'Step number' column shows '1 / 1' for all steps. The 'Stop source' column shows 'Target reached' for steps 2361, 2360, 2359, 2358, 2357, 2355, 2354, and 2353, and 'Trigger released' for steps 2356 and 2352. The 'Torque' column shows '0.059' for step 2361, '0.064' for step 2360, '0.032' for step 2359, '0.435' for step 2358, '0.064' for step 2357, '0.016' for step 2356, '0.032' for step 2355, '0.016' for step 2354, '0.064' for step 2353, and '0.064' for step 2352. The 'Angle' column shows '1.0' for steps 2361, 2360, 2359, 2358, 2357, 2355, 2354, and 2353, '0.2' for step 2356, and '0.5' for step 2352. The 'Tightening unit' column shows '1 (Tightening unit - 1)' for all steps. The 'Tool' column shows '1' for all steps. The 'Result count' is 2361.



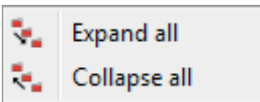
- Select the number of results to display per page.
 - 10
 - 20
 - 50
 - 100
 - 200
 - 250



- Click to display the last result.



- Select the number of pages to display.
- Use the arrows to display the first page, the previous page, the next page or the last page.



- Right click any row to view or not the steps of the Pset.

- Apply profiles and/or filters to sort and customize columns and rows.
- From the list of results, select one result and click its row. The details of the result are displayed. The associated curve is also displayed if available.

5.2 - Multi-step

CVI ANALYZER is able to display multiple steps when the user has chosen to store the results of each Pset step.

- To set this option, refer to chapter "Step/General" in the CVI CONFIG user manual.

Results														
Profile Default		Filter No filter		1		10		Result count 7053						
Type	Status	Tool status	Step status	Results	Date	Time	Pset	Pset name	Step number	Stop source	Torque (N.m)	Angle (Deg)	Tightening unit	Tool serial number
				7053	03/09/2014	11:41:29	2	Pset	3 / 3	Target reached	17.13	33.8	1 (Tightening unit - 1)	12861945
				7053	03/09/2014	11:41:29	2	Pset	3 / 3	Target reached	17.13	33.8	1 (Tightening unit - 1)	12861945
				7052	03/09/2014	11:41:27	1	Pset	2 / 2	Target reached	25.15	64.8	1 (Tightening unit - 1)	12861945
				7051	03/09/2014	11:41:25	1	Pset	2 / 2	Target reached	25.38	67.6	1 (Tightening unit - 1)	12861945
				7051	03/09/2014	11:41:25	1	Pset	2 / 2	Target reached	25.38	67.6	1 (Tightening unit - 1)	12861945
				7050	03/09/2014	11:41:22	1	Pset	2 / 2	Target reached	25.22	66.5	1 (Tightening unit - 1)	12861945
				7049	03/09/2014	11:40:51	2	Pset	3 / 3	Target reached	17.17	29.5	1 (Tightening unit - 1)	12861945
				7048	03/09/2014	11:40:35	2	Pset	2 / 3	Monitor. NOK	13.51	0.5	1 (Tightening unit - 1)	12861945
				7048	03/09/2014	11:40:35	2	Pset	2 / 3	Monitor. NOK	13.51	0.5	1 (Tightening unit - 1)	12861945

5.3 - Multi-tool

CVI ANALYZER is also able to display results with multiple tools like below.

