



Hot foil stamping controller



Document: Operation Manual
Document #:
Document Rev: 1

Product: Hot foil stamping controller
Product Rev:

Created: 20-Jan-2013
Updated:

THIS MANUAL CONTAINS INFORMATION FOR INSTALLING AND OPERATING THE FOLLOWING PRODUCT:

- HOT FOIL STAMPING CONTROLLER

“TINY CONTROLS” AND THE TINY CONTROLS COMPANY’S LOGO ARE COPYRIGHTS OF TINY CONTROLS PVT. LTD. OTHER TRADEMARKS, TRADE NAMES, AND SERVICE MARKS OWNED OR REGISTERED BY ANY OTHER COMPANY AND USED IN THIS MANUAL ARE THE PROPERTY OF THEIR RESPECTIVE COMPANIES.

TINY CONTROLS PRIVATE LIMITED
C-55, NISHAT PARK, KAKROLA MOR, NEW DELHI, INDIA – 110078
WEB: <http://www.tinycontrols.com>
PHONE: +91-11-2533-1567, +91-991-119-3210

CONTENTS

Item	Page #
GENERAL DESCRIPTION	3
SPECIFICATIONS	3
LOCATION OF COMPONENTS	4
TERMINALS	5
OPERATING THE CONTROLLER	6
JOG MODE	7
SET MODE	8
EDIT MODE	9
CONNECTION DIAGRAM	10

GENERAL DESCRIPTION

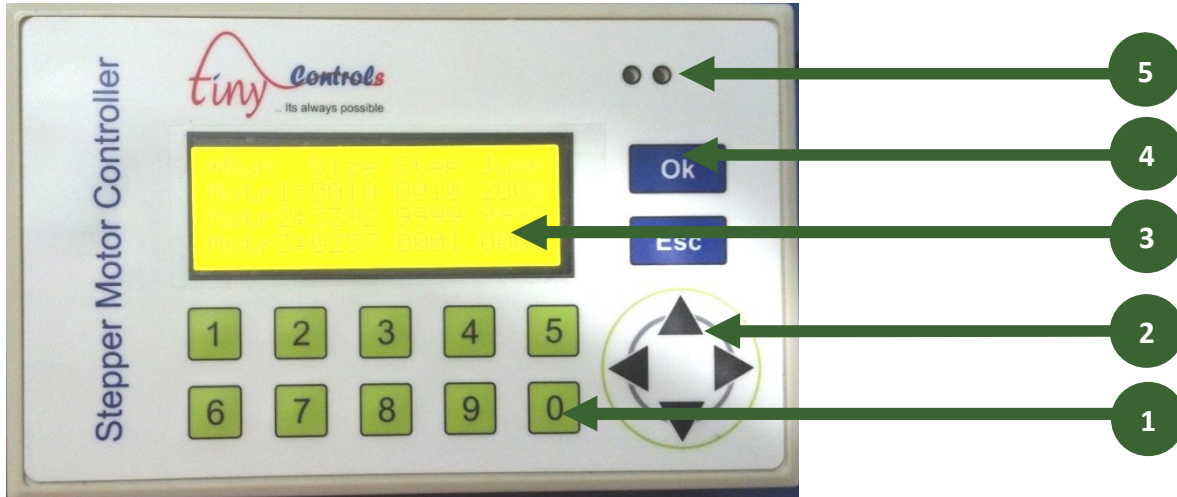
Hot Foil Stamper is a programmable controller intended to control the Hot Foil stamping machines.

It can control three motors with Independent parameter setting for each motor like motor speed, acceleration, roller perimeter, steps size; number of steps and jump size perimeter are independently configurable.

SPECIFICATIONS

- Supply Voltage: (90V-220V) AC mains supply
- Max Pulse Rate: 30 KHz
- Overall Size: 162 mm x 102 mm x 76mm
- Panel Mounting: 155 mm x 92 mm
- Input: One NPN proxy sensor
- Outputs: Three terminals step pulse each for a motor
- Display: 20x4 line alphanumeric
- Ambient temperature range: 0°-55° C
- Relative humidity: 90% without condensation
- Weight: 100g

LOCATION OF COMPONENTS: Major components of the Indexing Controller



The description of these components is as following:

1. NUMERIC KEYS (0-9)

Numeric keys are used for entering the numeric values in edit mode. In jog mode, some of these serve other functions.

2. NAVIGATION KEYS PANEL (UP, DOWN, RIGHT, LEFT)

In edit and setup modes, these keys are used to navigate the cursor. Use left right navigation keys to move the cursor to each digit place. Use up-down navigation keys to move the cursor from one attribute to other in both modes mentioned above.

Pressing left and right navigation keys long results to enter in different modes. It is discussed further in manual.

3. LCD DISPLAY (20x4)

This LCD indicates all the information related to MENUS or MODES.

