



USER MANUAL FOR
MACHINE CONTROL SYSTEM LE-300

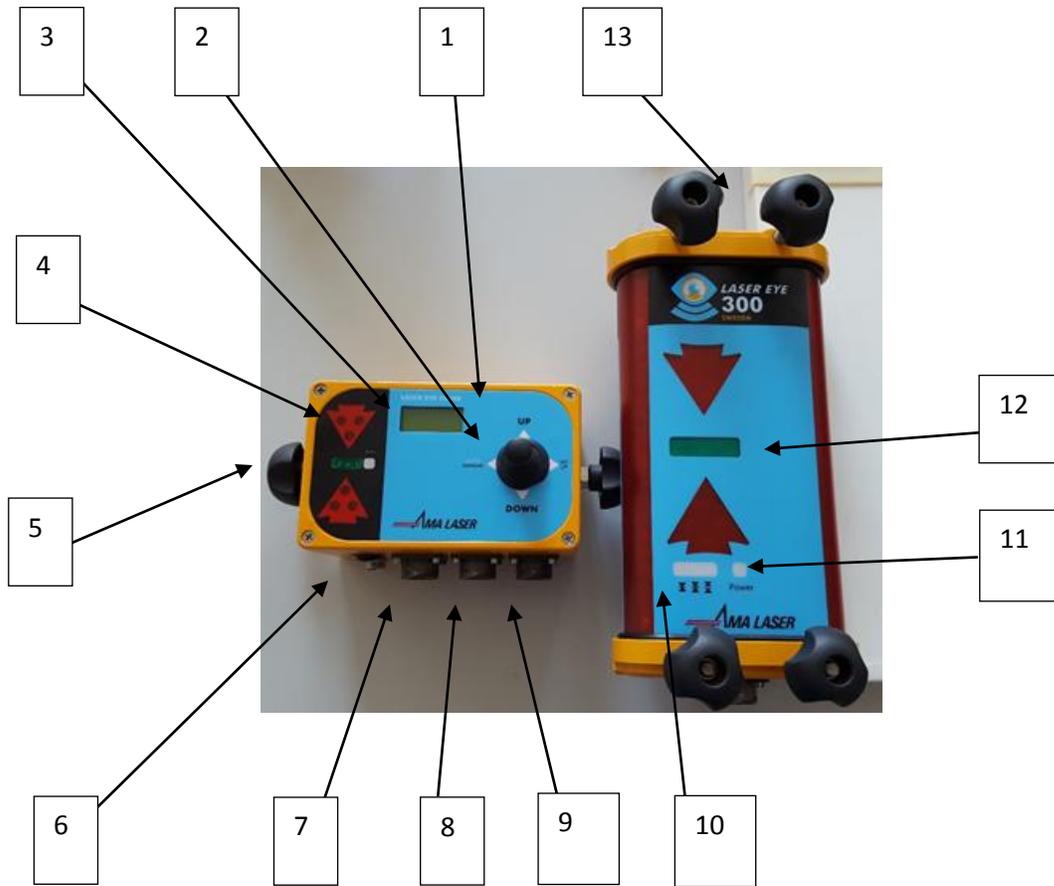
Version 1.0

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INTRODUCTION

The LE-300 is a powerful, user friendly tool for controlling construction or agriculture machinery with laser guidance.

In this manual we will describe how to install and use this equipment to its full potential.



1. LE-300 Control box
2. Joystick
3. LCD screen
4. LED visual indicator
5. Nut for fixing control box
6. ON / OFF switch
7. 12V power supply
8. Laser receiver connection cable
9. Hydraulic valve signal cable
10. Accuracy grade indicator
11. Power supply indicator on Laser Eye receiver
12. LASER EYE laser receiver module
13. Nut & bracket for fixing Laser Eye

1. EASY SETTINGS

With “EASY SETTINGS” you can adjust basic settings on the user interface of LE-300. To enter the “easy settings” menu. Tilt the joystick to right for a few seconds. You can now toggle up or down through the menu. If you wish to adjust settings, move the joystick left (decrease) or right (increase).

1.1. WIND

“WIND” allows the user to adjust the laser receiver in windy condition. The higher (*move joystick right*) the value the stronger the wind*.

CAUTION - the accuracy is with adjusting to strong wind!*

1.2. BRIGHT

“BRIGHT” allows user to adjust back light brightness of the LCD. The LCD is now strong enough to be clearly seen even in bright sun light. For adjusting brightness move joystick left (decrease) or right (increase).

1.3. BUZZER

“BUZZER” allows user to adjust sound level from control box of LE-300. For adjusting sound level move joystick left (*decrease*) or right (*increase*).

