



# PHC STUDIO SUITE

Walvoil  
Developments Tools

USER MANUAL

**PHC**  
STUDIO

**WST** PRO  
WALVOIL SERVICE  
TOOL



Thank you for choosing a **Walvoil** product.

Your product is the result of advanced technology, careful testing and an ongoing quest for reliability, safety, and higher performance.

The product must be operated within the parameters contained in the technical manual **D1WWED03E**.

To obtain a long service life, follow the maintenance instructions described in this manual.

### BEFORE READING THIS MANUAL

THIS PRODUCT IS INTENDED TO BE OPERATED CAREFULLY AND RESPONSIBLY BY A QUALIFIED OPERATOR. IF THIS PRODUCT IS USED IMPROPERLY, THE MANUFACTURER WILL NOT BE RESPONSIBLE FOR ANY RESULTING INJURY OR DAMAGE TO PERSONS OR PROPERTY.

Whenever the symbols shown below appear, follow the instructions that are given!

Be sure to perform all operations and maintenance in complete safety.

**WARNING** : identifies special instructions or procedures that may cause injury or damage to persons and property unless followed exactly.

### Additional information

This catalogue shows the product in the most standard configurations.

Please contact our Sales Dpt. for more detailed information or special request.

### WARNING!

All specifications of this catalogue refer to the standard product at this date.

Walvoil, oriented to a continuous improvement, reserves the right to discontinue, modify or revise the specifications, without notice.

WALVOIL IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN INCORRECT USE OF THE PRODUCT.

1<sup>st</sup> edition - April 2021

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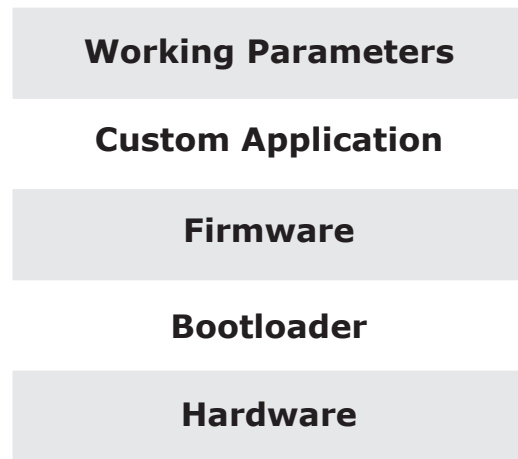
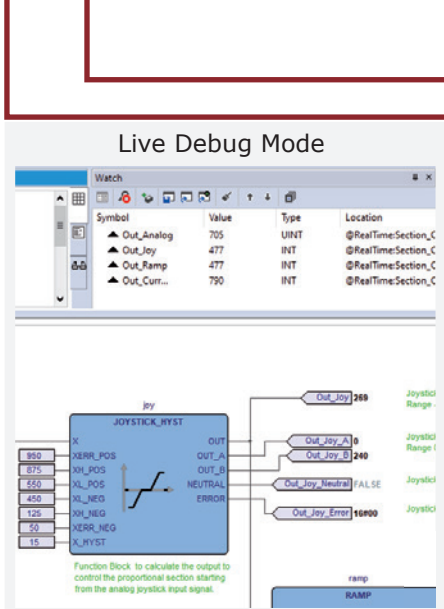
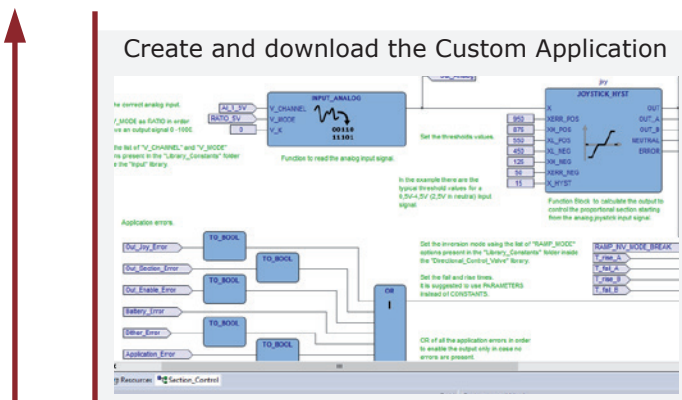
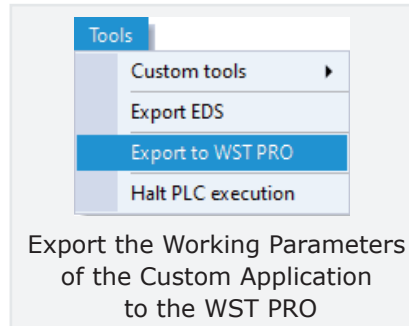
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## Introduction