Results														
Profile Default		Filter No filter		1		100		Result count 1						
Type	Status	Tool status	Step status	Results	Date	Time	Pset	Pset name	Step number	Stop source	Torque (N.m)	Angle (Deg)	Tightening unit	Tool serial number
				31855	12/05/2014	07:58:46	2	Jog_Rundown_Angle_Release					1 (Tightening unit - 1)	
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release					1 (Tightening unit - 1)	
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.015	1200	1 (Tightening unit - 1)	1	N/A
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.055	1201	1 (Tightening unit - 1)	2	N/A
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.116	1201	1 (Tightening unit - 1)	3	N/A
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.439	1201	1 (Tightening unit - 1)	4	N/A
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.021	1201	1 (Tightening unit - 1)	5	N/A
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.254	1201	1 (Tightening unit - 1)	6	N/A
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.099	1201	1 (Tightening unit - 1)	7	13871904
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.020	1201	1 (Tightening unit - 1)	8	13871902
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.054	1201	1 (Tightening unit - 1)	9	13871899
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.045	1201	1 (Tightening unit - 1)	10	13871901
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Monitor. NOK	0.000	1201	1 (Tightening unit - 1)	11	13871903
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Monitor. NOK	0.000	1201	1 (Tightening unit - 1)	11	13871903
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.037	1201	1 (Tightening unit - 1)	12	13871900
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.087	1201	1 (Tightening unit - 1)	13	07 B34748
				31854	12/05/2014	07:58:35	2	Jog_Rundown_Angle_Release 7 / 7	Target reached	0.117	1201	1 (Tightening unit - 1)	14	12867163
				31853	12/05/2014	07:58:24	2	Jog_Rundown_Angle_Release					1 (Tightening unit - 1)	

6 - PROFILE

Profiles are used to customize the columns of the result view. The user can define the columns he is interested in.

- Click "Profile" on the bottom left of the screen. The default profile is displayed:



- Click to create a new profile (up to 10).

Factory	Results				
Factory	Type	Status	Tool status	Step status	Results
Profile					
Profile_1					1634617
Profile name <input type="text" value="Profile_1"/>					1634617
Steps					1634616
<input checked="" type="radio"/> All steps					1634616
<input type="radio"/> Only last					1634615
Informations					1634615
<input type="checkbox"/> Factory					1634614
<input type="checkbox"/> Assembly line					1634615
<input type="checkbox"/> Working area					1634614
<input type="checkbox"/> Controller					1634614
<input type="checkbox"/> Controller serial numb					1634613
<input type="checkbox"/> MAC Address					1634613
<input type="checkbox"/> Ip address					1634613
<input checked="" type="checkbox"/> Tightening unit					1634612
<input checked="" type="checkbox"/> Tool					1634612
<input checked="" type="checkbox"/> Pset					1634611
<input checked="" type="checkbox"/> Results					1634611
<input checked="" type="checkbox"/> Results status					1634611
<input checked="" type="checkbox"/> Step status					1634611
Filter					1634611

- Customize the name.
- Tick "All steps" or "Only last".
- Tick the information to display.

The profile is automatically saved.

7 - FILTER

The filters are used to sort the results. A filter can contain several search criteria.

7.1 - Create your own filters

- Click "Filter" on the bottom left of the screen.

Factory	Type	Status	Tool status	Step status	Results
Profile					
Filter					
<input checked="" type="checkbox"/> No filter					1634617
					1634617
					1634616
					1634616
					1634615
					1634615
					1634614
					1634614
					1634613
					1634613
					1634612
					1634612
					1634611
					1634611



- Click to create a new filter (up to 10)

- Customize the name.
- Add one or more filters by ticking them one by one.

- Factory
- Assembly line
- Working area
- Controller name
- Controller type
- Software version
- IP address
- MAC address
- Controller serial number
- Tightening unit
- Tool
- Tool serial number
- Tool status
- Identifier 1... 10
- Results
- Type
- Result status
- Date
- Time
- Date and time
- Pset
- Pset name
- Step
- Step status
- Stop source
- Torque
- Offset
- Angle
- Current
- 2nd angle
- 2nd torque
- Overall angle
- Overall time
- Rundown angle
- Monitoring Time

- Untick the filter you want to suppress: the line will turn grey.
- Click "Apply" to execute the process and display the results.

The filter is automatically saved.



- Click to delete the filter.

- See below an example of filtering:

7.2 - Use standard filters

7.2.1 - Factory / Assembly line / Working area / Controller



- From the factory tool bar, click to filter by name.

- Enter the text in the "Contains" field and tick "Apply" to valid your selection.
- Repeat the same for the other filters.

7.2.2 - Controller type



- From the factory tool bar, click and go to the "Controller type" tag.

- Tick the type of controller to view.

7.2.3 - Filter on type of tightening result



- From the Results display area, click below each column header.

