User Guide

Focus 60 / Focus 61

Atlas Copco Industrial Technique AB

9839 0211 01
2017-01
Edition 1.1

Revision history

Edition	*Date*	*Author*	*Description*	*Reference Minimum Software version (ToolsTalk BLM)*	*Reference Firmware version*
1.0	11 October 2016	C. Pacente	First issue	10.0.0	5.5.0.x
1.1	13 January 2017	C. Pacente	Specifications updated (*par. 1.3*), System Overview updated (*chapter 2*), Focus 60 / Focus 61 Ethernet Ports updated (*par. 4.4*), Focus 60 / Focus 61 Barcode Scanner Interface (RS232) updated (*par. 4.5*), Focus 60 / Focus 61 I/O BUS (CAN) updated (*par. 4.6*), Focus 60 / Focus 61 Wave Flexible Antenna updated (*par. 4.7*), Software Installation updated (*par. 5.1*), Pset Configuration updated (*par. 6.3*), I/O Accessories updated (*par. 6.6*), Results Viewer updated (*chapter 9*), CBP added (*chapter 13*)	10.1.0	5.5.1.x

NOTE: This User Guide may be altered without further notice.
For further information log on to the Atlas Copco website: www.atlascopco.com

NOTE: The programming software (ToolsTalk BLM) may be updated with no changes regarding the Focus 60 / Focus 61 functionalities.
The *Reference Firmware version* requires a specific *Software version* (for further details refer to the above "*Revision history*" table).

NOTE: In case of conflicts between translations of this User Guide, always refer to the official English version.

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SAFETY INFORMATION

WARNING: PLEASE READ CAREFULLY THE FOCUS 60 / FOCUS 61 SAFETY INFORMATION (No. 9834 4137 00) PRIOR TO USE THE PRODUCT AND PAY ATTENTION TO THE SAFETY INSTRUCTIONS PROVIDED.

1 INTRODUCTION

1.1 About this Document

This document is a User Guide for the ***Focus 60 / Focus 61***: it consists of the following main parts:

Part	Name	Description
Chapter 1	Introduction	This chapter introduces this User Guide and provides the technical specifications for the Focus 60 / Focus 61.
Chapter 2	System Overview	This chapter introduces the Focus 60 / Focus 61 with its main functions.
Chapter 3	Installation Instructions	This chapter explains how to install the Focus 60 / Focus 61.
Chapter 4	User Interfaces	This chapter provides an overview of the user interfaces available on the Focus 60 / Focus 61.
Chapter 5	Working with ToolsTalk BLM	This chapter introduces the operations into the Focus 60 / Focus 61 management software.
Chapter 6	Programming Focus 60 / Focus 61	This chapter drives the operator in programming the Focus 60 / Focus 61 in order to work on the production line. This includes creating the *Pset* for the MWR-TA and programming the *Jobs*.
Chapter 7	Executing Tightening Operations	This chapter explains how to execute tightening operations with MWR-TA connected with the Focus 60 / Focus 61.
Chapter 8	Live Monitor	This chapter explains how to view live results with ToolsTalk BLM.
Chapter 9	Results Viewer	This chapter explains how to review the results of the tightening operations with ToolsTalk BLM.
Chapter 10	Focus 60 / Focus 61 Settings	This chapter explains how to setup the Focus 60 / Focus 61.
Chapter 11	Working with Open Protocol	This chapter describes how to work with Atlas Open Protocol application.
Chapter 12	Working with ToolsNet	This chapter describes how to work with ToolsNet.

Part	Name	Description
Chapter 13	CBP	This chapter describes the CBP (output protocol).
Chapter 14	Maintenance	This chapter describes the required maintenance procedures for the Focus 60 / Focus 61.
Chapter 15	Troubleshooting Guide	This chapter explains how to solve the most common problems while working with the Focus 60 / Focus 61.

1.2 Reference Documents

Hereunder a list of important documents, useful for a complete view of the product in all its applications:

- Focus 60 / Focus 61 Safety Information (*No. 9834 4137 00*): Multilanguage Safety Information and Declaration of Conformity
- MWR- TA and Charging Cradle MWR User Guide (*No. 9839 0214 01*)
- MWR-TA Safety Information (*No. 9834 4136 00*): Multilanguage Safety Information and Declaration of Conformity
- Charging Cradle MWR Safety Information (*No. 9834 4138 00*): Multilanguage Safety Information and Declaration of Conformity

1.3 Specifications

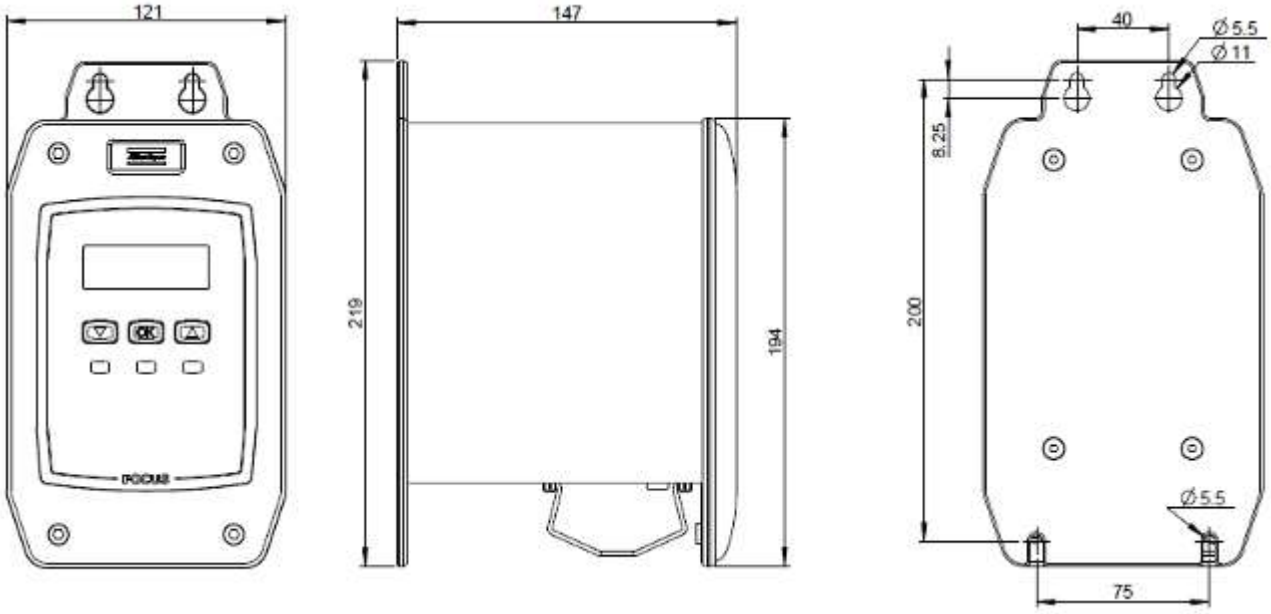
TECHNICAL

- Maximum accuracy error: ***+ / - 1 % measurement***
- Angle measurement: ***Resolution → 0,00°***
- Results memory capacity: ***20.000 (minimum)***
- Pset memory capacity: ***10 (one Pset = one MWR-TA)***
- Maximum number of identifier strings: ***3 strings (33 characters total)***
- Units of Measurement supported: ***Nm, ft-lbs, in-lbs, ozf ft, ozf in, kgf cm, kgf m***
- Average radio range: ***10m***

POWER SUPPLY

- Input power: ***100-240 VAC with 50/60 Hz***
- AC Power Consumption: ***25 W (maximum***)

DIMENSIONS



The unit of the dimensions is in mm.

INTERFACES

- Ethernet ports
- Barcode Scanner interface (RS232)
- I / O BUS (CAN)
- Wave Flexible Antenna connector
- Radio module frequencies:

Country	Number	Channel	Frequency [MHz]	Data rate [bit/s]
Europe	*1*	***51***	868.034	38400
	2	***56***	868.297	38400
	3	***60***	868.502	38400
	4	***64***	868.706	38400
	5	***69***	869.006	38400
	6	***76***	869.273	38400

Country	Number	Channel	Frequency [MHz]	Data rate [bit/s]
	7	***82***	869.573	38400
	8	***84***	869.840	38400
	9	***51***	868.034	19200
	10	***56***	868.297	19200
	11	***60***	868.502	19200
	12	***64***	868.706	19200
	13	***69***	869.006	19200
	14	***76***	869.273	19200
	15	***82***	869.573	19200
	16	***84***	869.840	19200
USA	*1*	***2***	902.791	38400
	2	***9***	906.478	38400
	3	***10***	907.004	38400
	4	***17***	910.691	38400
	5	***20***	912.271	38400
	6	***31***	918.064	38400
	7	***32***	918.590	38400
	8	***46***	925.963	38400
	9	***2***	902.791	19200
	10	***9***	906.478	19200
	11	***10***	907.004	19200
	12	***17***	910.691	19200
	13	***20***	912.271	19200
	14	***31***	918.064	19200
	15	***32***	918.590	19200
	16	***46***	925.963	19200

ENVIRONMENTAL CONDITIONS

Comply with the following environmental conditions during the operations:

- Indoor Use ONLY
- Environmental Class: II
- IP Index according to EN IEC 60529: **IP21**
- Room Temperature: 5 °C to 40 °C *(41 °F to 104 °F)*
- Maximum relative humidity 80% for temperature up to 31 °C *(88 °F)* decreasing linearly to 50% relative humidity at 40 °C *(104 °F)*
- Altitude: Up to 2000m

SYSTEM REQUIREMENTS

Hereunder are the PC minimum requirements for installation of ***Focus 60 / Focus 61*** *Management Software* (*ToolsTalk BLM*):

- Processor: 400 MHz (800 MHz or above recommended)
- Memory: 256 Mb or above
- Hard disk space: 610 Mb (1 Gb recommended)
- Display: 1024 x 768, High Color (16-bit)
- Operating Systems: Windows XP Service Pack 3 (SP3), Windows 7, Windows 8.1, Windows 10
- Internet Explorer 5.01 or later (required for installation of the .NET Framework)
- Windows Installer 3.1
- Microsoft Excel 2007 or later (required to view the exported file with the tightening results)

NOTE: A system should meet these or the minimum requirements for the operating system, whichever is higher.

1.4 EC Declaration of Conformity

The ***Focus 60 / Focus 61*** is in conformity with the requirements of the council Directives on 06/22/1998 on the approximation of the laws of the Member States relating:

- 2014/30/EC EMC Directive – Electromagnetic Compatibility
- 2011/65/EC ROHS Directive – Risk of Hazardous Substances
- 1999/05/EC R&TTE Directive – Radio and Telecommunications Terminal Equipment
- 2014/35/EC LVD – Low Voltage Directive

The ***Focus 60 / Focus 61*** complies with the following harmonized standards:

Emission

- ETSI EN 301 489-3 v1.6.1 Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz
- EN 61000-3-2:2006 + A1:2009 + A2:2009 Harmonic current emissions
- EN 61000-3-3:2008 Voltage changes, voltage fluctuations and flicker

Immunity

- ETSI EN 301 489-3 v1.6.1 Electromagnetic compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz
- EN 61000-4-2:2009 Electrostatic discharge immunity test (ESD)
- EN 61000-4-3:2006 + A1:2008 + A2:2010 Radiated, radio-frequency, electromagnetic field immunity test
- EN 61000-4-4:2004 + A1:2010 Electrical fast transient / burst immunity test (BURST)
- EN 61000-4-5:2006 Surge immunity test (Surge)
- EN 61000-4-6:2009 Immunity to conducted disturbances, induced by radio-frequencies fields
- EN 61000-4-11:2004 Voltage dips, short interruptions and voltage variations immunity test

NOTE: Connect the SIP/SOP of the ***Focus 60*** / ***Focus 61*** ONLY with devices in compliance with the following harmonized standards:

• IEC EN 60950-1:2005 + A1:2009 + A2:2013	Safety of electronic equipment within the field of audio/video, information technology and communication technology. General requirements.
• IEC EN 61010-1:2010	Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements.

NOTE: The internal battery of the ***Focus 60*** / ***Focus 61*** is in conformity with the following harmonized standard:

• IEC 60086-1:2015	Primary batteries – Part 1: General.

1.5 FCC/ IC

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

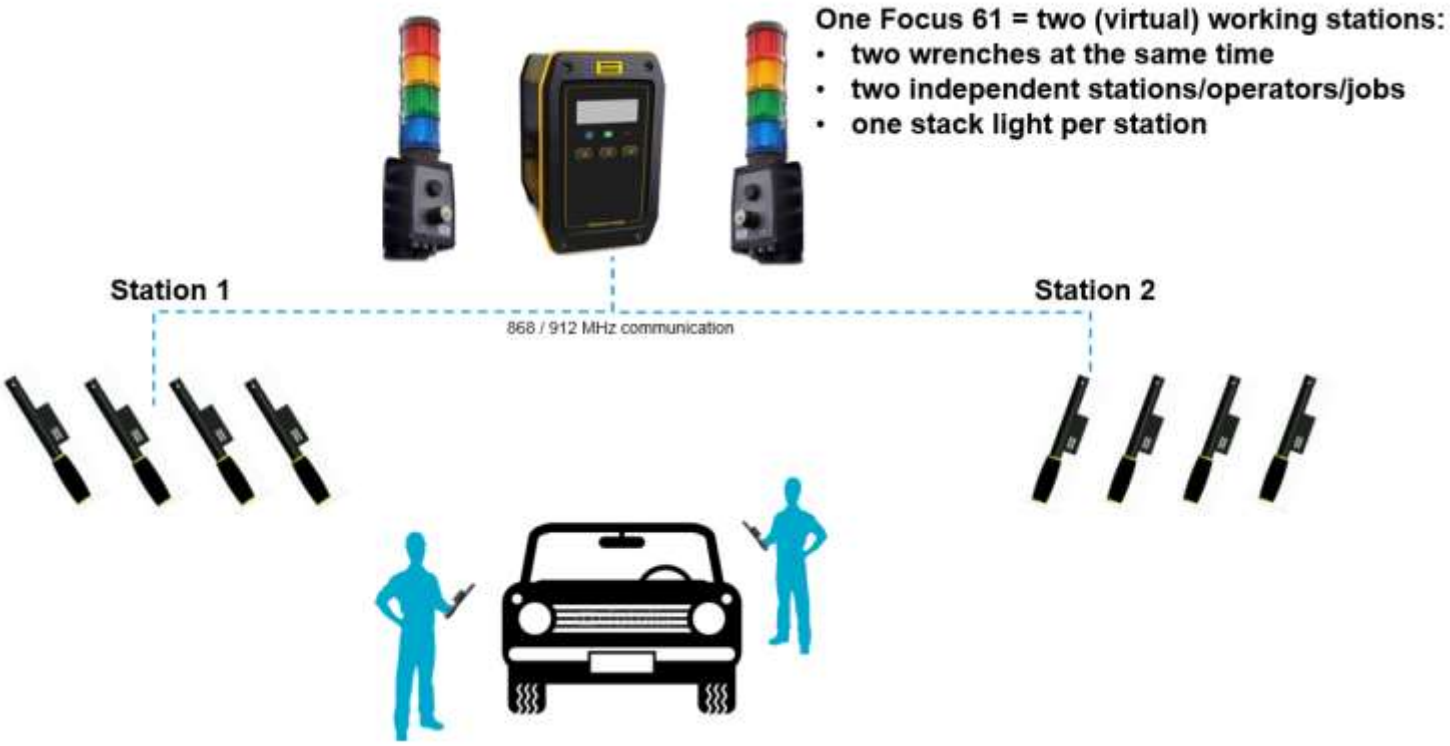
This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s).
Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.
L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

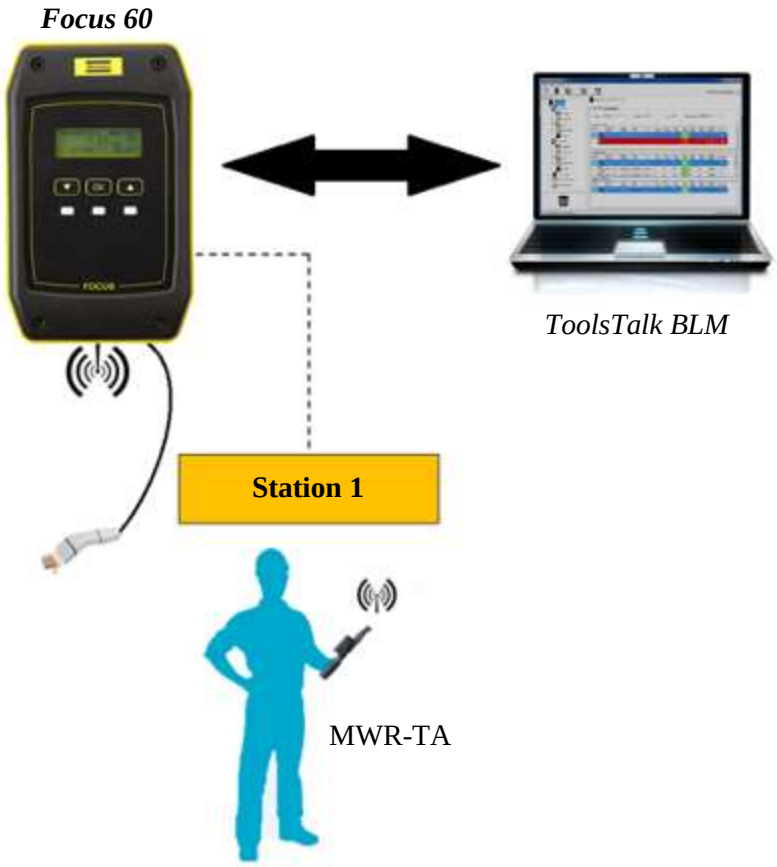
2 SYSTEM OVERVIEW

The ***Focus 60 / Focus 61*** is a controller designed to manage a production line station where mechatronic MWR wrenches are used to do tightening operations.

The ***Focus 61*** can manage up to 10 MWR-TA divided into two stations. On each station, one MWR-TA can be active at a time.



The ***Focus 60*** can manage only one MWR-TA on one station:



Hereunder are the main functions of ***Focus 60 / Focus 61***:

MAIN FUNCTIONS	FOCUS 60	FOCUS 61
MWR-TA management via 868 / 912 MHz radio module	***X***	***X***
Torque/Angle/Time monitoring (according to the MWR-TA model) to control if the tightening is *OK* or *Not OK*	***X***	***X***
Barcode scanner interface	***X***	***X***
Job management for the MWR-TA on two stations		***X***
Programming Software (*ToolsTalk BLM*) to program the controller and results download	***X***	***X***
Open Protocol connection		***X***
Toolsnet	***X***	***X***

The ***Focus 60 / Focus 61*** package contains the following items:

	**Focus 60 / Focus 61 Controller** ***(Focus 60 → P/N 8439 0044 30)*** ***(Focus 61 → P/N 8439 0044 31)*** The main module of the ***Focus 60 / Focus 61***, which contains all the Hardware and Firmware.
	**ToolsTalk BLM** ***(P/N 8059 0981 10)*** The *Management Software*. It represents the *Pset* and *Job* programming, configuration and retrieving results.
	**Power Cables** The power cables depends on the region. The right one is always in the package.
	**Antenna** ***(Antenna (868 MHz) → P/N 4027 5022 13)*** ***(Antenna (915 MHz) → P/N 4027 5022 14)*** The *Antenna* is installed on the ***Focus 60 / Focus 61***, for communicating with the MWR-TA.

The following additional module for ***Focus 60 / Focus 61*** is available:

	**Stacklight (*P/N 8433 0570 13*)** Colored lamps for a real time indication of the tightening results, system status etc.

3 INSTALLATION INSTRUCTIONS

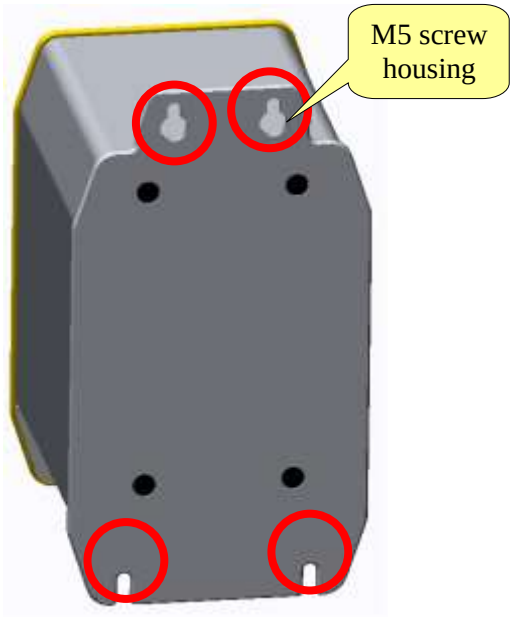
3.1 Installing Focus 60 / Focus 61

WARNING: Install the ***Focus 60 / Focus 61*** close to the AC Power in order to manage it easy.

NOTE: Position the ***Focus 60 / Focus 61*** so that the On-Off switch is easily accessible.

NOTE: For maximum tool performance, mount ***Focus 60 / Focus 61*** in order to guarantee free airflow. This improves the cooling of the controller.

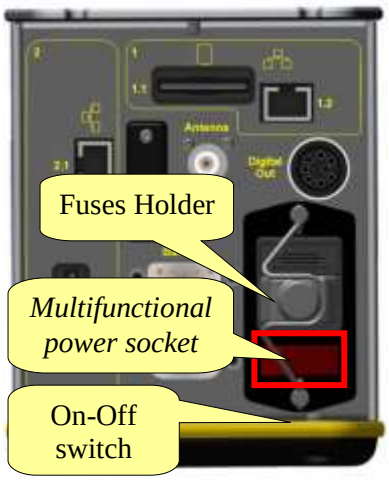
1. Mount the ***Focus 60 / Focus 61*** either on the wall or on steel plate by using four M5 screws. If mounting on a wall, make sure to use the correct wall bracket (plug and screw). If mounting on a steel plate, make sure that the plate is at least 2 mm thick.



NOTE: Refer to the paragraph "*Specifications – Dimensions*" to define how to install the M5 screws.

NOTE: Use ***ONLY*** the power cable provided with the ***Focus 60 / Focus 61*** package. Using of any other power cable may impair the protection provided by the equipment.

2. Connect the power cable from the multifunctional power socket (refer to the figure on the right).



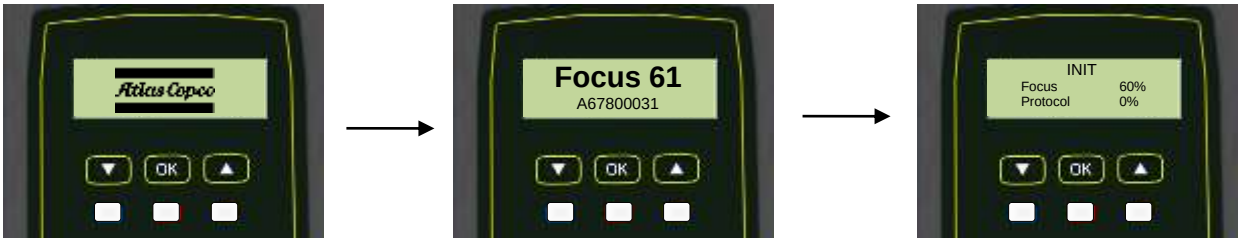
3. Connect the power cable to the AC Power.

NOTE: By using the On-Off switch (placed on the bottom side of the *Focus 60 / Focus 61*), switch the ***Focus 60 / Focus 61*** on, to verify that the installation is correct. Check that the light of the On-Off switch is red and that the other LEDs (placed on the front panel) illuminate correctly.

4 USER INTERFACES

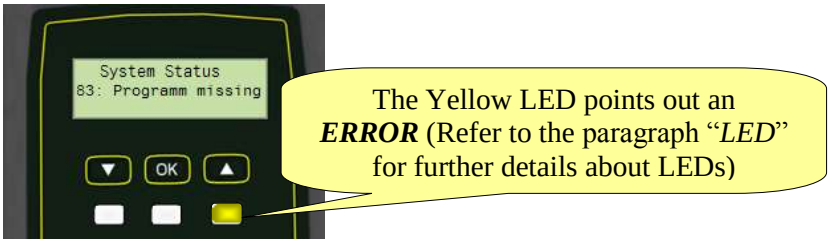
4.1 Focus 60 / Focus 61 Display

During the start-up of the ***Focus 60 / Focus 61***, the following screens show in sequence:

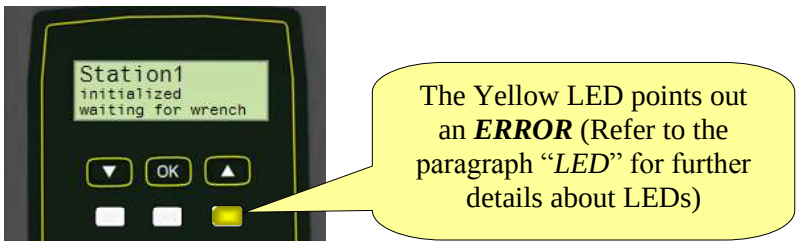


NOTE: The above screens refer to the ***Focus 61*** start-up. The start-up of the ***Focus 60*** is the same, unless the screen in the middle ("*Focus 60"* replaces "*Focus 61"*).

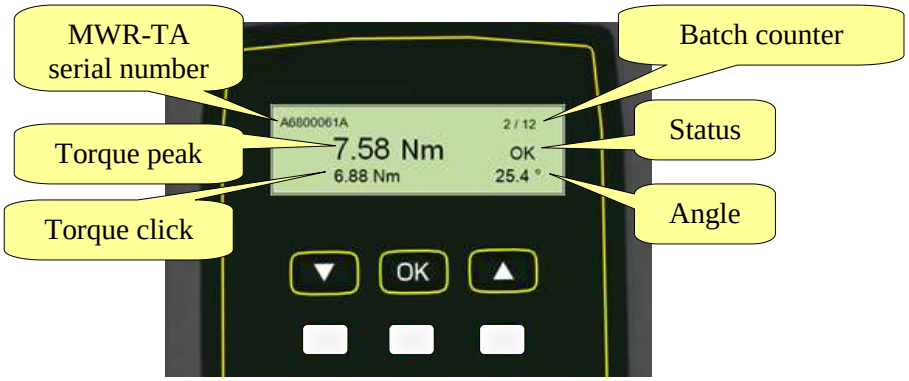
If no one MWR-TA is associated with any Station of the ***Focus 61***, the following screen is shown:



If a MWR-TA is associated with one Station of the ***Focus 60 / Focus 61***, but either the batteries level of the MWR-TA is too low or the MWR-TA is out of the range of the ***Focus 60 / Focus 61***, the following screen is shown:



Associate the MWR-TA with a Station of the ***Focus 60 / Focus 61***. After few seconds, the ***Focus 60 / Focus 61*** shows the data of the ongoing tightening operation on the MWR-TA (refer to the following picture):



MWR-TA serial number	Serial number of the MWR-TA that is working.
Torque peak	Maximum torque measured during tightening phase.
Torque click	Click-point measured during tightening phase.
Status	Result of tightening operation of the operating MWR-TA. **NOTE**: Refer to the paragraph "*Executing tightening operations*" for further details.
Angle	Maximum angle measured during the tightening phase.
Batch counter	Number of the current tightening over the job step total tightenings.

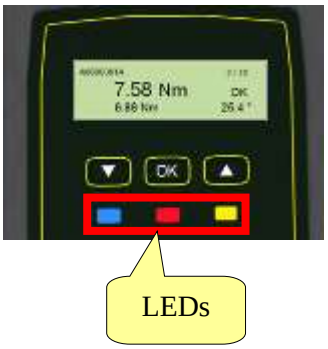
4.2 Focus 60 / Focus 61 Keyboard

Use the keyboard to browse the ***Focus 60 / Focus 61***menu and to change the info screens:

Icon	*Name*	*Description*
	***OK***	Middle button under the display. It changes the settings of the device.
	***DOWN***	Left button under the display. It slides down the fields of the settings and decreases value in settings menu.
	***UP***	Right button under the display. It slides up the fields of the settings and increases value in settings menu.

4.3 Focus 60 / Focus 61 LEDs

There are three LEDs on the ***Focus 60 / Focus 61***front panel:



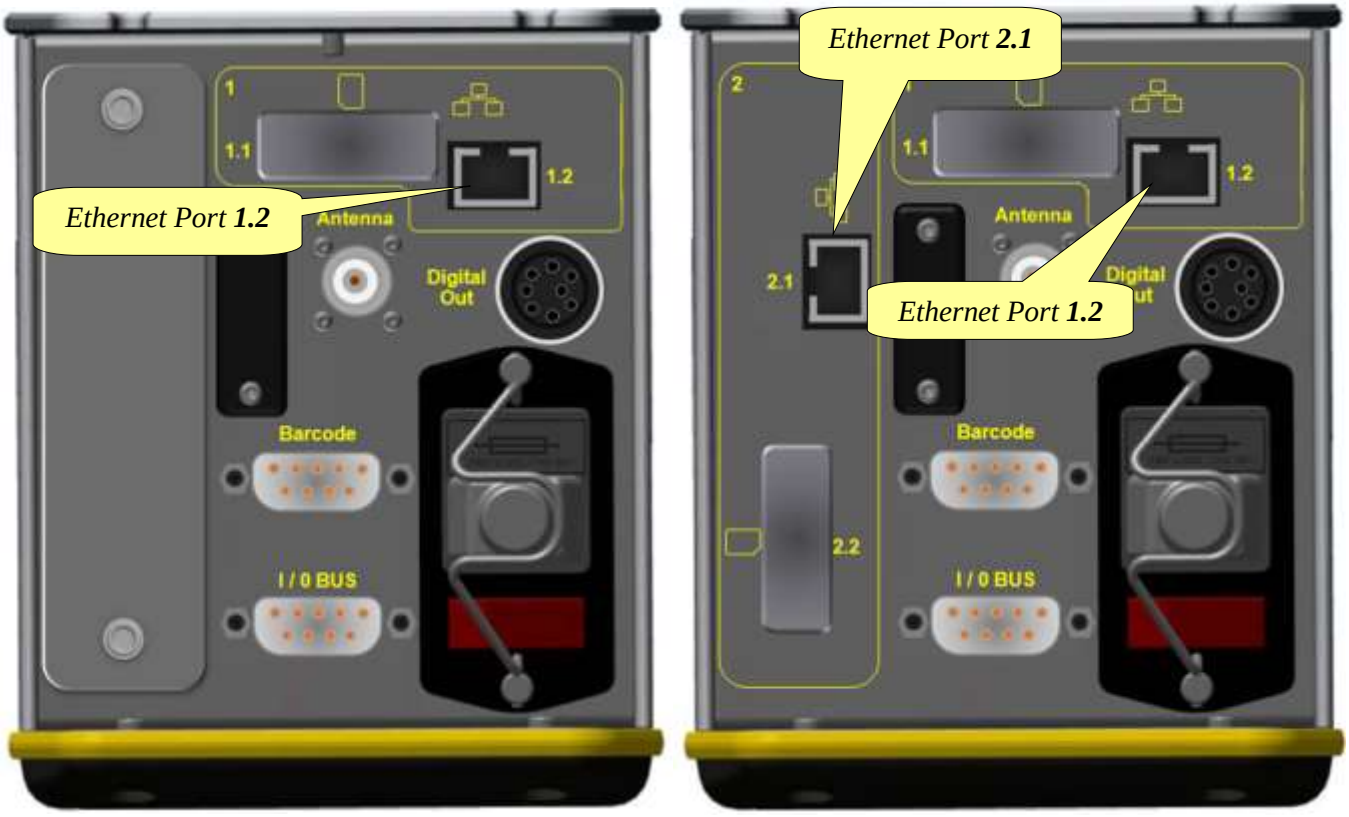
LED color	*Description*
Blue	The **Blue** LED is on when the system is ready. The system is *not ready*, if: - there is an error (*Main error flag* in *MainState* but field is set); - the system is processing an update (any of the flags in the update field of the *MainState* but field is set); - the "*Ready*" flag in the script station state for any enabled station is not set.
Red/ Blinking Green	**Red**: The ***Focus 60 / Focus 61***communicates with ToolsTalk BLM. **Blinking Green**: The ***Focus 60 / Focus 61*** communicates with a MWR-TA.
Yellow	The ***Focus 60 / Focus 61*** display shows an error.