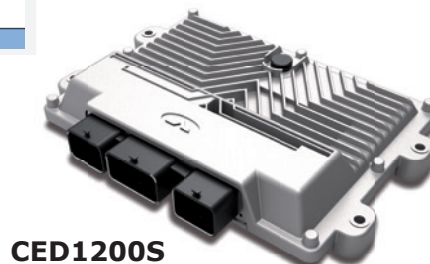
Used to develop and integrate custom application logics in Walvoil electronic control units.

Compliance with all the 5 Programming Languages of the IEC 61131\_3 PLC Standard:

- Ladder Diagram (LD)
- Function Block Diagram (FBD)
- Structured Text (ST)
- Instruction List (IL)
- Sequential Function Chart (SFC)

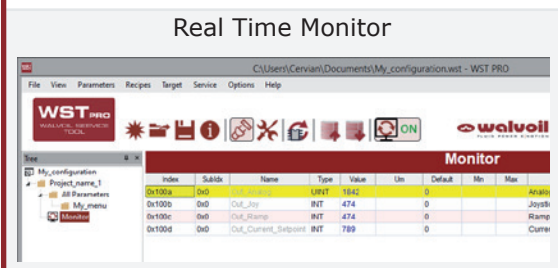
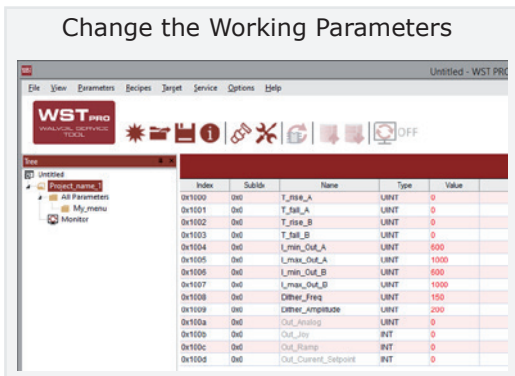


Walvoil Electronic Control Units

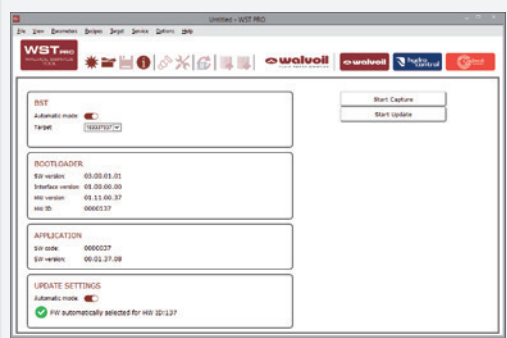


With the advanced Walvoil Service Tool it is possible to:

