

List of the parts:

Controllers:

Option 1 (expensive and silent (overkill)):

Trinamic, TMC 2130, watterott, x3 units (37.62)
Trinamic, TMCM 1110, DigiKey, x3 units (295.50)

Option 2 (cheap and noisy (more reasonable)):

A4988 Stepper Motor Driver Module, Hobbyking, x3 units (8.13)
TB6600 4A 9-42V stepper motor driver, amazon, x3 units (41.07)

Microcontroller:

3D printer RAMPS control board, Hobbyking, x1 unit (optional) (6.01)

Option 1 (with real Arduino)

Arduino Mega 2560, DigiKey, x1 unit (38.50)

Option 2 (cheap analog (the same functionality))

Kingduino Mega 2560, Hobbyking, x1 unit (10.60)

Connectors:

D-sub 25, male connector, x1 unit

D-sub 25, female connector, x1 unit

Wires:

D-sub 25 male - D-sub 25 female, 3.0Amp rating, x1 unit

Screws and nuts:

???

Other parts:

???

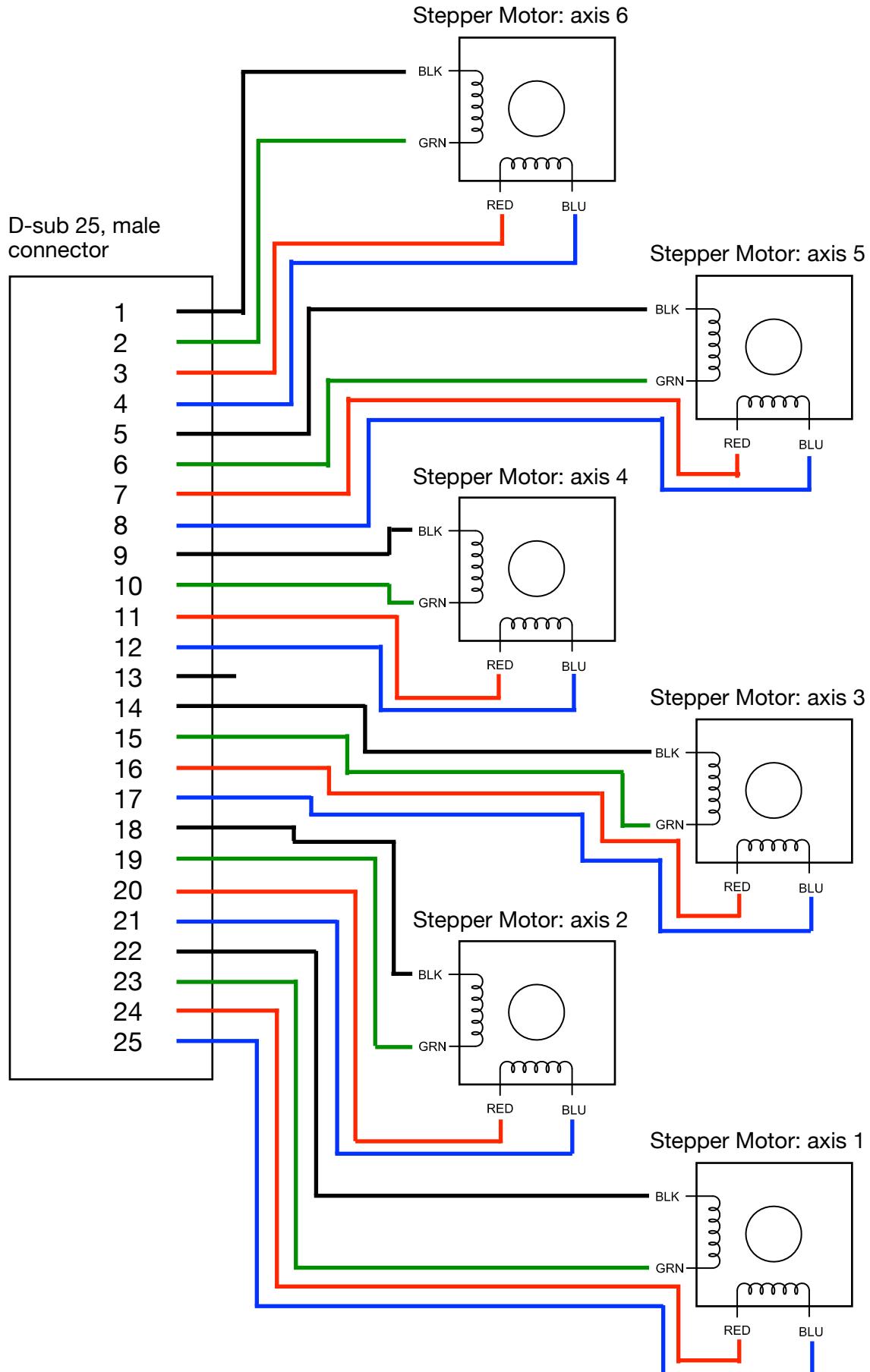
What would you need as a tools:

Soldering iron

Wires

How to assemble:

Wiring inside the robot arm module:

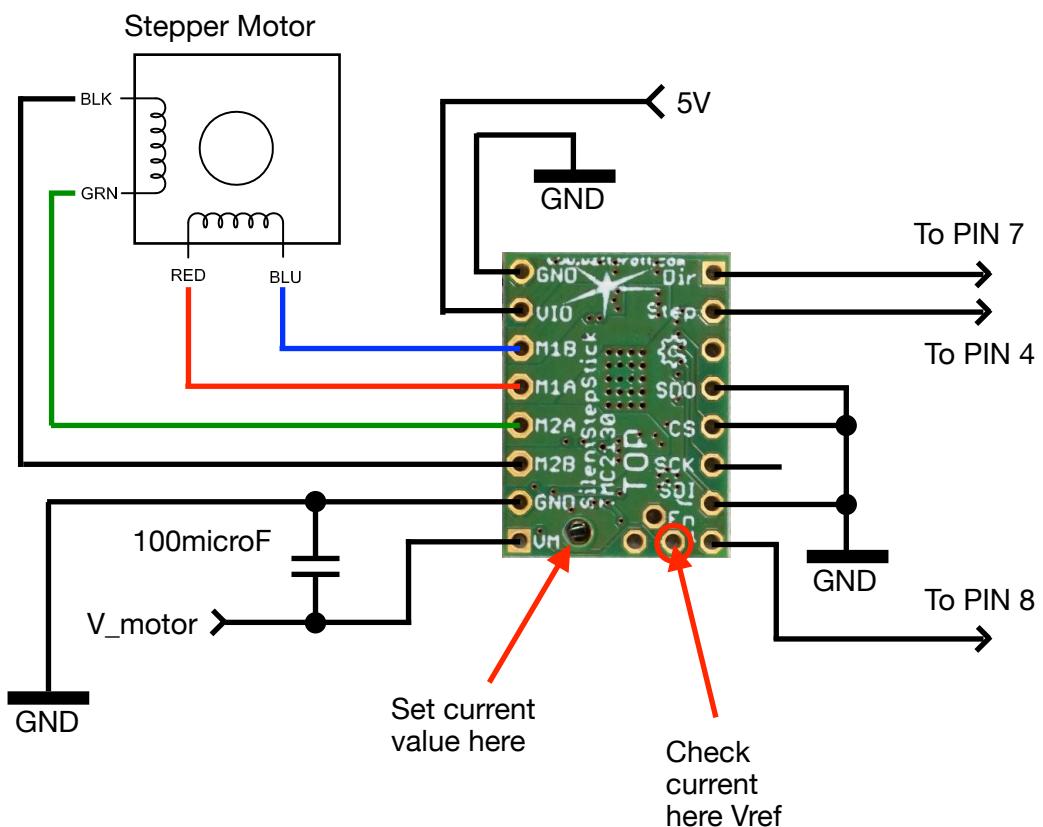


Axis 6:

TMC2130 driver is operated in standalone operation. This two connectors should be short circuit:



Schematics of the driver connection and motor to the different pins of the Arduino Mega:



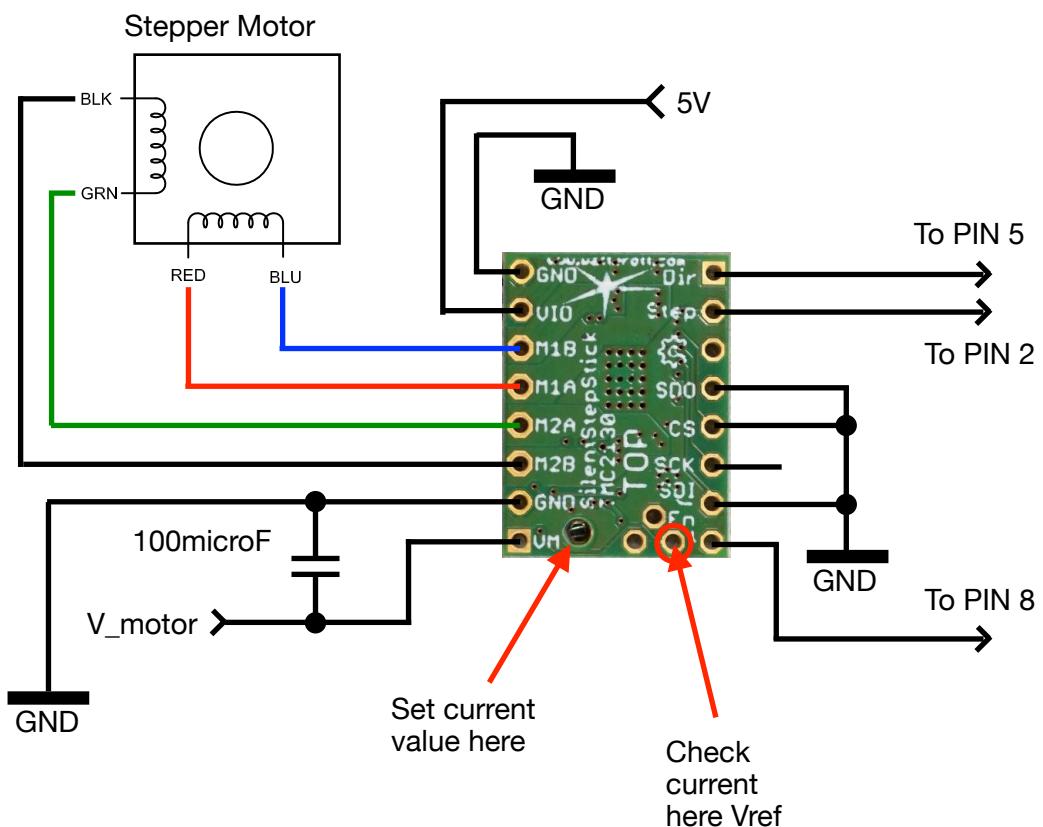
Current should be set at level lower than 0.6A.

Axis 5:

TMC2130 driver is operated in standalone operation. This two connectors should be short circuit:



Schematics of the driver connection and motor to the different pins of the Arduino Mega:



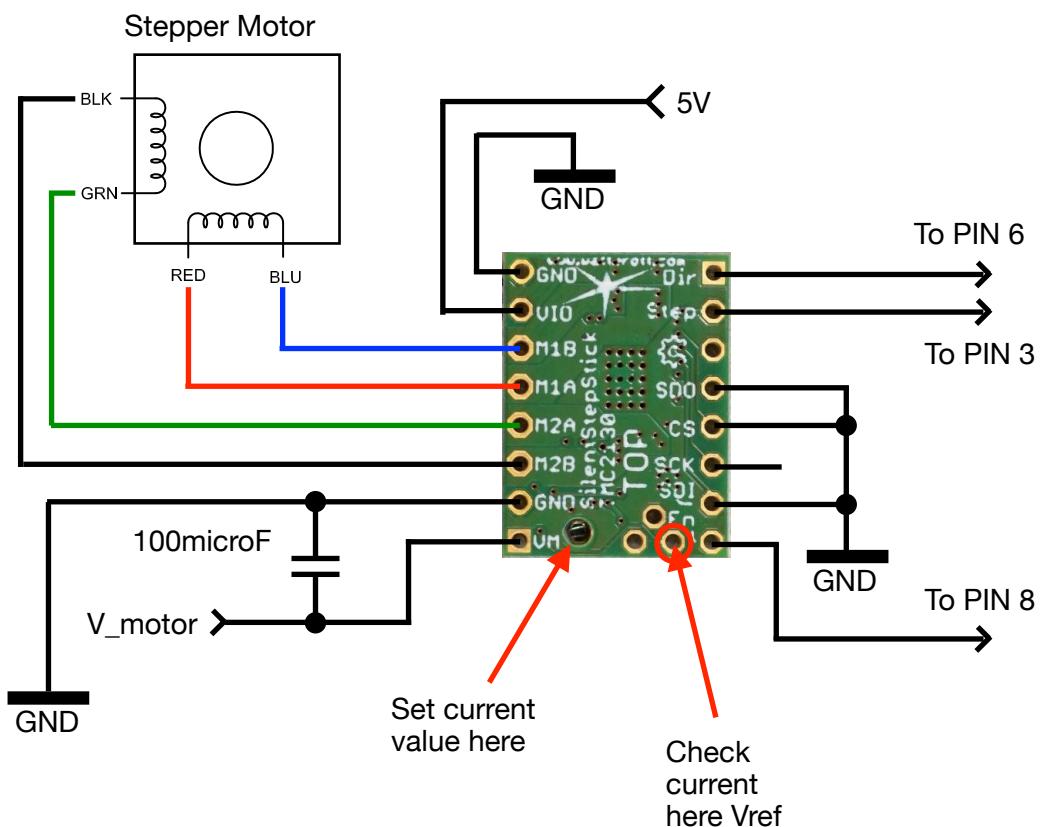
Current should be set at level lower than 0.67A.

