[AIBO Mechatronics]

Belt marking machine project

Starting day 08/12/2019

Finishing day 31/01/2020

Work that had to be done:

1-To do mechanical elements maintenance and calibration

2-To know electrical elements properties and datasheet feature

3-To design control board for the machine

4- To design control panel that will cover electrical and control components

5-To write machine control program with arduino

6-To design user interface for machine

Machine elements

Element name	amount
NEMA 23 stepper motor	X1
DC motor	X1
di soric fork light sensor(digital)	X1
TDK-LAMBDA DSP (power supply)	X1
8 modul 10 volt relays	X1
Pneumatic linear system sensor (digital)	X2
Pneumatic actuator (double acting)+its driver	X1
Z-Air pneumatic +its driver	X1
Knife starting sensor(digital)	X1
Nema 23 driver(DM 542 Ddriver)	X1
Arduino mega microcontroller	X1

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Materials cost:

Electronic materials

Arduino mega mini pro microcontroller	80tl
Klemans and resistors	40tl
Usb cables	30tl
220 volt head	10tl
PCB Card work	200tl

Mechanical material (control panel) with 3d

PCB card protector	50 tl
Hinges	40tl
Control cables housing	40tl
Panel connectors	20 tl
Bolts and screws	15tl

Total amount	525tl

Mechanical material (control panel) with laser cutting machine

Basen	1
Baseup	1
Baseupn	1
left_sidee	1
wall2	1
holder	12

Work that has been done during the period

- The machine board controller (Done).

-Machine controlling code (Done).

-User interface (Done).

-Control panel (Done).

-Communication with other laser machines (Done).

-Mechanical elements calibration (Done).

Features of the machine

1- It can mark for continued time that have been required from by the user
2- It can also cut for every individual pieces of belt that required by user
3- It can communicate with other laser machines synchronously and do its work with respect to the user input with equal delays of laser machine.
4- It can be used for different belts that have different values of width.