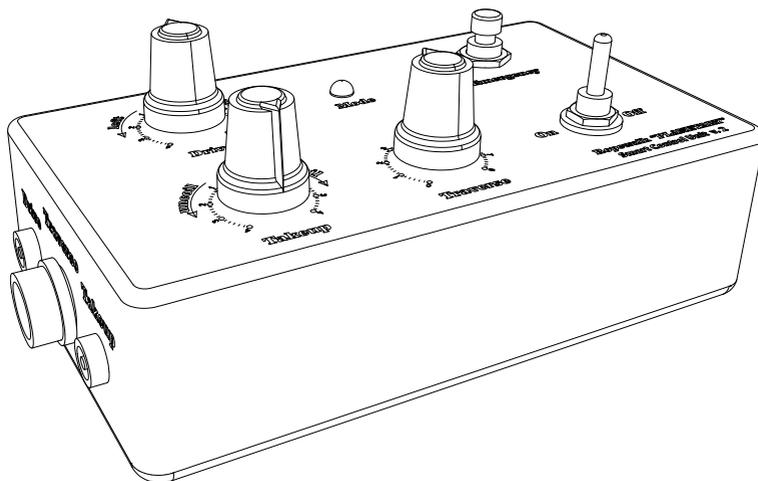


**DOMANOFF**  
WORKSHOP

# Smart Control Unit

for PL Endless rope making machine

VERSION 3.0





**Drive**

6

**Mode**

2

**Emergency**



**Takeup**



**Traverse**

**On**

1

**Off**

**PL rope making machine  
Smart Control Unit v. 3**

**Drive**

**Traverse**

**Takeup**

7

9

8

**Power Supply**

11



**12V 2.0A**

10

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## Control elements and sockets

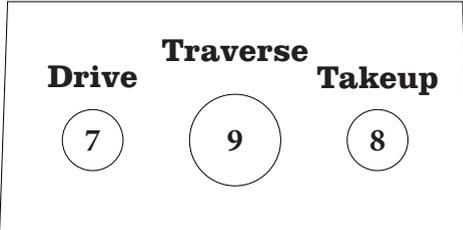
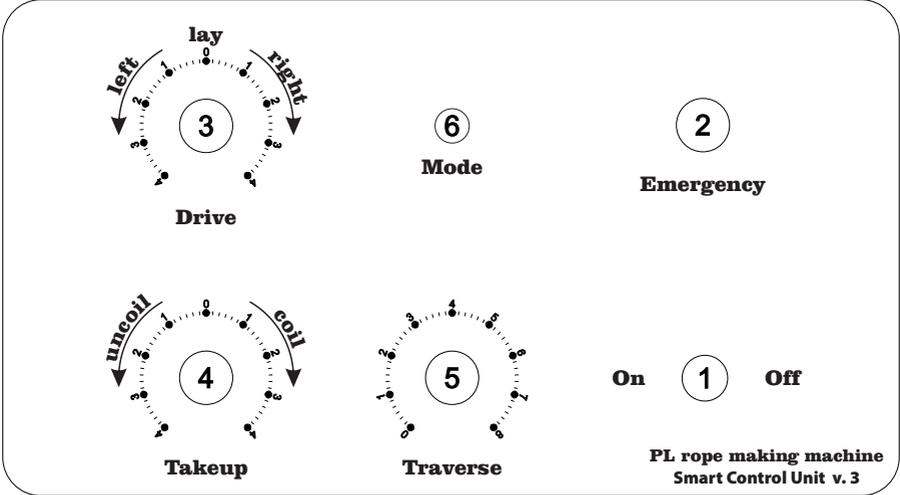
The unit has the following control elements and sockets:

1. Drives On/Off switch (1)
2. Drives emergency stop button (2)
3. Main drive rotation speed and direction control knob (3)
4. Take-up rotation speed and direction control knob (4)
5. Traverse speed control knob (5)
6. Mode LED indicator (6)
7. Main drive socket (7)
8. Take-up socket (8)
9. Traverse socket (9)
10. Power socket (10)
11. Power LED indicator (11)

## Basic features

Programmable Smart Control unit based on a micro controller is intended for operating the PL Endless rope making machine. It allows the following:

- To alter the main drive rotation speed and direction using one knob;
- To alter the take-up rotation speed and direction using one knob;
- To alter the traverse speed using one knob;
- To simultaneously turn on the main drive, traverse and the take-up. The take-up and traverse turn on immediately while the main drive starts smoothly within predefined time;
- To simultaneously turn off the main drive, traverse and the take-up block. The main drive stops immediately while the take-up and traverse stop in predefined time;
- To immediately turn off the main drive, traverse and the take-up by pushing emergency stop button;
- To set traverse furthest and closest end stops before using;
- To permanently change direction of the main drive and the take-up rotations.
- To set maximum speeds of the main drive and the take-up;