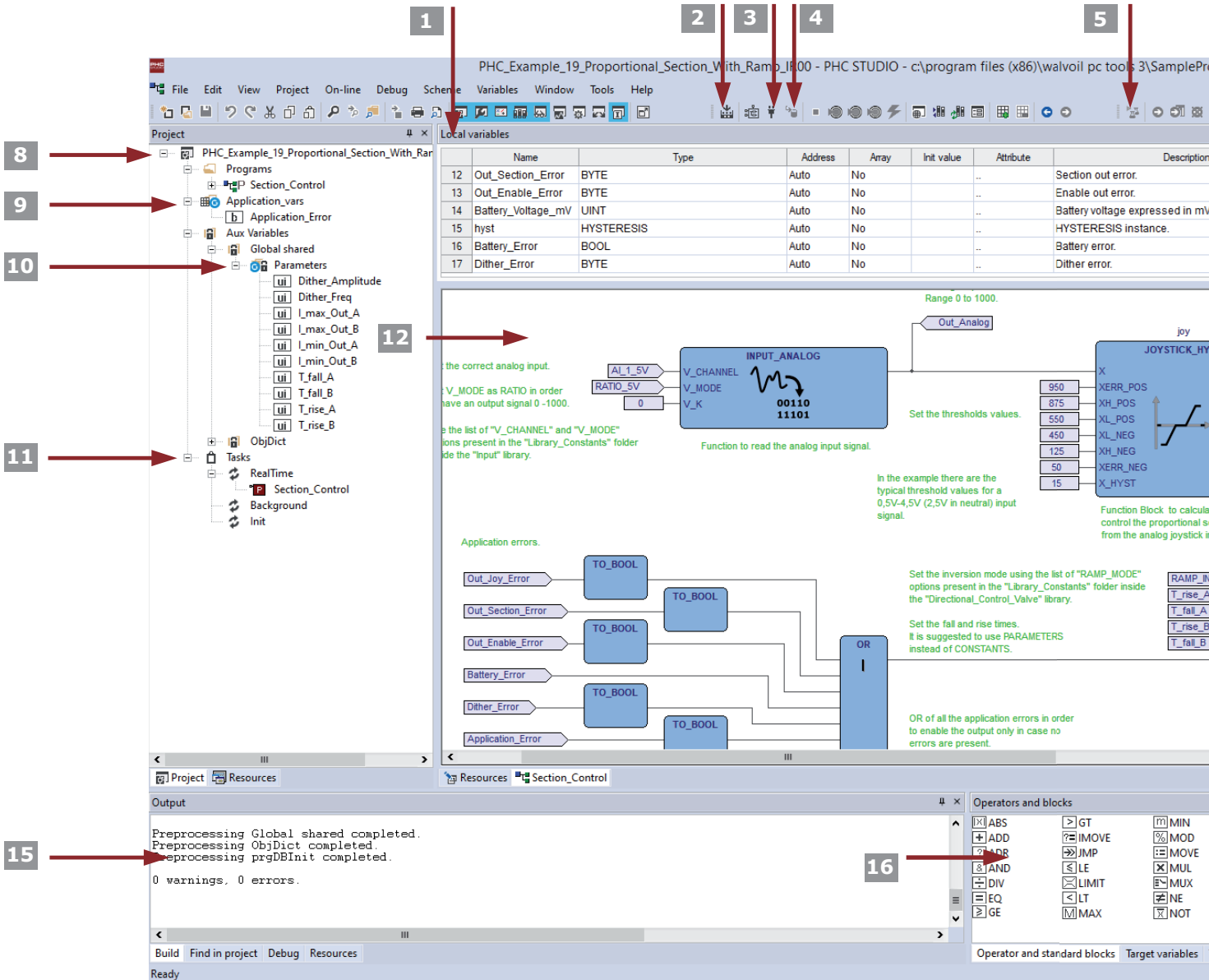
- Change the Working Parameters to calibrate and configure the Application
- Monitor I/O signals in real Time
- Execute in-field system Diagnostic
- Update the Firmware and Software in the field