4.4 Focus 60 / Focus 61 Ethernet Ports

The *Ethernet Port* allows the communication between the ***Focus 60 / Focus 61*** and ToolsTalk BLM.

Two *Ethernet Ports* characterize the ***Focus 61*** (***Focus 60*** has only one). See the pictures below.

Focus 60 ***Focus 61***



4.5 Focus 60 / Focus 61 Barcode scanner Interface (RS232)

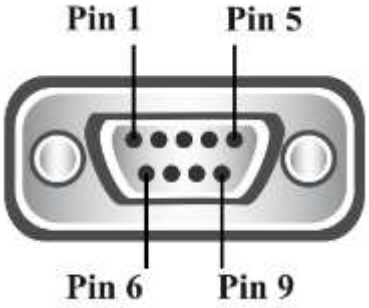
The ***Focus 60 / Focus 61*** has a barcode interface RS232 (see the pictures below) with a switchable 5V power supply (max 400 mA).

The *Barcode* interface *RS232* parameters are as follows:

- 8 data bit
- 1 stop bit
- no parity
- Data Rate: it is settable according to customer needs (refer to the following table). By default, the Data Rate is set on ***38400 bit/s***.

Data rate nominal (bit/s)	***Data rate actual (bit/s)***	***Mismatch***	***Note***
9600	9615	0.2%	
19200	19231	0.2%	
38400	38462	0.2%	
76800	76923	0.2%	
115200	114286	0.7%	
230400	235294	2.1%	Not yet available

- Pin assignment barcode scanner port:



PIN #	***Signal***
1	
2	RX
3	TX
4	
5	GND
6	
7	
8	
9	+5 VDC

- No Prefix
- No Suffix
- TERMINATOR: CR + LF
  Terminator Specification:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
V	E	H	I	C	L	E	_	I	D	E	N	T	_	N	U	M	B	E	R	\r	\n
56	45	48	49	43	4C	45	5F	49	44	45	4E	54	5F	4E	55	4D	42	45	52	0D	0A
086	069	072	073	067	076	069	095	073	068	069	078	084	095	078	085	077	066	069	082	013	010

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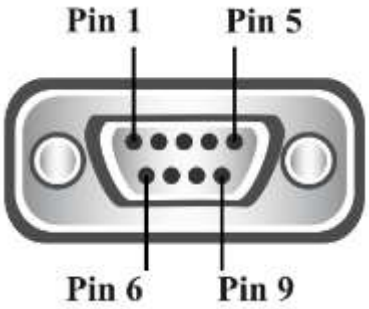
4.6 Focus 60 / Focus 61 I / O BUS (CAN)

I / O BUS (CAN) (see the pictures below) connects the *Stacklight* to the ***Focus 60 / Focus 61***. The *Stacklight* is an optional tool that supplies a real time indication of each tightening result, system status, etc.

I / O BUS (CAN) parameters are as follows:

- Data Rate: 250000 bit/s
- Address range: 1…f
- Current at 24V: 250mA (maximum)
- Pin assignment I/O BUS *(CAN)*:



PIN #	*Signal*
1	+24 VDC
2	Data Low
3	GND
4	GND
5	
6	GND
7	Data High
8	
9	+9 VDC

NOTE: All signals and voltages are galvanically separated from the device.

Focus 60 ***Focus 61***

4.7 Focus 60 / Focus 61 Wave Flexible Antenna

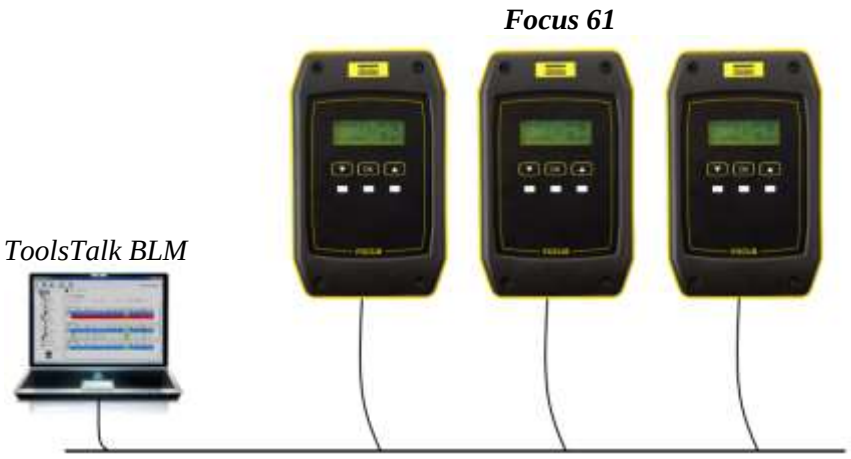
The *Wave Flexible Antenna* (see the pictures below) allows the ***Focus 60 / Focus 61*** to communicate with the MWR-TA.

The *Wave Flexible Antenna* parameters are as follows:

- 1/4 Wavelength Whip Antenna
- Rugged Flexible Plastic Finish
- Available as BNC
- Available as Straight or Right Angle
- Omni-Directional Design
- Impedance: 50 Ω
- Operating Temperatures: – 30 °C to + 60 °C
- Insulation resistance: 500 MΩ at 500 VDC

Focus 60 ***Focus 61***

5 WORKING WITH ToolsTalk BLM



ToolsTalk BLM is a PC software package to manage the ***Focus 60 / Focus 61***.

It offers user-friendly programming and real time monitoring.

ToolsTalk BLM is a configuration interface between the user and the ***Focus 60 / Focus 61***.

The main features that characterize the configuration interface between the user and the ***Focus 60 / Focus 61*** are as follows:

- Stations configuration
- Pset / Job definition
- Events configuration (triggers to start a Job)
- Focus 61 settings
- Open Protocol settings

NOTE: For further details about *Software Installation* and *Software Registration*, refer respectively to the paragraphs "*Software Installation*" and "*Software Registration*".

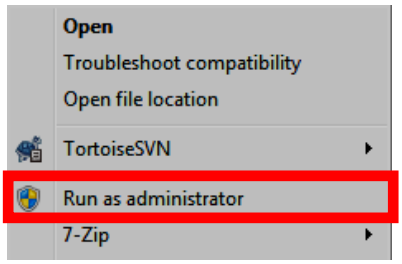
5.1 Software Installation

NOTICE Install ToolsTalkBLM with PC administrator rights.

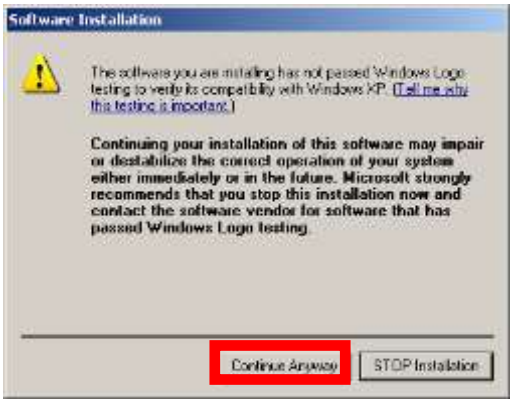
NOTICE Do not install the software from a shared folder/drive. Install the software from the supplied CD; if the CD content is copied into a PC folder, it must be a PC local folder.

To install the software, double-click the setup file and do the following instructions.

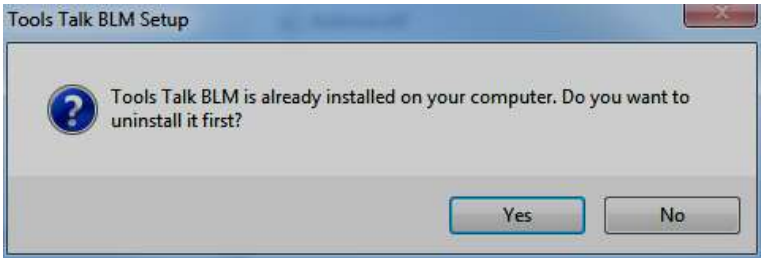
NOTICE For Window 7 operating system (*or later*), right-click the setup file and select the ***Run as Administrator*** (see the figure on the right):



Click ***Continue Anyway*** if the following *Windows message* is shown:

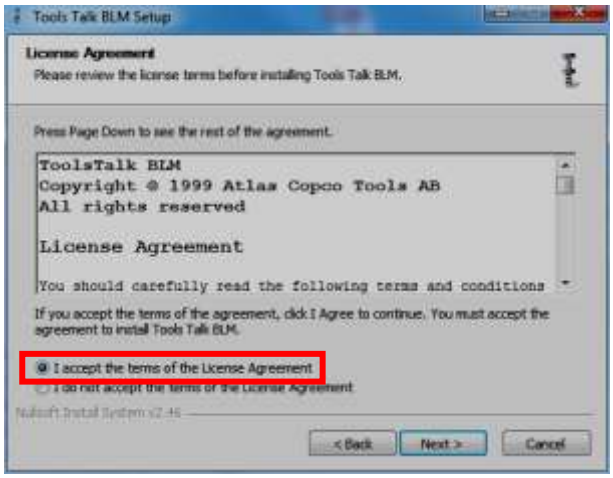


After double-clicking the setup file, if ToolsTalk BLM is already installed on the computer, the following message is shown:



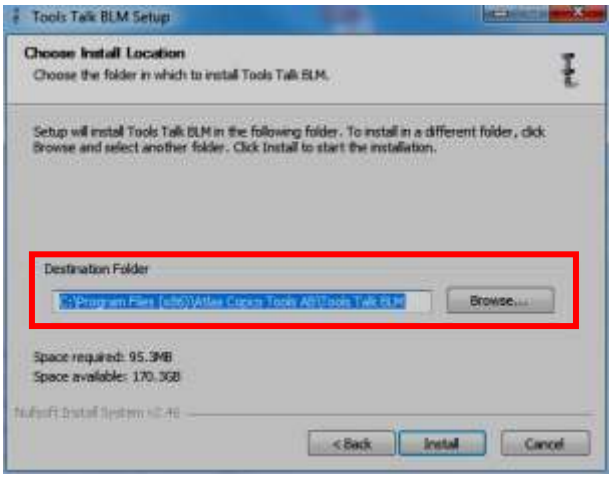
Click ***Yes*** in order to uninstall the ToolsTalk BLM software version installed on the computer. After clicking ***Yes***, it is possible to continue with the installation process:

Click ***Next*** to continue the installation process.

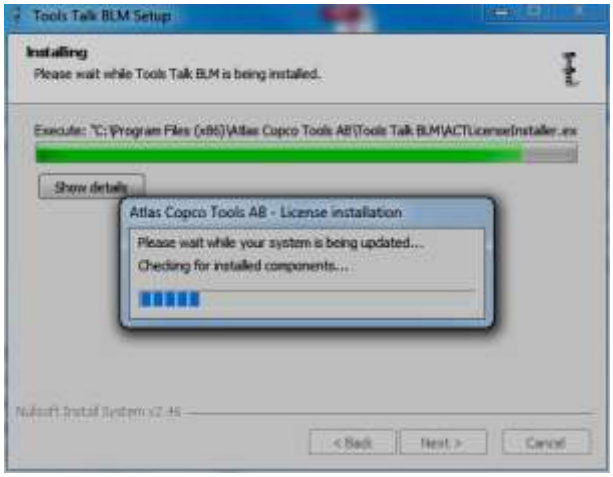


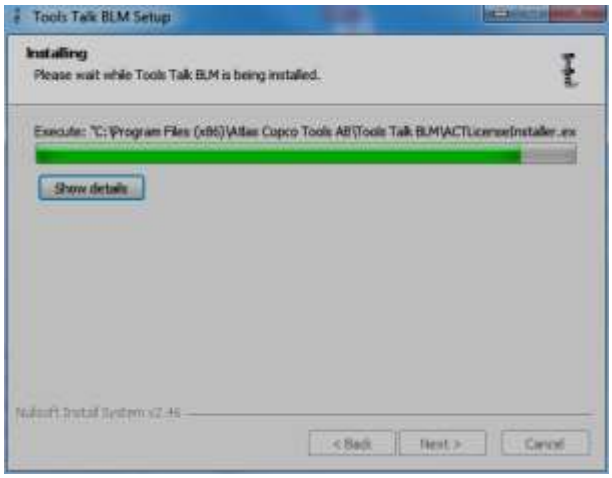
After carefully reading the ***License Agreement***, select the option "*I accept the terms of the License Agreement*" and click ***Next***.

Select the *Destination folder* in which to install the ToolsTalk BLM. Finally click ***Install*** to start the installation.

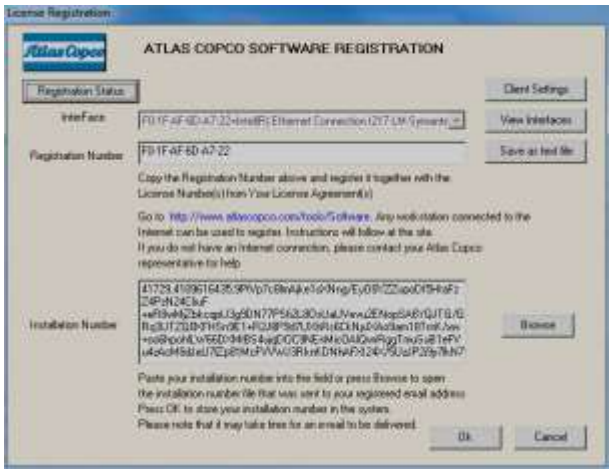


The following *Installation screen* alerts the operator that ToolsTalk BLM is being installed:

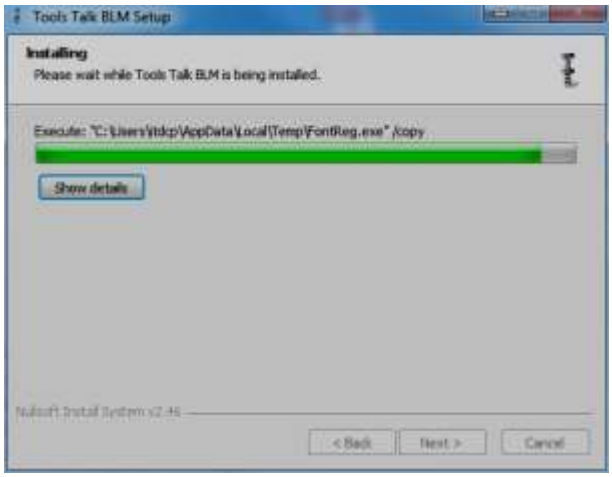




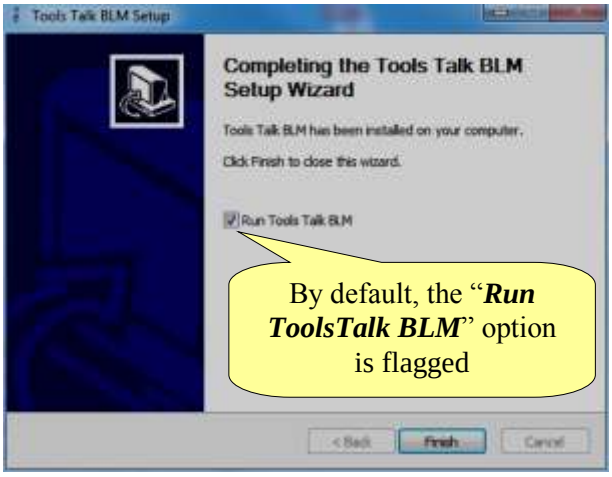
Before to finish the installation process, the screen on the right shows:



After clicking ***Ok***, the following *Installation screen* is shown:

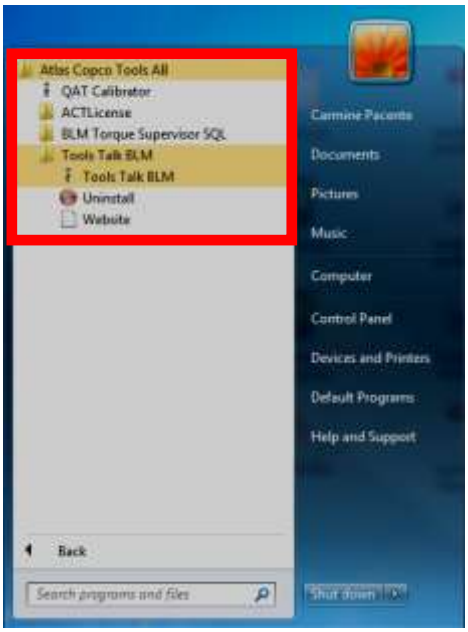


At the end of the installation process, the screen on the right is shown:



Click ***Finish***; ToolsTalk BLM is automatically started.

After installing the software, run the program by selecting ***Start → All Programs → Atlas Copco Tools AB → Tools Talk BLM*:**

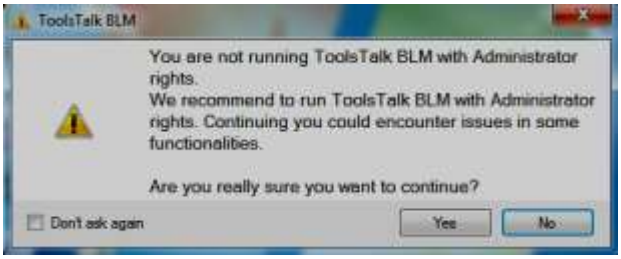


NOTICE ToolsTalk BLM Software runs also with *Windows Standard User*, except for the following issue:

- *Log management*

To avoid the previous issue, run ToolsTalk BLM as *Administrator*.

If the user does not run ToolsTalk BLM with *Administrator rights*, the pop-up on the right shows:

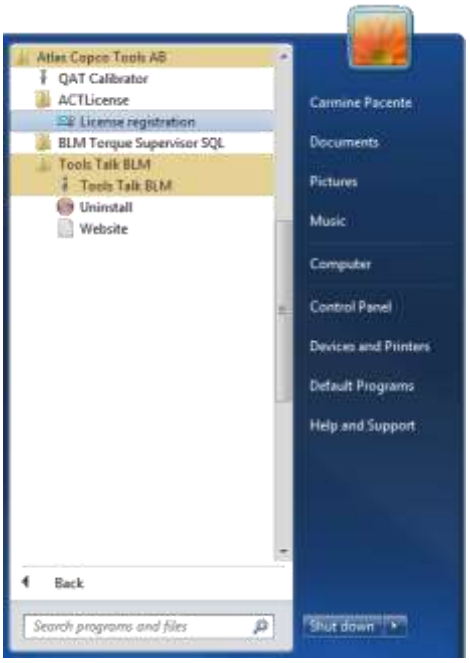


Click ***Yes*** to continue as *Standard User*: in this case, the user could encounter issues in some functionalities.

5.2 Software registration

After installing the software, register at www.atlascopco.com/tools/software; if there is no registration, the software works as demo for 60 days.

Once the software is installed, enter the registration form by selecting ***Start → All Programs → Atlas Copco Tools AB → ACTLicense*** (refer to the screen on the right).



5.3 Software upgrade

If there is a software update of ToolsTalk BLM, simply install the new version; the previous one is automatically uninstalled.

Close the previous version during the update process.

There is no impact through the update on the settings, tightening programs and results.

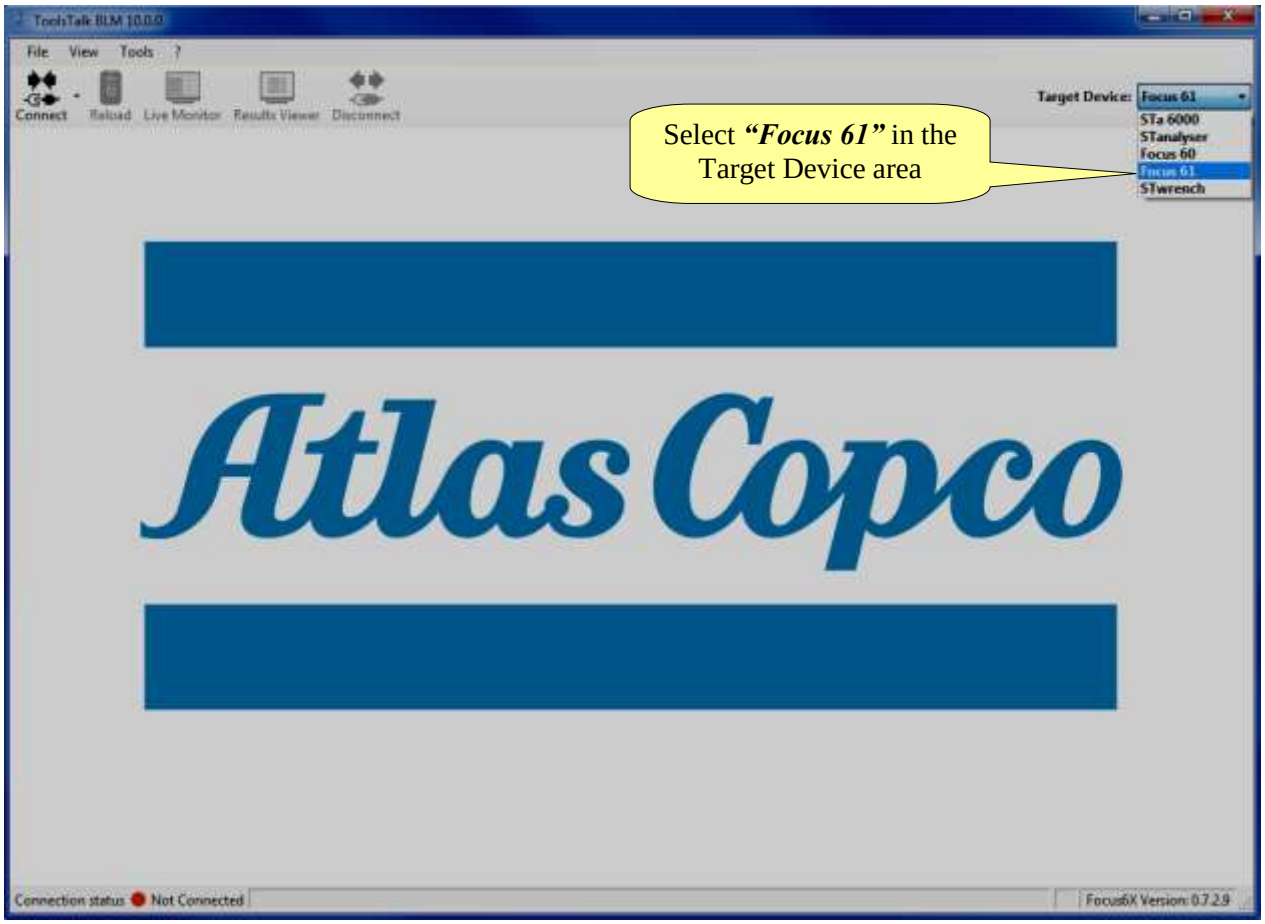
5.4 Connecting with the Focus 60 / Focus 61

NOTE: This paragraph describes the connection between ***Focus 61*** and ToolsTalk BLM. The procedure to connect ***Focus 60*** with ToolsTalk BLM is basically the same.

Click ToolsTalk BLM icon to launch the software.

After clicking ToolsTalk BLM icon, the following screen shows:

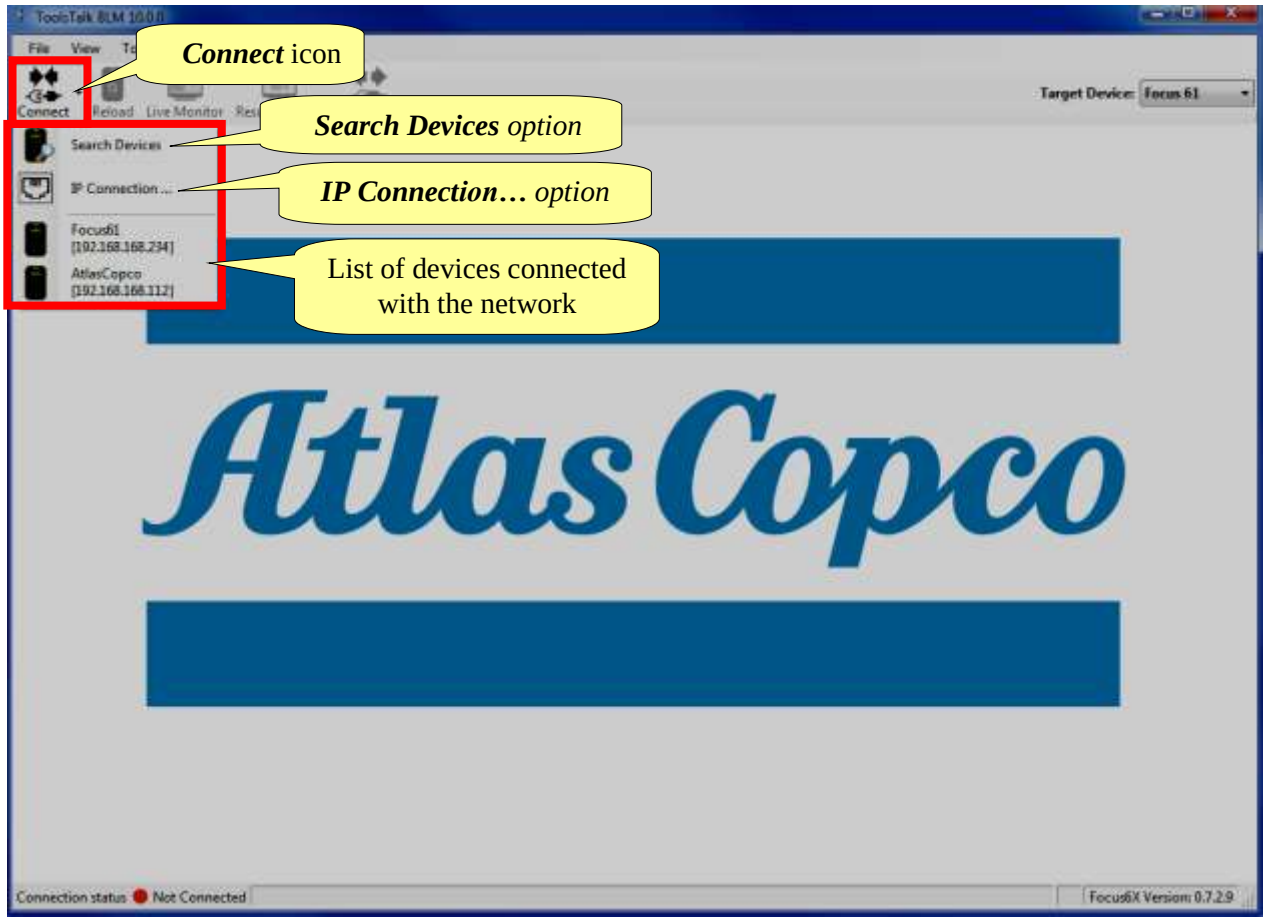
If necessary, select "***Focus 60***" or "***Focus 61***" in the *Target Device area* as shown in the screen below:



Turn the ***Focus 61*** on and wait until the initialization is completed. Then verify that the PC and ***Focus 61*** are connected with the same network.

NOTE: The connection between the ToolsTalk BLM and the ***Focus 60 / Focus 61*** is done via Ethernet.

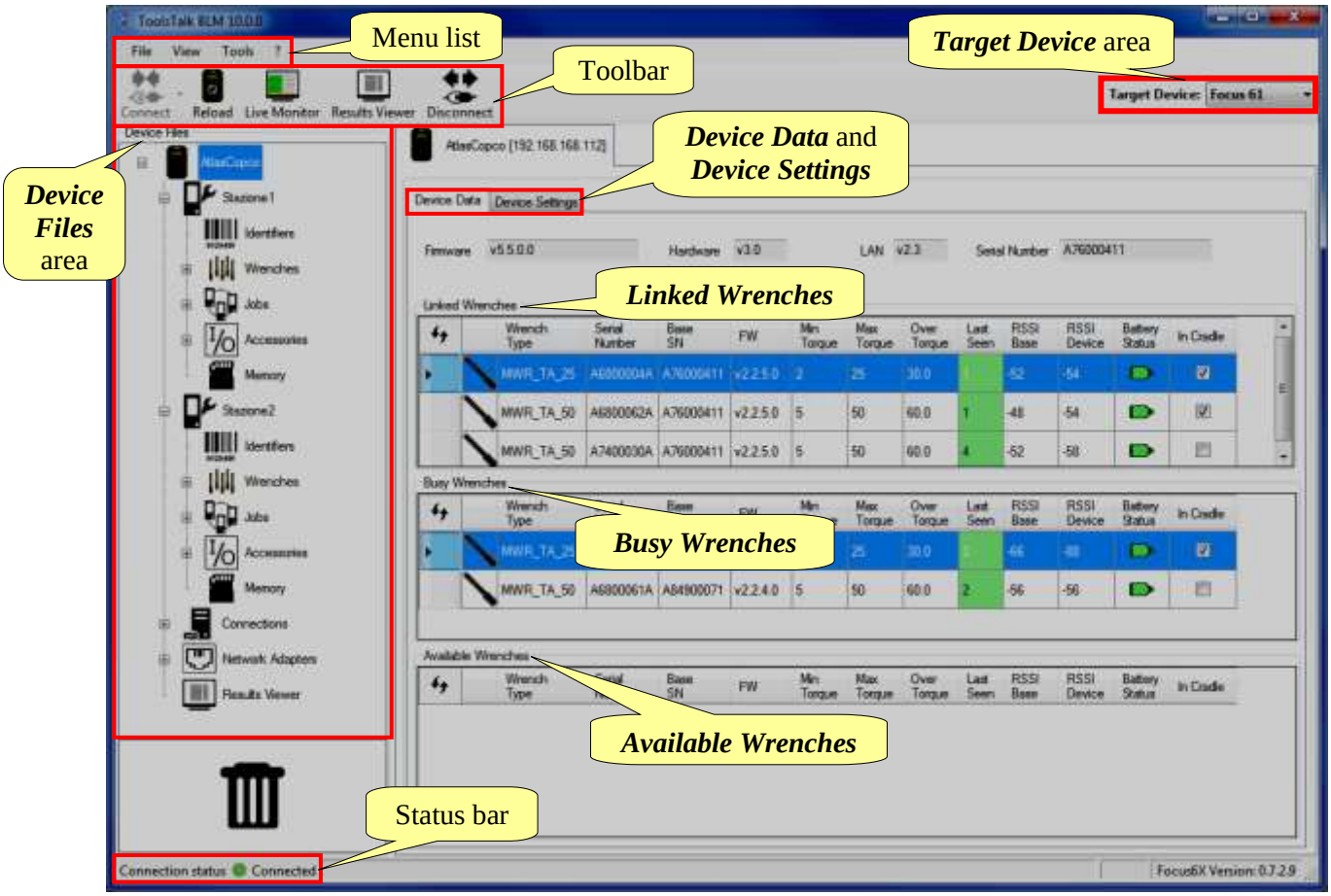
After turning the ***Focus 61*** on, click ***Connect*** icon: ***Search Devices*** *option*, ***IP Connection…*** *option* and the list of devices connected with the network show (see the screen below).