1.4. SAVE & EXIT

“SAVE&EXIT” allows user to save or leave “EASY SETTINGS” without changing values. To save new values in “EASY SETTINGS” move joystick to left* or right for not saving changes.

*Hold joystick in left position until the process is finished – watch bar indicator on LCD!!!

2. SYSTEM SETTINGS

These settings allow access to critical values relating to different hydraulics. **To enter “SYSTEM SETTINGS” you need to turn off the LE-300. Move the joystick right and turn on the LE-300. Now access “SYSTEM SETTINGS”.** You can now navigate the menu by toggling up and down. To adjust the values toggle left and right.

VALVE PERIOD

“VALVE PERIOD” is the time [ms] for each cycle* (min 200ms – max 1600ms). For adjusting toggle left and right.

*cycle is the time window which is driving the hydraulic valve with the information from the laser receiver “LASER EYE”

2.1. PULSE PERIOD

“PULSE PERIOD” is the time period that the hydraulic valve is open in each cycle. Each cycle [VALVE PERIOD] is divided in to 16 equal parts [16bit] and the number on LCD shows the fraction of the time period that the valve is open. Min 2/16th max 14/16th of selected* time cycle.

*absolute time is depend on time of “VALVE PERIOD”

2.2. BALANCE

“BALANCE” allows you to quickly adjust the blade speed during operation. To compensate for different loads depending on soil types and conditions.

2.3. SENSITIVE

“SENSITIVE” Adjusts the sensitivity of the laser receiver. You can chose one of 3 settings +/-4mm, +/-8mm or +/-12mm.

CAUTION: Wind settings will also affect the sensitivity.

2.4. LANGUAGE

User can chose between English or Turkish language*

*other languages are in progress to add in that menu.

2.5. SAVE or FACTORY

“SAVE or FACTORY” allows the user to save the new values or return to the original factory values. Move joystick right for saving new values or left for factory values. Please make sure that you hold the joystick in position until the update is completed.– see indicator on LCD.

3. QUICK FAULT CHECK

These two quick checks are developed and integrated in LE-300 system to help quickly fault find 2 of the most common problems that can occur on site. Helping keep stoppage time to a minimum.

Testing for damaged receiver. Disconnect the receiver (LaserEye) make an electrical circuit on the cable connector that was connected to the receiver between pins 3 and 4 (C and D) if you get a signal on control box then the cable is OK, you have a fault on the receiver “LASER EYE”.

Checking the cable to the hydraulic cable. Open the cover of the control box. Unscrew all 4 screws and lift carefully. Select manual mode on the control box. Move the joystick up and down. If the white LEDs light up, then the problem in most cases is with the cable.

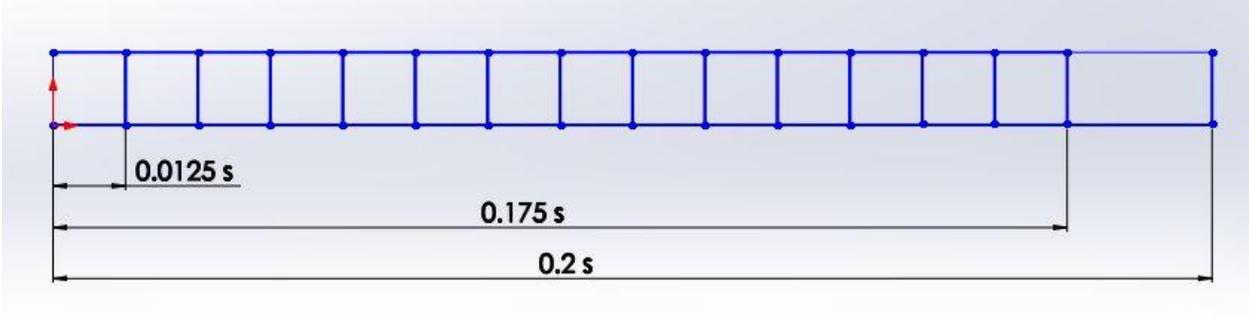
For further assistance contact your local AMA Laser dealer.

Valve period and pulse period Tables. To help understand these functions you can use the charts below to find the best settings for the hydraulic system on your machine.

