

HOPPER “E” WHITE DISC

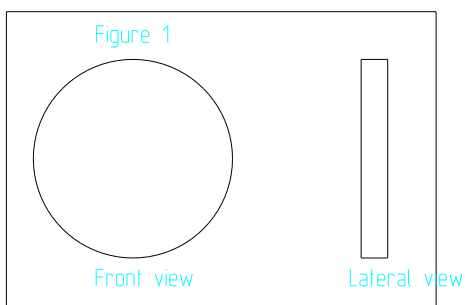
GENERAL OVERVIEW

The Hopper “E” can be used in the majority of change or coin/token pay out applications because unlike most other hoppers is not coin specific and has features and options that make it very versatile:

- Possible supply voltages 12 or 24 volts dc.
- Normal hopper or natural overflow, that avoids sophisticated software to control the hopper overflow (this overflow level could be customised).
- High level switch to detect, working on a weight principle, when the hopper is full and to report back to the machine software so it can route the excess coins to the cashbox. This level is adjustable with a screw.
- Low level switch for empty hopper detection.
- Two hoppers can be linked together to operate side by side for greater capacity in large pay out applications or to offer twin denomination pay out capability.
- Opticalswitch coin counting with a special feature that warranties a minimum pulse length of 18 milliseconds, avoiding special software treatment of the holes in coins or tokens.
- Pay out rate approximate 3 or 4 coins per second.

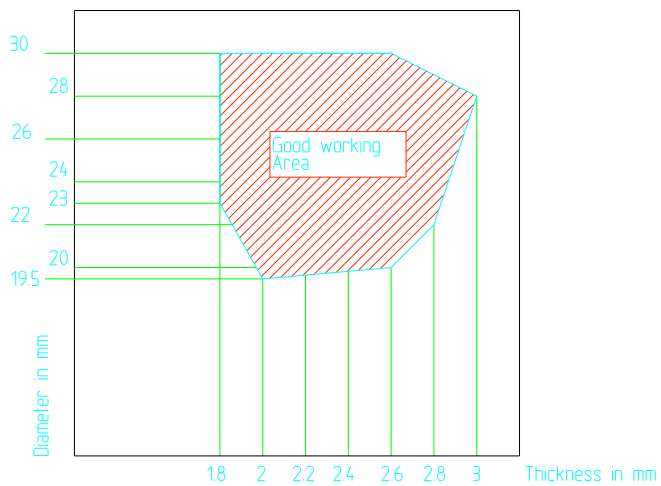
SPECIFICATIONS

Supply voltage	12 volt dc stabilised	24 volt dc stabilised
Normal Current Consumption	300 mAmp.	200 mAmp.
Maximum Starting Current	3 Amps. \pm 20%	1,5 Amps. \pm 20%
R. P. M.	20	24
M. T. B. F.	10^6	10^6



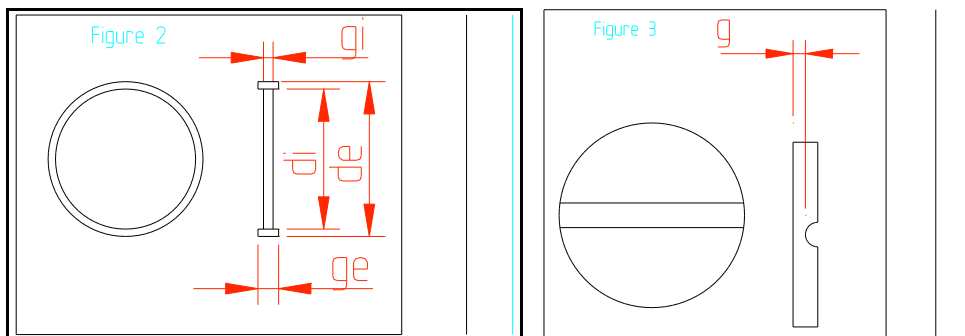
Coin sizes to be handled, in case of cylindrical regular coins (like in Figure 1) may be seen in the following graphic. The coins may also have thicker areas, like in figure 2, or slotted areas, like in figure 3, but the minimum thickness (g) has to be greater than 1,8 mm..

Standard Disc: Max. diameter 30 mm.
 Min. diameter..... 19.5 mm.
 Max. thickness..... 3 mm.
 Min. thickness..... 1.8 mm.



