Author of manual: Walter Cuter

Summary

1. MAIN SCREEN

1.1 MACHINE IN RUN STATE (MAIN SCREEN BACKGROUND COLOR IS GREEN)

Pic. 1

By pressing (icon n°12)   (+)
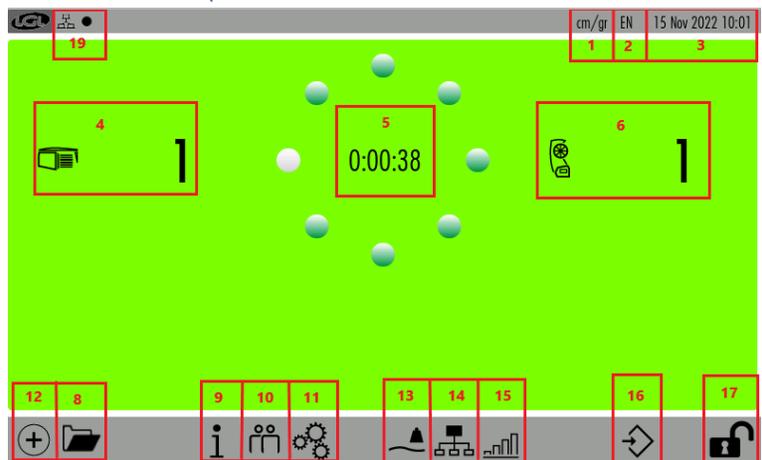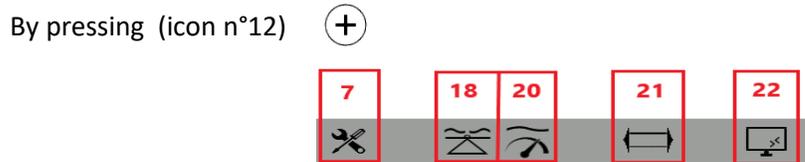
Pic. 1b

1= Unit of measure (to modify press settings icon 11   )

2= Language (to modify press settings icon 11)

3= Date

4= Number of LGL storage feeders connected

5= Timer (It tells from how long the machine is running or it is standing. It resets when the machine changes state RUN-STOP)

6= Number of LGL POSITIVE feeders (TWIN or SPIN) connected

7= Smart Utility function (see chapter3)

8= Open stored configuration files

9= Information about device (see chapter 4)

10= Access level (se chapter 5)

11= General settings (see chapter 6)

12= Page change icon

13= YCM function (see dedicated chapter)

14= Groups and parameters (see chapter 8)

15= Parameter graph (see chapter 9)

16= Present configurations saving

17= Press and hold to lock the screen (useful to clean the screen))

18= SYF function (see chapter 11)

19= Network status:

 = LAN. The black dot blinks when the device is connected. If there is no connection, the black dot is not present.

 =WIFI. The black dot blinks when the device is connected. If there is no connection, the black dot is not present.

20 = YSC function (see chapter 12)

21 = Warper function (see chapter 13)

22 = Data analysis and remote control (see chapter 14)

Press and hold (top left button) to take a screenshot (there must be an external USB key inserted). The image will be saved in the "Screenshot" folder.

1.2 MACHINE IN STOP STATE (MAIN SCREEN BACKGROUND COLOR IS RED)
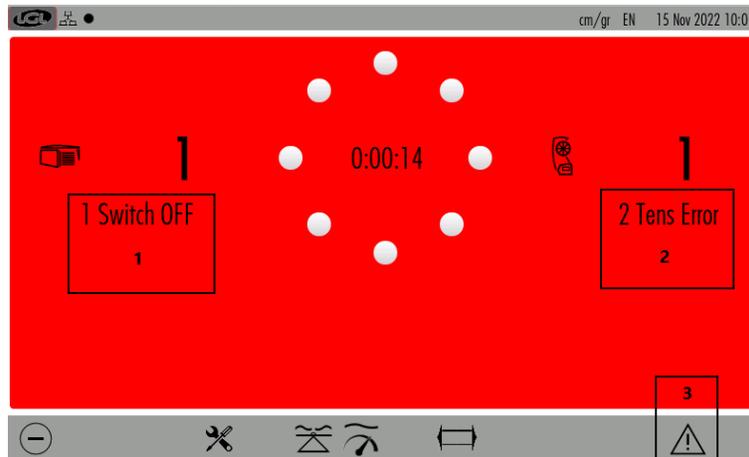
Pic. 2

1=   Negative feeder ID in alarm with short alarm string
2=   Positive feeder ID in alarm with short alarm string
3=   Alarm detail (see chapter 2)

2. FEEDERS IN ALARM

The alarm comes out on the screen as in the following picture:
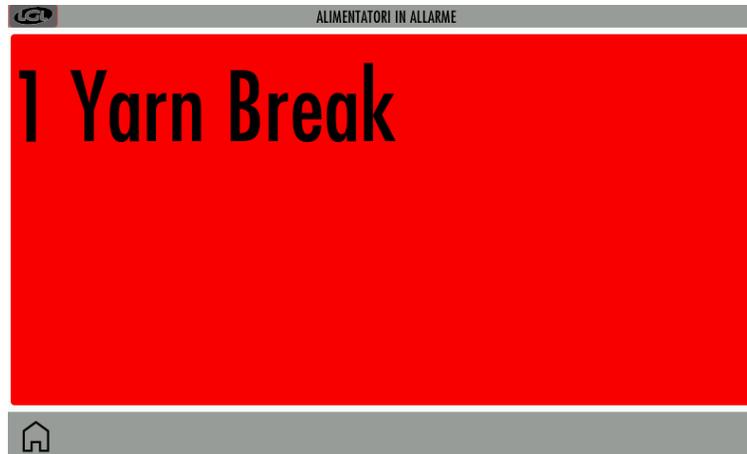
Pic. 2a

Pressing and then or , picture 3 appears. A list of all feeders in alarm shows up. Press each button to have more information (see picture 3)
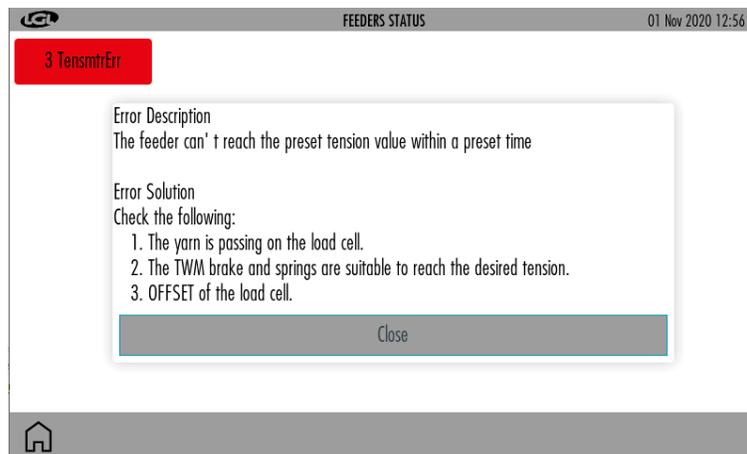
Pic.3