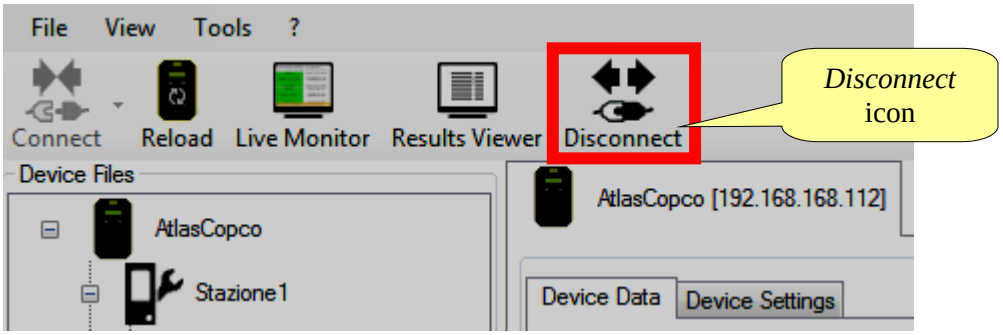
Search Devices *option* updates the list of devices connected with the network in real time.

After clicking the ***IP Connection…*** *option*, the *IP Address Connection* pop-up (see the figure on the right) shows. It connects a specific *Focus* with the network.
Insert the *IP Address* of the desired device and click *Connect*.

Select the desired device. Then wait until ToolsTalk BLM interface shows:

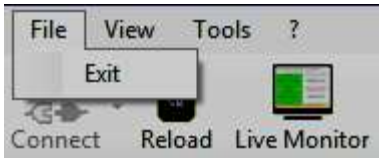
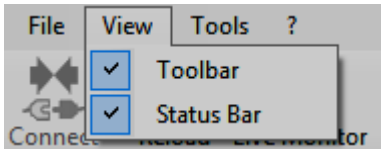
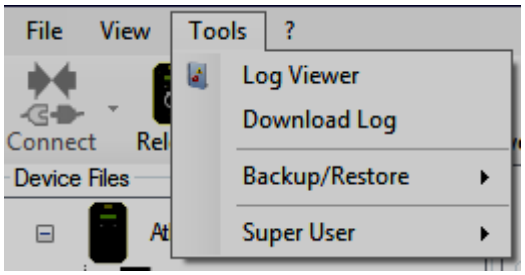


After connecting the desired device, ***Connect*** icon (placed on the toolbar) gets disabled, while ***Disconnect*** icon gets active: click to disconnect the system:



5.4.1 Menu list

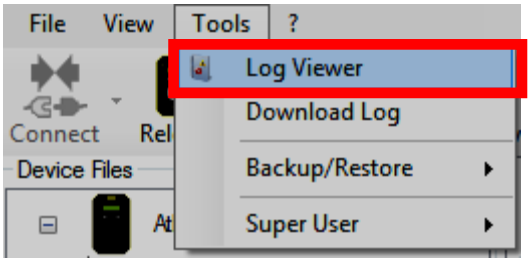
The following options are available on the *ToolsTalk BLM Menu list*:

ILLUSTRATION	*NAME*	*DESCRIPTION*
	**File**	"***File***" allows customer to exit from ToolsTalk BLM Software.
	**View**	"***View***" enables or disables the *Toolbar* and the *Status Bar*.
	**Tools**	"***Tools***" provides the following functions: - Log Viewer (refer to paragraph "*Enabling LOG Viewer*") - Download Log (refer to the paragraph "*Download LOG*") - Backup/Restore (refer to paragraph "*ToolsTalk BLM Backup and Restore / Update*") - Super User (*available only for Atlas Copco Service Personnel*)

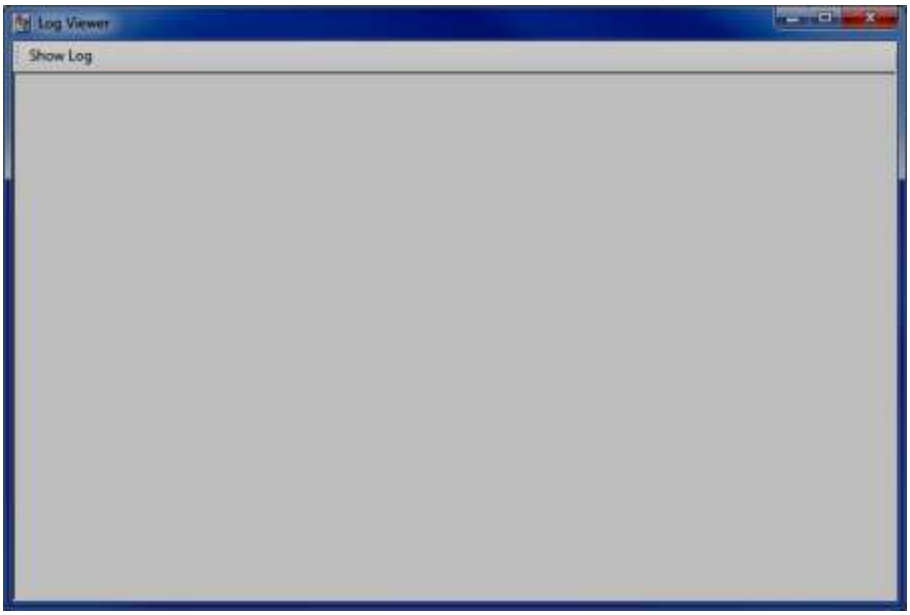
5.4.1.1 Enabling LOG Viewer

Enable LOG Viewer to trace the ToolsTalk BLM operations with the ***Focus 60 / Focus 61***: this is helpful for troubleshooting activities.

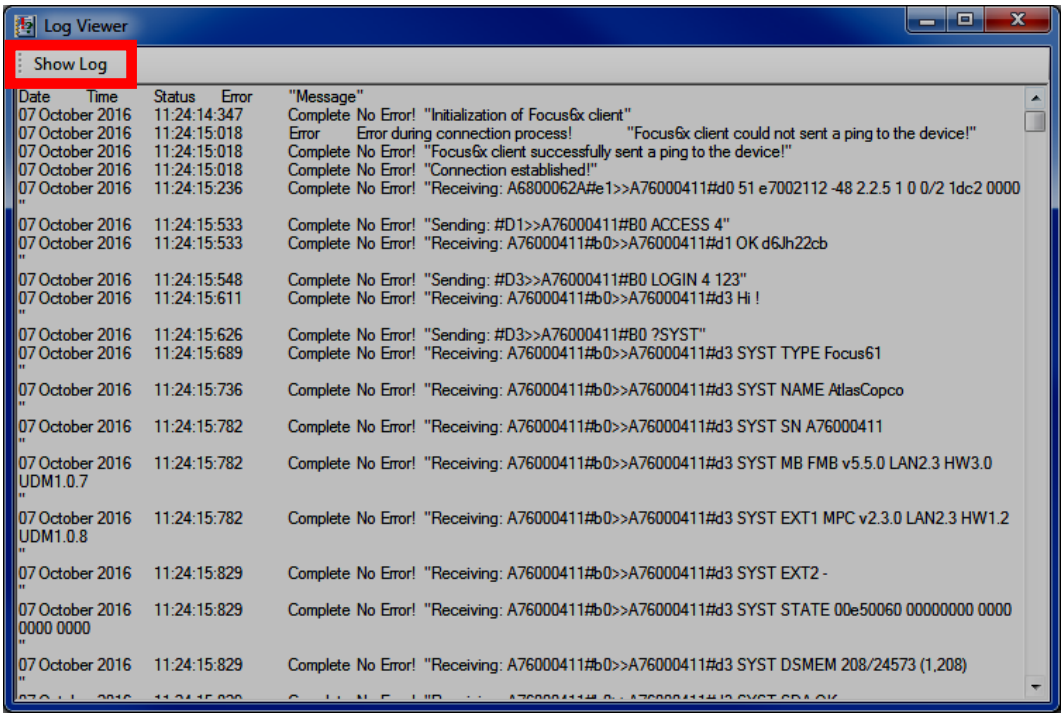
Select ***Tools → Log Viewer***:



The window on the right shows:



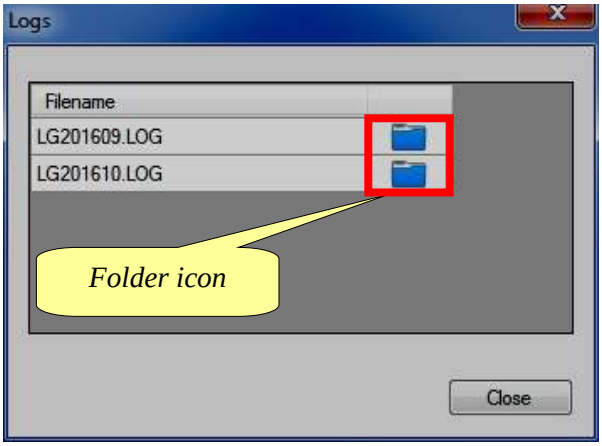
Click ***Show Log*** to display the information related to the "Log Messages" (operations made between the ToolsTalk BLM and the ***Focus 60 / Focus 61***):



5.4.1.2 Download LOG

Select ***Tools → Download LOG*** to download the LOG file stored in the ***Focus 60 / Focus 61*** memory.

After clicking, the following pop-up shows:

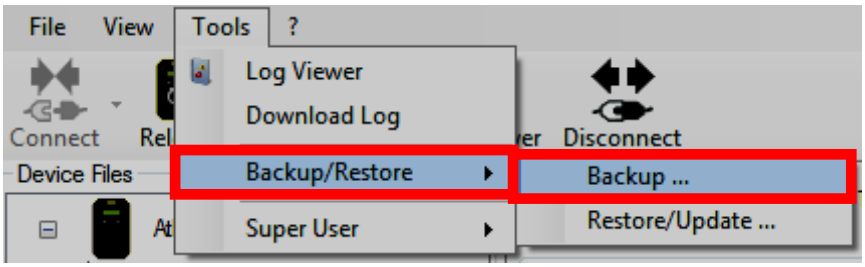


Click the *Folder icon* to select the destination folder of the LOG file.

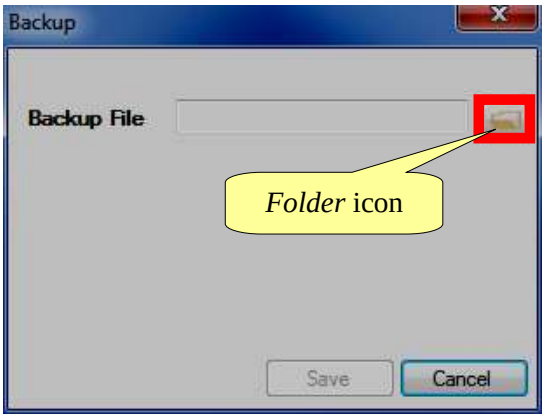
5.4.1.3 ToolsTalk BLM Backup and Restore / Update

5.4.1.3.1 *Performing Backup*

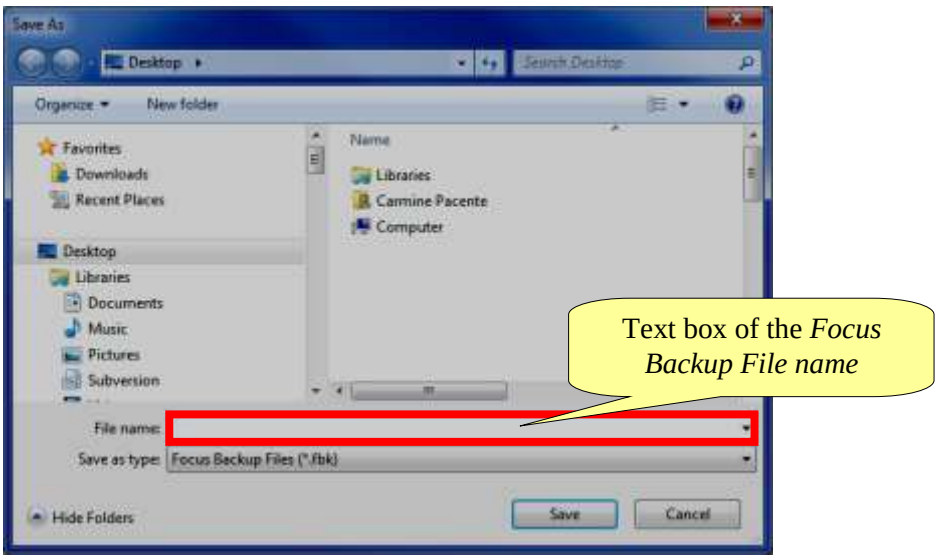
Select ***Tools → Backup/Restore → Backup…*** (see the figure below):



After clicking ***Backup…***, the pop-up on the right shows:

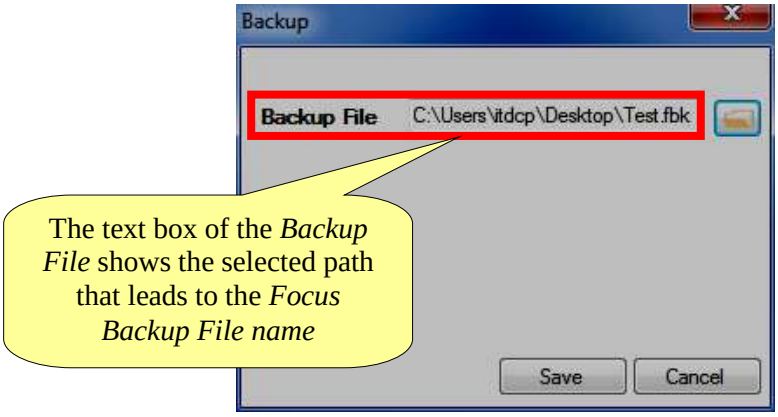


Click the "*Folder*" icon (see the above pop-up) to define the *Backup File*; the following window shows:



Type the *Focus Backup File name* into the related text box (see the figure above) and select the desired "*destination folder*".

Finally, click *Save*; the pop-up on the right shows:



Make sure that the text box of the *Backup File* shows the selected path that leads to the *Focus Backup File name*; then click *Save*.

The "*Saving Backup process*" starts automatically.

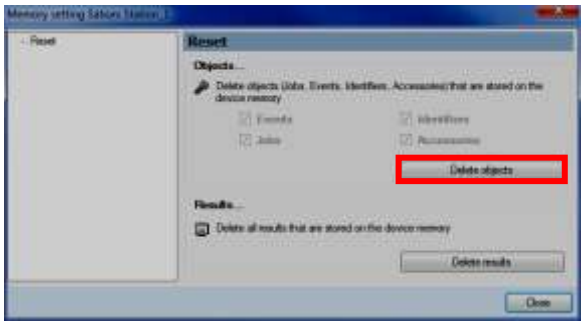
At the end of the "*Saving Backup process*" a "*Backup saved*" pop-up shows (see the figure on the right).

Click *OK*.

5.4.1.3.2 *Performing Restore / Update*

NOTE: Please, clean the system before restore backups.

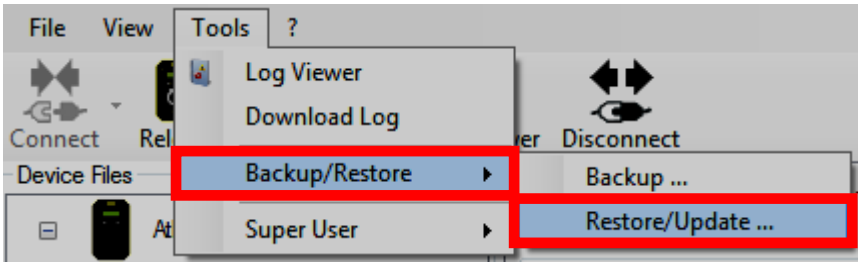
For both *Stations*, click ***Memory*** (placed in the *Device Files area*); the pop-up on the right shows:



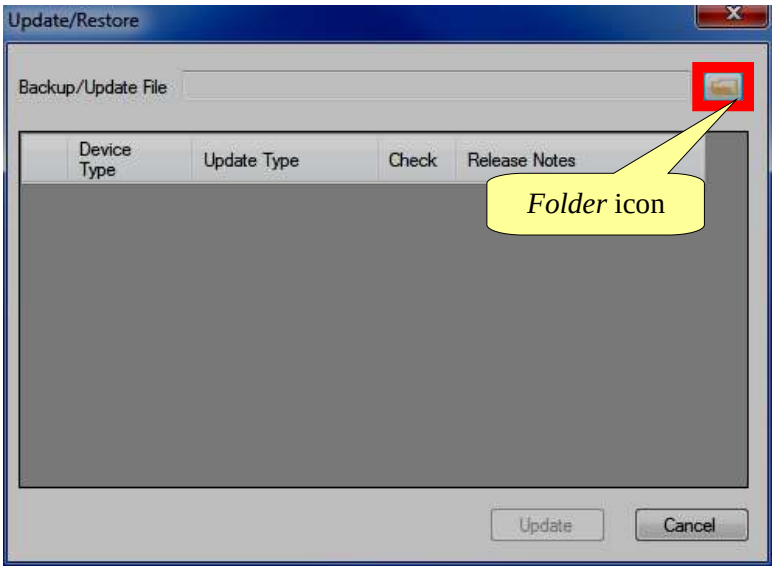
Click "***Delete objects***" to delete *Jobs*, *Events*, *identifiers*, *Accessories* stored on the device memory.

Finally, remove all of the wrenches.

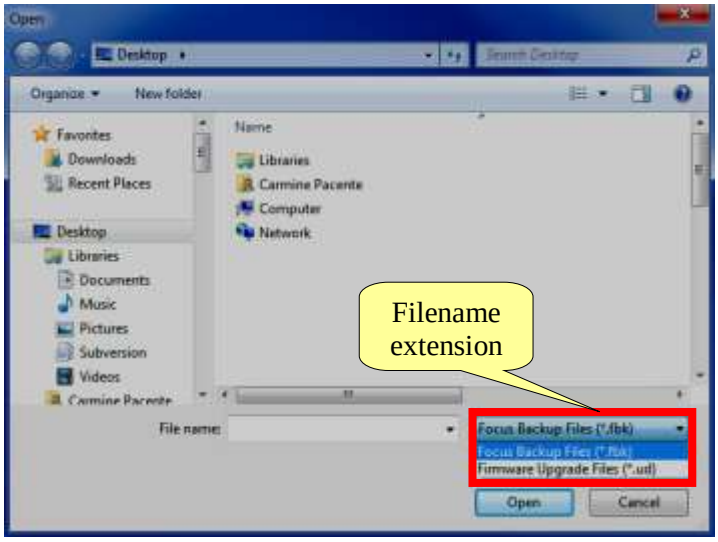
Select ***Tools*** → ***Backup/Restore*** → ***Restore/Update…*** (see the figure below):



After clicking ***Restore/Update…***, the pop-up on the right shows:



Click the "*Folder*" icon (see the above pop-up) to open either the *Focus Backup File* or the *Firmware Upgrade File*; the window on the right shows:

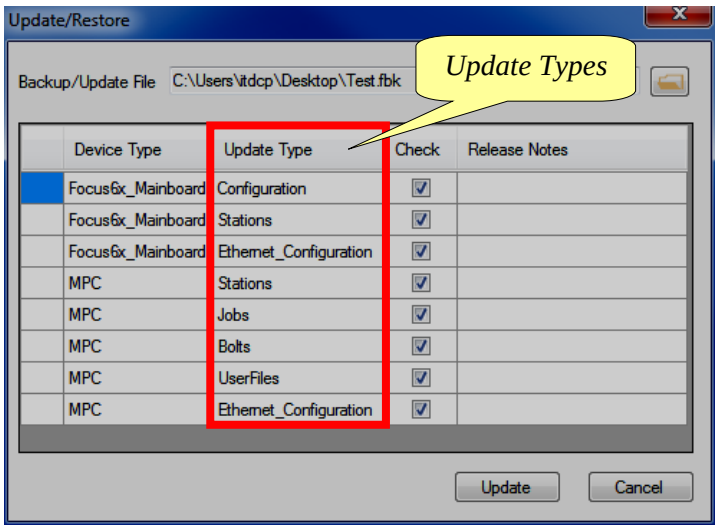


Select either the *Focus Backup File* or the *Firmware Upgrade File* with the related filename extension.

For the *Focus Backup File* open the drop down list on the right of the "*File name*" text box and select *Focus Backup File (*.fbk)*.

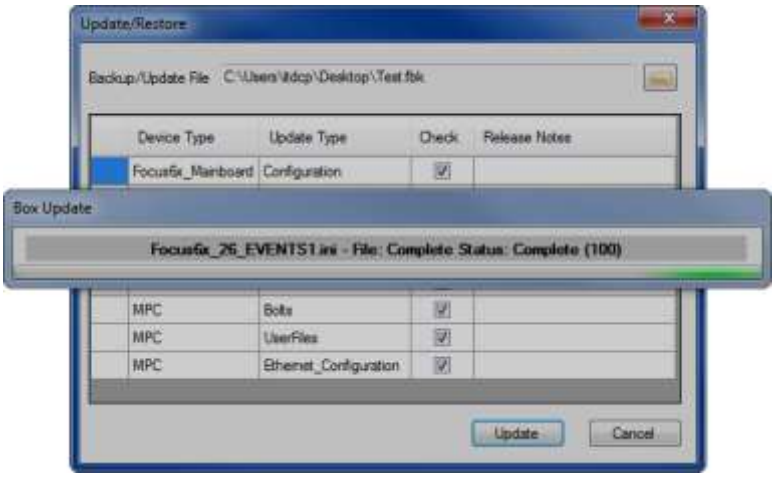
For the *Firmware Upgrade File* (sent by manufacturer to upgrade the ***Focus 60 / Focus 61***) open the drop down list on the right of the "*File name*" text box and select *Firmware Upgrade File (*.ud)*.

Finally, click *Open*; the pop-up on the right shows:

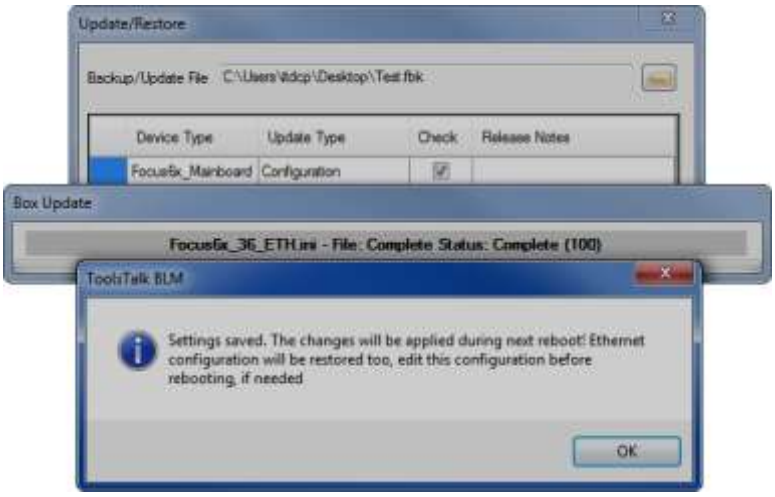


Make sure that each *Updated Type* is correctly checked; then click *Update*.

The "*Focus Update process*" starts automatically (see the figure on the right).



At the end of the "*Focus Update process*" a "*Settings saved*" pop-up shows (see the figure on the right).

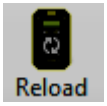
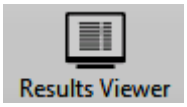


Do the instructions provided into the "*Settings saved*" pop-up and click *OK*.

NOTE: Before rebooting, it is highly recommended to select / confirm the correct *Ethernet configuration*, by acting on the *Network Adapters* section placed in the *Device Files area*.

5.4.2 Toolbar

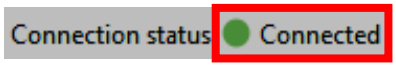
The ***Toolbar*** *icons* are shortcuts to the following functions:

ICON	*ICON NAME*	*DESCRIPTION*
	**Connect**	***"Connect"*** *icon* connects the ToolsTalk BLM with the ***Focus 60 / Focus 61***.
	**Reload**	***"Reload"*** *icon* reloads the data of the ***Focus 60 / Focus 61*** connected.
	**Live Monitor**	***"Live Monitor"*** *icon* opens the *Live Monitor functions*, showing in real time the tightening from the connected wrenches. **NOTE**: The tightenings (in real time) are displayed only one by one. **NOTE**: Refer to the paragraph "*Live Monitor*" for further details.
	**Results Viewer**	***"Results Viewer"*** *icon* shows the latest results stored by the device. **NOTE**: The ***only*** applicable filters are those set on the device (refer to the paragraph "*Device Settings*" for further details). **NOTE**: Refer to the paragraph "*Results Viewer*" for further details.
	**Disconnect**	***"Disconnect"*** *icon* disconnects the ToolsTalk BLM from the ***Focus 60 / Focus 61***.

5.4.3 Status bar

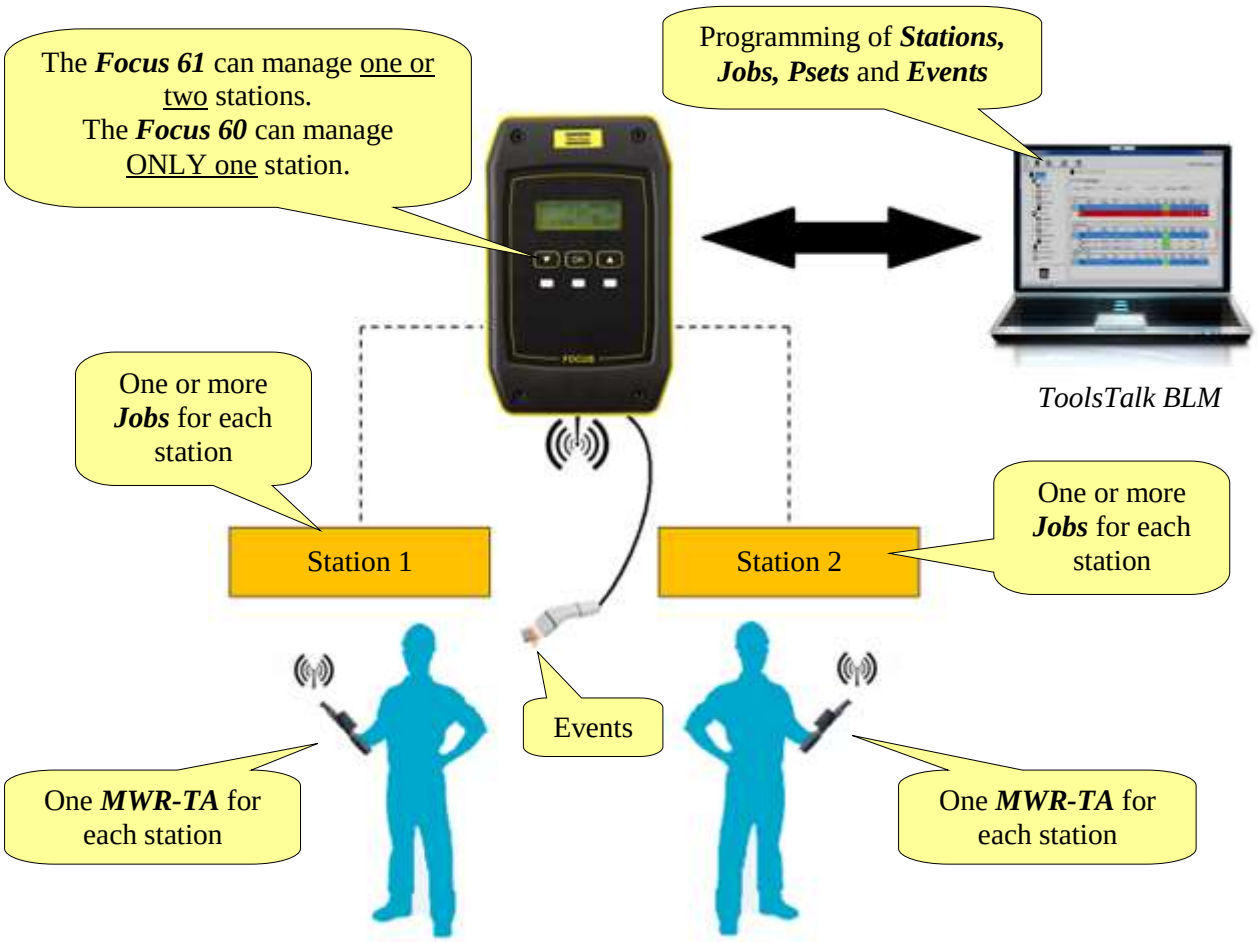
The status bar shows the connection status between ***Focus 60 / Focus 61*** and ToolsTalk BLM.