The coins outside the “good working area” have to be tested and probably will need another different disc on the hopper. Special discs are available for smaller, larger, thicker and thinner coins.

If irregular coins or tokens are being used, please consult the factory.



Approximate Capacity:

Coin diameter aprox. 23 mm. 1.000 coins

Coin diameter aprox. 24.5 mm. 600 coins

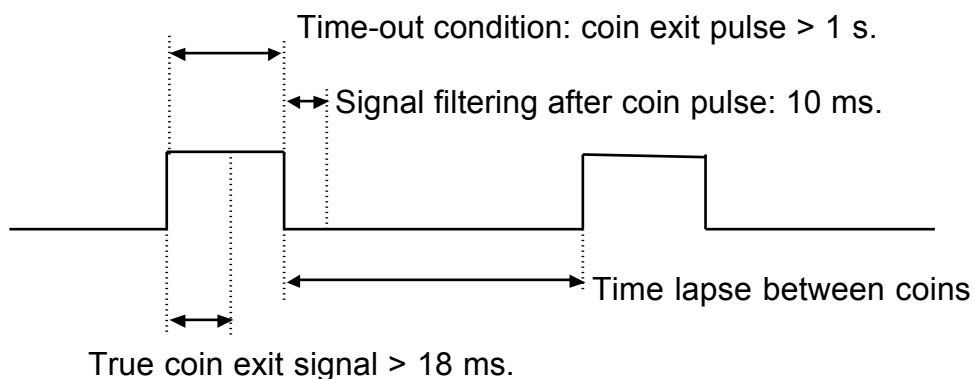
Coin diameter aprox. 26.5 mm. 670 coins

(Figures depend also on coin thickness)

MULTICOIN HOPPER OPERATION

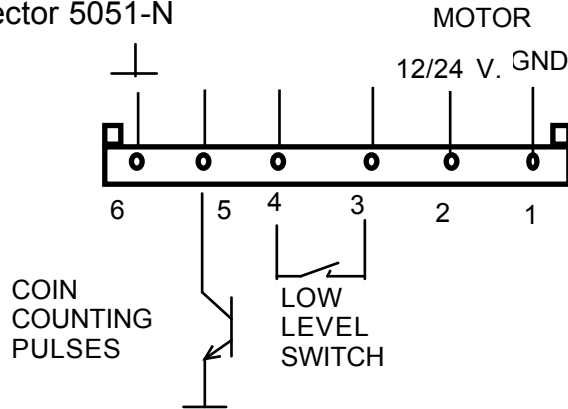
The normal pay out procedure is to start the hopper motor, count the coins being paid out and when the desired amount of coins is reached, then stop the hopper motor. That means to pay out the desired amount of coins in only one motor run. The counting software has to take into consideration the following:

- Once the hopper motor is activated, a true coin exit signal should be considered if this is longer than 18 milliseconds.
- If the coin exit signal is longer than 1 second, it must be considered that the hopper is out of order (or the optical switch is too dirty).
- After the falling edge of every coin exit signal, you should filter out the next 10 milliseconds in order to avoid noise pulses to be considered as true coin exit signals.
- Lapse between the exit of the last coin and the hopper's stop, should be as close to zero as possible.
- After the hopper stops, you must control that no complete coin exit pulses are generated, if this is not the case, that means that the hopper hasn't been switched off.
- It could happen that because of coin pick up difficulties, there is a long time lapse between two coins. If this time lapse is longer than 10 seconds, you should stop the hopper and restart it after 2 seconds. Repeat the process for a second time. If on the third try the lapse is again longer than 10 seconds, you should consider that the hopper is out of order.