3. SMART UTILITY FUNCTION

From main screen (picture 1) press icon:
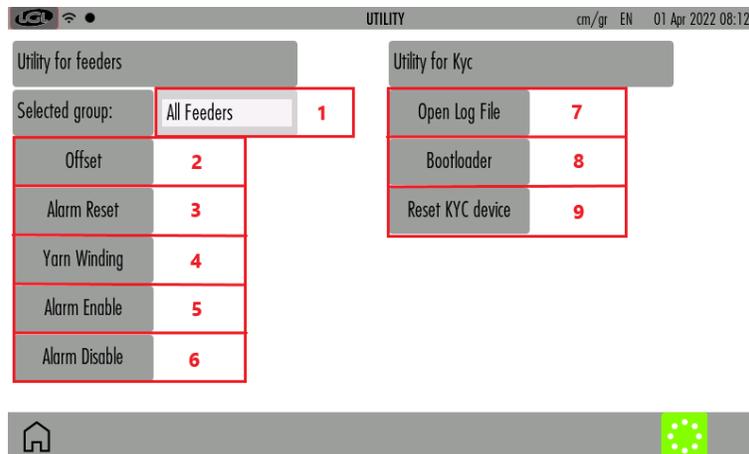
Pic. 4

1= Press to select the group of feeders to deal with

2= Offset command (see dedicated sub-chapter)

3= Alarm reset command: Reset alarm on selected devices

4= Yarn winding command: Send yarn winding on selected devices (only on POSITIVE feeders SPIN1 and TWIN)

5= Alarm enable command

6= Alarm disable command

7= Open a log file (located on the SD card)

8= Send KYC in bootloader mode (for advanced user only)

9= Restart KYC device (for advanced user only)

3.1 OFFSET

Press "Offset" button:
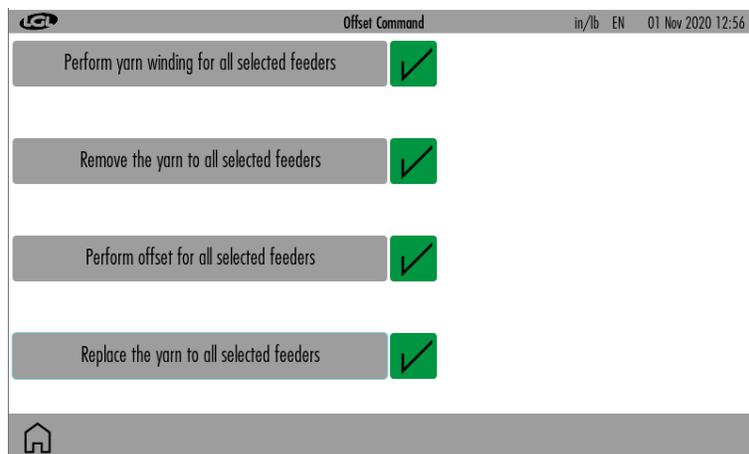
Pic. 5

There are 4 buttons, execute the command written in each button and then press ✓ .

First button is valid only on positive feeders TWIN and SPIN. For storage feeders, press this button without any action and go to the second button.

Second button requires to remove the yarn from all load cells. This is very important.

Third button to be pressed only when the action written in the second button has been performed. This button performs the OFFSET command.

Last button reminds to put the yarn back on the load cell.

4. INFORMATION

From main screen (picture 1) press ⅈ icon:
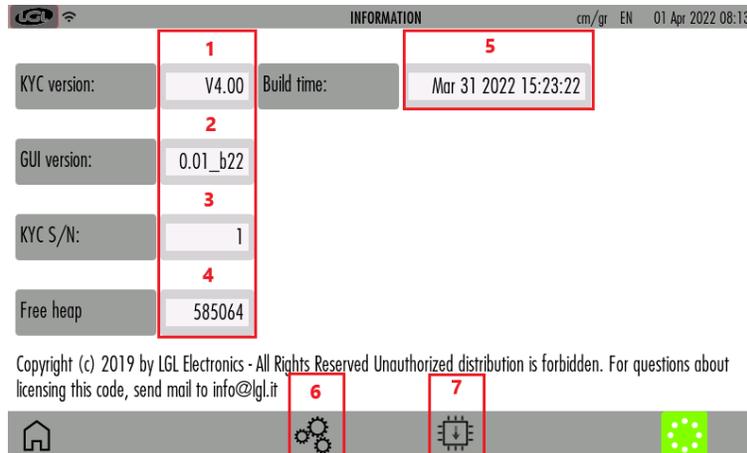
Pic.6

1=   KYC firmware version
2=   GUI software version
3=   KYC serial number
4=   Free memory available (for advanced user only)
5=   KYC firmware version build time (point 1)
6=   Diagnostic page (see dedicated sub-chapter)
7=   KYC firmware update (see dedicated sub-chapter)

4.1 DIAGNOSTIC PAGE

From picture 6 press ⚙ icon:
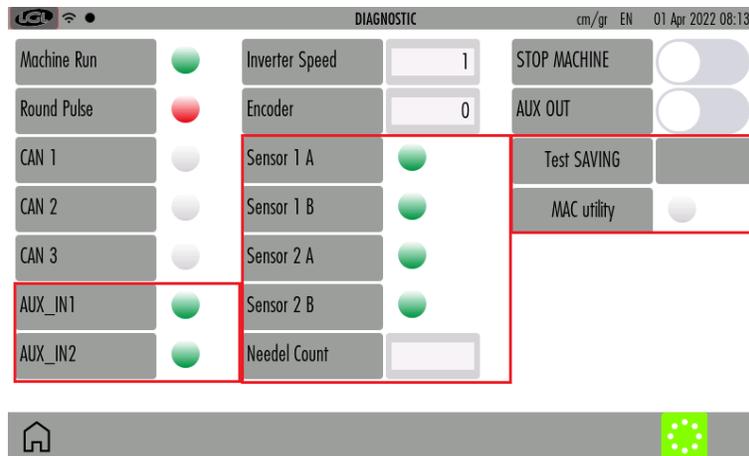
Pic.7

Utilities into red squares are available for advanced user only.

4.2 KYC FIRMWARE UPDATE

Press on [icon] icon:
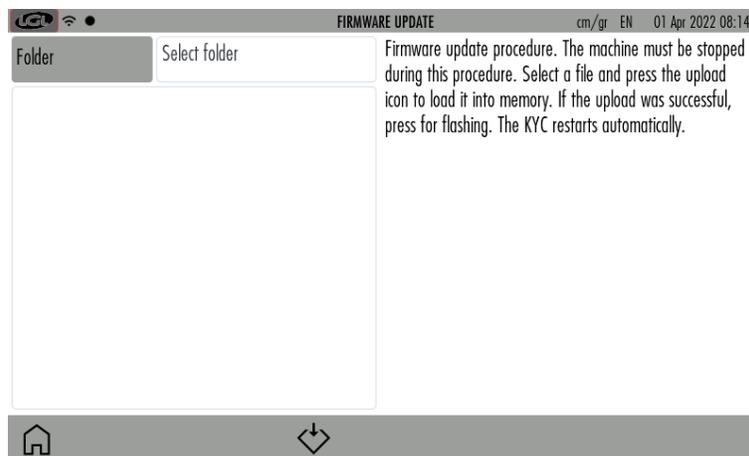
Pic.8

Insert the USB key with the software upgrade file into the KYC USB slot. Select folder and firmware file. The upgrade file must be located into the root folder of the USB key. The file is called "KYCTouch4.XX.srec".