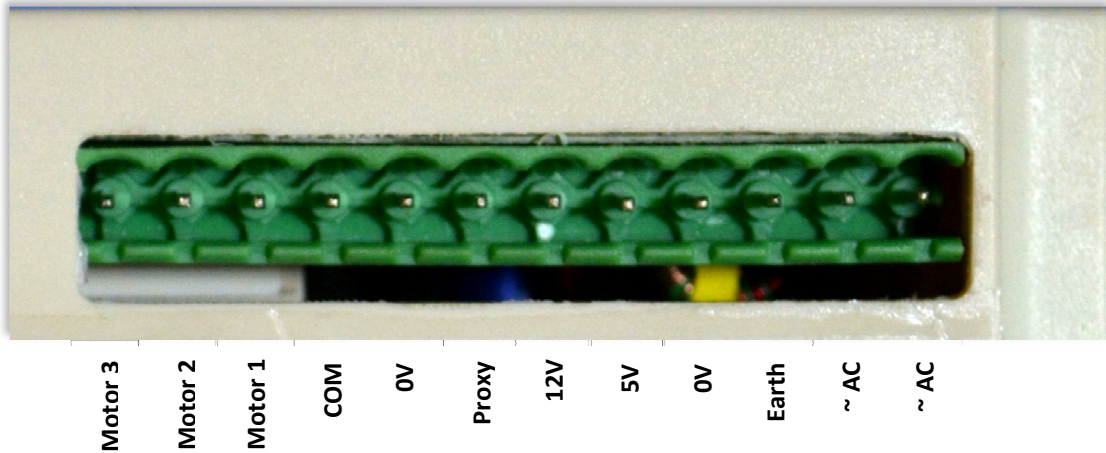
4. OK & Esc

Press OK to enter in jog mode. In edit and setup mode, pressing this key saves the modified values in EEPROM. Press Esc to back out of menus/mode, and pressing repeatedly returns the control to the main menu.

5. LED

This LED indicates the entry of control in a mode when right/ left key is pressed long.

TERMINALS



TERMINALS

1. ~AC (90V to 260V AC 50Hz/60Hz Live, **Handle with care**)
2. ~AC (90V to 260V AC 50Hz/60Hz Neutral, **Handle with care**)
3. **Earth (To Earth Main line, Handle with care)**
4. 0V: Common Ground
5. 5V: 5V output
6. 12V out: 12V NPN type proximity switch.
7. Proxy: Connect output of NPN type proximity switch.
8. 0V: 0V NPN type proximity switch.
9. 0V/ COM: Common ground, Connect to Stepper Driver e.g. Tstep-087.
10. M1: Motor1 Step Pulse Output (Connect to Stepper Driver e.g. Tstep-087).
11. M2: Motor2 Step Pulse Output (Connect to Stepper Driver e.g. Tstep-087).
12. M3: Motor3 Step Pulse Output (Connect to Stepper Driver e.g. Tstep-087).

OPERATING HOT FOIL STAMPER

HOME/RUN MODE

*Run	Size	Step	Jump
Motr1:	0010	2000	1000
Motr2:	0257	1281	9999
Motr3:	6912	0005	9999

When stamping controller is Switched ON, a splash screen showing the name of device. After a few seconds, Home/Run appears. It shows the parameters/ attributes and their values for which controller is in operation. User can enter in other modes only from Run mode screen by pressing their respective keys.

Whenever any key input is present then each motor moves with their respective **step size** value with **step** number of time and after that it moves with the value of **jump size**. And this process keeps on repeating whenever inputs are present.

For example: if user have to move the motors 10mm for 5 times and after that he has to move motor with 7mm. then he can fill the step size with 10mm, step with 5 and jump size with 7mm. Perimeter of pulley can be calculated with formula $Peri = (\pi * d)$; where $\pi = 22/7$ and d is the diameter of pulley. Perimeter, Speed and acceleration of respective motor can be set in set mode.

Note: if in some application any user wants the all motion of the same size then he can fill same value in **step size** and **jump size**. Step can be filled with any value.

JOG MODE

*Jog	Slow	Fast
M1-Keys:	1	6
M2-Keys:	2	7
M3-Keys:	3	8

User can enter in jog mode by long pressing OK key in RUN screen till the green LED glows. In Jog mode, user can manually adjust the foil puller. Numeric keys are used for fasten up and slow down the respective motor.

Slow: It shows that keys under this parameter are assigned for slow jogging of respective motors.

Fast: It shows that keys under this parameter are assigned for fast jogging of respective motors.

Press Esc button to exit from this mode to run mode.

SET MODE

*Set	Spd.	Peri	Acc.
Motr1:	0003	1809	01
Motr2:	0900	9999	01
Motr3:	0900	9021	01

User can enter in Set mode by pressing left arrow key for long time in home screen till green LED glows.

Spd. Speed of the each stepper motor which controls the pulley roller. Its range is 1 to 900 RPM.

Peri: Perimeter of the pulley which can be calculated with formula

$$\text{Peri} = (\pi * d);$$

Acc.: Acceleration value with which stepper motor achieves the top speed. The range for it is 1 to 20.

Press Esc button to exit from this mode to run mode.

EDIT MODE

*Edit	Size	Step	Jump
Motr1:	0010	2000	1000
Motr2:	0257	1281	9999
Motr3:	6912	0005	9999

Edit mode is to edit the values of the parameters of Run mode. In Run mode, long press right navigation key till green LED glows, Edit mode screen appears in which values of parameters can be modified for all three motors.

Size: It is the StepSize which determines the length of foil to be pulled from pulley in each step. The range for this parameter is 1 to 9999mm.

Step: Step determines the number of times the foil of length equal to step size to be pulled and after that the foil of length equal to jump size pulls. The range for this parameter is 1 to 9999mm.

Jump: Jump size is the length of foil that is pulled after completing the number of steps with Step size. The range for this parameter is 1 to 9999mm.

Press Esc button to exit to Home/Run mode.

CONNECTION DIAGRAM

