

# Stemming Timer

**Get the right volume in every hole every time**

Hummingbird's Stemming Timer allows existing stemming systems to be upgraded to provide highly accurate stemming times, which relate to higher accuracy of volume in each hole.

A simple to use interface allows the user to select jobs, start and stop stemming and do once-off system calibration.

## Powerful Performance

Designed for harsh industrial environments, the module features a tough fascia with integrated buttons and LCD graphics display. An industrial adjustable mount allows for optimum positioning for the operator.

The display is highly visible both at night and in sunlight due to the use of an industrially rated transfective graphics LCD display.

The integrated keypad and menu allows for customisation of the unit, initial calibration, job maintenance, and stemming control. An optional external switch input is also provided for stem start / pause function.

Up to 99 jobs can be loaded by the operator and will be stored in internal memory. Jobs no longer needed can be deleted.

Calibration in cubic cm per second of material delivered can be achieved in two simple ways.

1) If time taken to fill a particular hole and the dimensions of the hole are accurately known, then a simple calculation of volume in cubic cm divided by time taken in seconds yields the calibration factor. This factor can be entered directly.

2) If the characteristics of the vehicle are not known, the system can perform a calibration for the user. In system calibration mode, a container of known volume is used. The operator is prompted to start stemming and stop when the container is full. The user is then asked to enter the volume of the container. From this information, the unit calculates a stemming factor for the particular vehicle.



The user can make fine adjustments to the calibration factor as the job is in progress. These adjustments will compensate for small changes in the stemming vehicle over time as the job continues.

Operation is as simple as choosing a job and pressing the start button or the external switch. Once the stemming process has been started, a relay closes (or opens). This relay should be wired in series with the current operator start switch.

## Features

- 10V to 36V supply voltage
- Adjustable industrial mount
- Highly visible display
- Integrated user interface for customisation
- Highly accurate stem time
- Once-off calibration
- User fine-tune function
- Integrated relay output

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Technical Specifications and Ordering Information	
Part number	HMZT1000
Input voltage	minimum 10V; maximum 36V
Power consumption (W)	maximum 2.5W (200mA @ 12V)
Relay output	normally open or normally closed, 36V max, 1A max
Dimensions – display module (mm)	110mm(width), 75mm(height), 25mm(depth)
Operating temperature	-40°C to 85°C; 5% to 95% relative humidity
Part number for optional suction cup	HMSS-suction

## Main Display



Diameter of hole for current job (cm)

Depth of hole for current job (m)

Fine tune

Time for current stemming job

Access menu

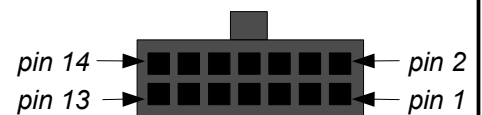
Fine tune -

Fine tune +

Start stem

## Connection Specification

- 1 Positive input voltage (10-36V)
- 2 Ground (0V)
- 3 Switch input
- 5 Switch input (ground)
- 9 Relay normally closed
- 11 Relay common
- 13 Relay normally open

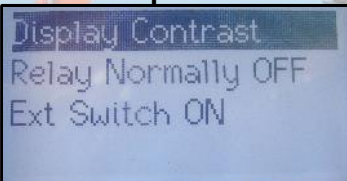


14 pin connector at rear of unit

## Stemming



## Initial setup menu



Optional sucker mount