Press [icon] to load new firmware on KYC. A green bar follows the copy. When the file has been copied, an icon with thunder shape appears. By pressing the icon, the file will be executed, the KYC device will turn off and after 15 seconds it will turn on again, upgraded and ready to work.

NOTE: the USB pen file system must be FAT or FAT32.

5. ACCESS LEVEL

This function allows the operator to set a password to modify parameters on the KYC screen. If a basic user does not have the password, he is able to display but not to modify information.

From main screen (picture 1) press ⚇ icon:
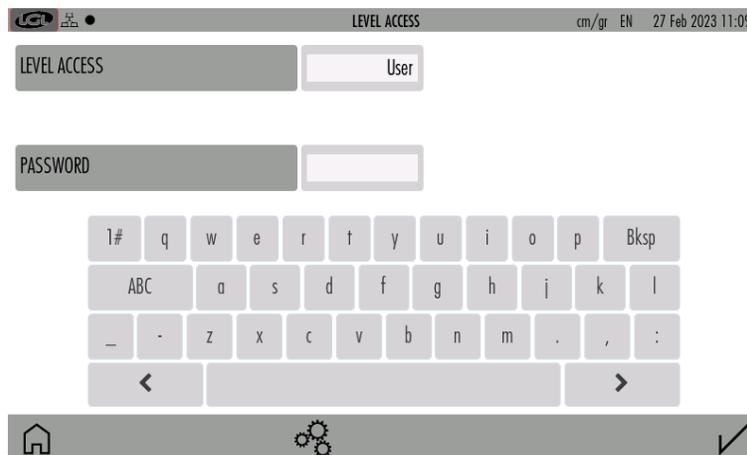
Pic.9

Press on ⚙ icon (Pic. 9A):
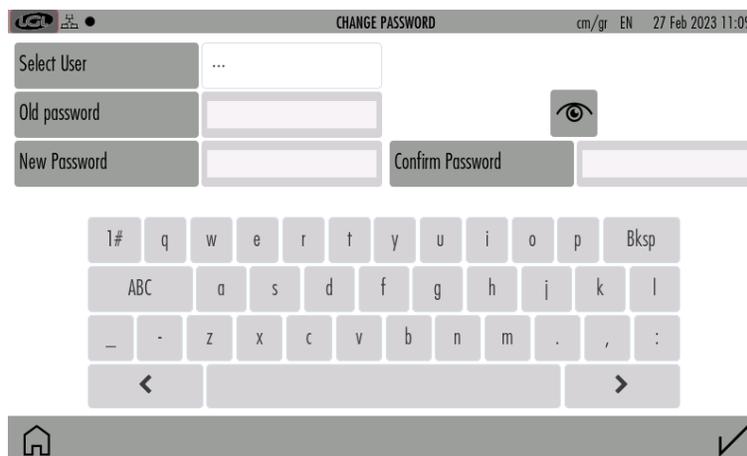
Pic.9A

Select user (User or Advanced User), insert password and press ✓ icon.

Base User: read only

Advanced user: read and write

To go back to the standard user, press ✓ without inserting any password.

6. GENERAL SETTINGS

From main screen (picture 1) press icon:
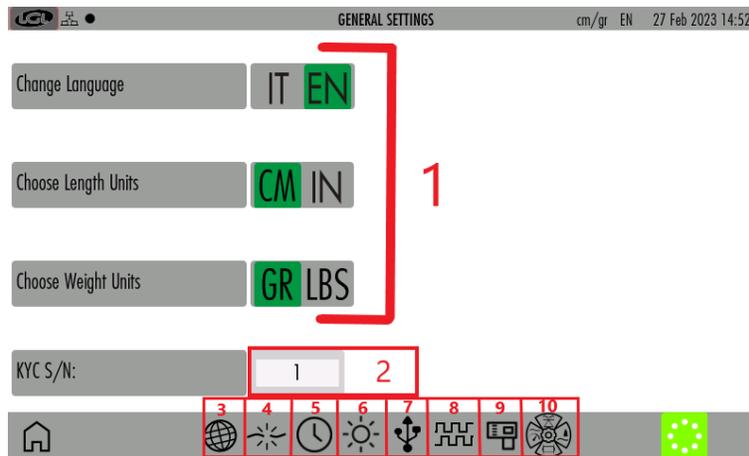
Pic. 10

1= Press to change unit of measure.
2= KYC serial number.
3= Network settings (see dedicated sub-chapter)
4= KLS function (see dedicated sub-chapter)
5= Date and clock settings
6= Brightness and sleep time settings

7= Send file to USB external device. Select the file to send and press to send it to a USB key
    device. If you want to delete a file in a SD card, select file and press

8= Encoder settings (see dedicated sub-chapter, for LGL technicians only)
9= Modbus settings (see dedicated sub-chapter, for LGL technicians only)
10= Functions settings -enable/disable- (see dedicated sub-chapter, for LGL technicians only)

6.1 NETWORK SETTINGS

Press icon:
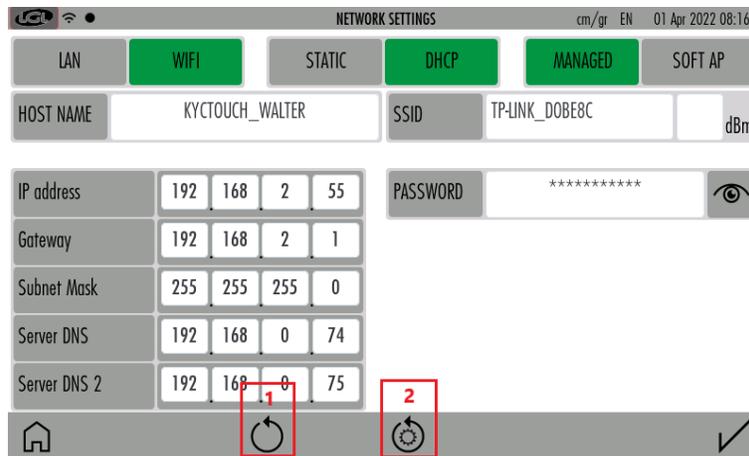
Pic. 11

Modify settings and press ✓ to confirm.

1= Press to scan available access points.

2= Press to reset to default network settings. Press ✓ to confirm.

