

Tips & Tricks Collamat 8600/9100

1 Changing the resolution of the C9100 stepper motor

The standard step width of a Collamat 9100 labeler is 0.346mm (Traction roller has 55mm diameter and 500 steps per revolution). Sometimes this resolution is not precise enough to place labels onto special precise shaped products like ink-cartridges, medical containers etc. Most times these application are not running at speeds higher than 20m/min. For these cases it is possible to increase the resolution of the step width to 0.173mm by changing the step-rate of the motor driver to 1000 steps per revolution.

Before you start to open the monitor read the following safety instructions and also get a technical handbook of the Collamat 9100 for reference.



ATTENTION:

The motor driver p.c. board is adjusted, tested and built into the monitor by Collamat Stralfors. Do not change the motor phase current !

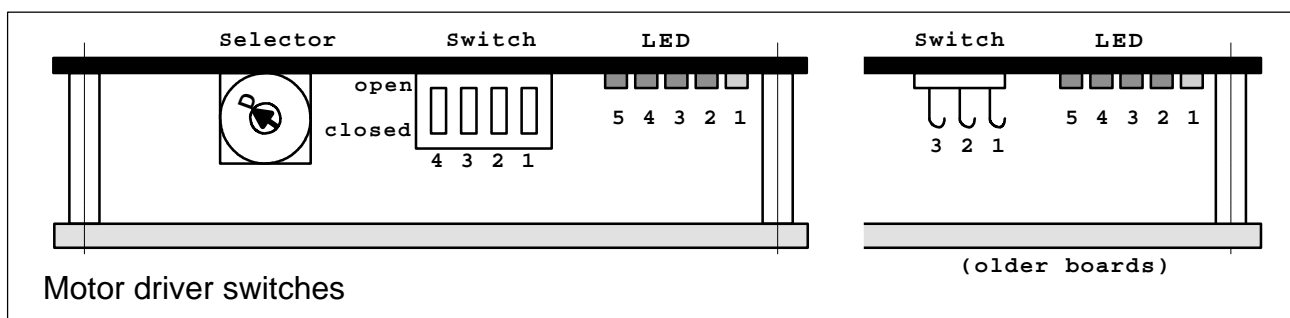


DANGER:

Disconnect all voltage supplies before working on the motor driver !

1.1 Settings

On the motor driver there are special switches for setting the number of steps and the motor phase current. See the following figure:



The **selector** switch is set to **D** (5A per phase) and must not be changed! At smaller currents the motor torque is not strong enough to transport the labels. At higher currents the power supply gets overloaded.

The **DIL** or **hook switches 1...4** are used to set the number of steps and the current reduction. The setting of the switches 3 and 4 must not be changed. Any changing may disturb the correct function of the Collamat.



ATTENTION:

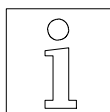
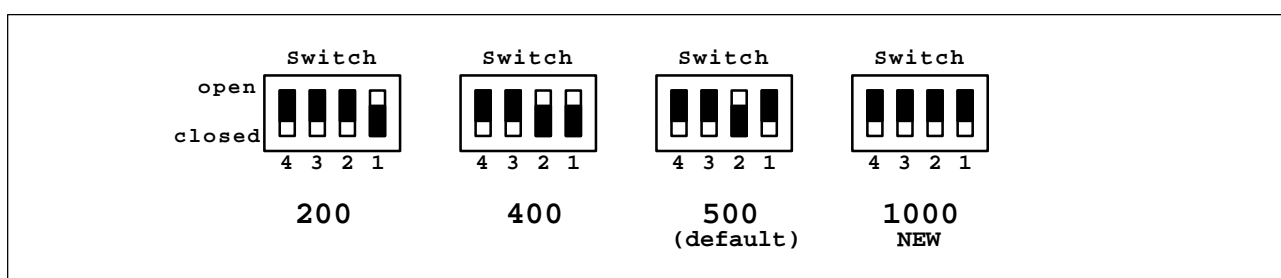
Do not change any switch or jumper position under voltage !

The following table shows the settings for the switches S1...S4

Switch 1	Switch 2	Switch 3	Switch 4	Number of steps
closed	open	open	open	200
closed	closed	open	open	400
open*	closed*	open*	open*	500*
open	open	open	open	1'000

* factory setting (default)
do not change S3 or S4

The default setting is 500 steps per revolution. To get the higher resolution of 1000 steps per revolution change **switch 2** to **open**.



NOTE:

This resolution change has important side effects to the monitor settings. Read the following hints.

The result of the resolution change is that all length and speed values concerning the label's and labeling values on the monitor are not true. The motor must double the steps to transport the same label than before. This means:

- the label length must be set to at least twice the real label length! Better is four times the real label length.
- the predispensing length is only the half of the indicated value. Double this value.
- the real labeling speed is half the indicated labeling speed. While using the incremental encoder, for compensation, the step width of the encoder can be set to twice of its real value. Do this also for the measuring Goods scanner.
For fixed speed, double it to achieve the correct labeling speed.
- double the maximum speed. Otherwise it will cause error messages.
- double all values if you use label suppression, delayed predispensing, multiple labeling and profiling.



ATTENTION:

This modification limits the true maximum labeling speed to only 50m/min (Collamat 9100). Today there is no way to increase the maximum labeling speed together with the labeling accuracy.