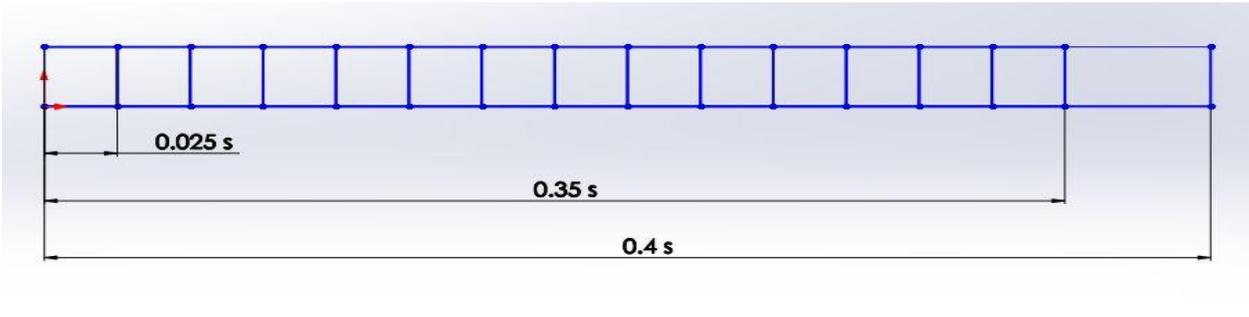
In “valve period” you can choose 8 different values. In the charts below you can see the possibilities in each “valve period” value (1-8) to set “pulse period” each square present

1/16 of time in “valve period”. In pulse period you can choose values from 1 – 14 and that is time how long valve will be open in this cycle.