6.2 ENCODER SETTINGS

Press ⎍⎍ icon:
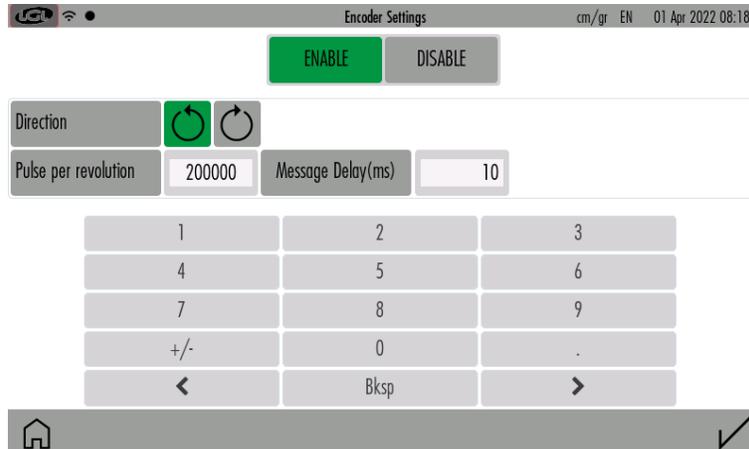
Pic.12

Modify settings and press ✓ to confirm. KYC reboot required.

The ENCODER settings are working only if an external ENCCODER is connected to the KYC device. At the moment the ENCODER is present only with TWIN feeders equipped with SYF function.

6.3 MODBUS SETTINGS

MOD BUS is a communication protocol that allows the LGL feeders system to bidirectionally communicate with an external system (for example an ERP). The protocol must be implemented in the external system to be able to get communication.

Press icon:

Pic.13

Modify settings and press ✓ to confirm. KYC reboot required.

7 KLS FUNCTION

KLS function allows feeders to stop the machine if the yarn gets broken between the feeder and the machine (For more information see feeders' manual). This function requires a connection with machine inverter and needs a machine run signal.

Press   icon; there are two mode of operation, Standard through a tuning procedure or Belt using the LGL-RPMF sensor.
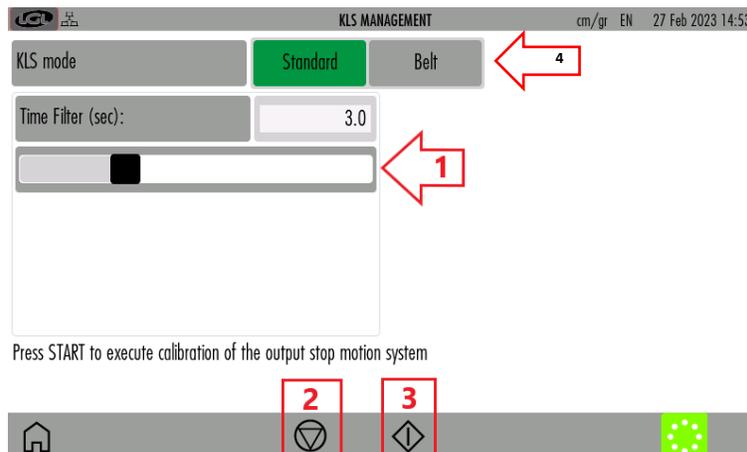
Pic. 14

1= Move slide to change KLS "Time filter" (default value 3seconds). This is the time the machine takes to reach production speed.
2= Stop KLS control (the machine must be standing). Attention: the machine won't stop if the yarn gets broken between the feeder and the machine.

3= Start KLS control. This button activates the kls system calibration. Start the machine and run it for at least 10 seconds. The stop the machine and re start it. See feeder instructions manual for more information.

4= To select where the system takes the RUN and the inverter signal: from the machine or from the LGL RPMF sensor (see chapter 7.1)

Time filter correct timing is 3 seconds which corresponds to the time the machine needs to get to production speed after a start.

7.1 KLS FUNCTION WITH BELT SENSOR

The KLS function with belt sensor allows feeders to stop the machine if the yarn gets broken between the feeder and the machine, without the use of the inverter signal and the run signal coming from the machine.
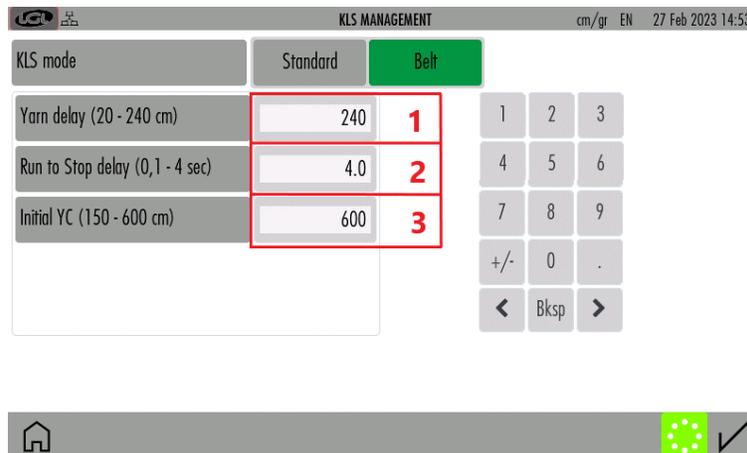
Pic.14A

This function is possible thanks to the LGL-RPMF sensor connected to the belt of the positive feeders. This sensor gives a measure of the machine movement and speed.

a. Connect the belt sensor on the KYC, use the 4 poles plug close to the KYC main connector. THE KYC will recognize the sensor automatically.

b. Select "belt" on the screen of picture 14. If necessary, change the parameters of picture 14A.

c. Check following parameters:

1= Yarn delay (20-240cm; default 80cm)
2= Run to stop delay (0,1 – 4 sec; default 0,4 seconds)
3= Initial Yarn consumption (150-600 cm; default 340 cm)

If necessary, change values. Press on $\checkmark$ icon to confirm. Default values are OK in most cases.

Please make sure that the belt is turning the lower wheel, because the signal is taken form the lower wheel.

8. YCM FUNCTION (YARN CONSUMPTION)

From main screen (picture 1) press ⛰ icon:
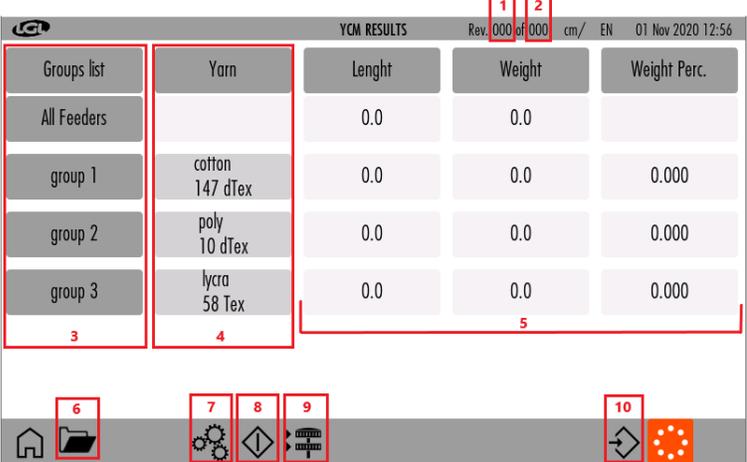
Pic. 15

1= Machine revolution Counter

2= Complete pattern revolutions.