CONNECTIONS

0.098" Molex connector 5051-N



Pin 1: Motor ground

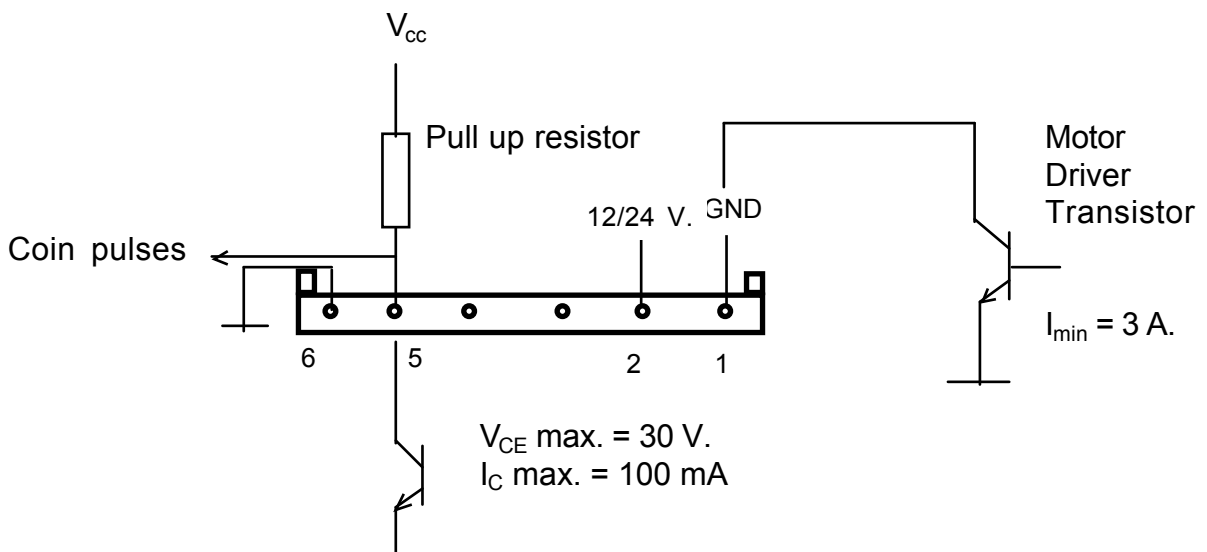
Pin 2: Supply for the motor and optical switch (12/24 v.dc)

Pin 3,4: Low level switch (optional) (3 Amps max.)

Pin 5: Coin counting pulses (open collector transistor, needs a pull up resistor)

Pin 6: Counting transistor common (has to be the ground of the 12/24v.dc)