7.2.4 - Filter on status

7.2.5 - Filter on Pset

- Use the following shortcuts:

n-m	from n to m results
n-	all numbers \geq to n
a;b;c	results a, b, c

- Tick "Apply" to valid the selection.






























7.2.6 - Filter on date

- Select an already existing configuration (today, yesterday, last week, etc...) or create your own.
- Enter the start/end dates.
- Click "Apply" to valid the selection.

7.3 - One-shot filtering

- Go to the results display area.
- Click the filter icons to sort the results as you want.

For example:

Results							
Type	Status	Tool status	Step status	Results	Date	Time	Pset
							
		 All		3152891	16/01/2013	18:16:25	1
		 Tightening OK		3152891	16/01/2013	18:16:25	1
		 Tightening NOK		3152890	16/01/2013	18:16:23	1
				3152890	16/01/2013	18:16:23	1
				3152889	16/01/2013	18:16:21	1
				3152889	16/01/2013	18:16:21	1
				3152888	16/01/2013	18:16:19	1

8 - PSET HISTORY

Each time a modification is done in a Pset, the history is kept in the controller memory.

The Pset name is followed by the date and the time of the modification.

- Click any Pset in the folder "History" to display the results linked to that Pset configuration.

Results														
Profile		Filter		1		10		Result cou						
Type	Status	Tool status	Step status	Results	Date	Time	Pset	Pset name	Step number	Stop source	Torque (N.m)	Angle (Deg)	Tightening unit	Tool serial number
				7045	03/09/2014	11:39:39	2	Pset	3 / 3	Target reached	17.00	18.6	1 (Tightening unit - 1)	12861945
				7044	03/09/2014	11:39:34	2	Pset	3 / 3	Target reached	17.11	17.2	1 (Tightening unit - 1)	12861945

9 - CURVES DISPLAY

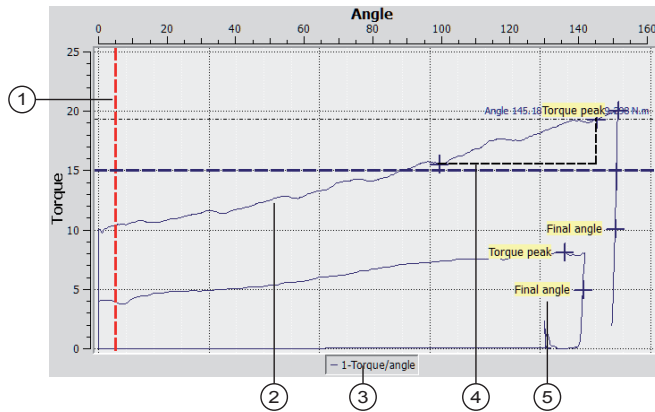


The number of curves to upload is 20 as a maximum per Tightening Unit.



- Click to create a tab (up to 1).

- Select the result in the list.



Legend

- 1 Angle min.
- 2 Torque min.
- 3 Curve type
- 4 Slope
- 5 Markers

	to print the curve.
	to show the Control markers.
	to show the Monitoring markers.
	to zoom out and return to the initial display.
	to activate the zoom. - use the mouse wheel to move on the screen. - zoom in by sliding the mouse - right-click to zoom out
	to draw the slope and display slope values (per tool).
	to reset the curve view.

- Use the mouse to follow the points of the curve.
- Select a type of curve:
 - Torque vs angle
 - Torque vs overall angle
 - Time curves
- Select all steps or step by step.

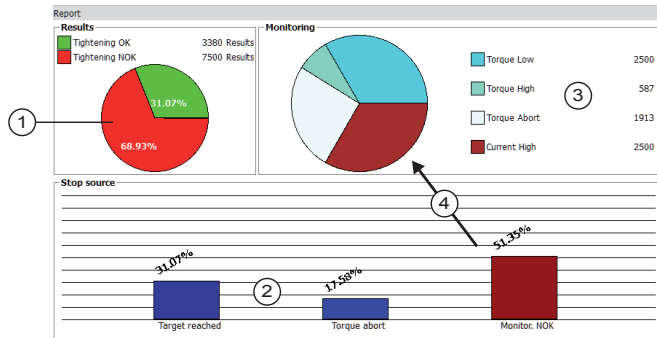
10 - REPORTS DISPLAY



- Each time you click this icon, a new tab is created (up to 5 different tabs).