When the connection between ***Focus 60 / Focus 61*** and ToolsTalk BLM is stable, a green bullet followed by "***Connected***" represents the *connection status* (see the figure on the right):



If the connection between ***Focus 60 / Focus 61*** and ToolsTalk BLM is not found, a red bullet followed by "***Not Connected***" represents the *connection status* (see the figure on the right):

6 PROGRAMMING Focus 60 / Focus 61



The ***Focus 61*** can manage one or two stations, while the ***Focus 60*** can manage only one station.

The stations are virtual, used by the software to let the device manage the jobs of the operators working, for instance, of the two sides of the same assembly area (in the case of the ***Focus 61***).

For each station, the sequence of operations that the operator must execute is defined into one or more *Jobs*. Each *Job* is a set of *Pset*, which is the tightening program loaded on the MWR-TA.

NOTE: The ***Focus 60*** can ONLY handle one Job and one Pset.

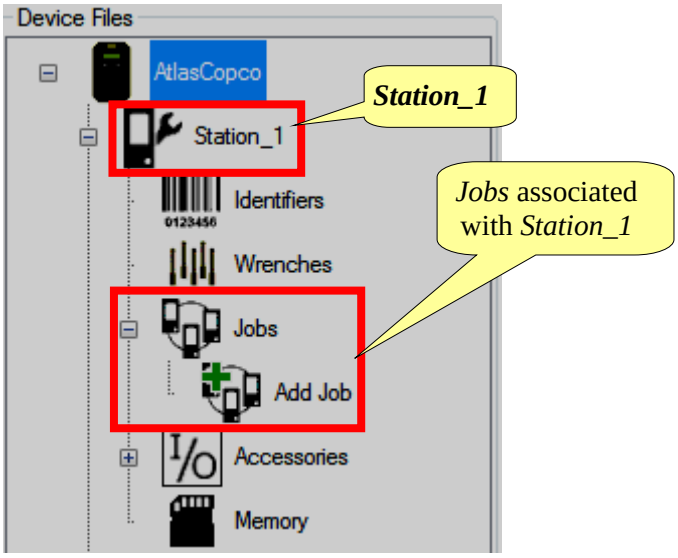
The *Jobs* start either automatically when the ***Focus 60 / Focus 61*** turns on or starting the operation by external signal given by scanning a barcode string or by the AOP command (refer to paragraph "*Events Configuration*").

Connect ONLY one barcode scanner with the ***Focus 60 / Focus 61***.

It is not possible to connect more stacklights (or other compatible components) with the ***Focus 60 / Focus 61***, if the connected I/O Device forwards the I/O Bus physically.

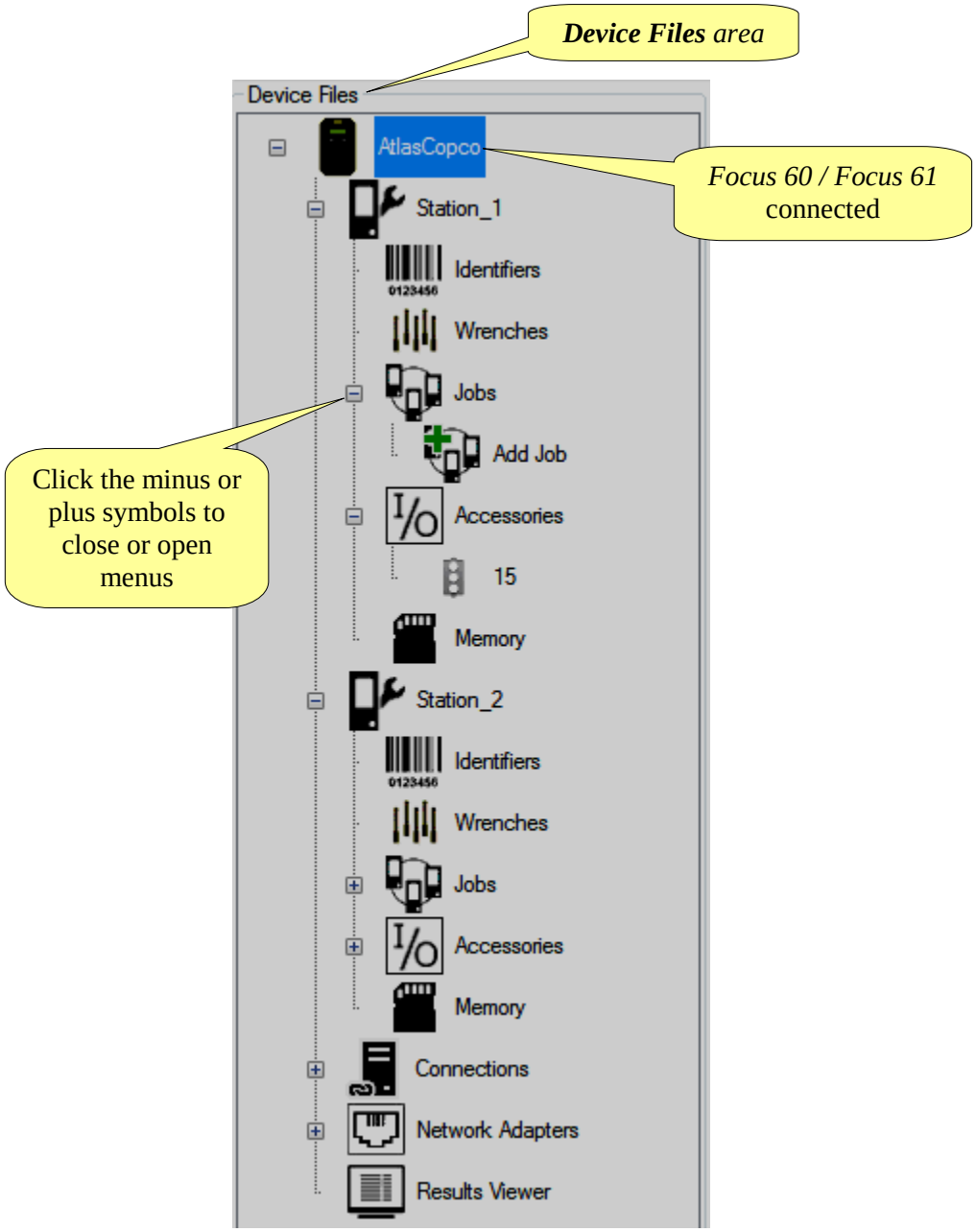
Connect ToolsTalk BLM with the ***Focus 60 / Focus 61*** (refer to paragraph "*Connecting with the Focus 60 / Focus 61")*.

On the left of the main screen (in the ***Device Files*** *area*), there are the *Station(s)* with the associated *Jobs*:



The following paragraphs describe step-by-step how to configure *Stations*, *Psets*, *Jobs* and *Events*, and how to *associate the MRW Wrenches with Station(s)*.

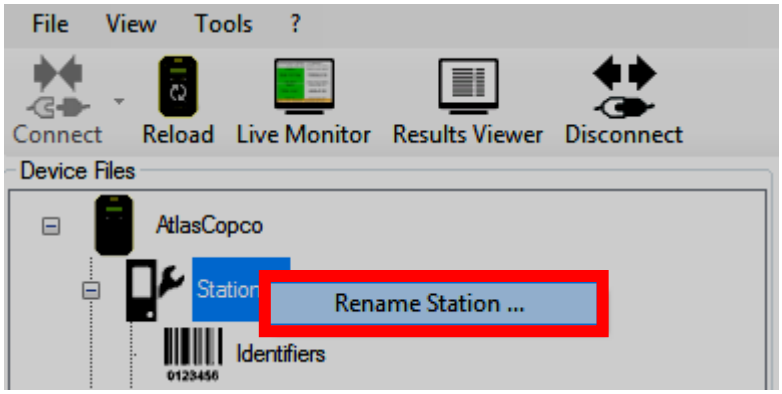
6.1 Stations Configuration



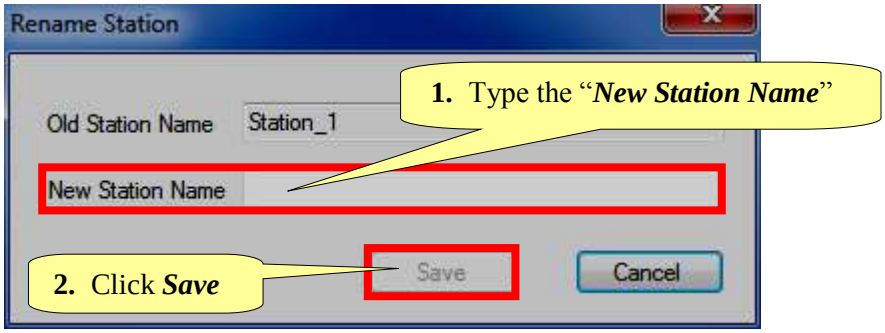
The ***Device Files*** *area* defines the stations associated with the ***Focus 60 / Focus 61*** connected. For each station there are MWR-TA associated, which execute the *Jobs* programmed.

For renaming the *Station* associated with the ***Focus 60 / Focus 61*** connected, right-click in correspondence of the symbol placed close to each station name and shown on the right:

The following screen is shown:

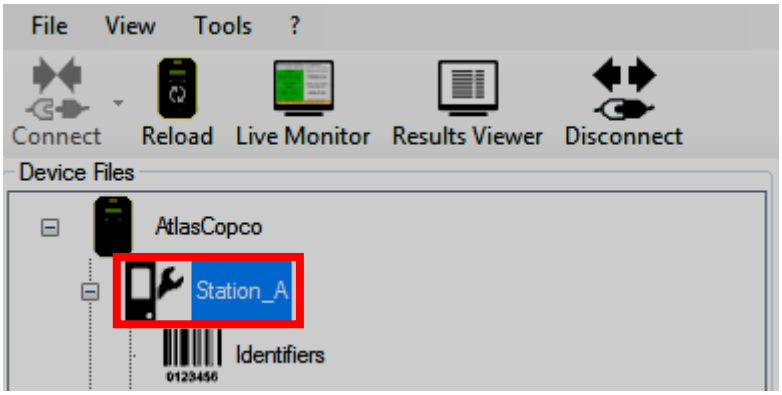


After clicking "**Rename Station …**" the following screen shows:

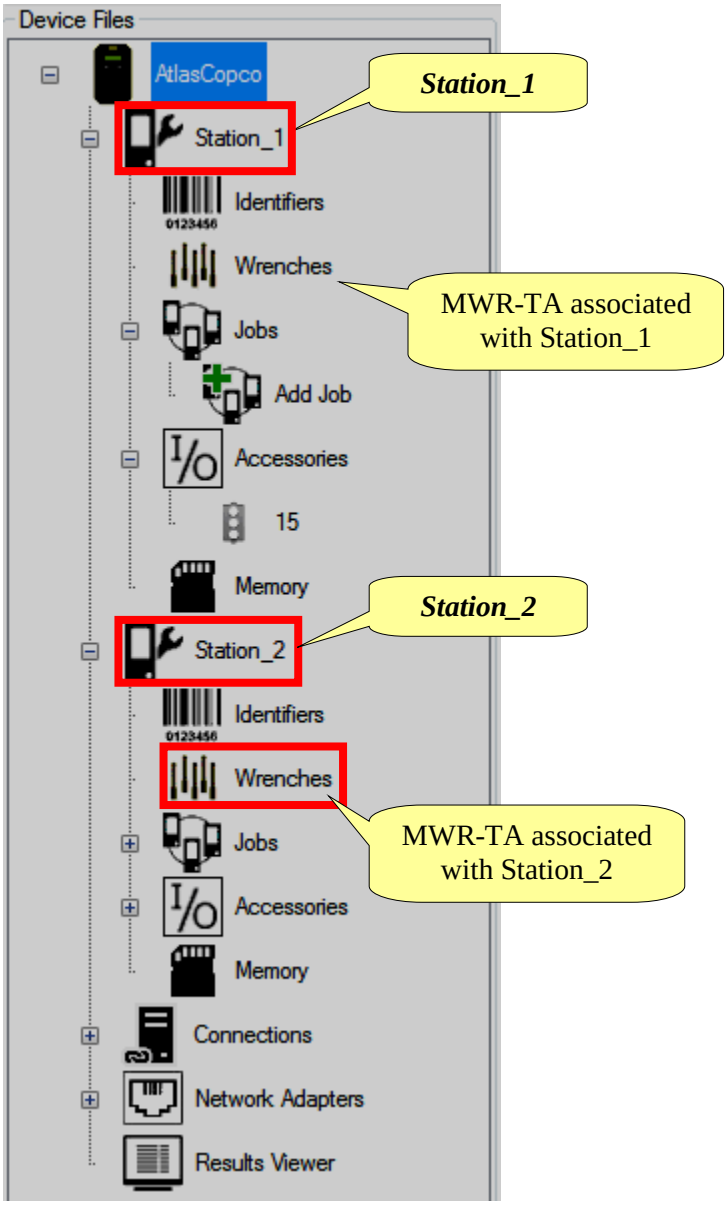


Type the "***New Station Name***" in correspondence of the respective text box; then click **Save**.

Once it is done, the *Station name* in the *Device Files area* is renamed according to the new input (for instance, in this case, "*Station_A*"):



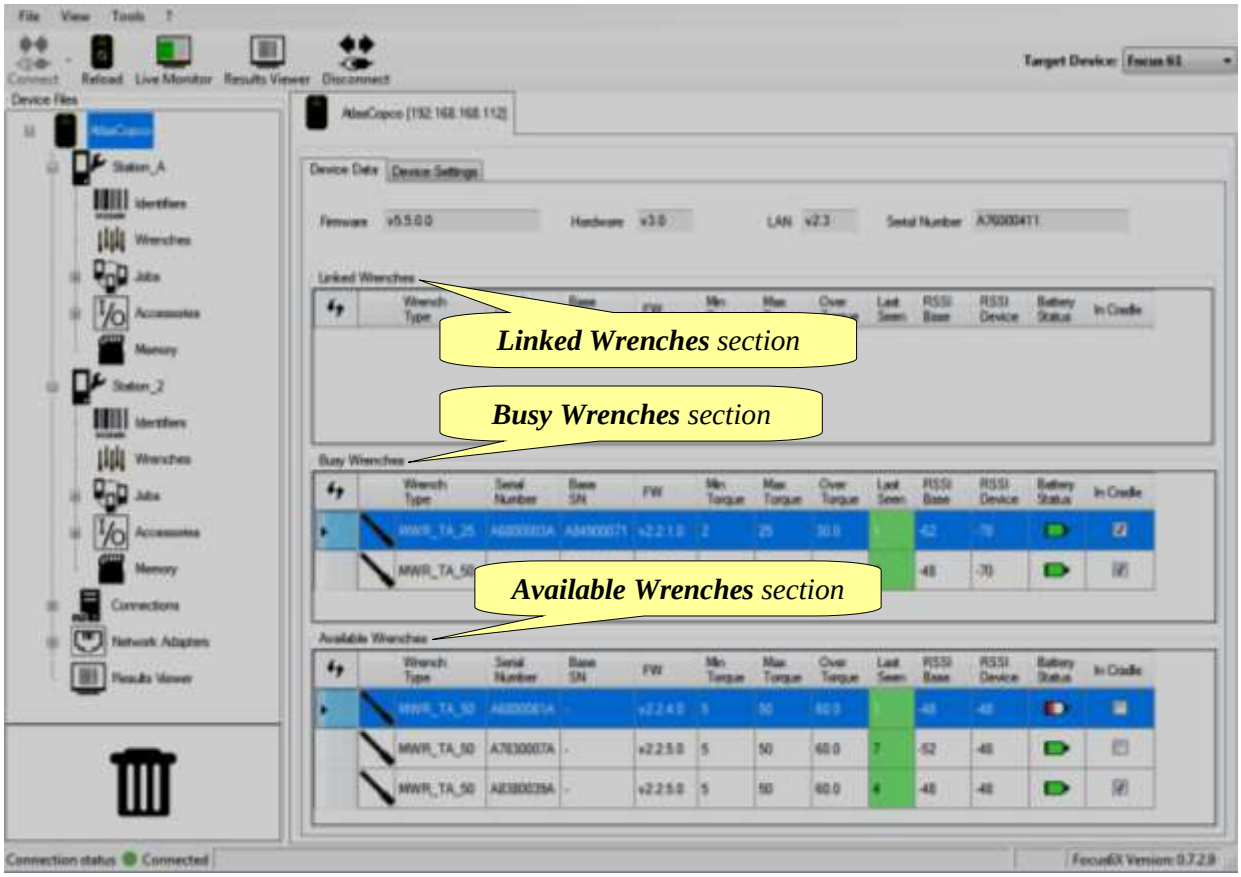
6.2 Associating the MWR wrenches with Station(s)



It is possible to associated up to 10 MWR-TA with a ***Focus 61***, divided into the two *Stations* (one MWR-TA on one *Station* for ***Focus 60***).

The ***Linked Wrenches*** *section* lists all the usable MWR-TA.

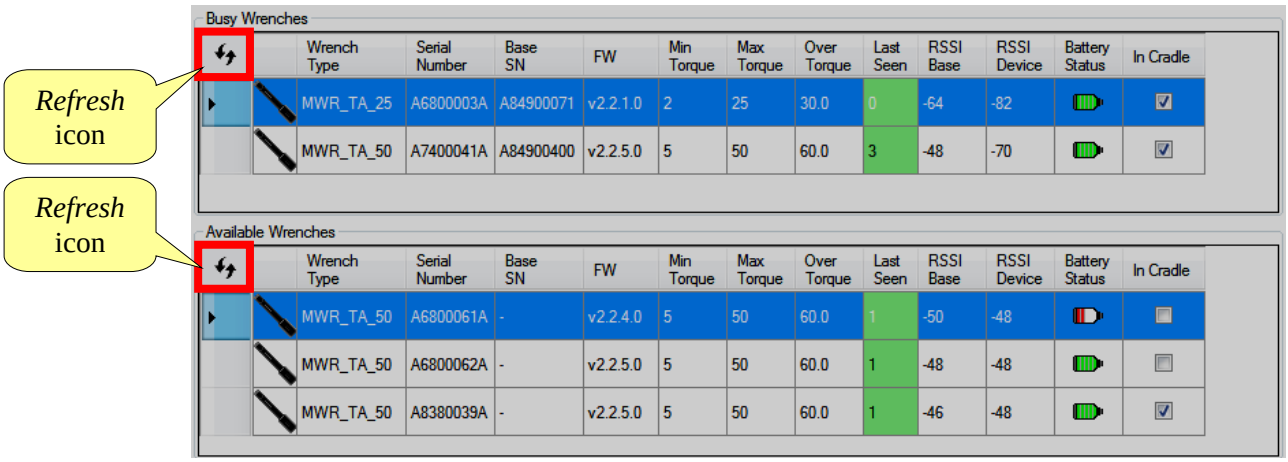
The MWR-TA shown as *available* or *busy* are only the MWR-TA powered on and visible from the controller via radio.



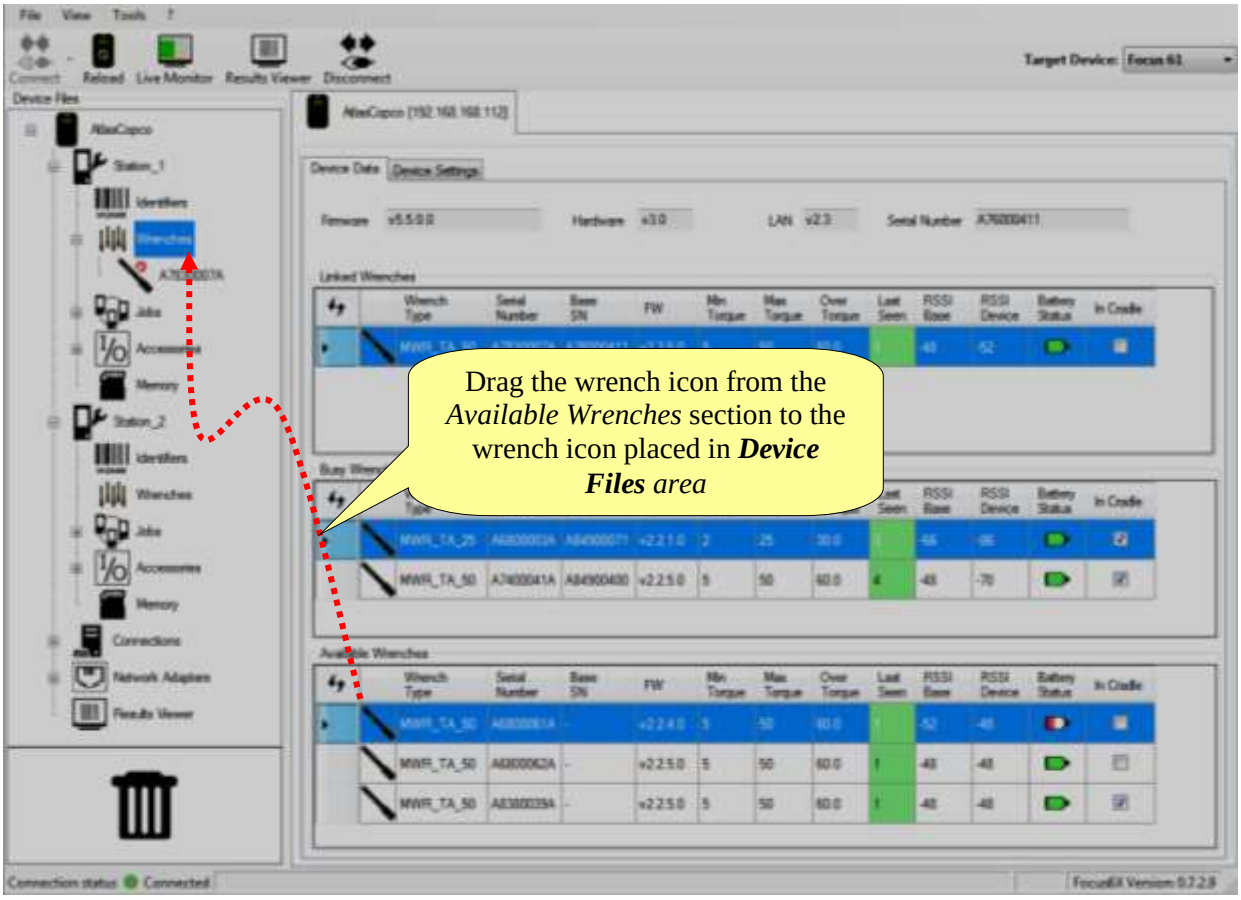
For each MWR-TA the following information are displayed:

Wrench Type	MWR-TA model
Serial Number	Serial number marked on the MWR wrench
Base SN	Serial number of the *Focus 60 / Focus 61*
FW	Firmware version loaded on the MWR-TA
Minimum Torque	Minimum torque values for the MWR-TA model
Maximum Torque	Maximum torque values for the MWR-TA model
Overload Torque	Maximum overload torque for the MWR-TA model
Last Seen	"*Keep alive*" mode of the MWR-TA by the controller **NOTE**: This box is highlighted by different colors according to the time of connection failure
RSSI Base	Received Signal Strenght Indication (indicated in dBm)
RSSI Device	Received Signal Strenght Indication of the Device (indicated in dBm)
Battery status 	*Green* → Battery charge ok *Red* → Battery charge low *Empty* → MWR-TA not available (but already linked)
In Cradle	Activated if the MWR-TA is on the *Charging Cradle MWR*

Click the *Refresh* icons to refresh the list of wrenches both in the *Busy Wrenches* field and in the *Available Wrenches* field:



To associate a MWR-TA with a *Station*, drag one of the available MWR-TA and drop it into the ***Wrench*** menu of the *Station* (refer to the figure below):



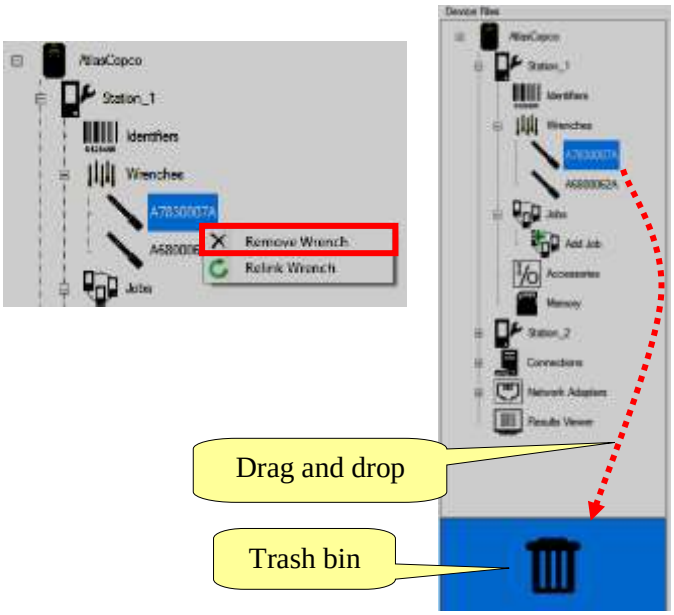
On the MWR-TA associated, the ***YELLOW LEDs*** are active.

NOTE: The following *LEDs* characterize the *MWR-TA:*

- Yellow
- Red
- Green
- Blue

For further details about MWR-TA LEDs, refer to the "*MWR-TA and Charging Cradle MWR User Guide*".

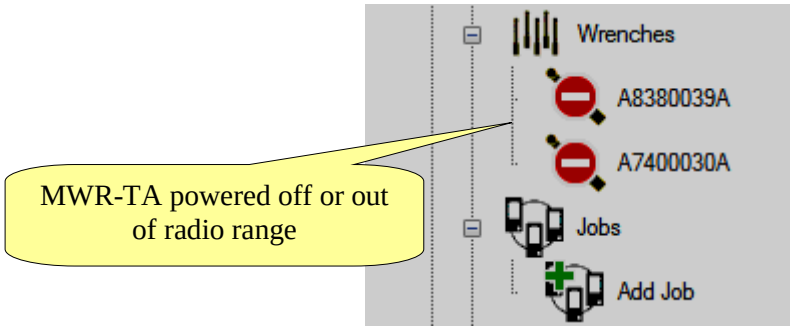
To remove a MWR-TA from the *Station* either drag and drop it into the trash bin or right-click and select ***Remove Wrench*** (see the figure on the right):



NOTE: If a MWR-TA is not used/linked to a job, then it can be removed.

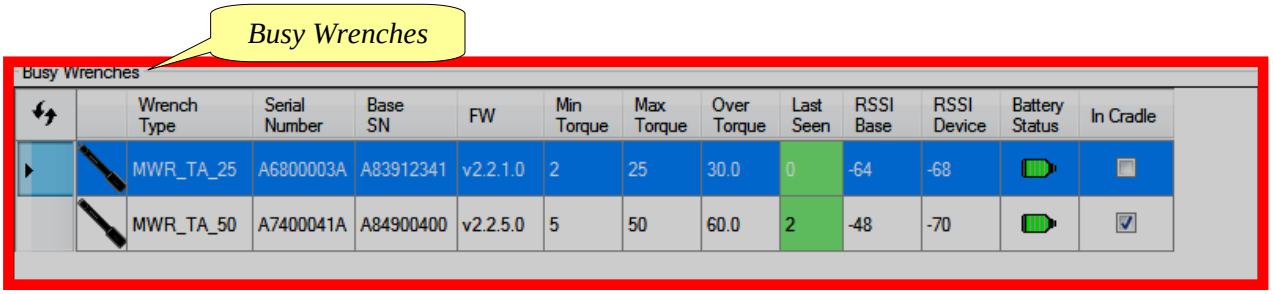
NOTE: ***Relink Wrench*** option relinks the selected wrench to a specific *Station*.

The following icon (see the figure on the right) marks the MWR-TA associated with the *Station*, but not connected:



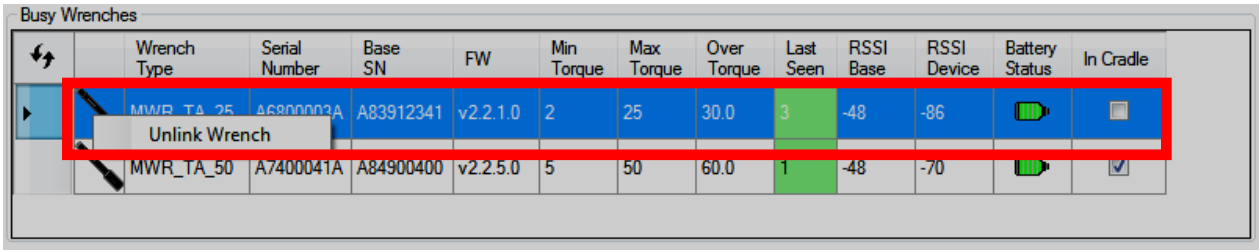
NOTE: The status of the MWR-TA shown in the figure above is refreshed dinamically in real time.

The *MWR wrenches* shown as *Busy* are associated to other ***Focus*** controllers.



To make a "*Busy Wrench*" available:

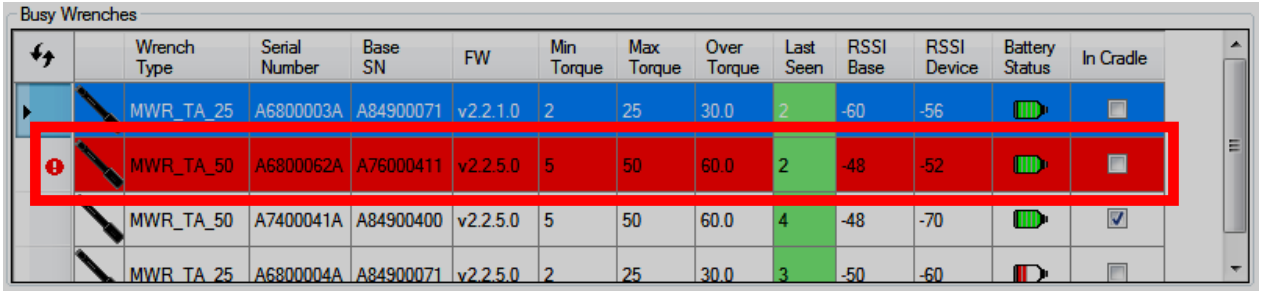
- Connect the controller that is associated with the wrench.
- Remove the wrench.
- In case that the controller is off or disconnected, it is possible to unlink the wrench by right-clicking and selecting ***Unlink Wrench***:



NOTE: The ***Unlink Wrench*** option does not work if the associated controller is on and in radio range.

NOTE: Please, be sure that the wrench is not in use on the other controller. If it is, it can cause malfunctions.