CANbus Firmware and Application Update



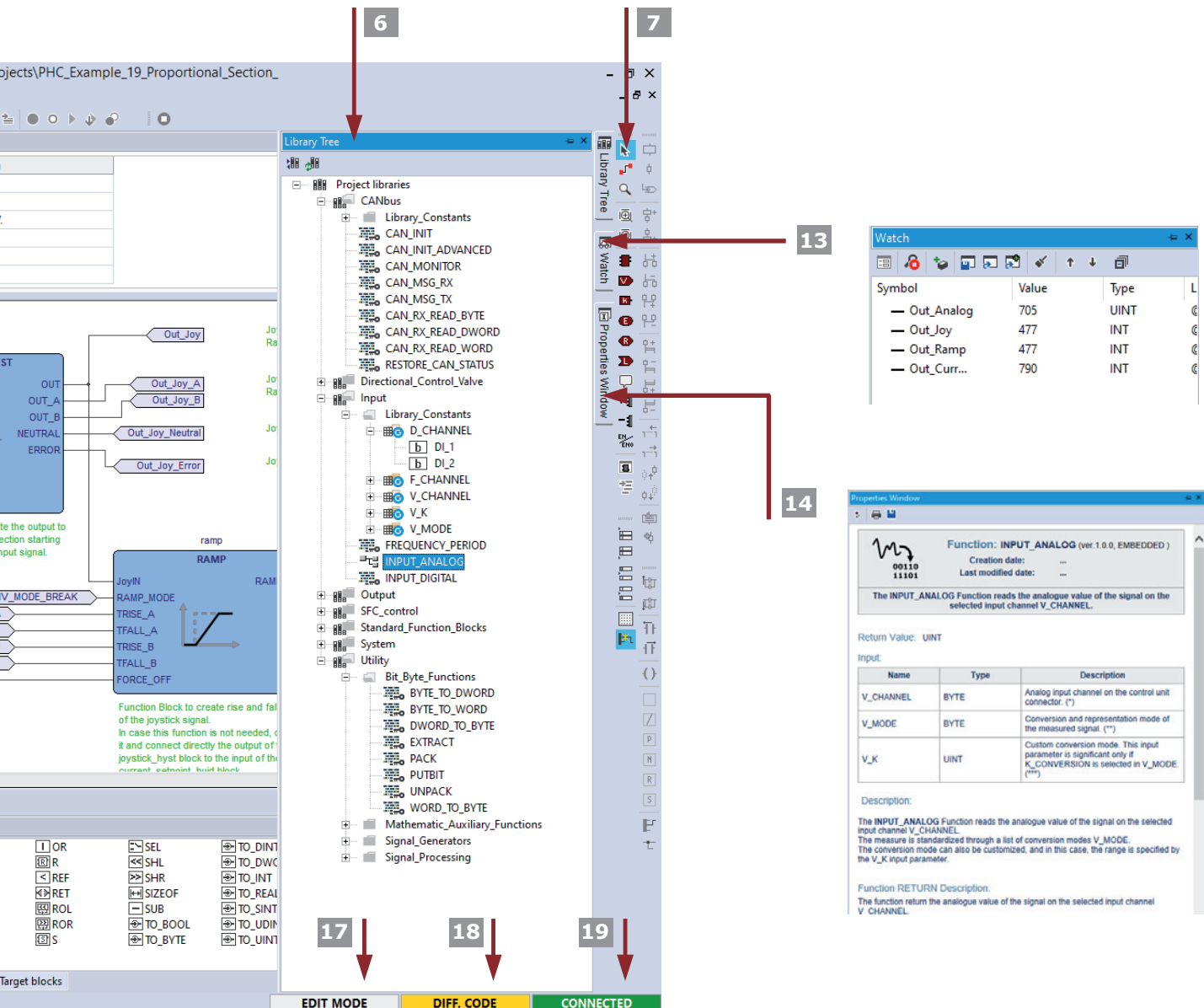
PHC Studio



- 1** • Local variable list: these variables are accessible only inside this Program/Function/Function block
- 2** • To compile the PLC project
- 3** • To connect the target
- 4** • To download the PLC code
- 5** • To enter the Debug mode
- 6** • Library tree window: list of all the Walvoil libraries
- 7** • Toolbar for programming
- 8** • Project window: all the Programs, Functions, Function Blocks and variables are created and managed here

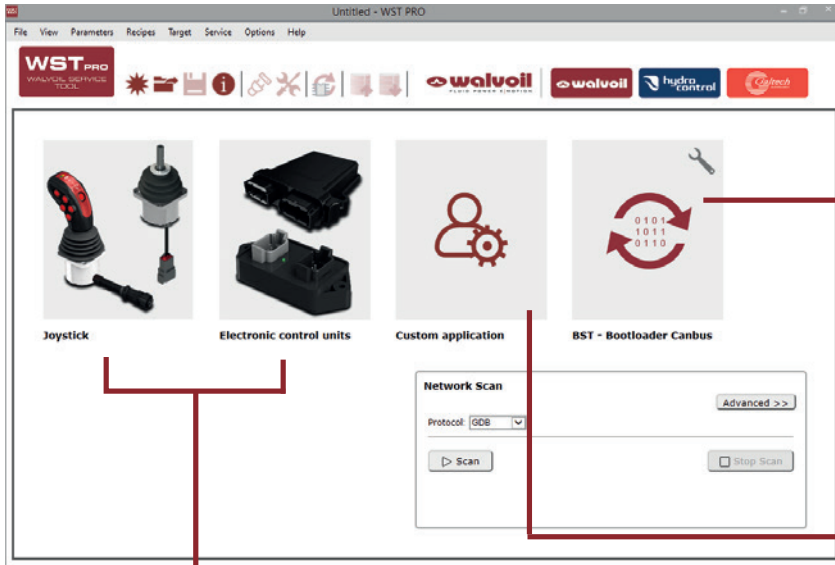
- 9** • Application variables: list of all the global application variables
- 10** • Parameters: list of all the application parameters
- 11** • Task list: To be executed the Program need to be assigned to a task
  - RealTime task: executed every 5ms.
  - Background task: executed when the microprocessor is free
  - Init task: executed only one time at the startup of the application
- 12** • Programming area window: to create the application code