Axis 4:

TMC2130 driver is operated in standalone operation. This two pads should be short circuit:



Schematics of the driver connection and motor to the different pins of the Arduino Mega:



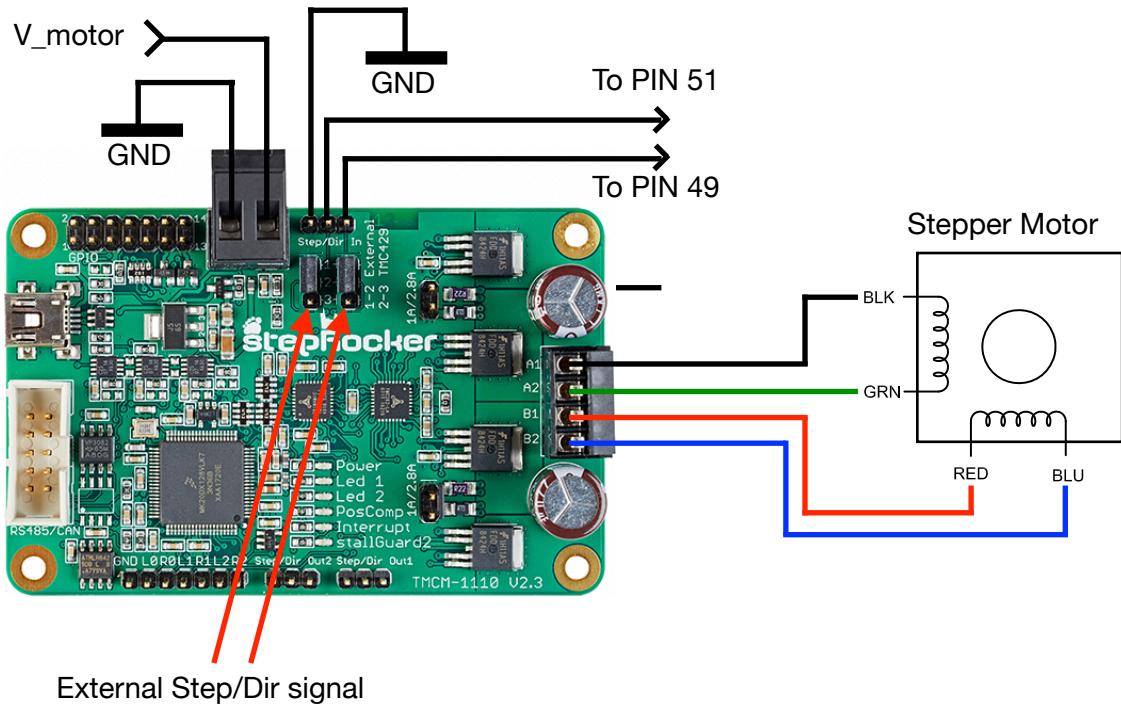
Current should be set at level lower than 0.67A.

Axis 3:

TMCM1110 driver is operated in standalone operation.

Jumpers should be set for the external Step/Dir signal (1-2 should be connected).

Current should be set at level lower than 0.85A (check the Trinamic manual for this).