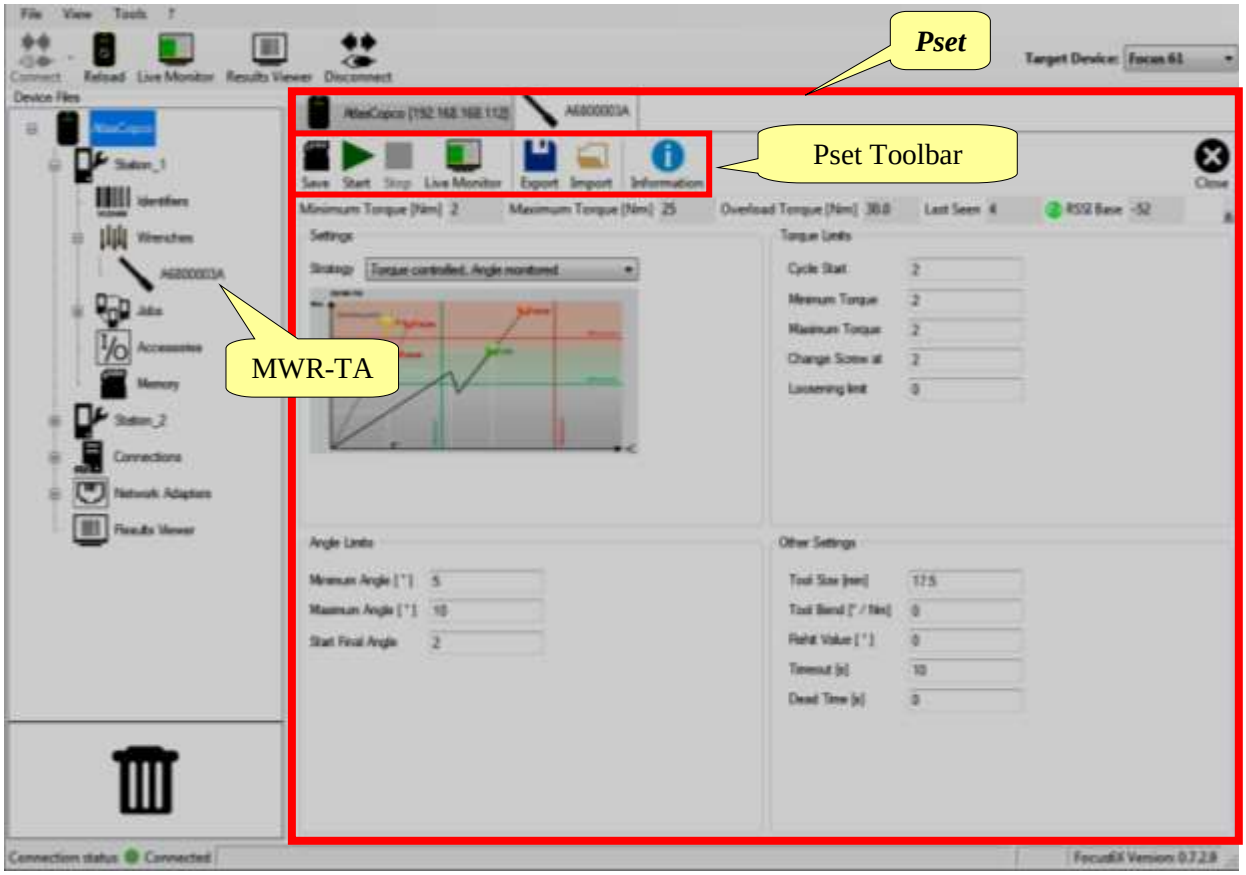
In some cases, a *Busy Wrench* is ***Red*** (see the picture below); it means that the controller has disassociated the MWR-TA, but it has not yet received this warning because it is out of radio range.



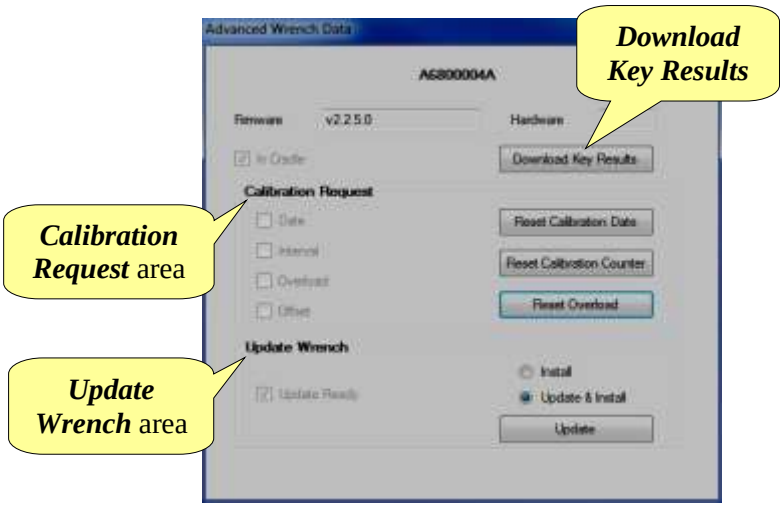
6.3 Pset Configuration

The set of parameters that controls a tightening process is contained into a so-called **Pset**. This section describes how to configure the Pset parameters necessary to do a tightening.

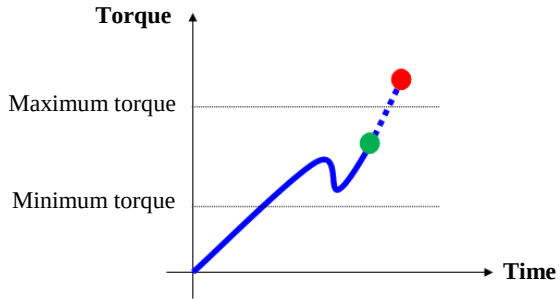
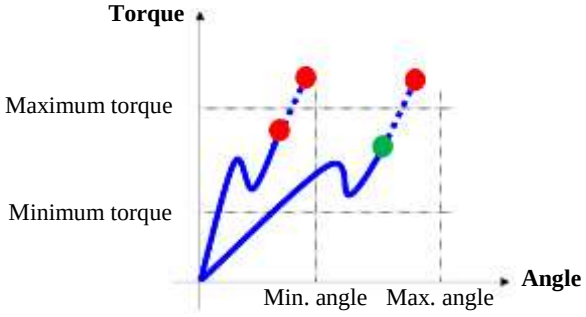
When a wrench is associated with a station while making a "*double-click*" on a MWR-TA, the page of the associated Pset is shown:



The *Pset Toolbar* (placed in the upper area of the above Pset window) provides the following functions:

ICON	FUNCTION	DESCRIPTION
	***Save***	Save the Pset parameters
	***Start***	Start the Pset on the MWR-TA. Refer to the chapter "*Executing Tightening Operations*" for further details
	***Stop***	Stop the Pset execution
	***Live Monitor***	Open the live results window (see the figure on the right):  Refer to the paragraph "*Live Monitor"* for further details
	***Export***	Export the Pset in a *.Pset* file (formatted as xml)
	***Import***	Load the Pset from the *.Pset* file exported previously
	***Information***	General information about the MWR-TA connected with the ***Focus 60 / Focus 61***. After clicking ***Information*** icon, the following screen shows: 

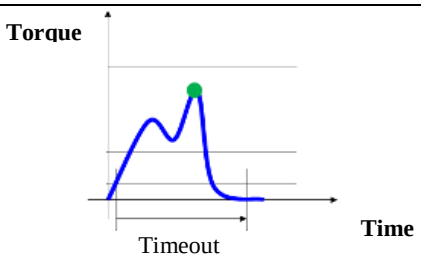
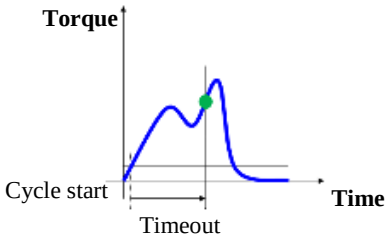
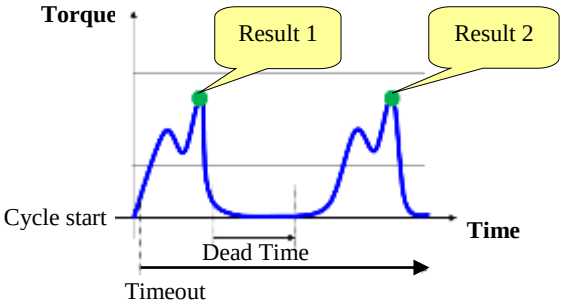
The ***Pset*** consists of the following parameters:

SETTINGS	
FUNCTION	***DESCRIPTION***
Strategy	Hereunder is a list of available strategies: • ***Torque controlled***: Only the torque is measured. The test result is *OK* if the maximum torque applied during the tightening is within the torque limits:  • ***Torque controlled, angle monitored***: Torque and angle are measured. The test result is *OK* if the maximum torque applied during the tightening is within the torque limits, and the angle is also within the angle limits: 

TORQUE LIMITS	
FUNCTION	***DESCRIPTION***
Cycle Start	Torque value from which the measurement of the tightening starts
Minimum torque and ***Maximum torque***	Torque limits to get a positive result
Change screw at	Torque limit for which the screw could be damaged by the excessive torque applied. If the operator applies torque over this value, the result is marked as *"**OVSC** = Additional torque limit "overload screw" exceeded"*
Loosening limit	If the operator applies torque in the wrong direction and reach this value, the result is marked as *"**NEG** = False direction of tightening (loosen)"*. **NOTE**: If the *Loosening limit* is set to zero, no results are detected (the function is disabled).

ANGLE LIMITS	
FUNCTION	***DESCRIPTION***
Minimum angle and ***Maximum angle***	Angle limits to get a positive result (*if angle value is considered in the test strategy*).
Start final angle	Torque threshold from which the angle measurement starts.

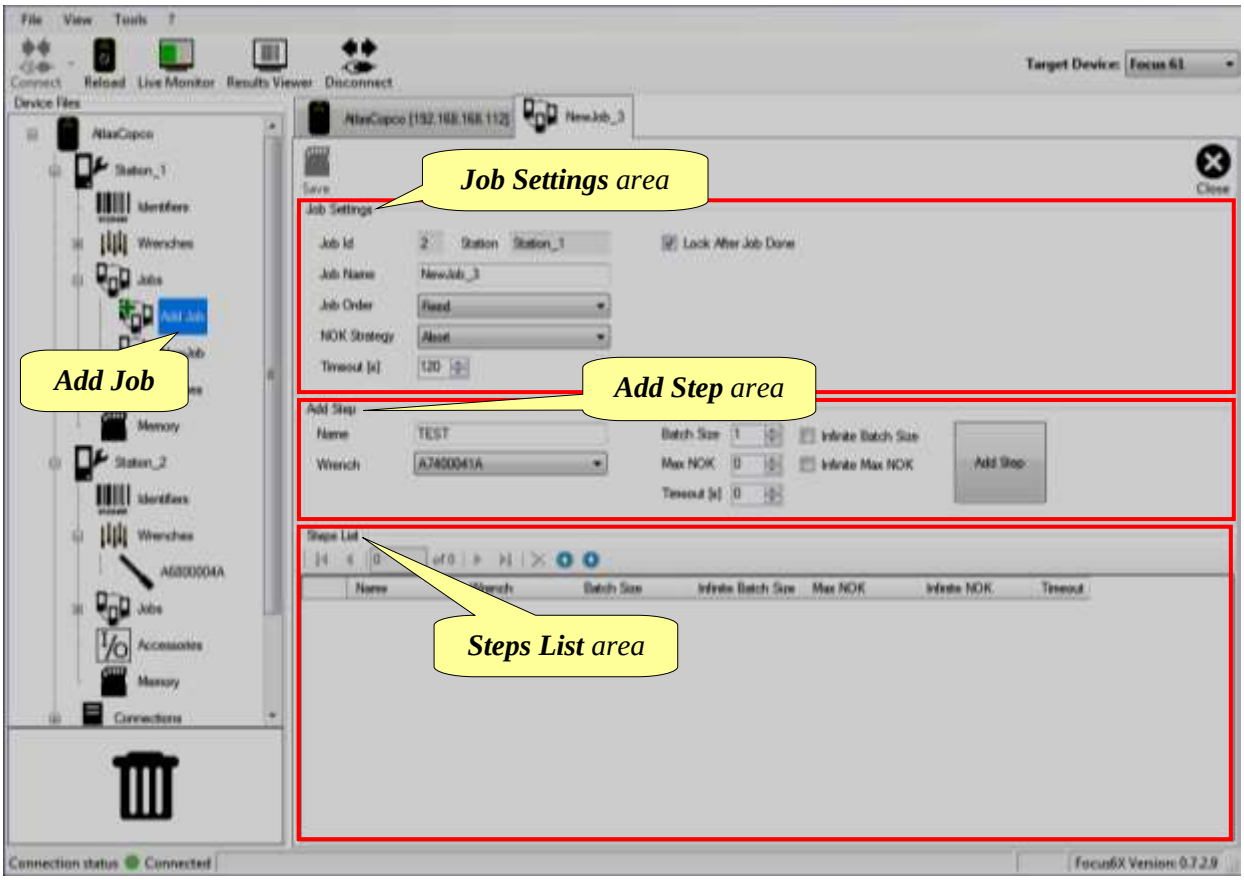
OTHER SETTINGS	
FUNCTION	***DESCRIPTION***
Tool size (mm)	Specific length (in millimeters) that characterizes the end fitting tool installed on the MWR-TA (see the examples on the right):  **NOTE**: It is mandatory to enter the proper value. This value is used to calculate the proper torque applied to the joint.
Tool Bend (° / Nm)	Bending of the end fitting tool installed on the MWR-TA. **NOTE**: It is mandatory to enter the proper value. This value is used to compensate the bending of the end fitting tool in the angle measurement.

FUNCTION	*DESCRIPTION*
Rehit Value (°)	If the torque reaches the click value within this angle, it means that the screw was already tightened. In this case the result is marked as ***RNOK*** or ***ROK*** . **NOTE**: Refer to the paragraph "*Executing Tightening Operations*" for further details about the results status.
Timeout (s)	Maximum time (in seconds) of the measurement (starting from the moment that the torque reaches the *Cycle Start* value). The tightening operation should be completed before the timeout (see the figure on the right):  If the timeout is too short (or the tightening too long) the result might not be taken at the proper maximum point: 
Dead Time (s)	Minimum time (in seconds) among two tightening operations. This timer starts when the torque goes below the *Cycle Start* value. Start the new tightening operation after the *Dead Time* expires:  If the operator starts a new tightening before the *Dead Time* expires, the maximum torque value of the whole trace is analyzed (see the figure on the right): 

6.4 Job Configuration

The *Job* is a set of tightening operations (steps) performed by the MWR-TA associated with a station.

Each MWR-TA must be configured with its *Pset* as described in the paragraph above.



Double-click ***Add Job*** (see the figure above) to create a new *Job*.

To remove a *Job* either double-click and select ***Delete*** or drag and drop the *Job* into the trash bin.

Job Settings *area* configures the *Job* according to the following parameters:

PARAMETER	***DESCRIPTION***
Job Name	Name of the *Job*

PARAMETER	*DESCRIPTION*
Job Order	- ***Fixed***: The *Steps* of the *Job* are executed in the order specified in the window above. - ***Free***: The *Steps* of the *Job* are executed according to the *Optional Trigger* defined in the ***Step parameter***. The *Optional Trigger* is a barcode string that must be scanned before executing the step. See below for further details about the *Step parameters*.
NOK Strategy	- ***Abort***: If a *Step* is executed with *Not OK* result, the *Job* is aborted. - ***Continue***: If a *Step* is executed with *Not OK* result, the *Job* continues.
Timeout (s)	Maximum time (in seconds) to complete the *Job*. If it is equal to zero there is no control on the time. By default it is set on *120 seconds*
Lock After Job Done	If enabled, the MWR-TA is locked at the end of the *Job* (the *Job* must start again to continue). If disabled, a new *Job* starts automatically when the previous *Job* is complete.

NOTE: The total number of *Jobs* is equal to ***1000***. They are distributed as follows: *300 Jobs for Station 1*, *300 Jobs for Station 2* and *400 Jobs for global (shared between Stations)*.

At the end of the configuration, click ***Save***.

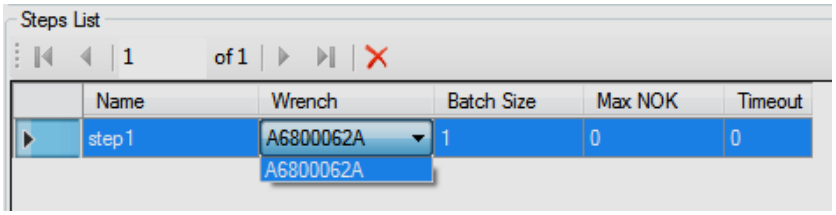
NOTE: ***Save*** icon is disabled if there are no steps in the *Job*.

To add a *Step*, enter the parameters in the ***Add Step*** *area* and click ***Add Step***:

PARAMETER	*DESCRIPTION*
Name	*Step* name
Wrench	Select the MWR-TA from the list of MWR-TA associated with the *Station*
Batch Size	Number of times/bolts that the *Step* works
Infinite Batch Size	Selecting "*Infinitive batch Size*" option, the *Step* works an infinite number of times/bolts. This option disables "*Batch size*" setting
Max NOK	For each tightening of the batch, it specifies how many times the operator can execute a test with *Not OK* result *For instance, if it is set to 2, the operator can repeat two times a wrong tightening; at the 3rd Not OK, the batch stops and the Job continues or aborts depending from the NOK Strategy parameter defined in the Job*
Infinite Max NOK	Selecting "*Infinitive Max NOK*" option specifies that the operator can execute a test with *Not OK* result infinitely. This option disables "*Max NOK*" setting
Timeout	Maximum time (in seconds) to start the *Step* from the moment the MWR-TA is ready to start

NOTE: The maximum permitted number of *Steps* (per *Job*) is equal to 100.

The ***Steps List*** *area* shows all of the *Steps* defined (see the picture on the right).



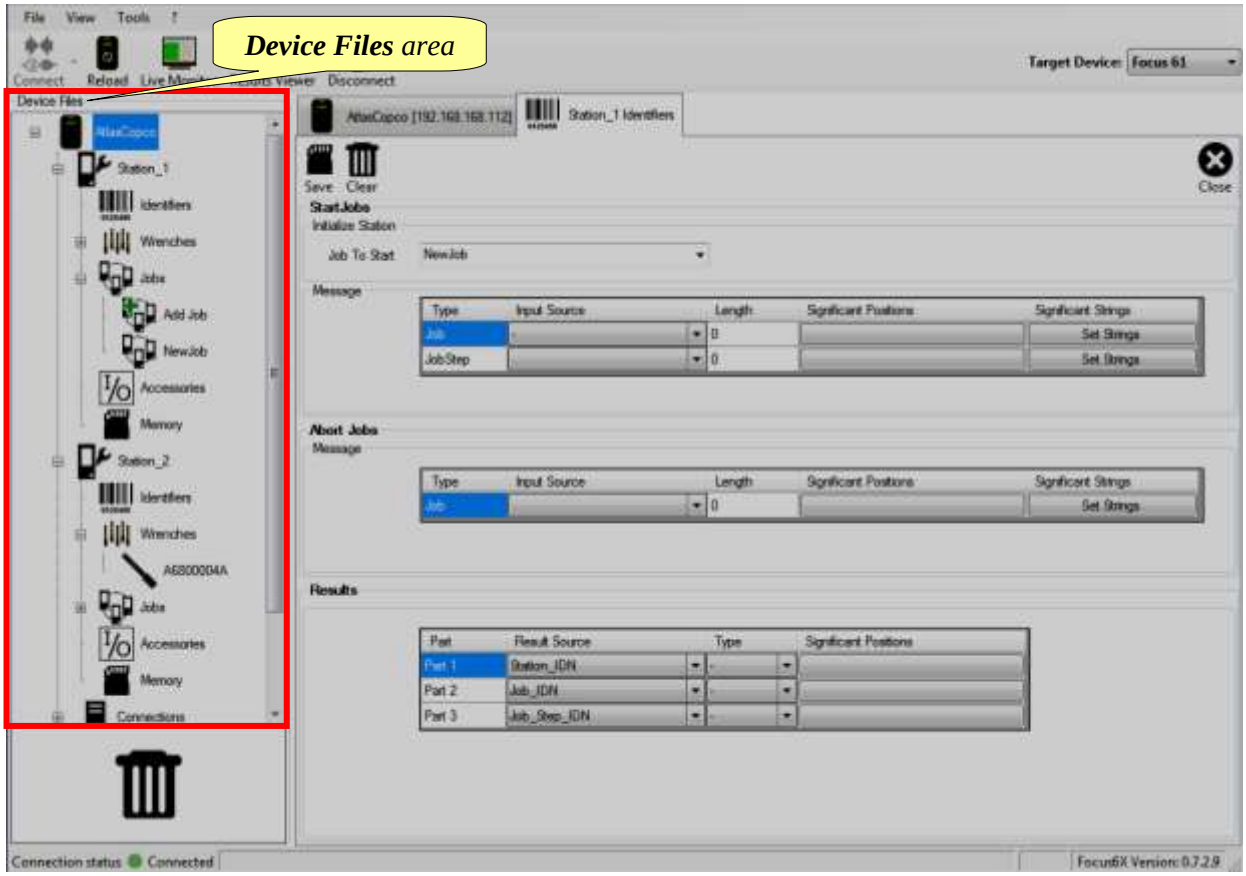
NOTE: It is not possible to modify a step already saved. To remove a step, select it and click *Remove* icon ( ).

NOTE: It is MANDATORY to disconnect the ToolsTalk BLM to use ***Focus 60/ Focus 61*** and start a *Job*.

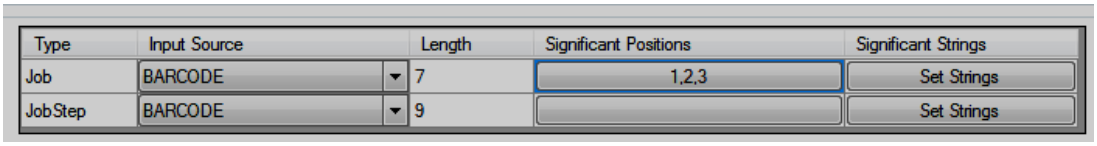
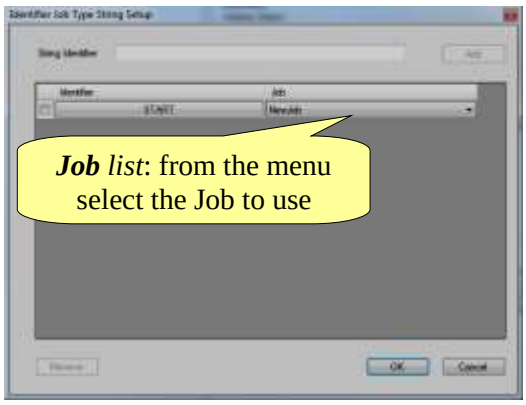
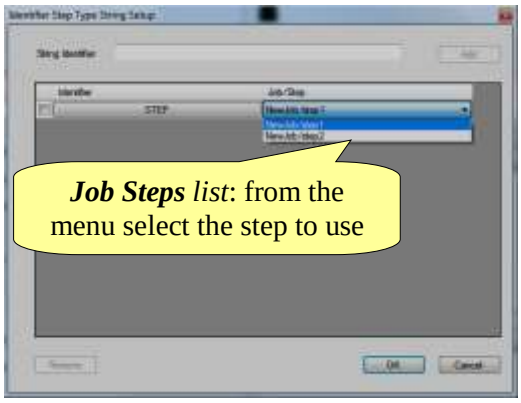
6.5 Identifier

Identifier option can both start / abort a *Jobs / Job steps* and record tightenings results.

Double-click ***Identifier*** icon placed in the *Device Files area* in order to open the configuration window:



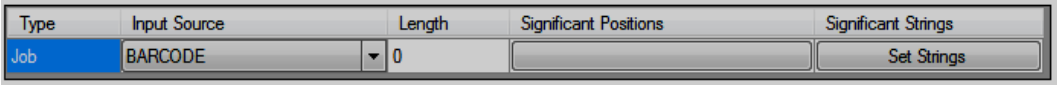
The following parameters configure the ***Identifier***:

START JOBS	
Initialize station	Select the *Job* to use when the *Focus 60 / Focus 61* is initialized.
Message	***Message*** area selects the signal that start a *Job / Job step*.  Select the signal between the following options: • *Barcode* • *AOP_setvin* • *AOP_Identifier* Define the following parameters: • *Length*: number of the characters of the input signal (barcode or AOP) • *Significant Position*: it defines the position of the characters that arranges the substring that starts the Job/Job step • *Significant String*: click *Set Strings button;* the following window opens both for *Job* and *Job steps*:  ***Job** list*: from the menu select the Job to use  ***Job Steps** list*: from the menu select the step to use

ABORT JOBS

Message

Message area selects the signal that stop a *Job*.

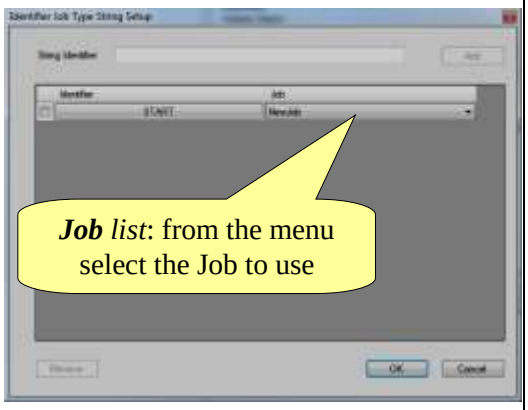


Select the signal between the following options:

- *Barcode*
- *AOP_setvin*
- *AOP_Identifier*

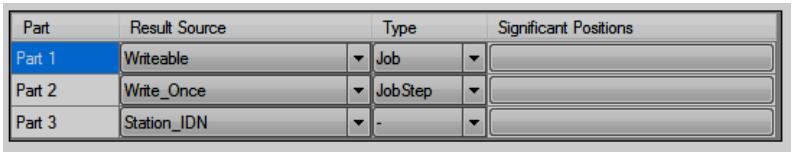
Define the following parameters:

- *Length*: the number of the characters of the input signal (barcode or AOP)
- *Significant Position*: the position of the characters that makes the substring that starts the Job
- *Significant String*: click *Set Strings button;* the pop-up on the right opens for *Job*.



RESULTS

Results area defines the editable information displayed in the results table (for further details about the results table, refer to the chapter "*Results Viewer*").



Results Source

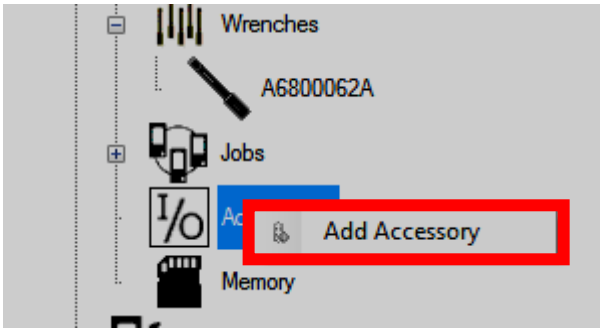
Station_IDN	*Station* name
Job_IDN	*Job* name
Job_Step_IDN	*Job Step* name
Writable	The IDN may be changed anytime during the active job, but it may just be updated during a *Job Step* start. An active *Job Step* is not affected.
Write_Once	The IDN can be set only once. Afterwards, all changes are rejected, except in the case the *Job* ends or is aborted.

Type
Results Source *Writable* and *Write_Once*, define the command to use as reference (*Job / JobStep*) in order to extract the results string.
Significant Position
It defines the position of the characters that arranges the substring of the command to use as result.

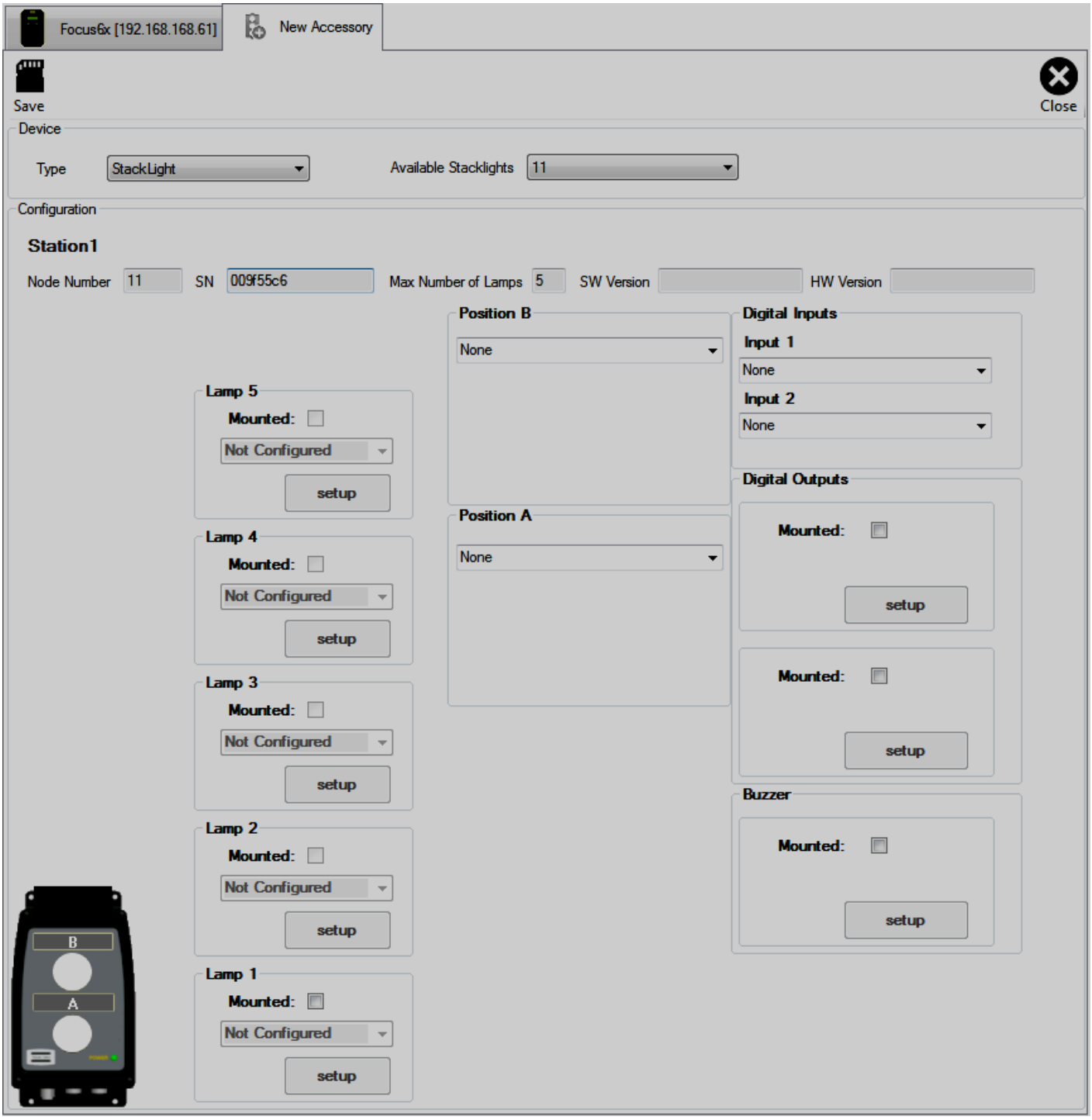
6.6 I/O Accessories

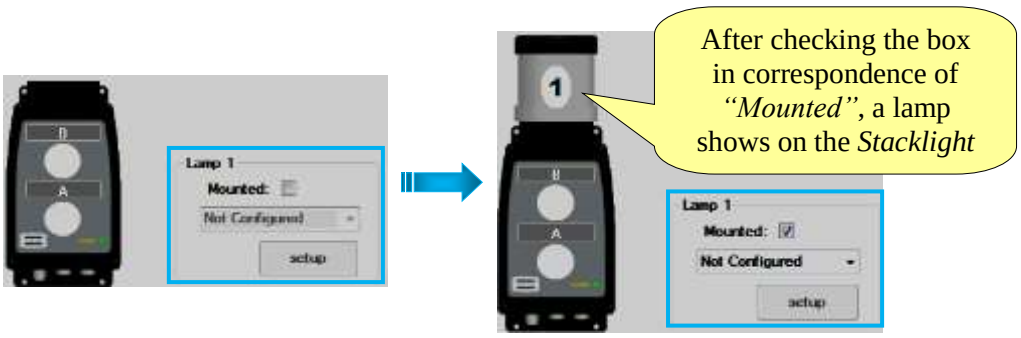
I/O Accessories option configures the accessories utilized during the ***Focus 60 / Focus 61*** operations.