- 13** • Watch the window for realTime monitor of all the parameters and variables
- 14** • Properties window with the detailed documentation of the Function/Function Block
- 15** • Output window:  
area where the tool communicates information to the user with different tabs for different informations
- 16** • Standard operators and blocks window:  
area with all the Standard functions of the IEC61131
- 17** • Mode info area:
  - EDIT MODE: to edit the project
  - DEBUG MODE: to debug the project with realTime monitor of all the parameters and variables
- 18** • Code info area:
  - SOURCE OK: the application software present in the target is the same of the project in PHC STUDIO
  - DIFF. CODE: the application software present in the target is different from the project in PHC STUDIO
  - NO CODE: the physical target is empty
- 19** • Connection info area:
  - CONNECTED: the physical target is connected to PHC STUDIO
  - NOT CONNECTED: the physical target is not connected to PHC STUDIO
  - ERROR: cannot connect to the physical target, error in the communication

## WST PRO



### STANDARD WALVOIL APPLICATIONS

To configure, calibrate and real time monitor

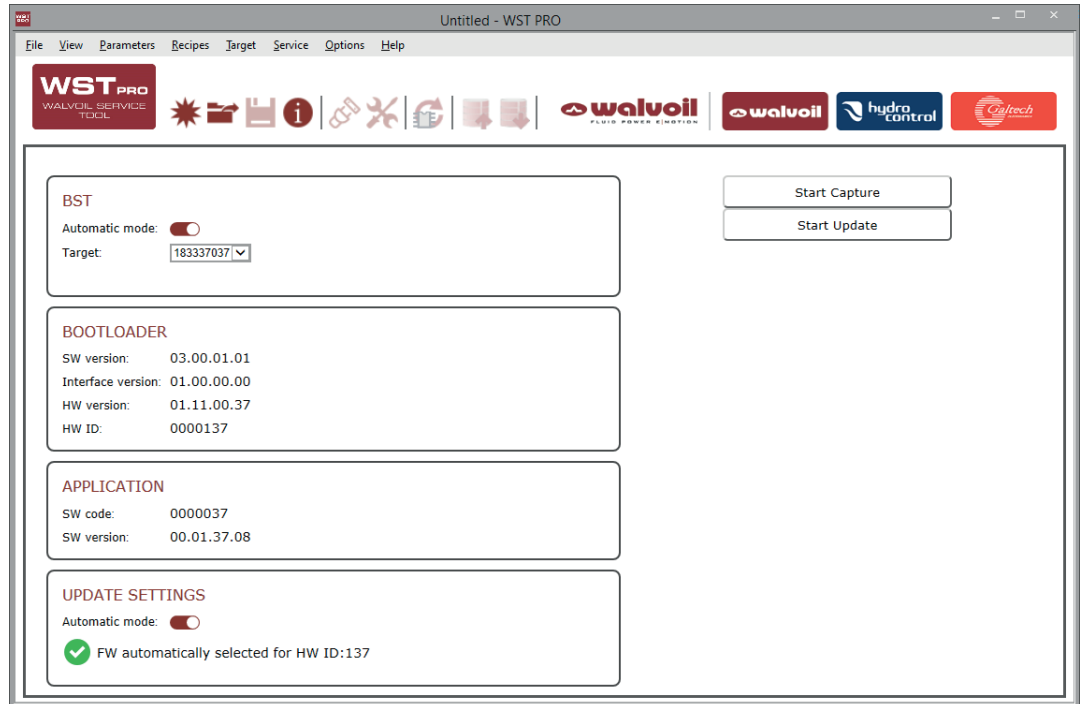


CED400W - CANbus FanDrive - SW0230040 - 40 (1.0)