VALVE PERIOD value 1; t = 0,2 s



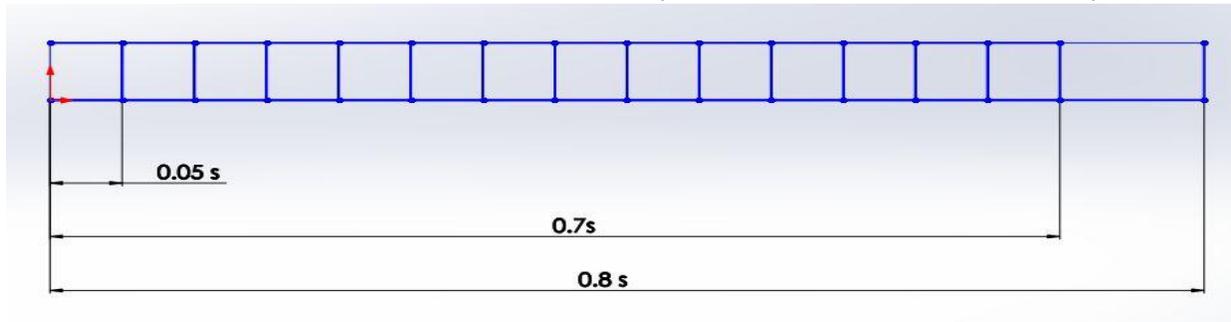
VALVE PERIOD value 2; t = 0,4 s



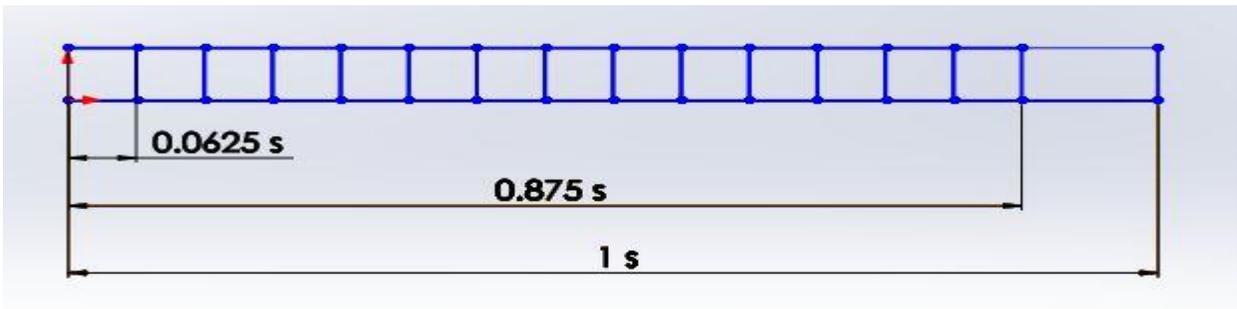
VALVE PERIOD value 3; t = 0,6 s



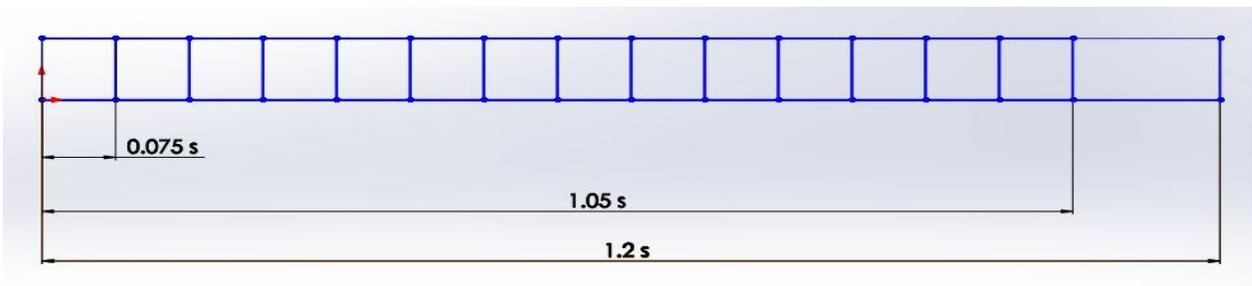
VALVE PERIOD value 4; $t = 0,8$ s



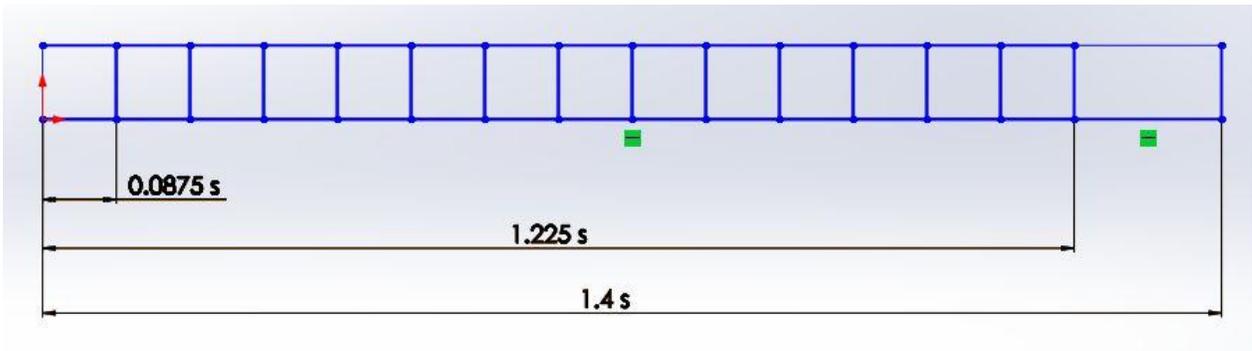
VALVE PERIOD value 5; $t = 1$ s



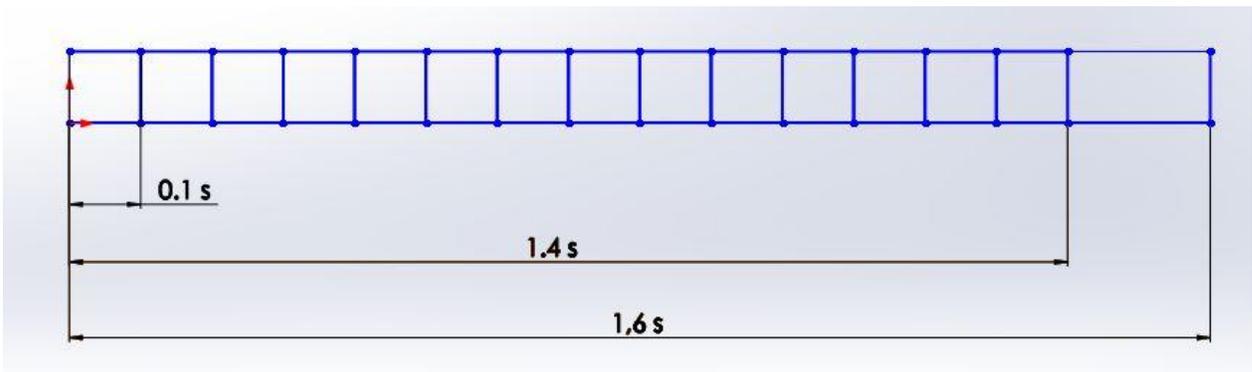
VALVE PERIOD value 6; $t = 1,2$ s



VALVE PERIOD value 7; t = 1,4 s



VALVE PERIOD value 8; t = 1,6 s



Technical Specification:

LaserEye 300:

Range: 1200M radius when used together with AMA DLx laser.

Detection angle: 360 Degrees, height 188mm.

Settings: Fine +/-4mm, Medium +/-8mm, Coarse+/- 12mm.

Power Source: 12VDC

Sealed: IP67

Dimensions: 265x140x75mm 1,4KG

CB300 control box:

Control: Manual and fully automatic. Up, Down, Wind setting.

Display: Colour coded LED's, monochrome LCD.

Audio: Single tone variable volume.

Sealed IP67.

Connections: Metal CE/Mil std.

Dimensions: 200x115x80mm 1,2KG

RC300:

Control: Manual, Automatic, Up, Down

Sealed: IP65