Right-click the ***I/O Accessories*** icon placed in the *Device Files area* in order to open the *New Accessory menu*:



After selecting ***Add Accessory***, the following window shows:

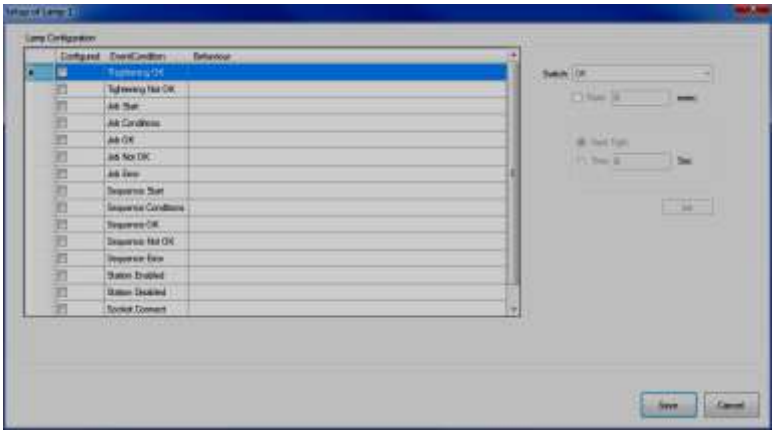


DEVICE	
Type	Accessory used
Available Stacklights	This drop-down list selects the ID channel to use in order to configure the accessory
CONFIGURATION	
Lamp	"*Lamp*" section configures the behavior of each lamp. The *Stacklight* mounts up to 5 configurable lamps. Do the following procedure to configure "*Lamp*" section. 1. Starting from *Lamp 1*, check the box in correspondence of *"Mounted"*: a lamp shows on the *Stacklight* on the left (see the figures below):  **NOTE**: Configure the lamps of the *Stacklight* starting from lamp 1 to lamp 5 (in ascending order). Only the last configured lamp is editable. *For instance, after configuring all of the lamps, to edit lamp 3, it is necessary to disable the last configured lamps in this sequence: lamp 5 – lamp 4.* *To disable a lamp, remove the check mark in correspondence of "Mounted".* 2. Open the drop-down list (placed below *"Mounted"* option) and select between the following options: *Not Configured, White, Red, Green, Yellow, Blue, Red Rotating, Yellow Rotating, Siren.* After setting the configuration, the lamp on the *Stacklight* is automatically colored according to the option selected. 

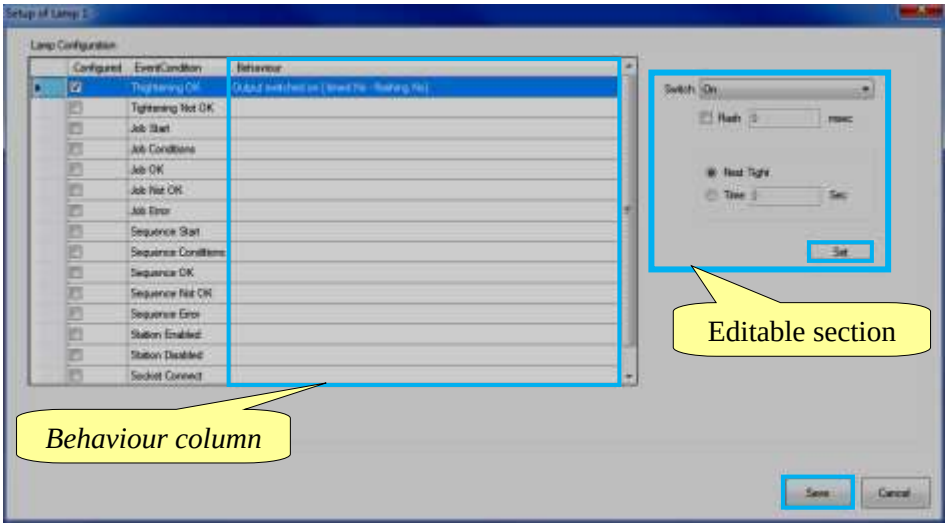
CONFIGURATION

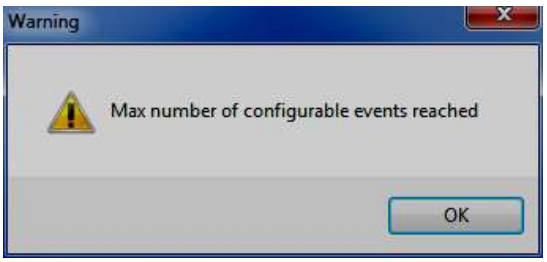
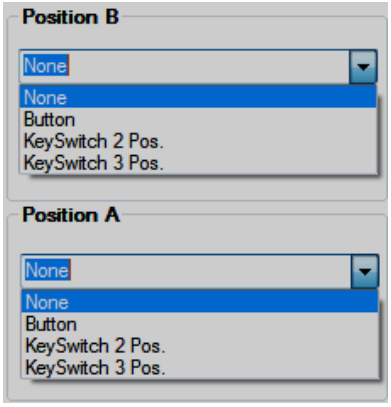
3. Click *Setup:*

The *Setup screen* on the right shows:



4. Select the *event condition* to associate with the lamp. After selecting the *event condition*, the editable section on the right of the *Setup screen* gets automatically active (refer to the following screen):

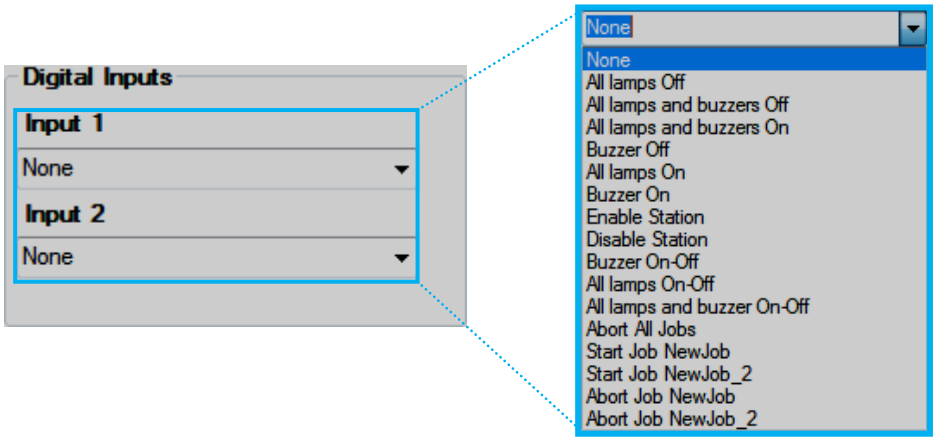


CONFIGURATION	
	The "*Behaviuor column*" summarizes the editable section. Configure the editable section by setting temporary intervals of flashes and signal duration. Finally click *Set* (placed on the lower right corner of the editable section). It is possible to set up to ***10*** event conditions for the same lamp. **NOTE**: It is not recommended selecting event conditions that do not agree on the same lamp (*for instance Tightening OK and Tightening NOK*). **NOTE**: The pop-up on the right shows, after reaching the maximum number of configurable events:  After configuring the necessary event conditions, click ***Save*** (placed on the lower right corner of the *Setup screen*).
Position A / B 	***Position A / B*** on the *Stacklight* (refer to the figure in the left column) defines an input type between the following options: 

CONFIGURATION

Digital Inputs

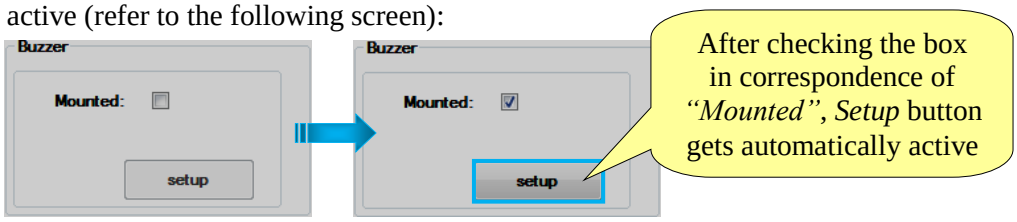
The external device sends one of the following signals to the *Stacklight:*



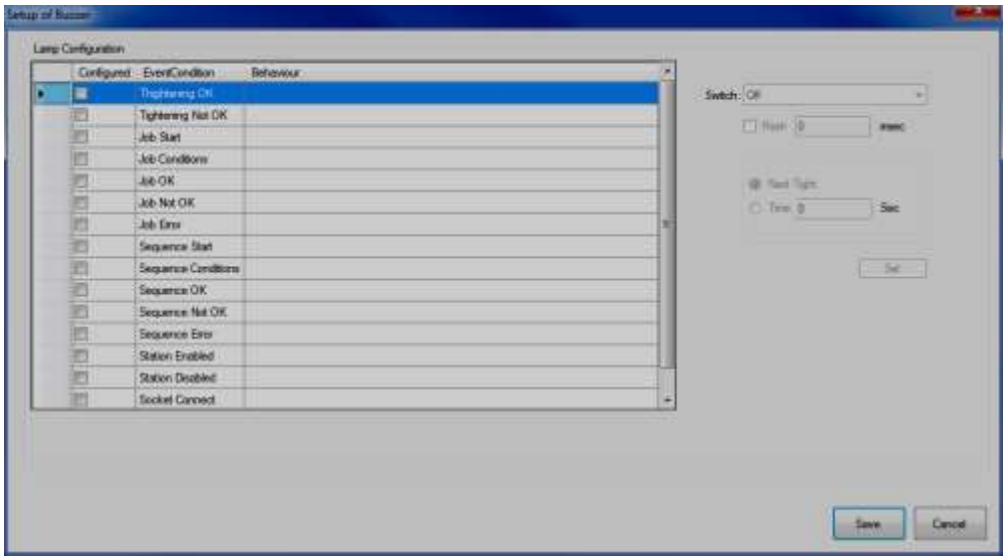
Buzzer

Do the following procedure to configure "*Buzzer*" section.

1. Check the box in correspondence of *"Mounted"*; the *Setup* button gets automatically active (refer to the following screen):

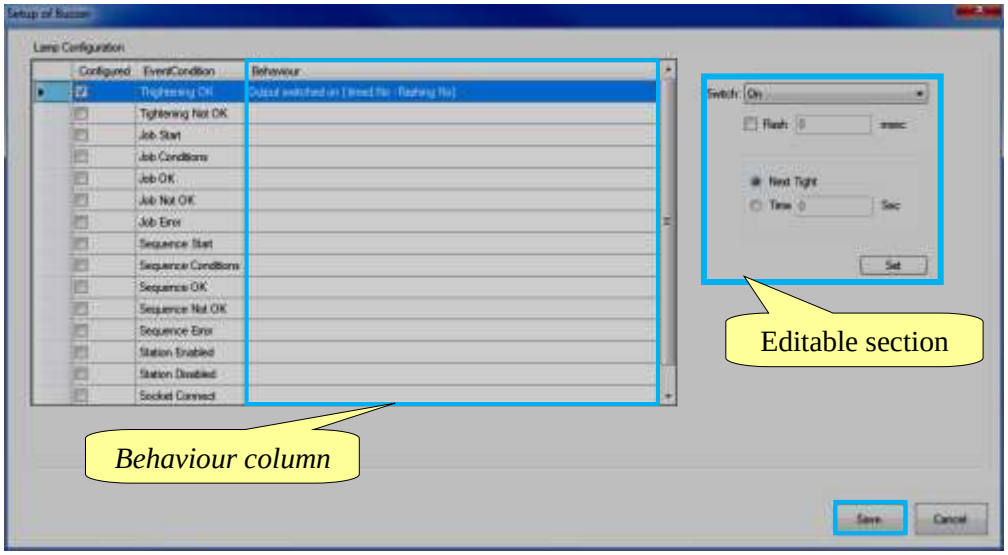


2. Click *Setup*. The following *Setup screen* shows:



CONFIGURATION

3. Select the *event condition*. After selecting the *event condition*, the editable section on the right of the *Setup screen* gets automatically active (refer to the following screen):



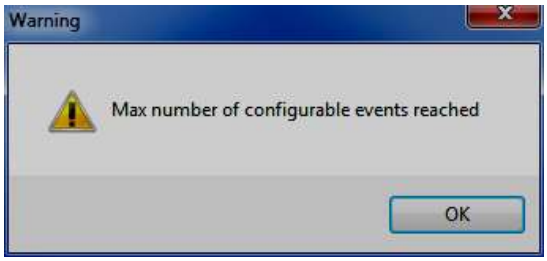
The "*Behaviuor column*" summarizes the editable section.

Configure the editable section by setting temporary intervals of flashes and signal duration. Finally click *Set* (placed on the lower right corner of the editable section).

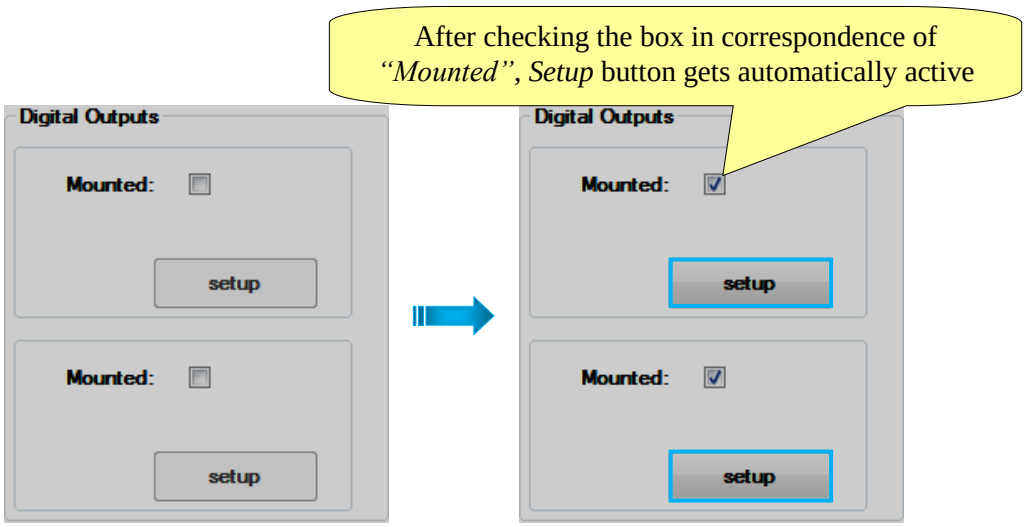
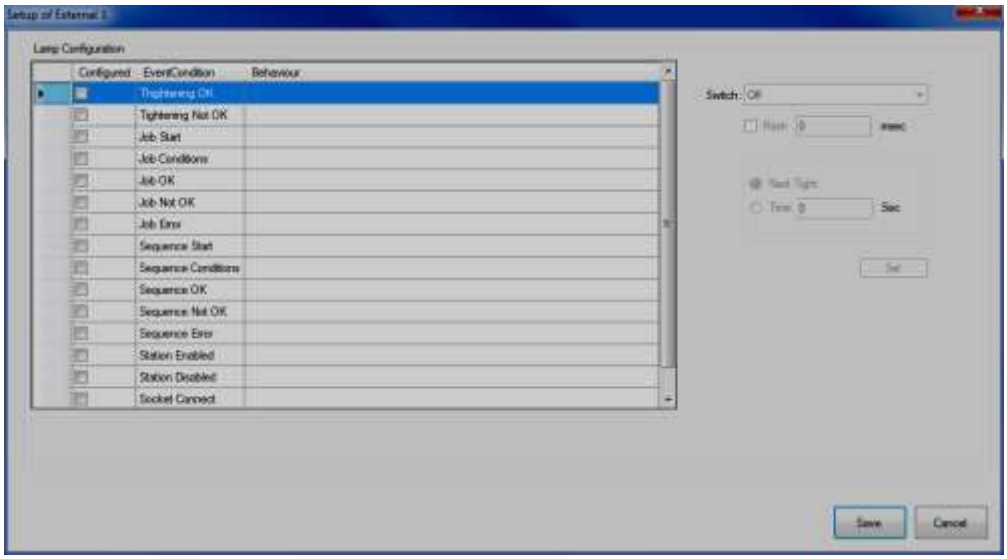
It is possible to set up to ***10*** event conditions.

NOTE: It is not recommended selecting event conditions that do not agree (*for instance Tightening OK and Tightening NOK*).

NOTE: The pop-up on the right shows, after reaching the maximum number of configurable events:

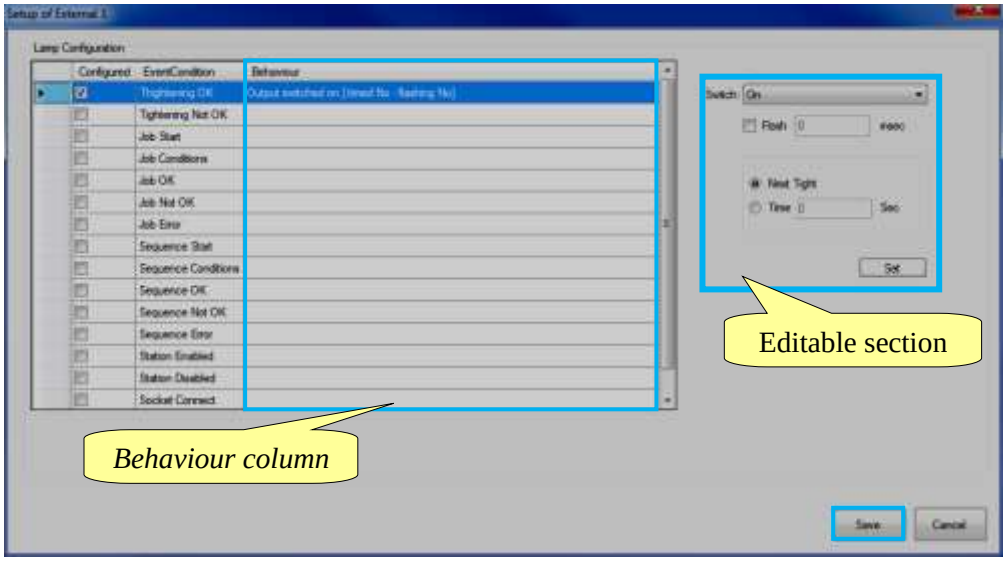


After configuring the necessary event conditions, click ***Save*** (placed on the lower right corner of the *Setup screen*).

CONFIGURATION	
Digital Outputs	Do the following procedure to configure "*Digital Outputs*" section. 1. Check the box in correspondence of *"Mounted"*; the *Setup* button gets automatically active (refer to the following screen):  2. Click *Setup*. The following *Setup screen* shows: 

CONFIGURATION

3. Select the *event condition*. After selecting the *event condition*, the editable section on the right of the *Setup screen* gets automatically active (refer to the following screen):



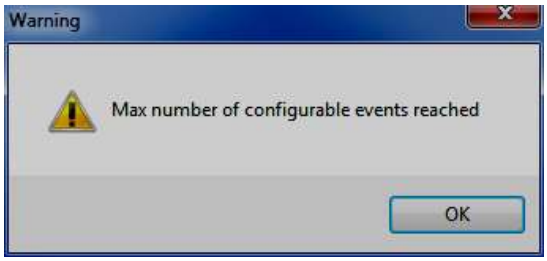
The "*Behaviuor column*" summarizes the editable section.

Configure the editable section by setting temporary intervals of flashes and signal duration. Finally click *Set* (placed on the lower right corner of the editable section).

It is possible to set up to ***10*** event conditions.

NOTE: It is not recommended selecting event conditions that do not agree (*for instance Tightening OK and Tightening NOK*).

NOTE: The pop-up on the right shows, after reaching the maximum number of configurable events:



After configuring the necessary event conditions, click ***Save*** (placed on the lower right corner of the *Setup screen*).

After setting the *Stacklight*, click **Save** (placed on the upper left corner of the *New Accessory* window).

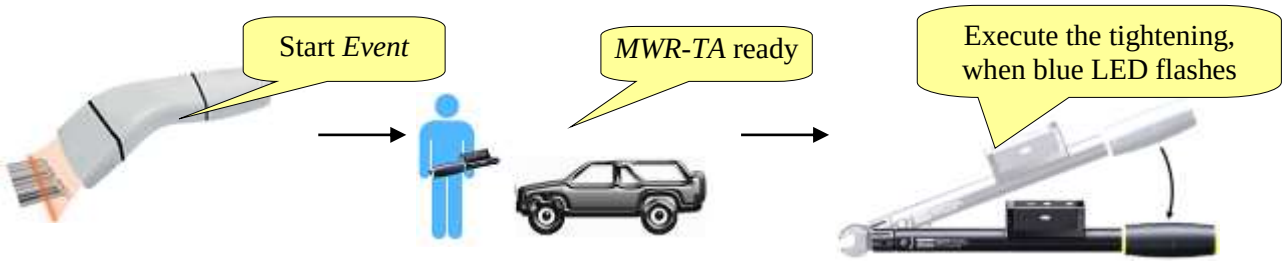
7 EXECUTING TIGHTENING OPERATIONS

NOTE: No effects resulting from special conditions should be detected when the ***Focus 60 / Focus 61*** is integrated into systems.

Once the ***Focus 61*** is configured as described in the previous paragraph "*Programming Focus 60 / Focus 61"*, it is possible to start a *Job* on the *Station(s)*.

On each station, only one MWR-TA can work at a time.

The *Job* associated with each MWR-TA starts depending from the ***Event*** settings.



NOTE: Refer to the paragraph "*Associating the MWR wrenches with Station(s)*" for further details about the LED indication on the MWR-TA.

The tightening results are visible on the ***Focus 60 / Focus 61*** display and on the stacklight (see the figure on the right).

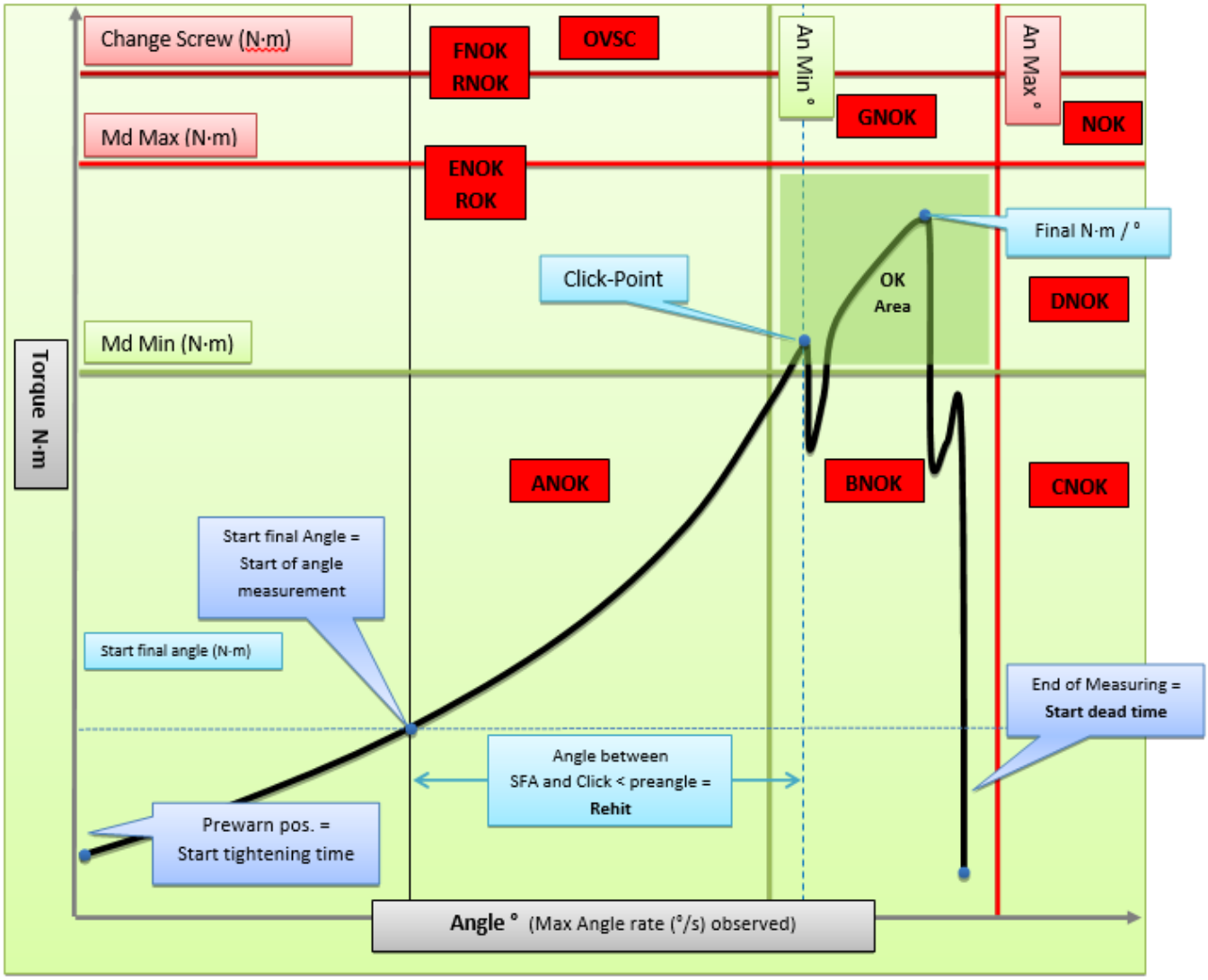
The ***Focus 60 / Focus 61*** display shows the tightening result of the last tightening:

Refer to the following *results status list* for possible results status that can be shown on the ***Focus 60 / Focus 61*** display:

- **OK** = Torque and angle within the limits (OK)
- **NOK** = Torque and angle above the limits (Not OK)
- **LCK** = Wrench locked
- **ANOK** = Torque and angle below the limits (Not OK)
- **BNOK** = Torque below the limits, angle within the limits (Not OK)
- **CNOK** = Torque below the limits, angle above the limits (Not OK)
- **DNOK** = Torque within the limits, angle above the limits (Not OK)
- **ENOK** = Torque within the limits, angle below the limits (Not OK)
- **FNOK** = Torque above the limits, angle below the limits (Not OK)
- **GNOK** = Torque above the limits, angle within the limits (Not OK)
- **ROK** = Existing fitting (double hit), torque within the limits
- **RNOK** = Existing fitting (double hit), torque above the limits
- **NEG** = False direction of tightening (loosen)
- **OVSC** = Additional torque limit “overload screw” exceeded
- **OVLD** = Overload value of the wrench exceeded! Check calibration urgently!
- **TNOK** = Timeout expired, torque / angle are not OK
- **TOK** = Timeout expired, torque / angle are OK
- **OVAR** = Maximum angular speed exceeded / it needs to be calibrated (Not OK)
- **OVAD** = Reading outside of the AD converter range (Not OK)

The following *"Torque – Angle"* graph shows all relevant *Parameters Settings values*.

According to them, the following example points the fields out that detect the results status above mentioned:

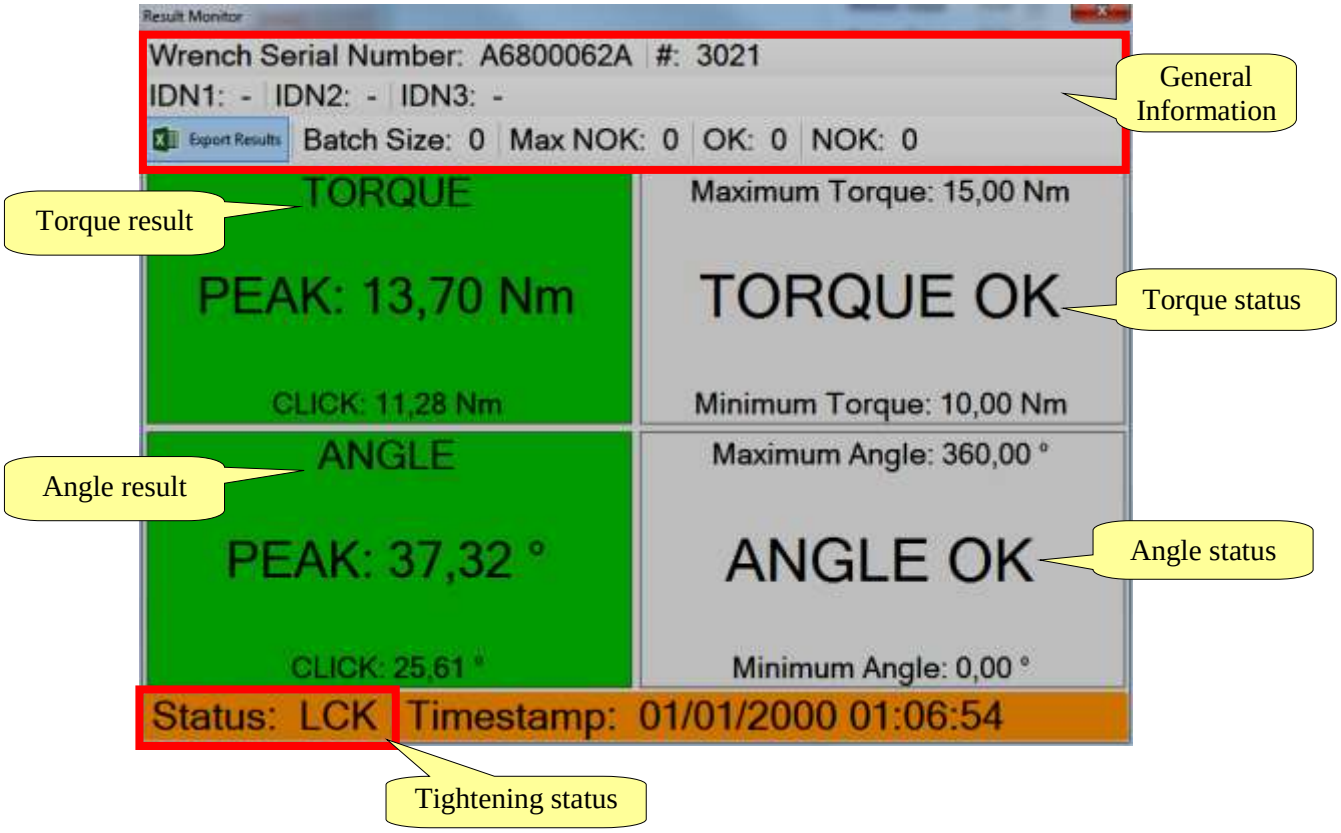


More precisely:

8 LIVE MONITOR

The ***Live Monitor*** icon shows in real time the tightening results of the MWR-TA connected with ToolsTalk BLM.