2 Increasing the maximum labeling speed of the C8600

The standard maximum labeling speed of the Collamat 8600 is 50m/min. Sometimes this speed is not high enough to stick labels to products because the conveyor speed is higher. If the labeling accuracy is not very important it is possible to increase the maximum labeling speed of the Collamat 8600 to 62m/min by changing the step-rate of the motor driver to 400 steps per revolution.

Before you start to open the monitor read the following safety instructions and also get a technical handbook of the Collamat 8600 for reference.



ATTENTION:

The motor driver p.c. board is adjusted, tested and built into the monitor by Collamat Stralfors. Do not change the motor phase current !

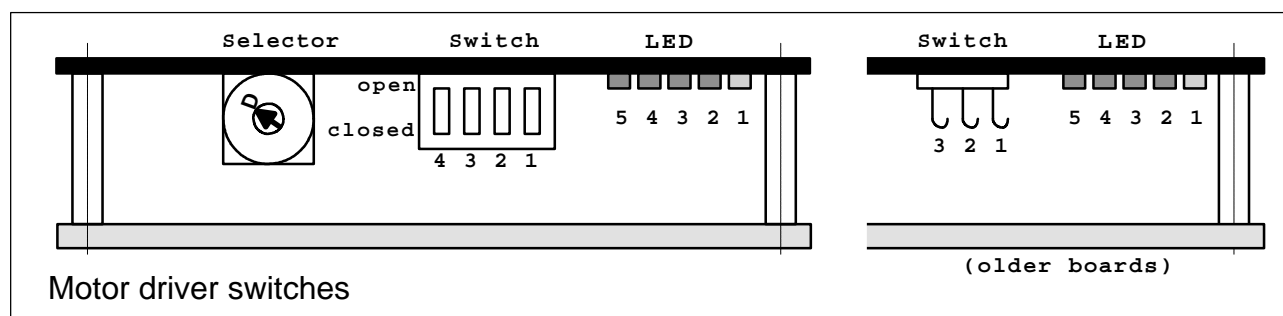


DANGER:

Disconnect all voltage supplies before working on the motor driver !

2.1 Settings

On the motor driver there are special switches for setting the number of steps and the motor phase current. See the following figure:



The **selector** switch is set to **D** (5A per phase) and must not be changed! At smaller currents the motor torque is not strong enough to transport the labels. At higher currents the power supply gets overloaded.

The **DIL** or **hook switches 1...4** are used to set the number of steps and the current reduction. The setting of the switches 3 and 4 must not be changed. Any changing may disturb the correct function of the Collamat.



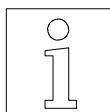
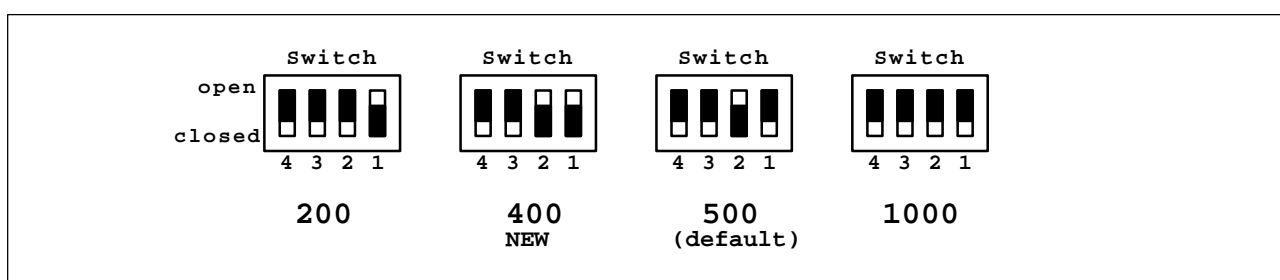
ATTENTION:

Do not change any switch or jumper position under voltage !

The following table shows the settings for the switches S1...S4

Switch 1	Switch 2	Switch 3	Switch 4	Number of steps
closed	open	open	open	200
closed	closed	open	open	400
open*	closed*	open*	open*	500*
open	open	open	open	1'000
* factory setting (default) do not change S3 or S4				

The default setting is 500 steps per revolution. To get the higher labeling speed the setting must be changed to 400 steps per revolution. Change **switch 1** to **closed**.



NOTE:

This speed change has important side effects to the monitor settings. Read the following hints.

The result of the speed change is that all length and speed values concerning the label's and labeling values on the monitor are not true. The real speed as all label dimensions are 25% higher than displayed. This means:

- the predispensing length is 25% longer than the indicated value. E.g. 20mm on the display are 25mm on the label.
- the real labeling speed is 25% faster than the indicated labeling speed. While using the incremental encoder, for compensation, the step width of the encoder can be set 20% shorter than its real value. Do this also for the measuring Goods scanner. For fixed speed, subtract 20% to achieve the correct labeling speed.
- the displayed label length is 20% shorter than the real length. Please concern this while setting label length. Best is to select "auto adjust" and then double the result.
- if you use label suppression, delayed predispensing, multiple labeling and profiling, please concern that the label lengths settings are 20% shorter than the real lengths.
- The step rate at the traction roller is now 0.215mm. (Originally it was: 0.172mm).
- Because the motor torque is still the same, problems using wide labels (Collamat 8620) can occur while labeling at high speed. The motor may loose steps or traction.



ATTENTION:

This modification increases the true maximum labeling speed to 62.5m/min (Collamat 8600). Today there is no way to increase the maximum labeling speed together with the labeling accuracy.