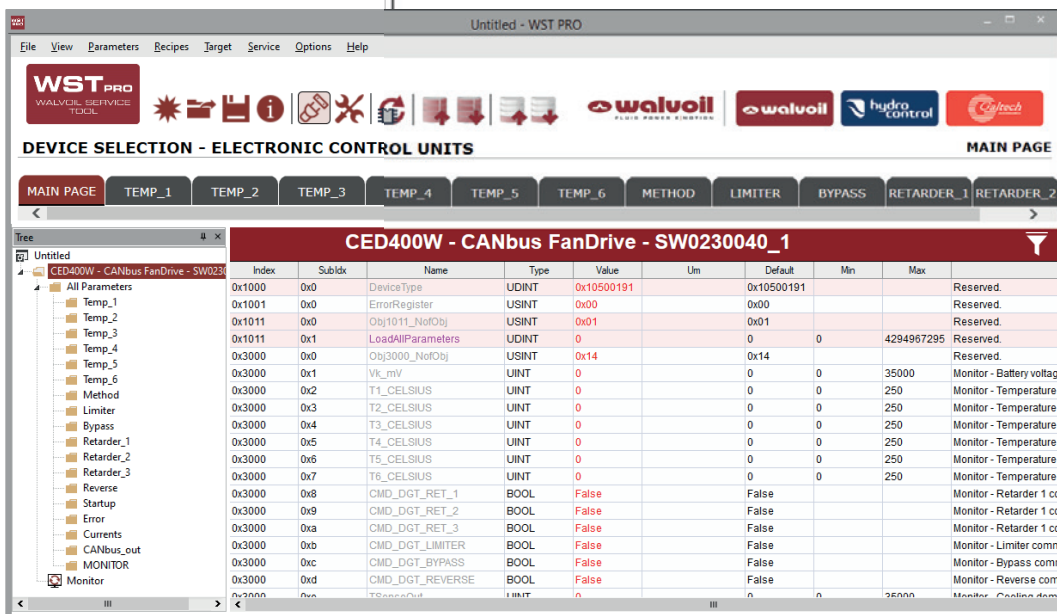
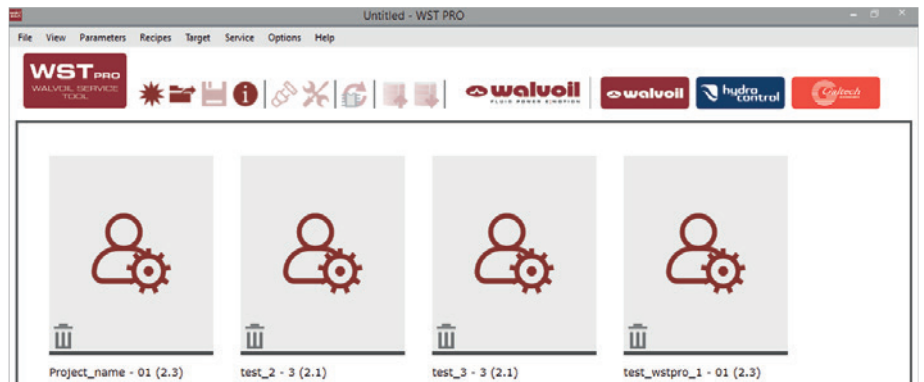
Limit Logic Enable	ON	
Cooling Demand Upper Limit	800	% From 0 to 1000
Cooling Demand Lower Limit	200	% From 0 to 1000
Input Type	CANbus	CANbus or physical switch
Input Pin	5L3	Pin number
CANbus Message ID	0x00000000	From 0x00000000 to 0xFFFFFFFF
CANbus Message Timeout	0	msec From 0 to 65535



BOOTLOADER CANBUS  
To update the Firmware  
and the Software  
of the  
Walvoil components