After clicking ***Live Monitor***, after executing a tightening with a linked MWR-TA, the following screen shows:

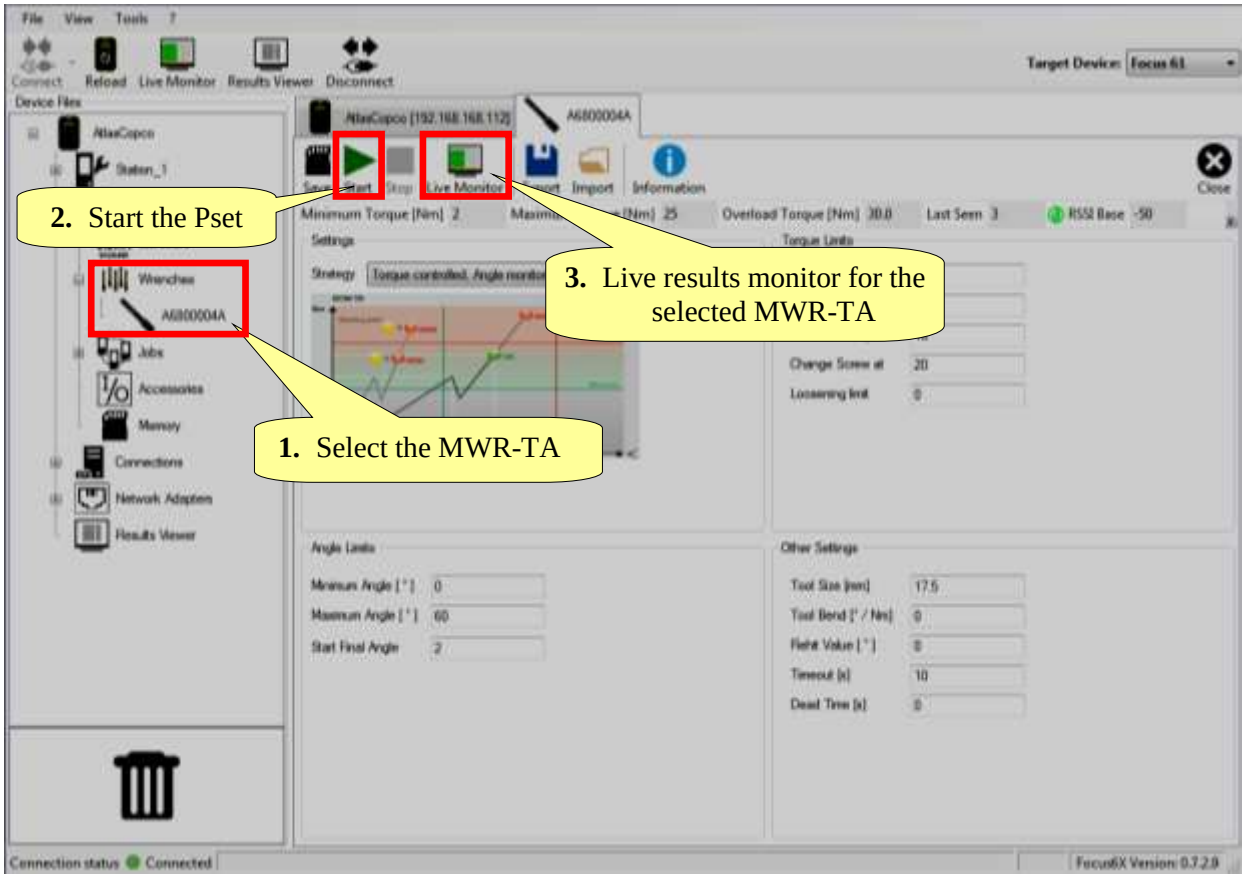


Hereunder are the fields displayed in the above *Result Monitor* screen:

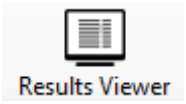
FUNCTION	*DESCRIPTION*
Wrench serial number	Serial number of the MWR-TA
#	Result ID
IDN1: IDN2: IDN3:	IDN defined in the *Job* **NOTE**: If the ToolsTalk BLM is connected, the IDN is NOT visible.
Export Results	This option exports in an Excel file the results displayed in a tightenings session
Batch Size, Max NOK	Pset parameters set for the MWR-TA
OK, NOK	Number of tightening operations with *OK* and *Not OK* results
Torque result and ***Angle Result***	Peak and click torque/angle values of the last tightening operation. The boxes are green colored if the torque/angle peaks are between the minimum and maximum values defined in the *MWR-TA Pset*; otherwise they are red colored
Torque Status and ***Angle Status***	This box shows the status and the limits defined in the *MWR-TA Pset*. The status can be: - ***Waiting…***: Live results monitor open, but no results available yet - ***Low***: Torque/Angle lower than the minimum value - ***OK***: Torque/Angle within the limits - ***High***: Torque/Angle higher than the maximum value
Status	Overall status of the tightening operation. Refer to the paragraph "*Executing Tightening Operations*" for further details about the code shown here. The box is green if the *Status* is *OK*, yellow if the MWR-TA is locked, red if the *Status* is *Not OK*.
Timestamp	Date and time

NOTE: In case two MWR-TA on two different stations generate a result at the same time, only the last one is visible on the ***Live Monitor*** interface.

NOTE: For Psets executed directly on the MWR-TA, it is possible to open a ***Live Monitor*** interface for each MWR-TA:

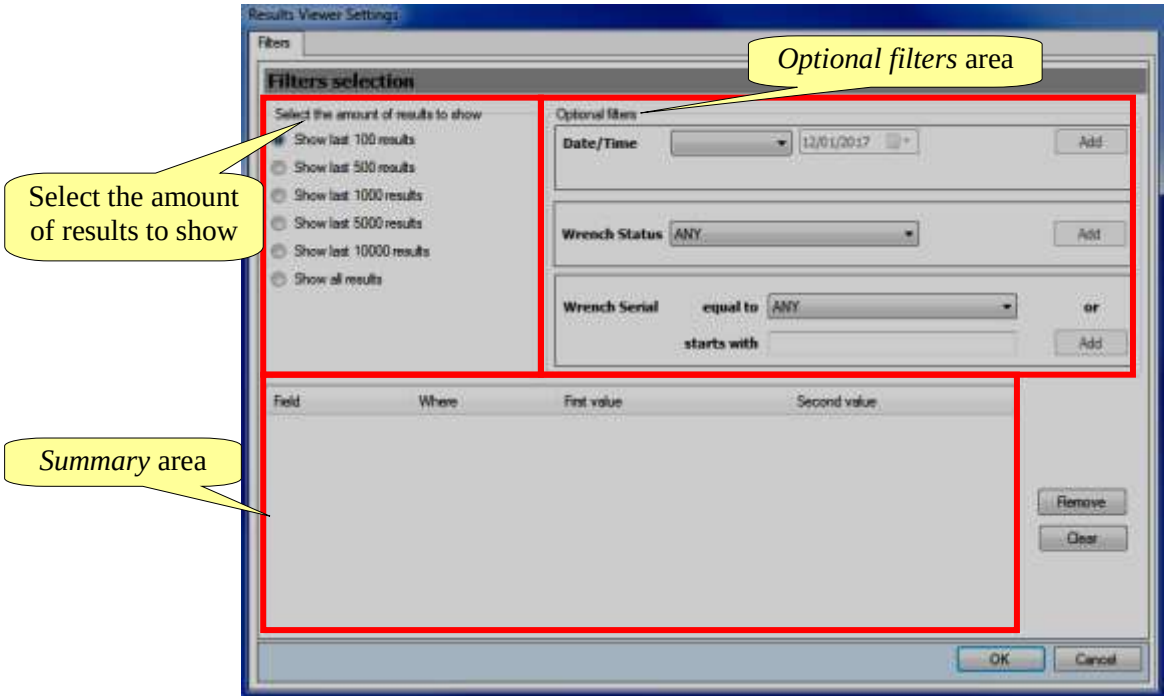


9 RESULTS VIEWER



The ***Results Viewer*** icon shows a list of the tightening results of all MWR-TA connected with ToolsTalk BLM.

After clicking ***Results Viewer***, the following ***Filters selection*** pop-up shows:

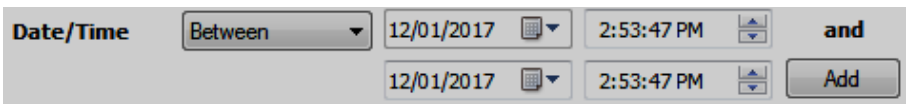


Select the amount of results to show, by acting on the left side of the above pop-up.

Set *Date/time filter*, *Wrench Status filter* and *Wrench Serial filter* in the *Optional filters* area.

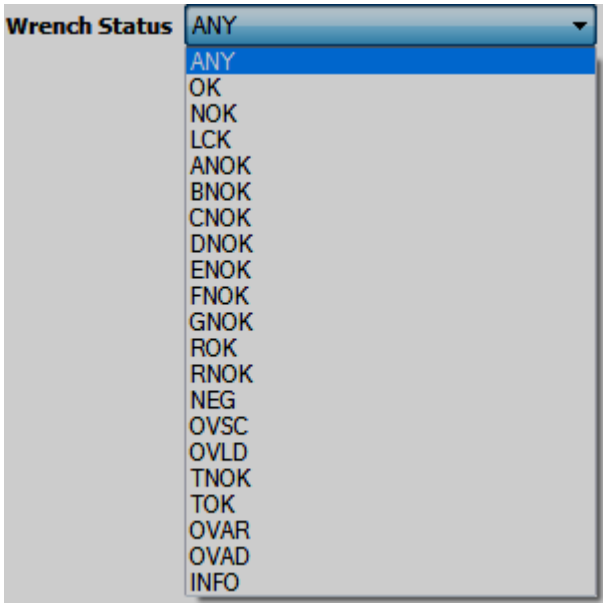
- *Date/time filter*: click the drop-down list and select between "*Equal*" or "*Between*".
  "*Equal*" option filters results measured in a specified day.

  "*Between*" option filters results according to a defined time interval:



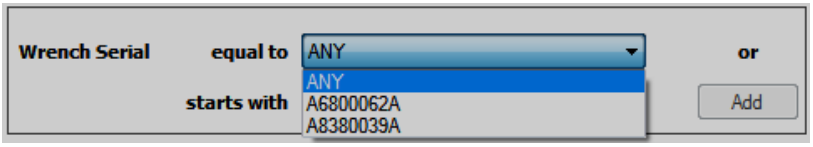
  After setting *Date/time filter*, click *Add*.

- *Wrench Status filter*: click the drop-down list and select between the *results status list* (see the list on the right):

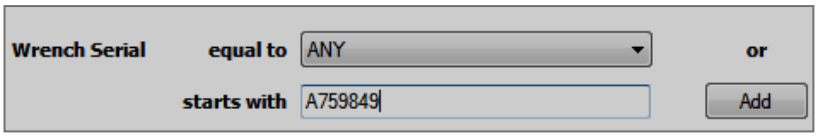


After setting *Wrench Status filter*, click *Add*.

- *Wrench Serial filter*: set the *Wrench Serial filter* with one of the following procedures.
  - Click the drop-down list in correspondence of "*equal to*" in order to show the *Serial numbers* of the wrenches connected with one of the two *Stations*. Select one *Wrench Serial*.



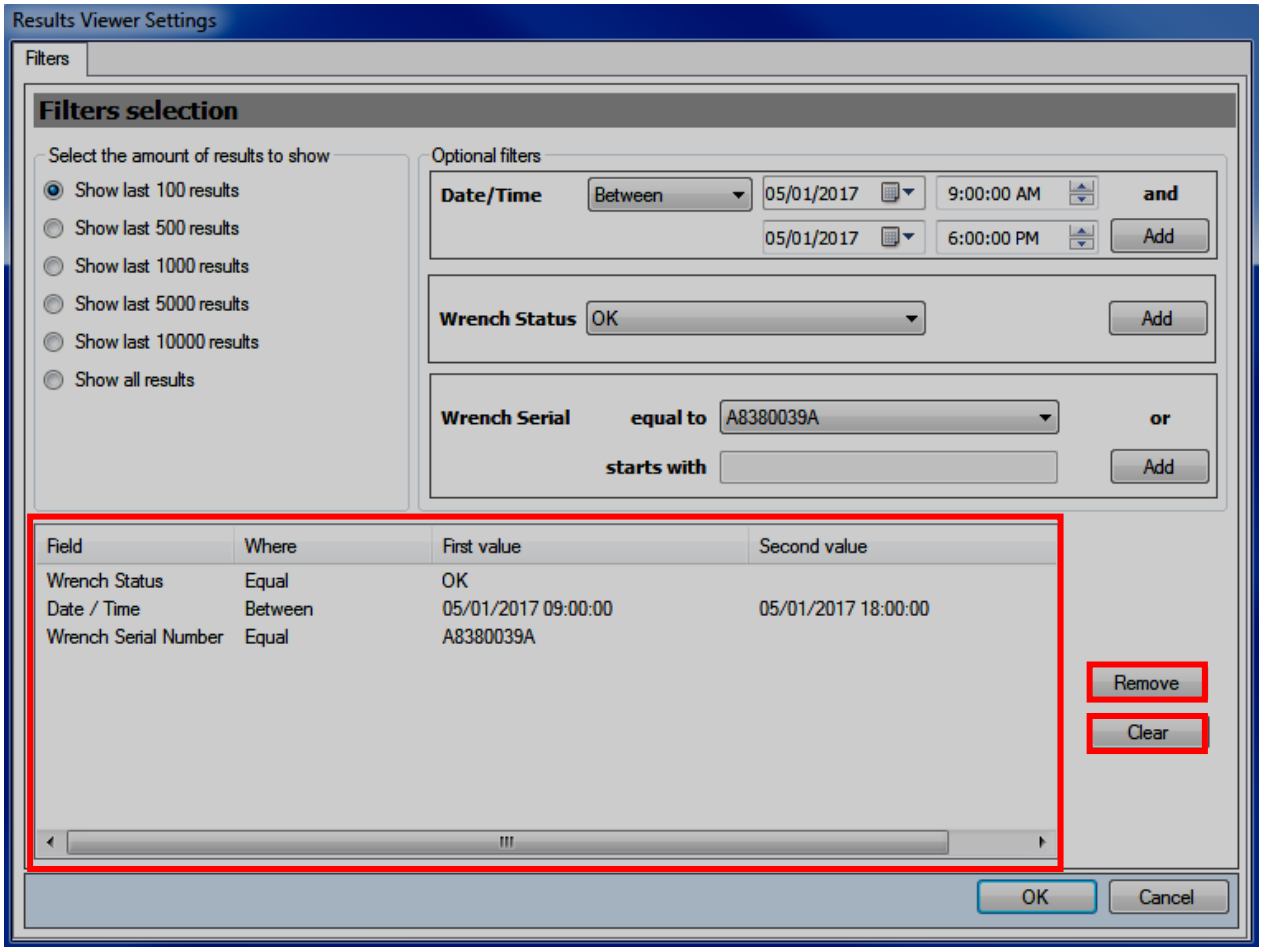
  - Keep *ANY* on the drop-down list placed in correspondence of "*equal to*". Manually insert the *Serial number* of the necessary wrench in correspondence of "*starts with*". This function examines *Serial numbers* also if they are partially inserted into the related text box, provided that the partial *Serial number* starts from the first digit.



NOTE: Use either the first or the second procedure above given.

After setting *Wrench Serial filter*, click *Add*.

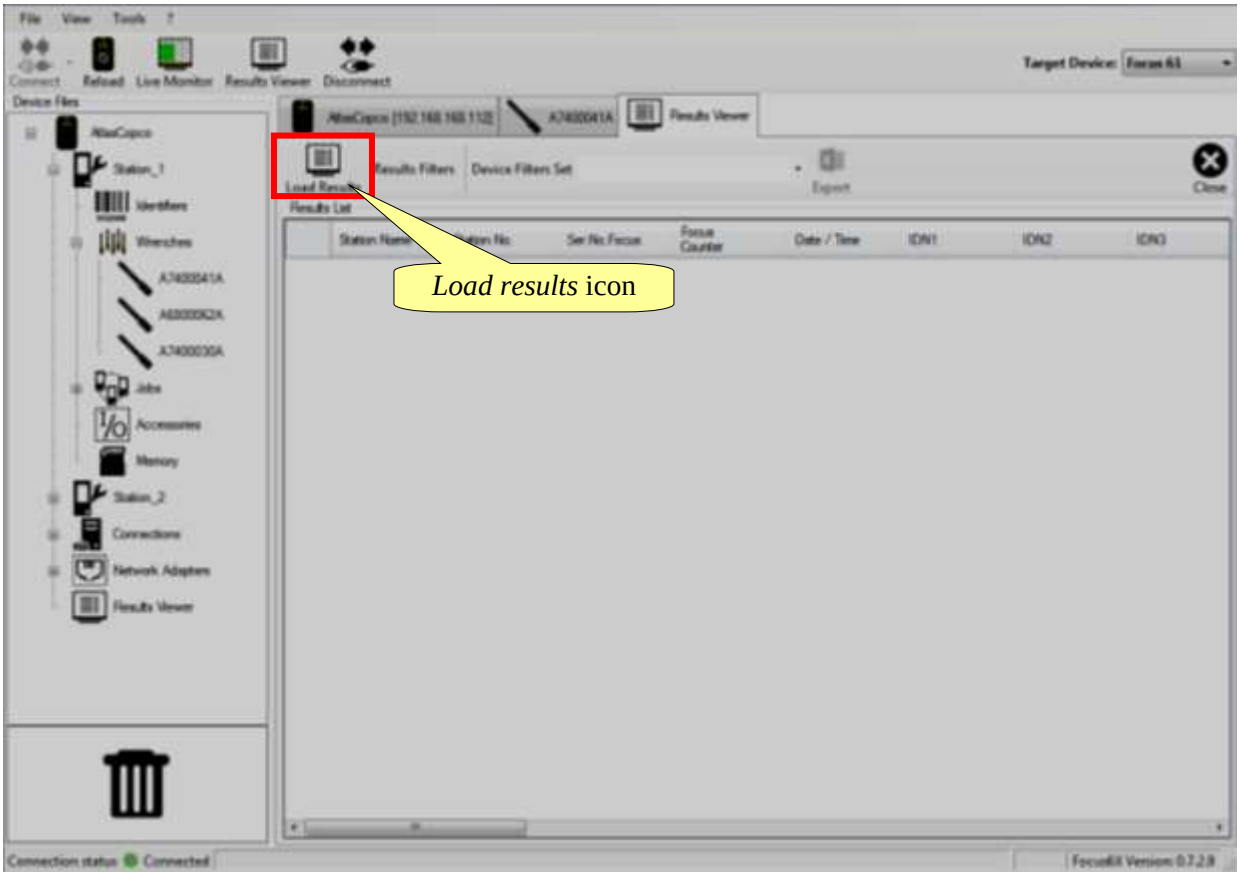
The *summary* area is automatically filled (see the following screen).



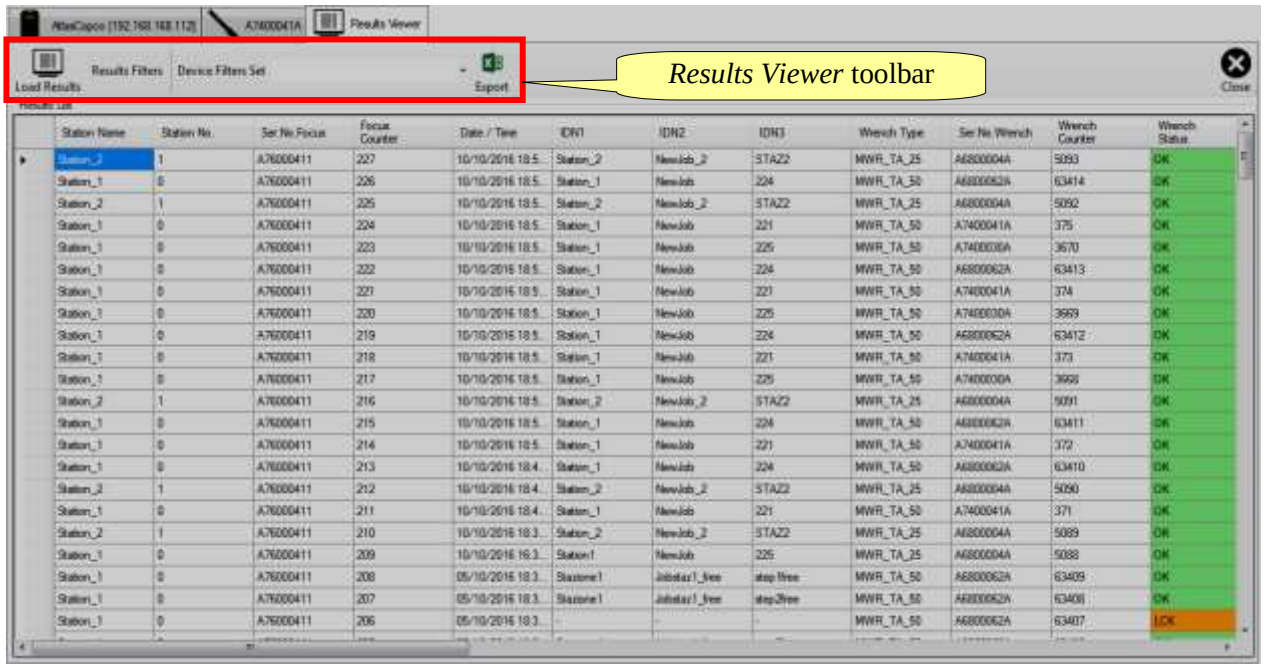
"Remove" button (placed on the right of the *Summary* area) removes the filters inserted in the *Summary* area singularly.

"Clear" button (placed below *"Remove"* button) removes all of the filters inserted in the *Summary* area at the same time.

After recording the ***Filters selection*** pop-up, click *OK*; the following screen shows:



Click *Load Results* icon to load the results set previously; the following results list shows:



The *Results Viewer* toolbar shows the following commands:

***Load Results** icon*	It loads all the results set in the ***Filters selection*** pop-up
Result Filters	It opens the ***Filters selection*** pop-up in order to modify the filters set previously
Device Filters Set	The *Set Filters* drop down menu is *Read Only*. It lists the *Tightening and Results Filters Settings* selected into the *Device Settings* page (for further details, refer to the paragraph "*Tightening and Results Filters Settings*")
Export	This option exports in an Excel file the *Results List*

10 Focus 60 / Focus 61 SETTINGS

10.1 Device Data

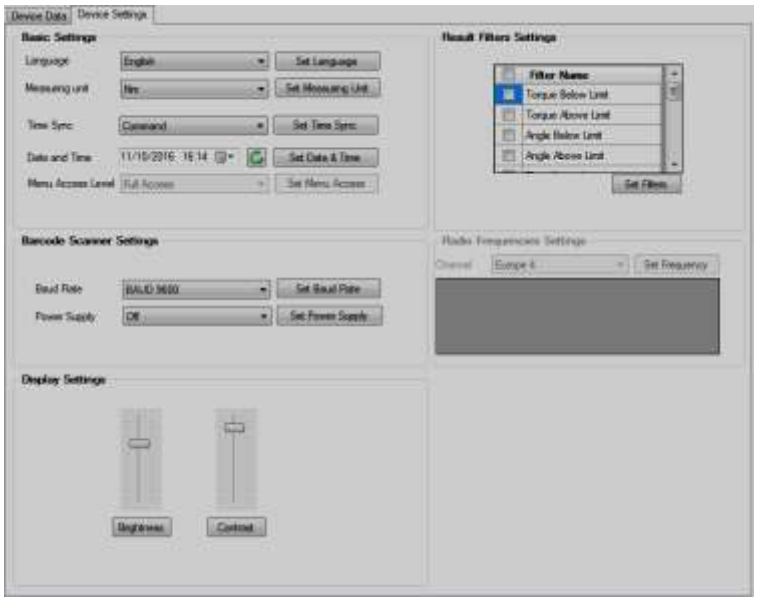
The ***Device Data*** indicates the main features of the ***Focus 60 / Focus 61***.

Firmware	Firmware version loaded on the ***Focus 60 / Focus 61***
Hardware	Hardware version of the ***Focus 60 / Focus 61***
LAN	LAN version of the ***Focus 60 / Focus 61***
Serial Number	***Focus 60 / Focus 61***serial number

NOTE: When programming the ***Focus 60 / Focus 61*** from ToolsTalk BLM, ensure that the ***Focus 60 / Focus 61*** is in the main menu.

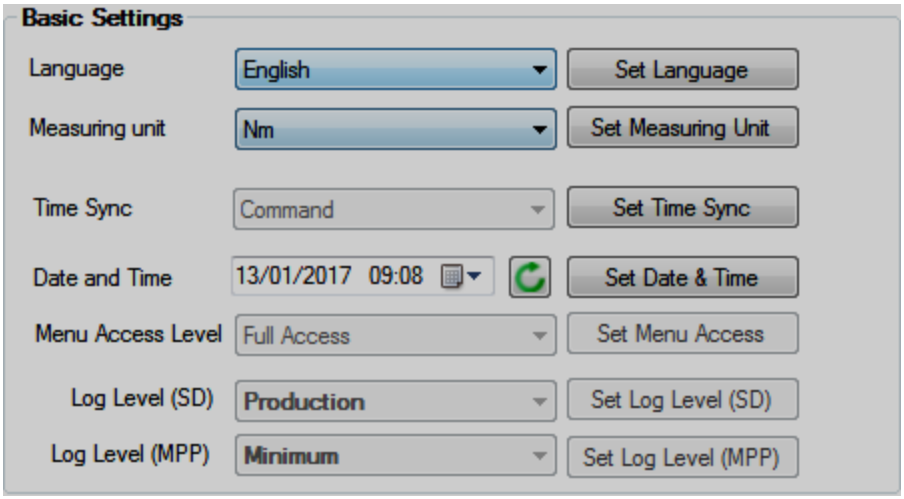
10.2 Device Settings

Device Settings page sets the parameters that characterize the ***Focus 60 / Focus 61***.



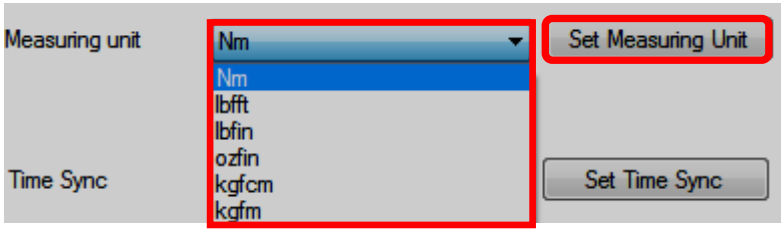
10.2.1 *Focus 60 / Focus 61* Basic settings

Basic Settings select the following features:



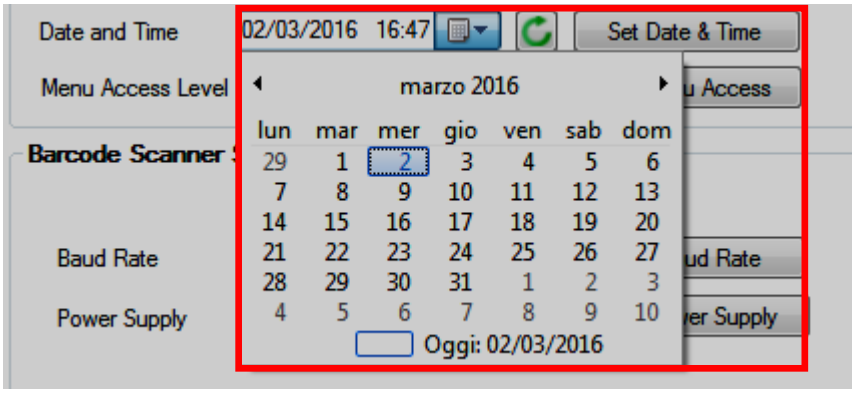
- ***Language***: it selects the ***Focus 60 / Focus 61*** language from the related list (refer to the screen below). Click "***Set Language"*** to confirm:

- ***Measuring unit***: it selects the ***Focus 60 / Focus 61*** measurement unit from the related list (refer to the screen below). Click "***Set Measuring Unit"*** to confirm:



- ***Time Sync***: it selects the *Time Sync* from the related list (refer to the screen below). Click "***Set Time Sync"*** to confirm:

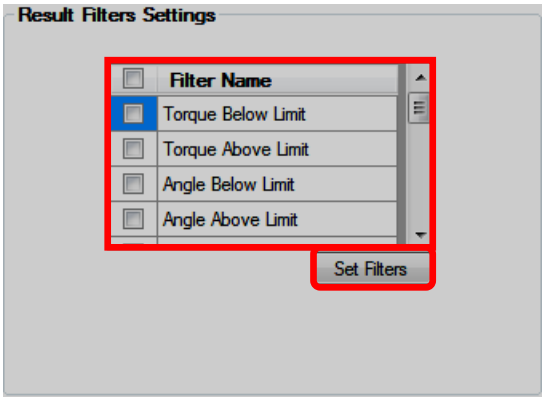
- ***Date and time***: It selects the ***Focus 60 / Focus 61*** *Date and Time* from the related section (refer to the screen below). Click "***Set Date & Time"*** to confirm:



NOTE: Click the icon to match the time set on the PC with the time of the ***Focus 60 / Focus 61***.