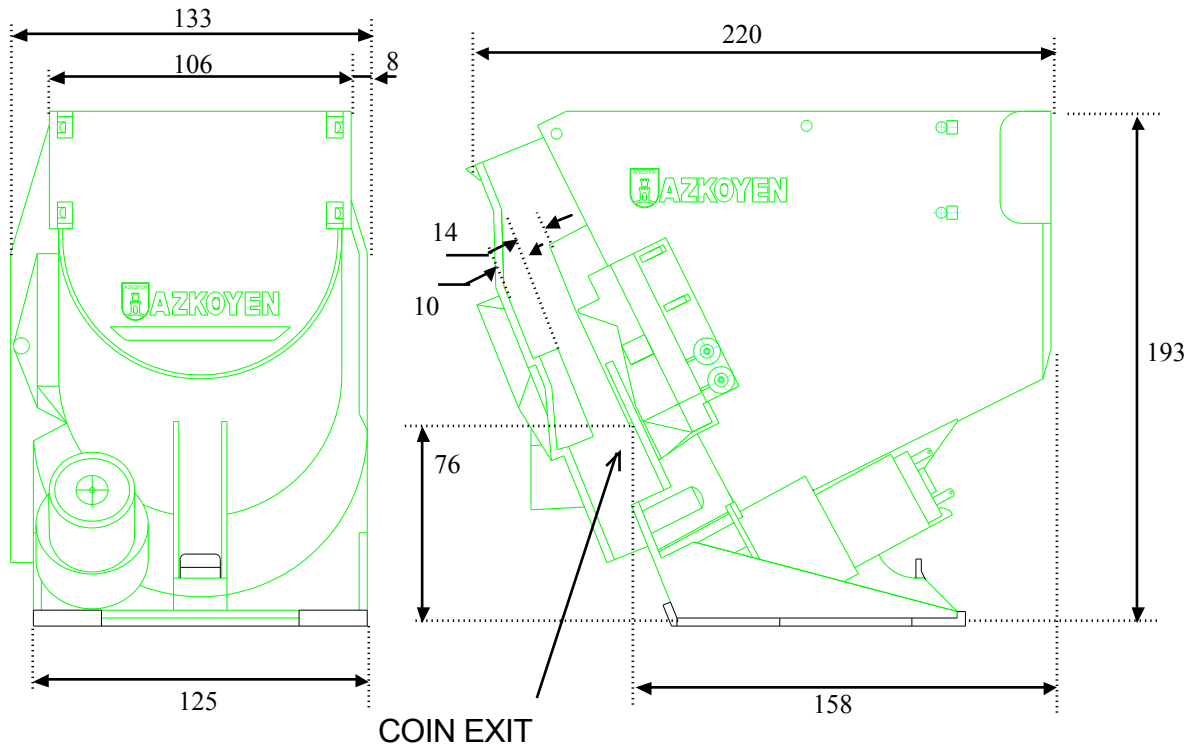
SUGGESTED CONNECTIONS



To drive the motor it is recommended to switch pin 1 (ground for the motor), so the supply voltage (12/24 v. dc) is permanently applied to the optical switch.

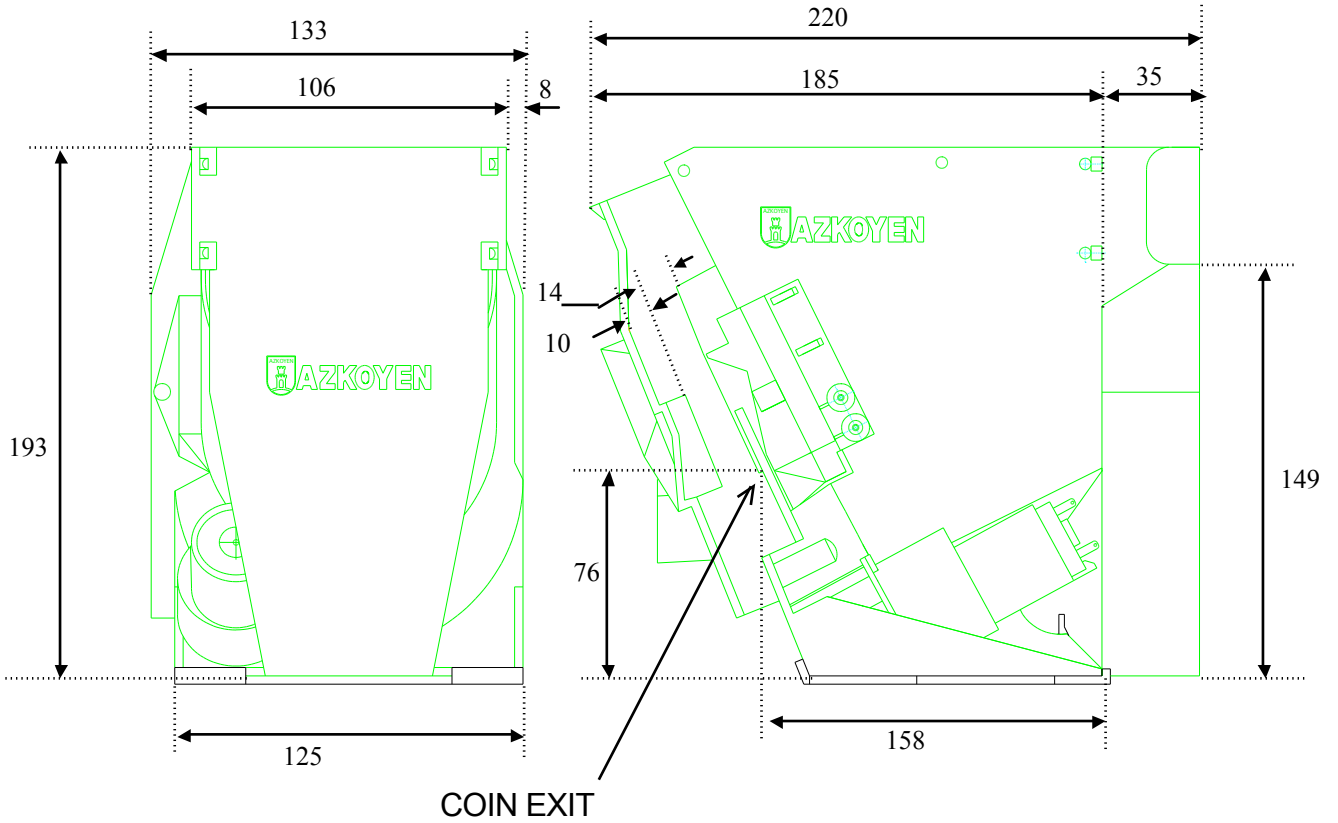
ELEVATIONS FOR THE HOPPER "E" NORMAL VERSION

All dimensions in millimetres.