- Select any item of the tree.

Example of display:



- 1 Distribution of tightenings OK/NOK
- 2 Tightening stop source condition histogram
- 3 Reasons for monitoring NOK
- 4 Details on Monitoring OK

- Tick the "Filter" tab on the left side of the screen and select one or more filters. The filters will limit the size of the results sample.



It is not possible to change the display.

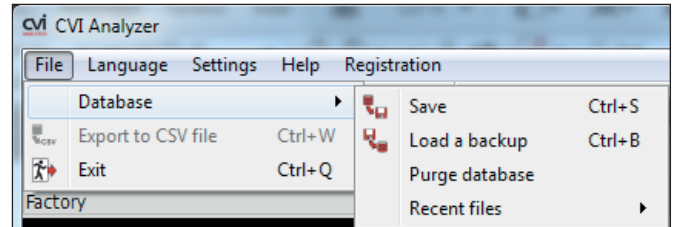
11 - BACKUP / EXPORT

11.1 - Save a database

Backup is used to save a complete database (controllers + results) in the software directory "C:\Program Files (x86)\Desoutter\CVIAnalyzer".

The name is "datas_dd_mm_yyyy_hh_mm_ss.db" by default.

- Click "File" then "Save" in the menu area or press "Ctrl+S".

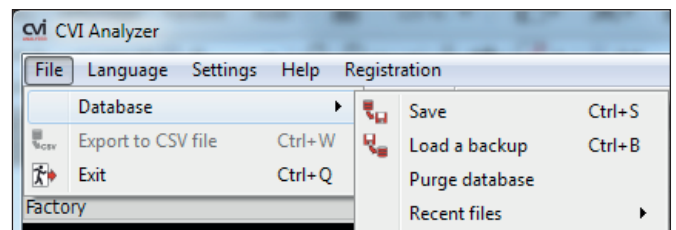


11.2 - Load a backup



Pre-requisite: you already have saved databases by using CVI ANALYZER.

- Click "File" then "Load a backup" in the menu area or press "Ctrl+B".



11.3 - Purge database

- Click "File" then "Purge database" in the menu area.

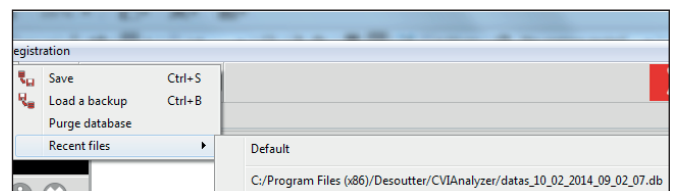


All results and Psets will be deleted.
Controllers will stay in the same place.

11.4 - Recent files

This function enables you to open the last files you have saved.

- Click "File" then "Recent files" in the main menu.



- Click "Default" to load the CVI ANALYZER database.

Below is the path leading to the software databases location.

11.5 - Export to CSV file

This function enables you to export the results to a "CVIAnalyzer_Results.csv" file in "C:\Program Files (x86)\Desoutter\CVIAnalyzer" by default.

- Select a controller in the tree view area.
- Click "File / Export to CSV file" or press "Ctrl+W".



Only results present in the results view will be exported ; the filters applied are taken into account.

12 - INFORMATION

12.1 - Controller

- Select a controller in the tree view area.
- Click to display information about the selected item .



The dialog box displays configuration for a CVI3 Vision controller. It includes buttons for 'Factory', 'Assembly line', and 'Working area'. Below these are input fields for 'IP address' (192.168.5.25), 'Software version' (1.5.7.0), 'Serial number', 'MAC address' (00:09:99:01:02:5A), and 'Tightening Unit number' (1).

- Change the IP address if required.



- Click to undo your last edit.

12.2 - Factory / Assembly line / Working area

- Select an Assembly line for example.
- Click to display information about the selected item .



The dialog box displays configuration for an Assembly line. It includes a 'Factory' button and a large 'Comments' text area for customization.

- Type a comment to customize the assembly line.

13 - SOFTWARE VERSION

- Click "About" in the main menu to display the software version.

More Than Productivity