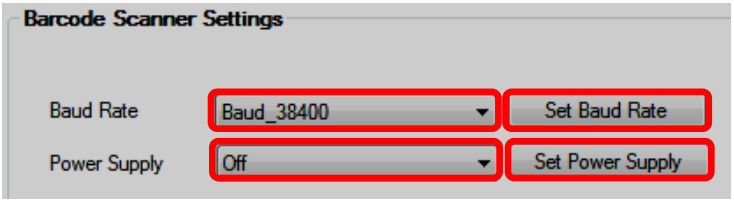
10.2.2 Result Filters Settings

Select the Filter(s) to set on the results stored by the ***Focus 60 / Focus 61*** from the related list placed in the ***Result Filters Settings*** (refer to the screen on the right) and click "***Set Filters"*** to confirm:



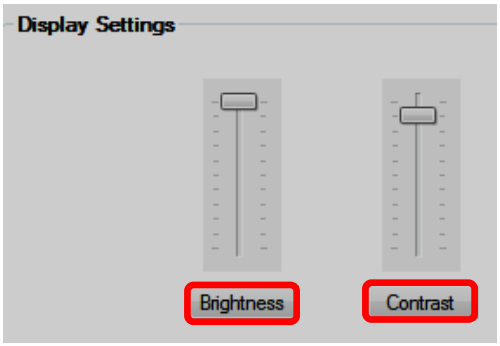
10.2.3 Barcode Scanner Settings

Select both the *Baud Rate* and *Power Supply* in order to set the ***Focus 60 / Focus 61*** from ***Barcode Scanner Settings*** (refer to the screen on the right) and click respectively "***Set Baud Rate"*** and "***Set Power Supply"*** to confirm:



10.2.4 Display Settings

Set both the *Brightness* and *Contrast* on the ***Focus 60 / Focus 61*** from the related section placed in the ***Display Settings*** (refer to the screen below) and click respectively ***"Brightness"*** and ***"Contrast"*** to confirm:

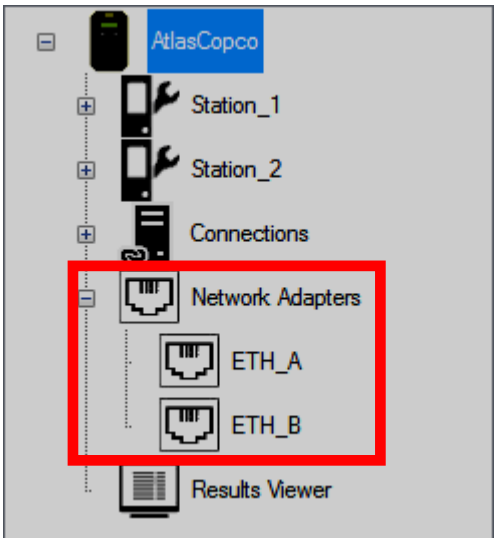


10.3 Network Adapters Configuration

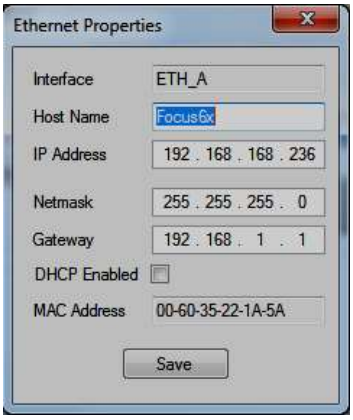
The ***Network Adapters*** menu (place in the *Device Files area*) configures the *Ethernet Ports A* and *B*.

NOTE: It is MANDATORY to connect the ***Focus 60 / Focus 61*** with ToolsTalk BLM before to access the ***Network Adapters Configuration***.

Select ***ETH_A*** or ***ETH_B*** option. This ports are defined in the reference protocol.



The ***Ethernet Properties*** pop-up on the right shows:

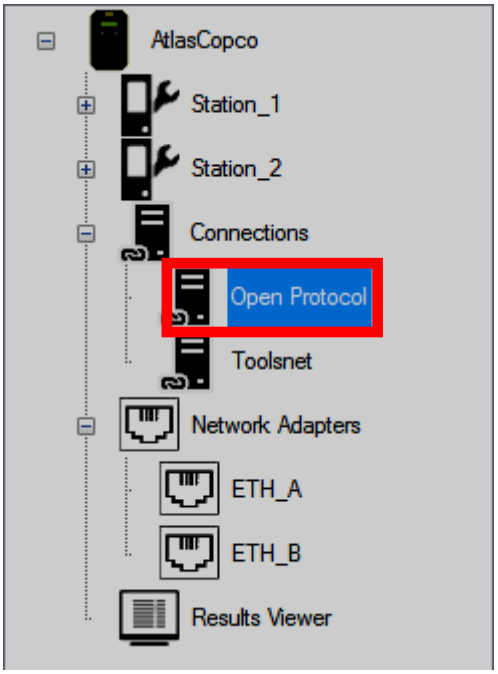


Configure the *Network Parameters* (***IP Address, Netmask, Gateway***), enable or disable the ***DHCP*** and click ***Save*** to confirm.

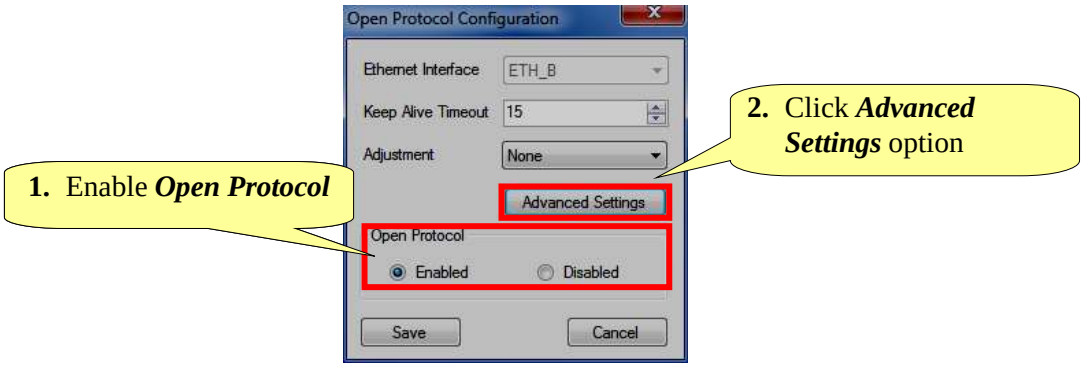
11 WORKING WITH Open Protocol

NOTE: Compatible ***Atlas Open Protocol (AOP)***: **1.6.3**

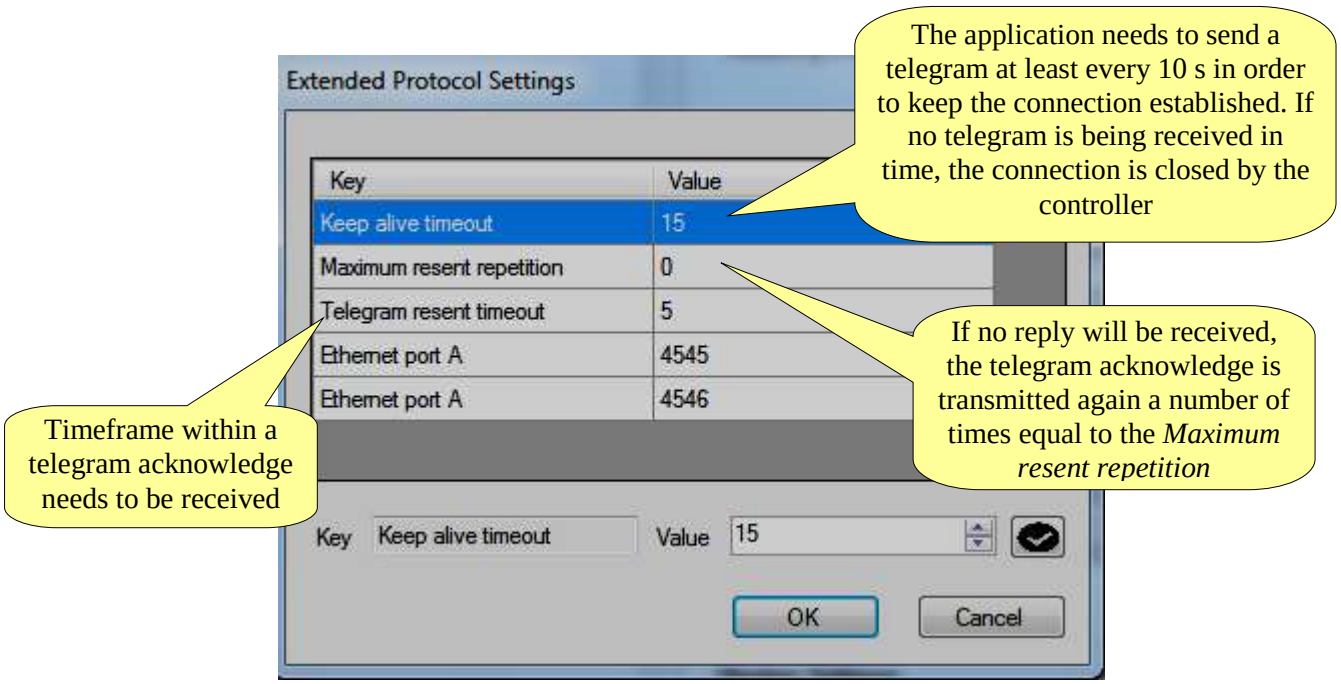
Atlas Open Protocol (AOP) is a communication protocol that interfaces directly with the ***Focus 61.***



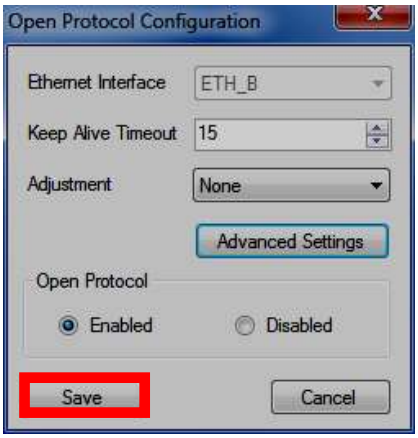
To enable this application, double-click the ***Open Protocol*** icon placed in the *Device Files area* (refer to the picture above: *Connections section*); the following pop-up shows:



After enabling the ***Open Protocol*** (by clicking *Enabled* box placed in *Open Protocol* section – refer to the screen above), it is possible to access the ***Advanced Settings*** (by clicking *Advanced Settings* button):



After setting the ***Extended Protocol Settings***, click ***OK***; finally click ***Save*** in the below pop-up:



11.1 Getting Result via Atlas Open Protocol

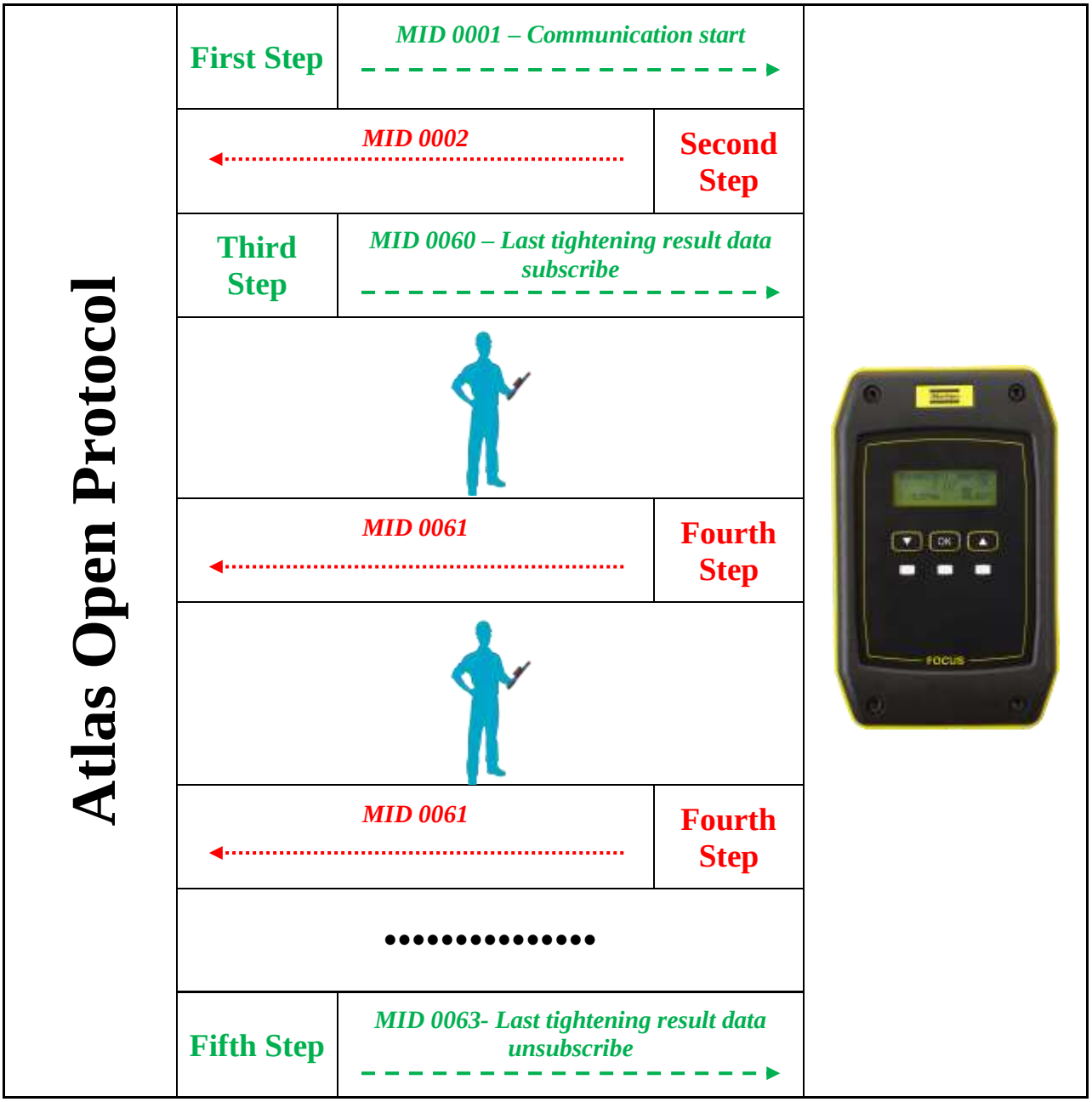
By the message "***MID 0001 – Communication start"***, a third application can start to communicate via *Atlas Open Protocol* with the ***Focus 61;*** the reply (***MID 0002***) contains the basic information about the controller.

Through the message "***MID 0060 – Last tightening result data subscribe"***, it is possible to make a subscription.

NOTE: It is MANDATORY to specify into the message ***MID 0060*** the Station ID (0 or 1).

From the subscription, all the tightening results performed will be sent to the *Atlas Open Protocol* application automatically by the message ***MID 0061***.

NOTE: When the application does not want any further data from the ***Focus 61***, it sends to the controller the message "***MID 0063- Last tightening result data unsubscribe".***


Atlas Open Protocol
First Step
MID 0001 – Communication start
MID 0002
Second Step
Third Step
MID 0060 – Last tightening result data subscribe
MID 0061
Fourth Step
MID 0061
Fourth Step
Fifth Step
MID 0063- Last tightening result data unsubscribe
OK
FOCUS

11.2 Starting a Job via Atlas Open Protocol by means of VIN or Identifier

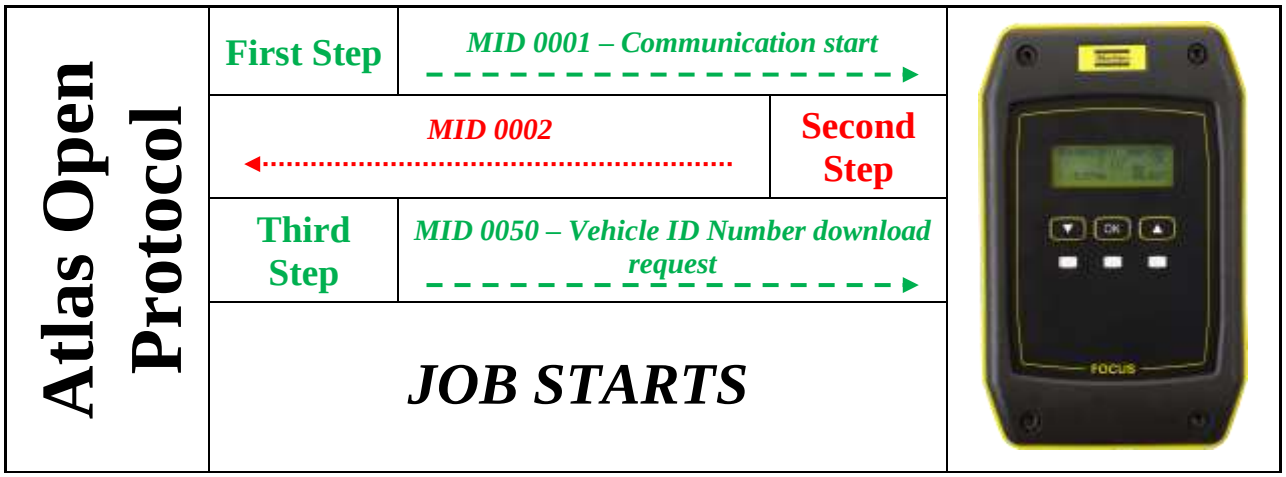
By the message "***MID 0001 – Communication start"***, the *Atlas Open Protocol* starts to communicate with the ***Focus 61;*** the reply (***MID 0002***) contains the basic information about the controller.
Through the message "***MID 0050 – Vehicle ID Number download request***", it is possible to trigger an event (configured in the ***Focus 61***) in order to start a *Job*.

NOTE: It is MANDATORY to specify into the message ***MID 0050*** the Station ID (0 or 1).

Before sending this message from the *Atlas Open Protocol* to the ***Focus 61***, there are some mandatory steps to satisfy.
First, configure a *Job* to associate with the *Event* (refer to the paragraph "*Job Configuration*").
Second, configure an *Event*:

- *Event Type* must be either *AOP_SETVIN*
- *Station action* must be set on *Enable Station*
- *Job action* must be set on *Start Job* (thus select the *Job* previously configured)
- *Barcode action* must be set on *Station_IDN*

After configuring both a *Job* and an *Event*, when the *Atlas Open Protocol* sends a message "***MID 0050 – Vehicle ID Number download request***" to the ***Focus 61***, this receives a VIN and verifies that it matches with the *Pattern* configured; if it is, the *Job* starts and the Blue LED on the MWR-TA starts to blink.

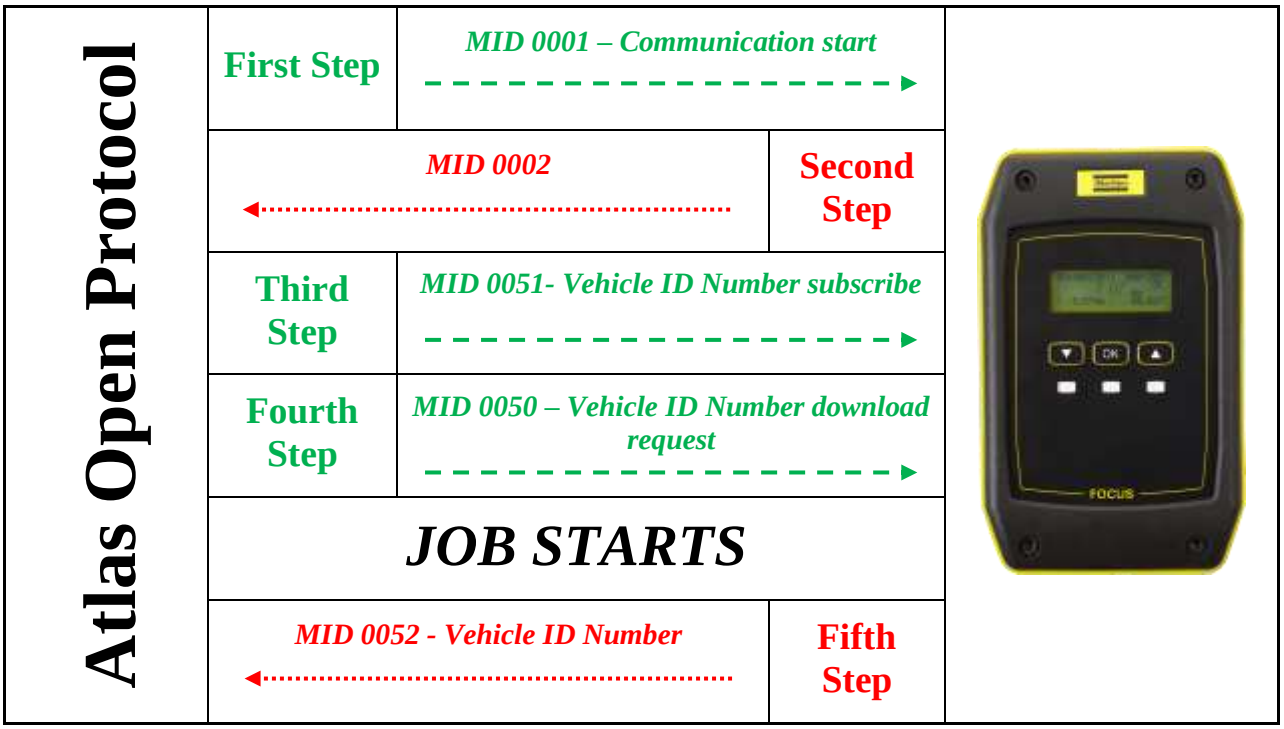


In the third step the VIN (Vehicle ID Number) is subscribed by the *Atlas Open Protocol*. This means that every time when the controller receives a new VIN (e.g. via barcode scanner), this VIN is transmitted to *Atlas Open Protocol*.

The fourth step contains the MID to request the latest VIN from the controller.
At the certain time the *Job* starts by a trigger, e.g. barcode, where a new VIN is set.

In the last step this VIN is transferred via MID 0052 to the Atlas Open Protocol.

NOTE: It is MANDATORY to specify into the message ***MID 0051*** the Station ID (0 or 1).

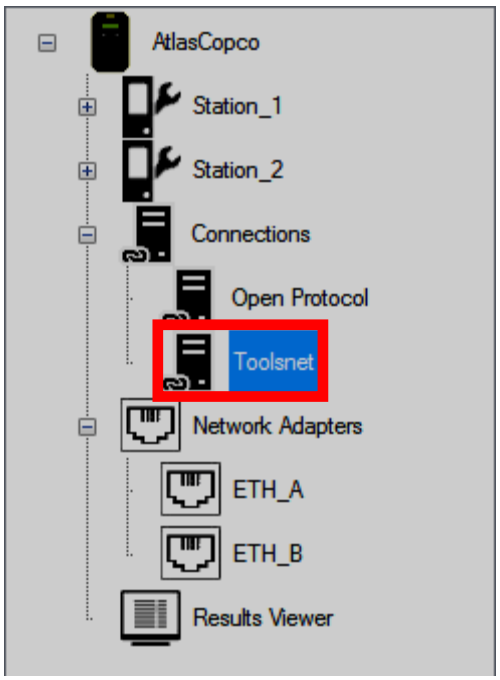


NOTE: The procedures above explained consider an *Event Type* set to *AOP_SETVIN* during the configuration of the *Event*.
If the *Event Type* is set to *AOP_IDENTIFIER*, the two procedures are the same, except the following conditions:

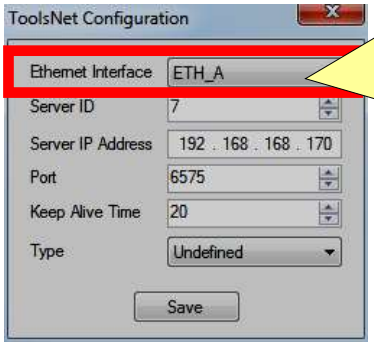
- ***MID 0050 – Vehicle ID Number download request*** is replaced by ***MID 0150 – Identifier download request***
- ***MID 0051 – Vehicle ID Number subscribe*** is replaced by ***MID 0151 – Identifier subscribe***
- ***MID 0052 – Vehicle ID Number*** is replaced by ***MID 0152 – Identifier***

12 WORKING WITH ToolsNet

ToolsNet is an application that configures the ***Focus 60 / Focus 61,*** in order to allow to send data to the same ToolsNet.



To enable this application, double-click the ***ToolsNet*** icon placed in the *Device Files area* (refer to the screen above: *Connections section*); the following pop-up shows:



Ethernet Interface has 3 options:

- ***None***: It disables the comunication
- ***ETH_A/B***: Interface to use to communicate with ToosNet

After setting the *ToolsNet Configuration*, click ***Save.***

13 CBP

The CBP is a basic output protocol for tightening results. The default output port is 10001 on Ethernet interface A (1.2). Each dataset contains detailed information about the tightening according to the data output format listed in the table below:

Ser. No. Focus	Ser. No. Wrench	Data-Set-Type	Focus Counter	Station Group	MWR type	Date / Time	MWR Counter	Tightening Strategy	Tightening Status	Tightening Status Code	MWR Status
A76000441	A8370022A	f0	200	0	52	08.09.2016 11:13:18	214	M0	OK	0	160
A76000441	A8370022A	f0	201	0	52	08.09.2016 11:13:21	215	M0	OK	0	161
A76000441	A8370022A	f0	202	0	52	08.09.2016 11:13:23	216	M0	LCK	4000	160

IDN1	IDN2	IDN3	SeqID / JobID / JobstepID / PSET ID	Sequence OK	Sequence NOK	Target OK	max NOK	Sequence Step	Unit	Snug Point	Final Torque
Station1	NewJob	2x25Nm	1001010000	1	0	2	2	1	Nm	15.00	22.29
Station1	NewJob	2x25Nm	1001010000	2	0	2	2	2	Nm	15.00	22.71
-	-	-	1010000	0	0	0	0	0	Nm	15.00	22.40

Click Torque	Min. Torque	Max. Torque	Final Angle	Click Angle	Min. Angle	Max. Angle	tightening time	Max. Tightening Time	Station Name	Group ID	PSET Name
20.76	15.00	80.00	3.12	2.36	0.00	360.00	0.5	15	Station1	GRP0	PSET0
21.18	15.00	80.00	8.07	6.52	0.00	360.00	0.5	15	Station1	GRP0	PSET0
42542	15.00	80.00	7.59	7.00	0.00	360.00	0.5	15	Station1	GRP0	PSET0

14 MAINTENANCE

14.1 Focus 60 / Focus 61 Cleaning

Keep the ***Focus 60 / Focus 61*** clean.

After use, remove any traces of oil, grease and dust from the ***Focus 60 / Focus 61***, especially from the user interfaces (for further details about the user interfaces, refer to the chapter "*User Interfaces*").

Use an anti-static cleaning cloth in order to remove dust from the ***Focus 60 / Focus 61***.

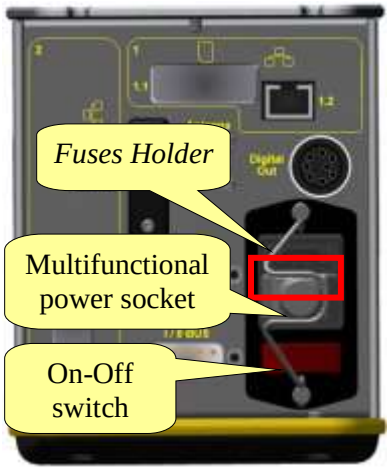
Avoid using harsh detergents to clean ***Focus 60 / Focus 61***.

When the Ethernet cable(s) is not connected with the ***Focus 60 / Focus 61***, insert the plug into the respective housing(s) in order to protect itself from the dust.

When the SD Card(s) is not inserted into the ***Focus 60 / Focus 61***, insert the plug into the respective housing(s) in order to protect itself from the dust.

Keep always the connectors and the Serial Port RS232 clean, placed on the bottom side of the ***Focus 60 / Focus 61***.

14.2 Fuses Replacement



Two *Miniature Fuses* (***5 x 20 mm, Time-Lag T, L, 250 VAC***) are installed into the ***Focus 60 / Focus 61***.

The *Fuses Holder* (with the multifunctional power socket and the On-Off switch) is placed on the bottom side of the ***Focus 60 / Focus 61.***

If an overheating occurs on the ***Focus 60 / Focus 61*** or if the On-Off switch is not red lighted when the ***Focus 60 / Focus 61*** is on, it is highly recommended to replace the *Miniature Fuses.*

Do the following procedure in order to replace the two *Miniature Fuses*:

1. If necessary, switch the ***Focus 60 / Focus 61*** off by acting on the On-Off switch placed on the bottom side of the device (refer to the figure on the right).
2. Disconnect the power cable from the AC Power in order to work in safe.
3. Disconnect the power cable from the multifunctional power socket (refer to the figure above).

NOTE: Pay close attention during the execution of the next steps: the two *Miniature Fuses* could fall down on the floor. This is due to the fact that it is not necessary to remove the ***Focus 60 / Focus 61*** from its working position.

4. By using a shaped tool (i.e. screwdriver), extract the *Fuses Holder* as shown in the picture on the right:

5. After extracting the *Fuses Holder*, it is possible to see the two *Miniature Fuses* (refer to the picture on the right).

   Remove the old *Miniature Fuses* and install the new ones.

6. After installing the new *Miniature Fuses*, push the Fuses Holder into its housing as shown in the picture on the right:

NOTE: Use ***ONLY*** the power cable provided with the ***Focus 60 / Focus 61*** package. If you use any other power cable, the protection provided by the equipment may be impaired.

7. Reconnect the power cable to the multifunctional power socket
8. Reconnect the power cable to the AC Power.

NOTE: Switch the **Focus 60/ Focus 61** on, to verify that fuses replacement was done correctly. Check, that the light of the On-Off switch is red and if the other LEDs (on the front panel) illuminate correctly.

15 TROUBLESHOOTING GUIDE

Here is a quick troubleshooting guide for the ***Focus 60 / Focus 61***.

If a problem occurs, before taking any action (replacing parts or contacting customer support), be sure to check that the ***Focus 60 / Focus 61*** was used correctly.

Improper operation can cause troubles even if the system is in good working order.

In case of issues, the log file (refer to paragraph "*Enabling LOG Viewer*" for further information) can provide information about the problem.

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