3= List of feeders' groups. Press on each group button to view data for the feeders in each group (see sub-chapter 8.1)

4= Yarn settings for each group. Press "Yarn" to change settings (see dedicated sub-chapter)

5= Yarn consumption values

6= Open stored YCM settings

7= YCM general settings (see dedicated sub-chapter)

8= YCM Start/Stop

9= Belt feeder settings (see dedicated sub-chapter)

10= YCM report saving

8.1 YCM: FEEDERS IN GROUP

Press one group button. For example, press "group1" in picture 15. Picture 16 appears:

Pic. 16

1= Insert a feeder number to view single feeder yarn consumption values.
2= YCM Start/Stop
3= Press to keep repeating YCM calculation.

8.2 YARN SETTINGS

Press "Yarn" button:

Pic. 17

Insert yarn setting for the feeders in the selected group (in this example "group 1")

8.3 YCM GENERAL SETTINGS

From YCM main screen (picture 15) press ![icon] icon:
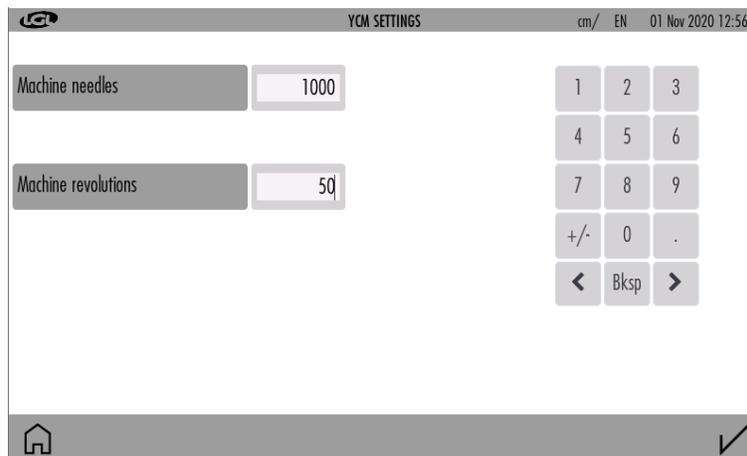
Pic. 18

Insert machine revolution and machine needless to calculate YCM

8.4 BELT FEEDER SETTINGS

From YCM main screen (picture 15) press ![icon] icon:
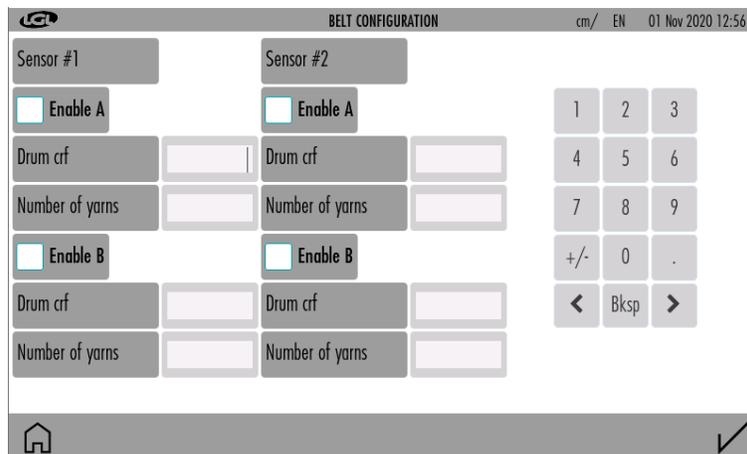
Pic. 19

Check on "Enable A" or "ENABLE B" to enable belt feeders.

- Drum crf is the circumference of the belt feeder drum
- Number of yarns: how many feeds are supplying the same type of yarn.

9 READ/WRITE PARAMETERS

From main screen (picture 1) press ⬛ icon:

Pic.20

On this page you can see, for each group of feeders, 5 parameters. The reported value is the one read by the first feeder of each group.

      1= Press the parameter's name or the "Select" button to change the viewed parameter (see dedicated sub-chapter 9.1)

      2= Press group button to view information for each feeder of that group (see dedicated sub-chapter 9.2)

      3= Press the button with the value to change the parameter value for all feeders in the group. If it is read-only, a message will appear (see dedicated sub-chapter 9.3)

      4= Press to create/manage groups (see dedicated sub-chapter)

      5= Press to delete this configuration.

9.1 PARAMETER CHANGE

Press the parameter's name or "Select":
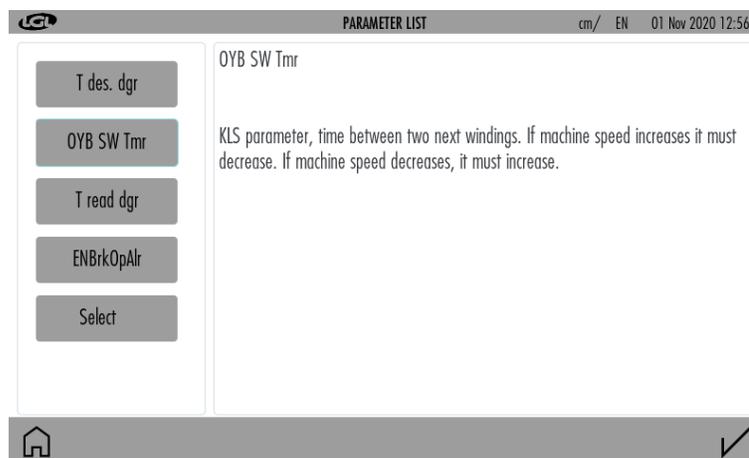
Pic. 21

All the parameters available in the group will appear.

Press on parameter button, right side a description of the parameter appears.

9.2 PARAMETER FOR FEEDERS IN THE SELECTED GROUP

Press group button:

Pic. 22

1= Press to change group.
2= Press the parameter name or "Select" to change the parameter to view.
3= Press the button with the value to change the parameter value on the single feeder or all feeders in the group. If it is read-only, a message will appear (sub-chapter 8.3)
4= Press and insert feeder number to view single feeder values.
5= Number of feeders in the group

9.3 CHANGE PARAMETER'S VALUE

Press the button with the value to change the parameter value to the single feeder or all feeders in the group:

Pic. 23

1= Feeder number, if you are viewing a specific group, otherwise group name.