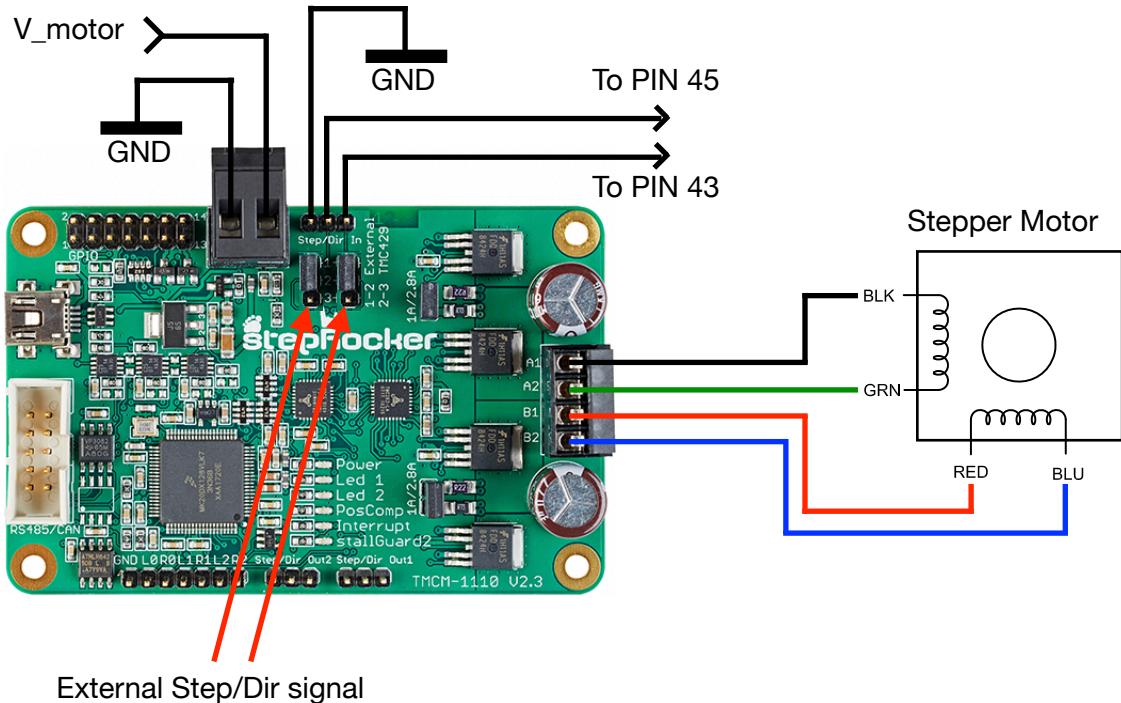


Axis 2:

TMCM1110 driver is operated in standalone operation.

Jumpers should be set for the external Step/Dir signal (1-2 should be connected).

Current should be set at level lower than 2.8A (check the Trinamic manual for this).

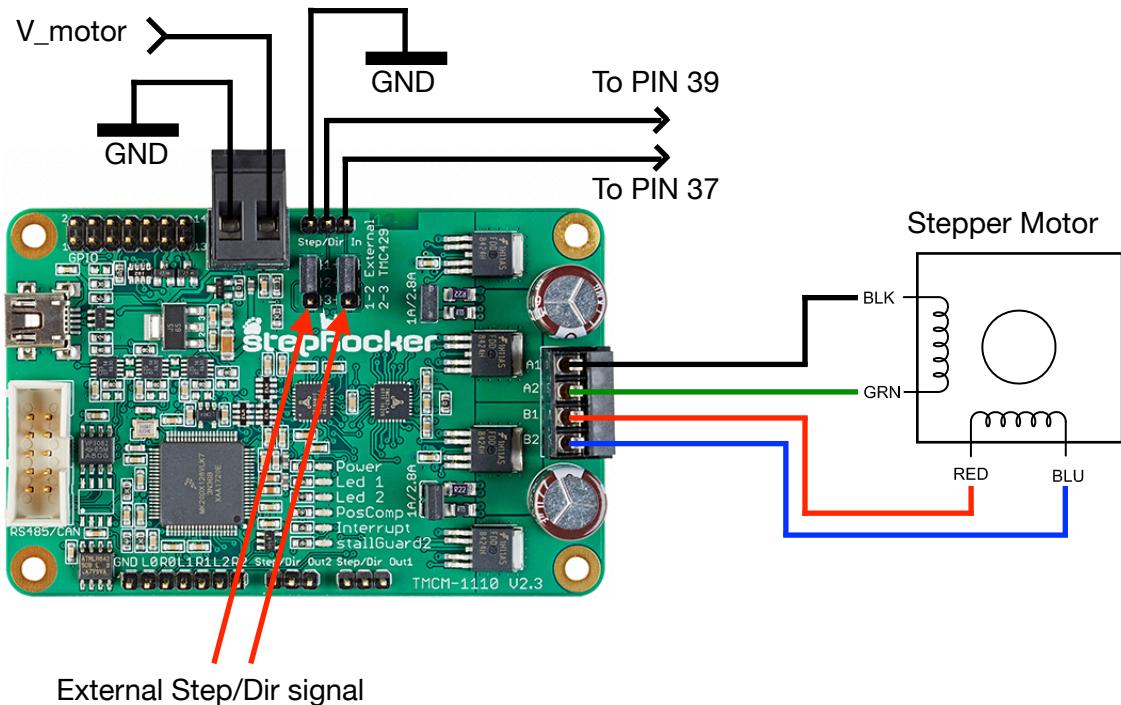


Axis 1:

TMCM1110 driver is operated in standalone operation.

Jumpers should be set for the external Step/Dir signal (1-2 should be connected).

Current should be set at level lower than 2.8A (check the Trinamic manual for this).



List of the parts:

1. ???
2. ???