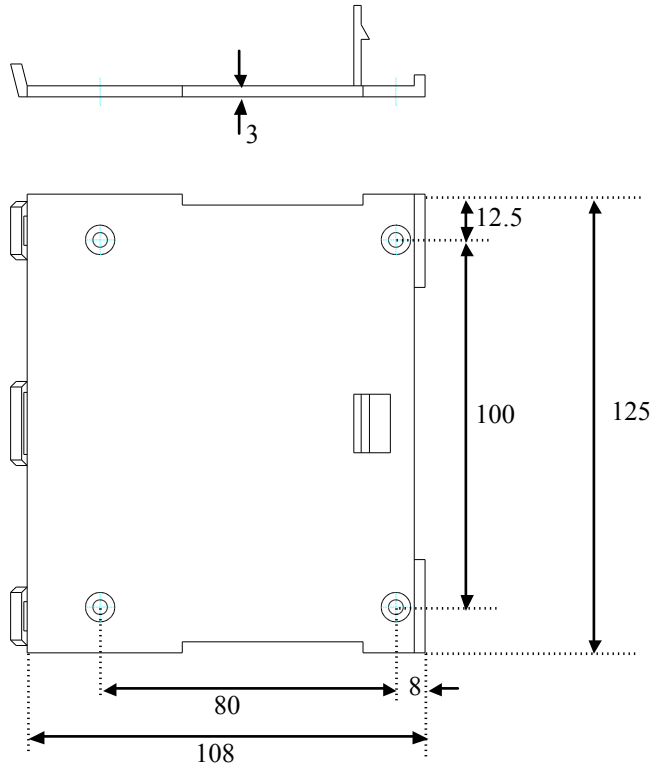
ELEVATIONS FOR THE HOPPER "E" NATURAL OVERFLOW VERSION

All dimensions in millimetres.

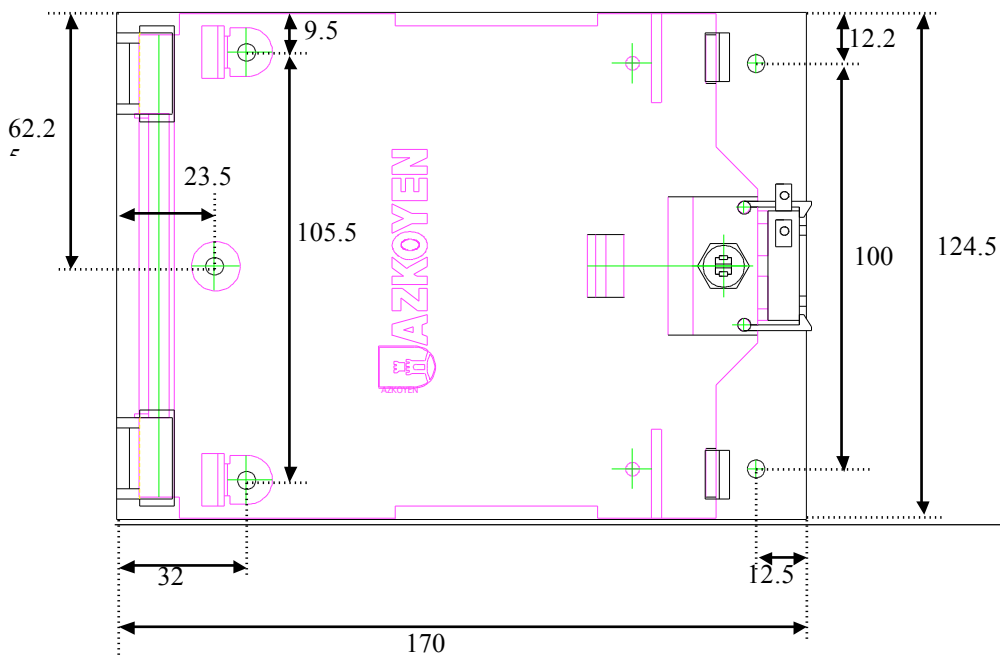
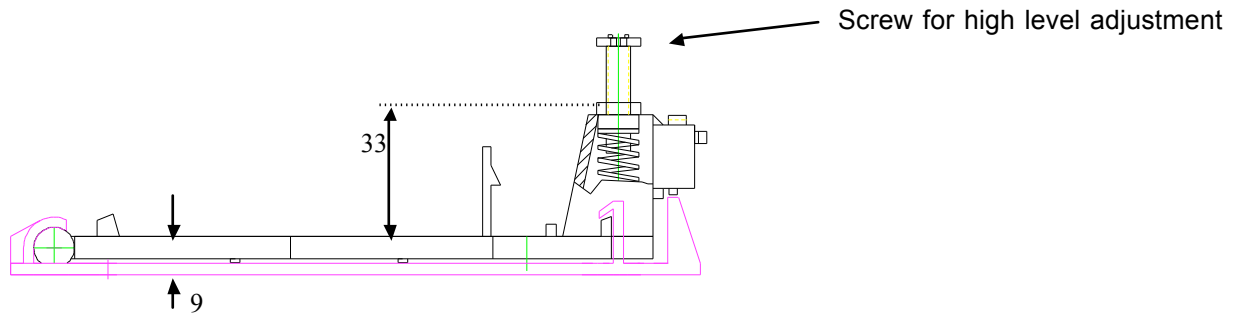