2=   It Is visible only if you are viewing a specific group. If selected, the parameter value will change for all feeders in the group. Otherwise only for the selected feeder (in the example feeder number 5)

3=   Insert new value and press ✓

9.4 CREATE/MANAGE GROUPS

From parameters screen (picture 20) press ⬚ icon:
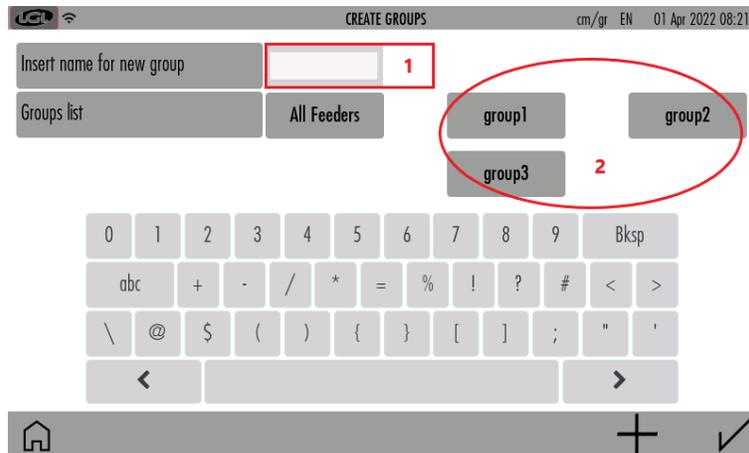
Pic.24

1=   Insert the name of the new group and press ✛ to add it in the list (see dedicated sub-chapter)
2=   List of created groups

as soon as all necessary groups have got their names, press ✓ to continue with the next step, which consists in associating each feeder with its group (9.4.1).

To delete or rename a created group, press, and hold the name of the group in the list.

9.4.1   GROUPS ASSOCIATIONS

Picture 25 appears:

Pic.25

1= Group name ready for association. Tap on the feeder square to associate the feeder to the group.

2= Change group to associate. Move back and forth to modify.

3= Repeat the association to all remaining feeders. To be used in case the association repeats.

4= Delete the association.

Press on ✓ to confirm association.

10 GRAPH OF PARAMETERS

From main screen (picture 1) press ▁▂▃ icon:
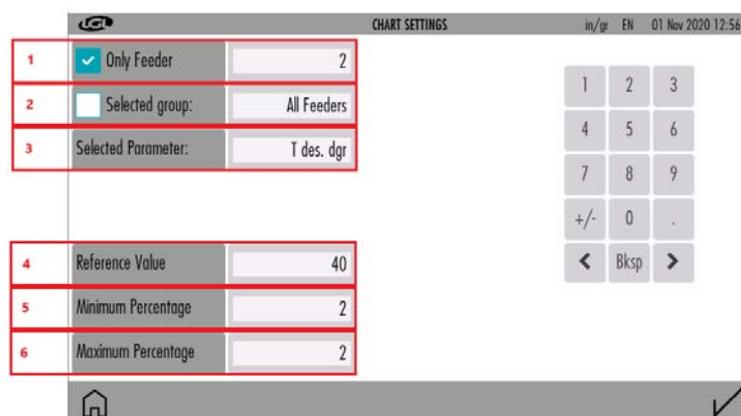
Pic. 26

1= Select if you want to see the chart of one feeder only.

2= Select if you want to see the graph of all feeders in the selected group. To select a group, press on "All Feeders"

3= Select parameter.

4= It is possible enter a reference value with a control percentage. If the read value differs from the input information, the feeder's bar on the chart will turn red.

5= Minimum allowed value (%).

6= Maximum allowed value (%).

Press ✔ icon:
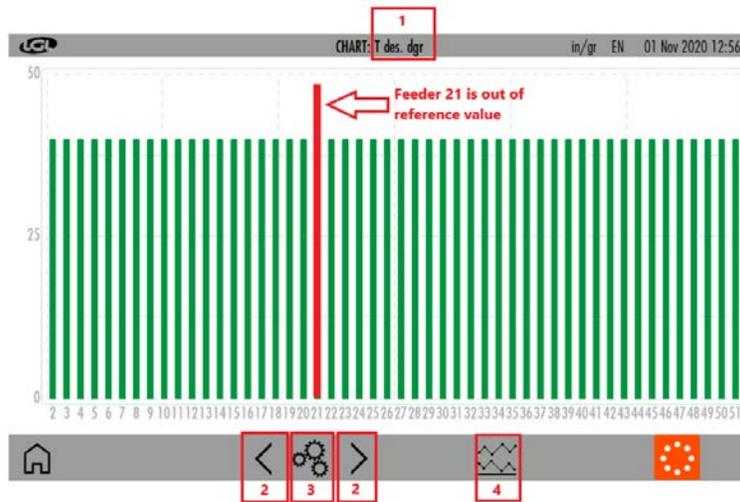
Pic. 27

1= Parameter shown.

2= If there are more feeders than the maximum amount the screen allows to show, press to view the others.

3= Press to modify chart info (Pic. 26)

4= Press to view chart of minimum and maximum read value (Pic. 28)
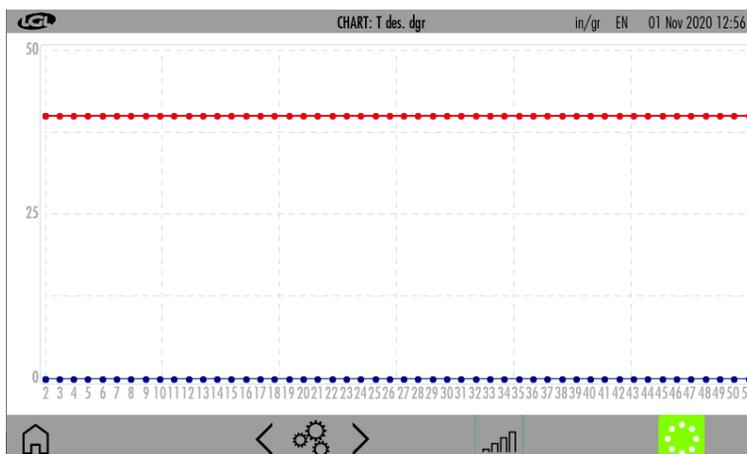
Pic. 28

11 SYNCHRONOUS YARN FEEDING FUNCTION (SYF)

This function is available only on TWIN feeder equipped with board LGL272. It is not available on any other LGL product. The KYC system must be connected to the machine encoder. The TWIN feeder works synchronous with the machine, thus releasing a constant amount of yarn.