## Operation guidelines

- Unplug power supply (10) if it's plugged.
- Plug the main drive, the traverse and the take-up into the specified sockets (7), (8) and (9).
- Make sure that the On/Off switch (1) is in Off position.
- Plug the power supply into the specified socket (10).
- Power LED (11) should light and mode LED (6) shouldn't.
- Control block rotates traverse in to the middle position.
- Calibrate traverse if needed as it is described in "Programming. Traverse calibration" section.
- Set the drives' control knobs (3) and (4) to middle "0" position.
- Turn the ropewalk on with the On/Off switch (1). Mode LED starts to blink slowly and then lights continuously after the main drive has reached the set speed.
- Using knob (4) gradually increase the take-up speed until the desired speed is reached.
- Using knob (3) gradually increase the main drive speed until the desired speed is reached.
- Using knob (5) gradually increase the traverse speed until the desired speed is reached.
- To stop the ropewalk set On/Off switch (1) to Off position. Mode LED starts to blink slowly and then goes off after take-up and traverse have stopped.
- To immediately turn off the drives push the emergency stop button (2). Mode LED starts to flash rapidly.
- To disable the emergency mode set On/Off switch (1) to Off position. Mode LED is off.

## Programming

You can make some adjustments and store it in the internal memory. So you do not need to make it every time you plug power supply.

Changes can be made only when On/Off switch (1) is in Off position by pressing the emergency stop button (2). Following is the list of settings you can make:

Setting	Pressing times	Mode LED	Description
Calibrate traverse	1+1+1	Slowly blinks	Pressing emergency stop button (2) when the machine is idle activates the traverse calibration mode: the leader moves to the furthest position which should be adjusted using main drive knob (3). Pressing emergency stop button (2) again moves the leader to the closest position which should be adjusted using take-up knob (4). The distance between end stops should correspond with the take-up spool width. To store end stop positions and quit calibration mode press the emergency stop button (2) one more time.* The traverse has to be calibrated every time you change the type of take-up spool. <b>If always using the same take-up spool you only need to perform calibration once, before the first use.</b>
Change main drive rotation direction	2	Flashes twice	It is intended for the rotation direction to correspond with that written on the control block. I.e. if the control handle is set to the right lay, and the machine's head is rotating towards you (which actually makes it the left lay), you should change the head rotation direction (lay) by pressing twice emergency stop button (2). <b>Normally you never need to make it as direction is already set correctly.</b>

\* Before starting to calibrate traverse turn the main drive knob (3) to the rightmost position and the take-up knob (4) to the leftmost position.

Setting	Pressing times	Mode LED	Description
Change take-up rotation direction	3	Flashes 3 times	The same as above for the take-up. <b>Normally you never need to make it as direction is already set correctly.</b>
Set the maximum main drive speed	4	Cont. series of 4 flashes	Turn the main drive rotation speed and direction control knob (3) to the leftmost position (otherwise you can't enter this mode) and press emergency stop button (2) four times. Rotating this knob left to right sets the highest main drive speed from 0 to maximum. Press the emergency button (2) once to set maximum main drive speed. <b>Be careful changing this setting. It can break the machine.</b> <b>Normally you never need to make it as max. speed is already set correctly.</b>
Set the maximum take-up speed	5	Cont. series of 5 flashes	The same as above for the take-up using take-up rotation speed and direction control knob (4) <b>Be careful changing this setting. It can break the machine.</b> <b>Normally you never need to make it as max. speed is already set correctly.</b>

## Important notes

- Before reconnecting the main drive, take-up and traverse unplug control block from power supply. Otherwise the control block can be damaged.
- When the control unit is not in use disconnect it from the power supply. The On/Off switch does not fully shut off the control block, internal circuits remain live and power LED lights.
- Only use power supply similar to those supplied with the control unit. Power supply enclosed may differ from that indicated on the control unit.
- When using control block from another machine the rotation direction and maximal speed of the main drive (left-right lay) and/or of the take-up (coil-uncoil) may switch to the opposite. See "Programming" section how to fix it.
- When the main drive and take-up are in operation, especially on low speed, a mid-frequency whining sound may appear. That is not a defect
- It is not recommended to run the main drive at maximum speed for a long time. This can cause the internal chip to overheat. If this happens, let it cool down for some time.
- Before calibrating the traverse turn the main drive rotation speed and direction control knob (3) to the rightmost position and the take-up rotation speed and direction control knob (4) to the leftmost position to avoid end stops collision. You can't set the furthest end stop closer then the closest end stop and vice versa.
- The design of the control block may differ from that shown in this manual.
- **Motors can be very hot. So please be careful and do not touch it.**

If you find some translation mistakes and/or misprints in this manual, please, let us know sending message to [info@ShipWorkshop.com](mailto:info@ShipWorkshop.com).

Your help is highly appreciated!