CUSTOM APPLICATIONS  
To configure, calibrate  
and real  
time monitor



CED400W Hardware Connection



CED400W

1 USB\_RS232 interface

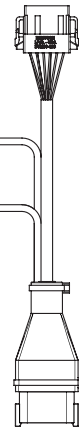


2 USB-CAN (IPEH-002021) interface

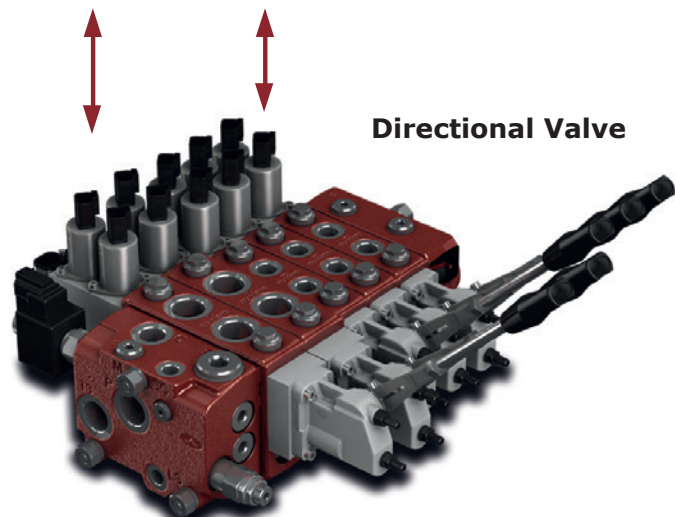
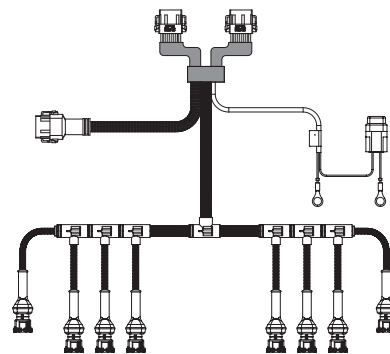


RS232  
CAN

3 CED400W PROGRAMMING CABLE



Joystick



Directional Valve

- 1 • W0420001
- 2 • W0420003
- 3 • VCAV600018

**WARNING**

The User is required to properly verify and test that the Software is correctly working within the specific scope of its application and under the actual configuration of the operating system in use. The Software will perform in substantial conformance with the documentation supplied with the Software when used with the indicated hardware and operating system configuration.

The User is required to verify the accuracy of the installation of the libraries on the control units programmed with the Software and the reliability of their operating system. The manufacturer and/or the distributor is not liable for: (i) the incorrect installation of the libraries on the control units, as well as (ii) an installation which is not conforming with the requirements of the control units, and (iii) any other deviations from the recommended use of the Software and of the operating system, including but not limited to virus, third parties installations, and any other modifications affecting the correct and recommended use of the Software.

The SOFTWARE is provided "AS IS" WITHOUT WARRANTY OF ANY KIND EITHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE other than those expressly provided under proper installation by a proper experienced User. ALL RISKS OF QUALITY AND PERFORMANCE OF THE outcome of the SOFTWARE REMAIN WITH the User.

The User is solely responsible for programming the control units through the use of the libraries and is required to verify the compliance with any possible limitation in the use of the devices in which the libraries are installed.

IN NO EVENT will the manufacturer, its employees, distributors, directors or agents be liable for any direct or indirect damage or other liability arising from the use or inability to use the Software, INCLUDING BUT NOT LIMITED TO LOSS OF PROFITS, LOSS OF BUSINESS OR OPPORTUNITY OR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL OR EXEMPLARY DAMAGES, INCLUDING LEGAL FEES, ARISING FROM SUCH USE OR INABILITY TO USE THE PROGRAM, EVEN IF the manufacturer or an authorized licensor dealer, distributor or supplier has been advised of the possibility of such damages, or for any claim by any other party. Since SOME STATES OR JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR THE LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, IN SUCH STATES OR JURISDICTIONS, the manufacturer's and/or distributor's LIABILITY SHALL BE LIMITED TO THE EXTENT PERMITTED BY LAW.



Innovation · Continuity · Integration  
————— It is Power —————



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