From main screen (picture 1) press ⟨≋⟩ icon:
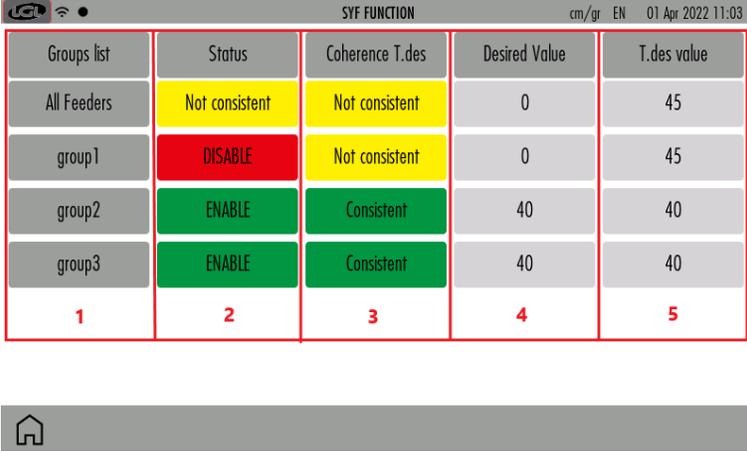
Groups list	Status	Coherence T.des	Desired Value	T.des value
All Feeders	Not consistent	Not consistent	0	45
group1	DISABLE	Not consistent	0	45
group2	ENABLE	Consistent	40	40
group3	ENABLE	Consistent	40	40
1	2	3	4	5

Pic.29

1= Groups list. Press on each group tab to perform tuning (see dedicated sub-chapter 11.1)
2= Status of synchronous yarn feeding per each group (read only):
   ENABLED: All feeders in each group provide the same amount of yarn.
   DISABLED: All feeders in each group work with the tension sensor.
   Not consistent: The feeders in the group have different SYF values from one another.
3= Coherence of the desired tension value during tuning procedure.
   Consistent: All feeders in group have the same tension value
   Not consistent: All feeders in the group have different desired tension values. The desired tension values must be modified to be all same for the same group.
4= Desired yarn consumption value in cm/revolution. Press to change value.

   NOTE: After pressing on the value, in the next screen by pushing ⊘ , the SYF function for the group will be disabled and each feeder will work in tension mode.
5= Desired tension. Press to change value.

11.1   SYF TUNING

press a group tab in picture 29 to perform SYF tuning. See Pic.30:
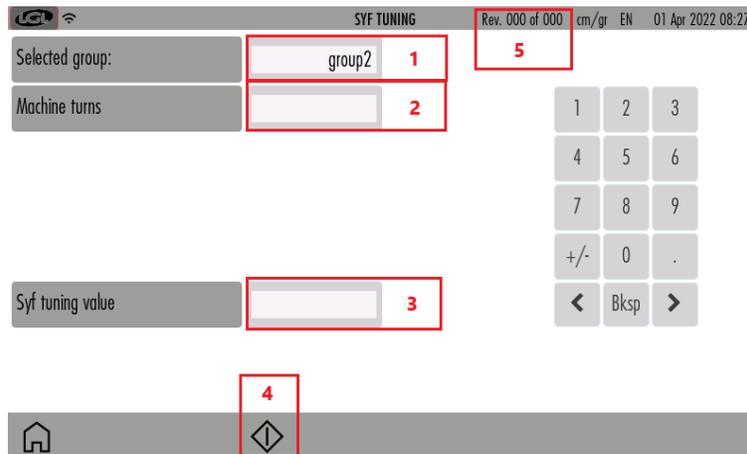
Pic.30

1= Group selected.
2= Duration of the SYF tuning procedure in number of machine revolutions.
3= When the tuning procedure is over, the yarn consumption value will be shown here.
4= Press to start/stop tuning procedure.
5= The number of machine revolutions will increase from 0 to the preset value during tuning.

When the tuning procedure is over, the yarn consumption value is shown and the symbol ✓ appears.

Press ✓ to send the value to all feeders and to enable the SYF function.

12   YARN SPEED CONTROL (YSC)

This function is available only on Ecompact and Ecopower feeders DC versions.
YSC is a function which allows the feeder equipped with ATTIVO system to control the yarn consumption reference (yarn consumption mode) during plain knitting fabric, and the tension reference (tension mode) during Jacquard patterns.
Feeders can automatically pass from one mode to the other when the pattern passes from plain to jacquard and viceversa.

From main screen (picture 1b), press ⌒ icon:
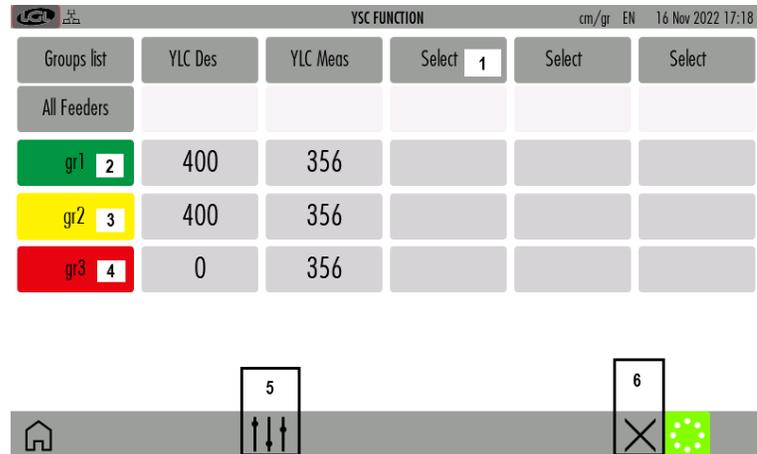
Pic. 31

1= Press to select YSC parameters

2= The rectangle is green because the YSC is active and all feeders in the group have the same value

3= The rectangle is yellow because the YSC is active but there are the feeders with different values in the same group

4= The rectangle is red because the YSC is not active for all feeders in the group

5= Tuning button (see 12.1 chapter)

6= Button to disable ysc to all feeders. Verify desired tension as it may have changed during YSC

12.1 YSC TUNING

From YSC screen press ⇅ icon:
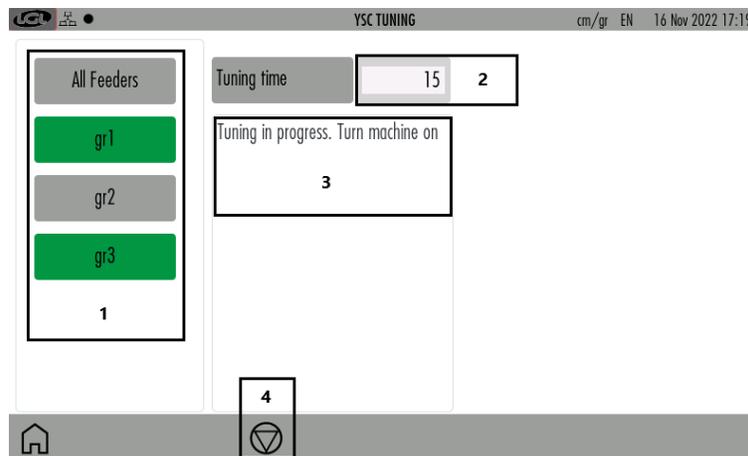
Pic. 32

1= Press and hold to select or deselect a group (green= yarn consumption mode; grey= tension mode)

2= Change tuning time (default value=15. Suggestion: do not change this)