NORMAL BASE PLATE

All dimensions in millimetres.



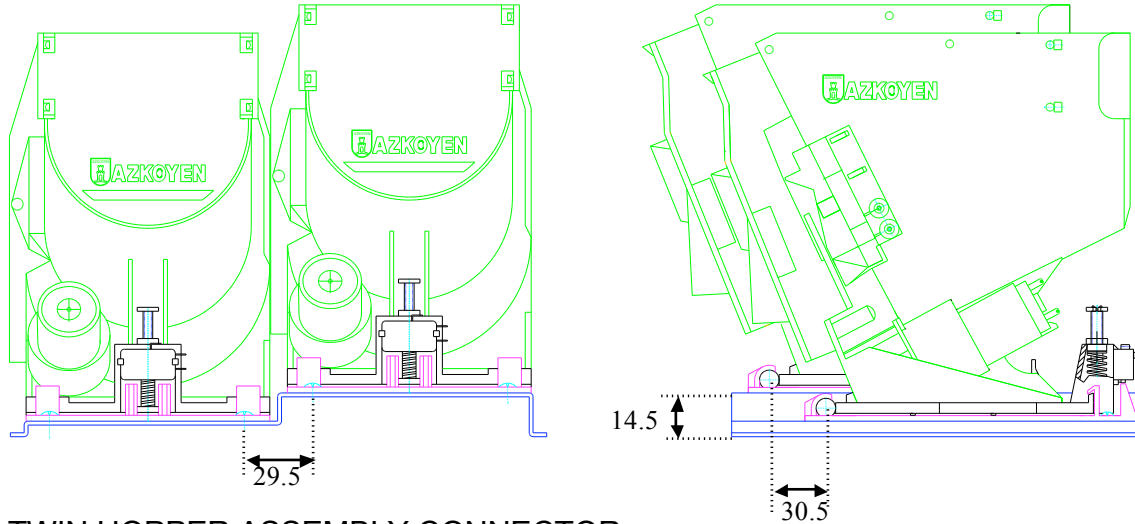
BASE PLATE WITH HIGH LEVEL SWITCH
 All dimensions in millimetres.



Maximum current through the high level switch: 5 Amps

TWO HOPPERS IN CASCADE

All dimensions in millimetres.



TWIN HOPPER ASSEMBLY CONNECTOR

- Pin 1 0 volts & switches common for hopper 1 (black)
- Pin 2 Microswitch coin counting hopper 2 (white - brown)
- Pin 3 Microswitch coin counting hopper 1 (white - black)
- Pin 4 Low Level Switch hopper 2 (when available)(orange - brown)
- Pin 5 Low Level Switch hopper 1 (when available)(orange - black)
- Pin 6 High Level Switch hopper 2 (yellow - brown)
- Pin 7 High Level Switch hopper 1 (yellow - black)
- Pin 8 + 12 or 24 volts. Motor Power supply hopper 1 & 2 (green)
- Pin 9 Control motor hopper 1 with 0 volts. (violet)
- Pin 10 Control motor hopper 2 with 0 volts. (white)
- Pin 11 Not connected
- Pin 12 0 volts & switches common for hopper 2, linked to pin 1 (black)