3= information: tuning in progress and end of procedure

4= Button to start or stop tuning procedure

12.2 YSC PROCEDURE

The pattern must be plain, all feeders of the same group must consume the same amount of yarn.
Select the groups which you require to run in yarn consumption mode.
If the machine is running, stop it.
Press tuning procedure button (number 4 in picture 32)
Run the machine and wait until the end of the tuning procedure. After about 30 seconds the tuning is over. From that moment on the YSC function is active and working.
In the YSC main screen each group working in consumption mode will be green and each feeder of the group will adjust the same yarn consumption by moving the Attivo brake.
Each group working in tension mode will be grey.
On the screen it is possible to display the parameters which are involved in this function:
YLC Meas: this is the actual yarn consumption (read only, in cm/2s).
YLC Des: this is the desired yarn consumption set during tuning procedure (read /write, in Cm/2s). Each feeder keeps this parameter constant by modifying the desired tension.
YLCT.min: minimum tension permitted by YSC system (default 2g). If the yarn tension Tdes gets to Tmin during YSC working, YSC stays active, even if the tension won't go below Tmin.
YLCT.max: maximum tension permitted by YSC system (default 7g). If the yarn tension Tdes gets to Tmax during YSC working, YSC stays active, even if the tension won't go above Tmax.
Both T.min and T.max can depend on the mechanics of the output brake. In fact the output brake could not be able to achieve a too high or a too low tension.
YLC%max: maximum variation of real time yarn consumption above which YSC system is disabled. This parameter defines a limit between a plain area and a jacquard area of the same pattern. When the yarn consumption overcomes %max, it means that the pattern is no more plain and that feeder must work in tension mode. The tension each feeder adjusts is the very last it was adjusting during consumption mode (default 10%).
YLCTdesTun.: tension of the ATTIVO system during tuning procedure. During tuning procedure ATTIVO is working in tension mode, and this is the tension at which the system records the yarn consumption parameters.

13 WARPER FUNCTION (only for TWIN feeders)

This function is available only for Twin units, and it is required when the unit is installed on a warper in order to automatically set the feeders which are involved in the warp production and the ones which will not be used.

From main screen (picture 1b) press ⟷ icon:
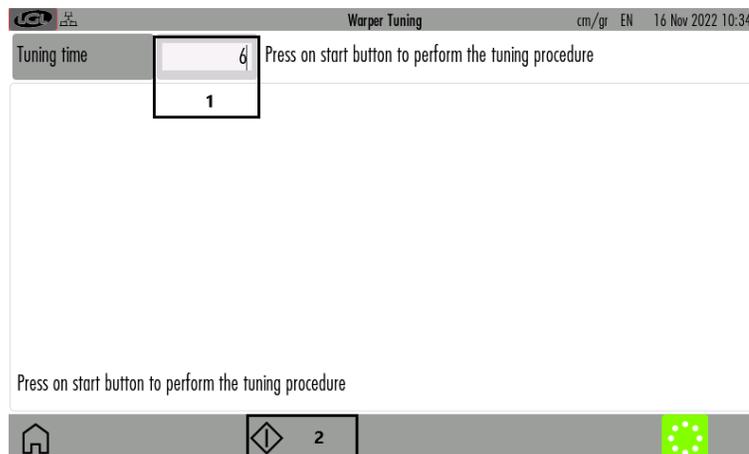
Pic. 33

1= Time of tuning (default 6 seconds).

2= Press to start tuning procedure. When the start button is pressed the stop button will appear to manually stop the tuning. Then start the machine.

After the tuning time, the result will be proposed as show in the following screen:
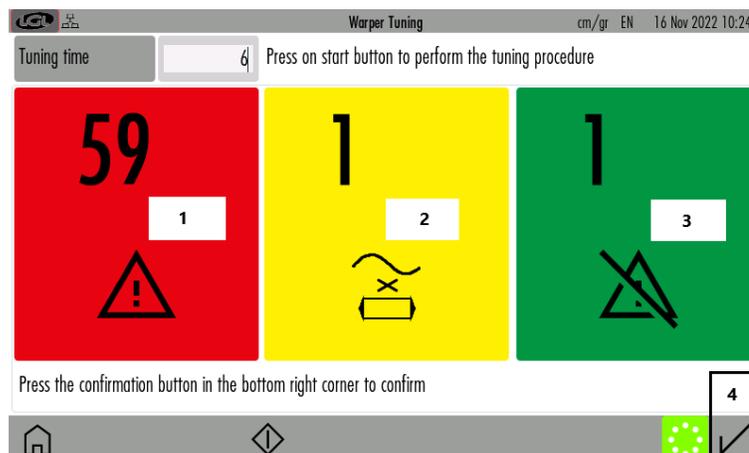
Pic. 34

1= Feeder in alarm (different from "YrnStanding A")

2= Feeder in "Yrn Standing A"

3= Feeder not in alarm

4= Confirm button

If the result is as expected, press the confirmation button.

Once the tuning is over and the operator presses the confirmation button, all green feeders will be supposed to work in the next warp production, while the red and the yellow ones are not supposed to work.

This means that if one feeder which is supposed to work does not turn, it will stop the machine, as well as if one feeder that is not supposed to work is actually turning.

14 DATA ANALYSIS AND REMOTE CONTROL

This function is available in combination with LGL KYC touch device from KYC software version 4.19.

Data Analysis consists in monitoring the feeders' parameters on the long run, with the target to offer predictive maintenance and suggestions to improve machines efficiency.

Remote control allows an LGL technician to check the feeders from remote in case of a problem.

From main screen (picture 1b) press [icon] icon:
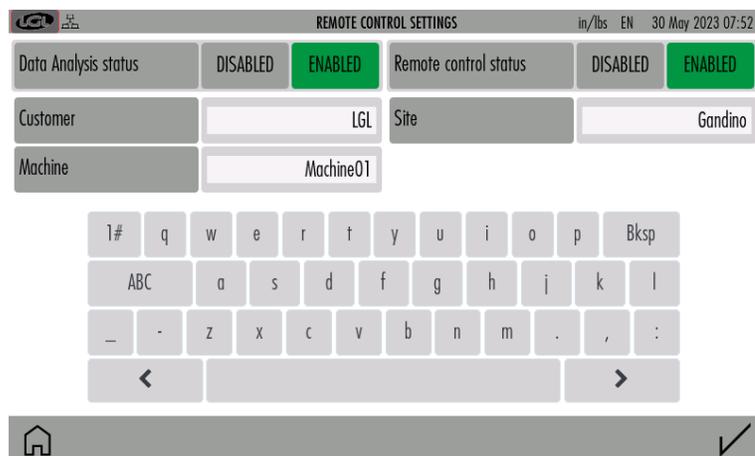
Pic.35

If you want to enable data analysis, select enable with relative button, insert information about customer, site and machine and press ✓ to confirm.

If you want to disable data analysis, select disable with relative button and press ✓ to confirm.

If you want to enable remote control, select enable with relative button and press ✓ to confirm.

If you want to disable remote control, select enable with relative button and press ✓ to confirm.

Once confirm button is pressed, the kyc device will recycle power to enable the changes.

15 MANUAL REVISION

00. First revision

01. Add new features
05. Add YSC and Warper functions
06. Add manage password (level advanced for customer)
    Add function setting manage
    Add Bel sensor for KLS function
07. Add Data analysis and remote control page