Hillsdale Terminal

250 Industrial Drive
Hillsdale Michigan 49242

Abstract

Instruction for use and care of your Hillsdale Terminal Crimp Machine

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WARNING! Installation of electrical wire and terminals can be hazardous if done improperly. Improper use can result in personal injury or property damage. For safe electrical practices, consult National Electrical Code. A licensed electrical contractor or engineer must be consulted to determine that the correct wire and terminal size is used and that it is properly and safely installed for all applications. Follow **all** Safety Lock out – Tag Out procedures when using this equipment. Safety air valve is located on the back of the machine to turn off air and release air contained in the unit when necessary.

MYLAR TAPE CRIMP MACHINE

A. Control Panel Introduction, Unit requires standard 120V AC current and a **clean-dry** compressed air source 80-100psi. Higher PSI will crimp terminals tighter.

Description of the Switches and Buttons:

1. Mechanical system power switch:
   Push the switch to power on, and push it again to power off.
2. A/M (Auto/Manual) movement operation, Auto will make foot pedal control cycle
3. ACT:
   Push the button to activate one cycle each event when in Manual.
4. Reset switch:
   Push the reset button and hold to release a malfunction.
5. Alarm light:
   The alarm light will be on when a malfunctioning operation is occurring.
6. Buzzer:
   Buzzer will sound under malfunctioning operation procedure.
7. Counter:
   The counter value will increase by an increment of 1 each time an assembling procedure is completed under the normal operation procedure.
8. Load/Run: Switch to load to raise ram cylinder to change dies or thread mylar strip into sprocket. Switch to Run when finished. Keep hands clear when switching.
9. Single/Double: Determines if one or two indexes are done in auto cycle.

Attention

Please follow the general procedure to turn off the system power.

DO NOT turn off the power while the machine is under operation to avoid the machine failure.

B. Malfunctioning Situations:

1. Buzzers sounds under malfunctioning situations.
   Check sensors and magnet switches to find whether the reason they are not functioning well is not due to them being loose, displaced, or damaged. Adjust and replace sensors and switches as needed and make sure everything is properly installed. Clear any parts that did not index properly using the load switch.

2. Follow the procedure to check every malfunction that occurs to avoid the same problem from happening again.

3. When a malfunction is occurring within the machine, push the reset button to turn off the alarm light before restarting the machine. Under certain situations turn unit off and restart if necessary.

C. Emergency

Immediately turn the machine off by pulling the plug for emergency situations such as the following:

1. Machine operation might put the operation staff in danger of being injured.

2. If cylinder cannot function normally due to material being stuck and will result in the machine crashing.

Attention

If either of the above situations exists, please turn off power immediately because the power can automatically turn back on after the issue is resolved. DO NOT turn on the power when the malfunction is not yet resolved.

D. Maintenance

Operation Control Panel

1. DO NOT put any objects on the panel.

2. Keep the panel clean.

3. Tighten up the loose buttons, switches, or lights; and replace the damaged buttons, switches, or lights. unplug the power before doing the maintenance procedure to avoid the danger of electric shock.

System Control Box

Periodically check the control components see if there are any loose or damaged parts. Repair as needed. (Weekly checking is advised.)

1. Periodically check connecting plug between system control box and machine to see if it's loose and tighten it as need be. DO NOT step on the connecting wire or put any object on it. (Daily checking is advised.)
2. Apply light grease or oil on all moving metal parts. Add a few drops of light air tool oil into air supply, do not put excess oil into air lines, a few drops are good.

Note

Make sure to do the maintenance work properly to extend the machine's use.

E. Remarks about warranty

1. 12-month warranty.

2. Consuming parts are not covered by the system warranty.

3. Damage caused by man-made negligence or improperly operating are not covered by the warranty.

4. System damage caused by altering the system circuit or system program is not covered by the warranty.

F. The dies:

1. To change the die to a different size:
   A. Move toggle switch to load position, turn power off, leave air connected to hold dies open.
   B. Remove the 2 lower screws that hold the guard on using a 4 mm Allen wrench.

   C. Remove screws that hold the dies that are currently in the upper and lower positions with a 3 mm Allen wrench.
   d. When you switch the dies out make sure the new die's wire gauge matches your part.
   e. Replace screws in the new upper and lower dies. Make sure they are fully seated, meaning the upper die is all the way up and the lower die is all the way down.

2. To adjust the dies in and out:
   a. Use a shim of a different thickness behind the upper die to move it to the desired position on the terminal.
   b. Loosen the screws on the lower die retainer with a 5 mm Allen wrench in order to move the lower die to be in line with the upper die.

3. To thread tape into the machine while switch is in load position and power is off:
   a. Push in the button that covers the indexing wheel. Lift the cover, exposing the indexing wheel.
   b. Align sprockets on Mylar tape onto the indexing wheel.
   c. Close the cover for the indexing wheel and be sure it locks down into place.

4. Put the guard back on and replace the screws that hold it in place with the 4 mm Allen wrench.

5. Switch toggle to RUN position. You should run a sample part and test UL pullout with pull test equipment.

   a. If it doesn't pass the pull test the dies need to be adjusted to be closer together. This can be accomplished by loosening upper die lock 8 mm screw. Turn top adjusting screw counterclockwise to increase force and clockwise to decrease force. Tighten down the 8 mm screw again.

   b. Continue this process of running a sample, testing the sample, and adjusting the dies in the machine accordingly until you create a part that passes the pull test which indicates the machine is set up correctly and ready to go.

PLC INPUTS AND OUTPUTS

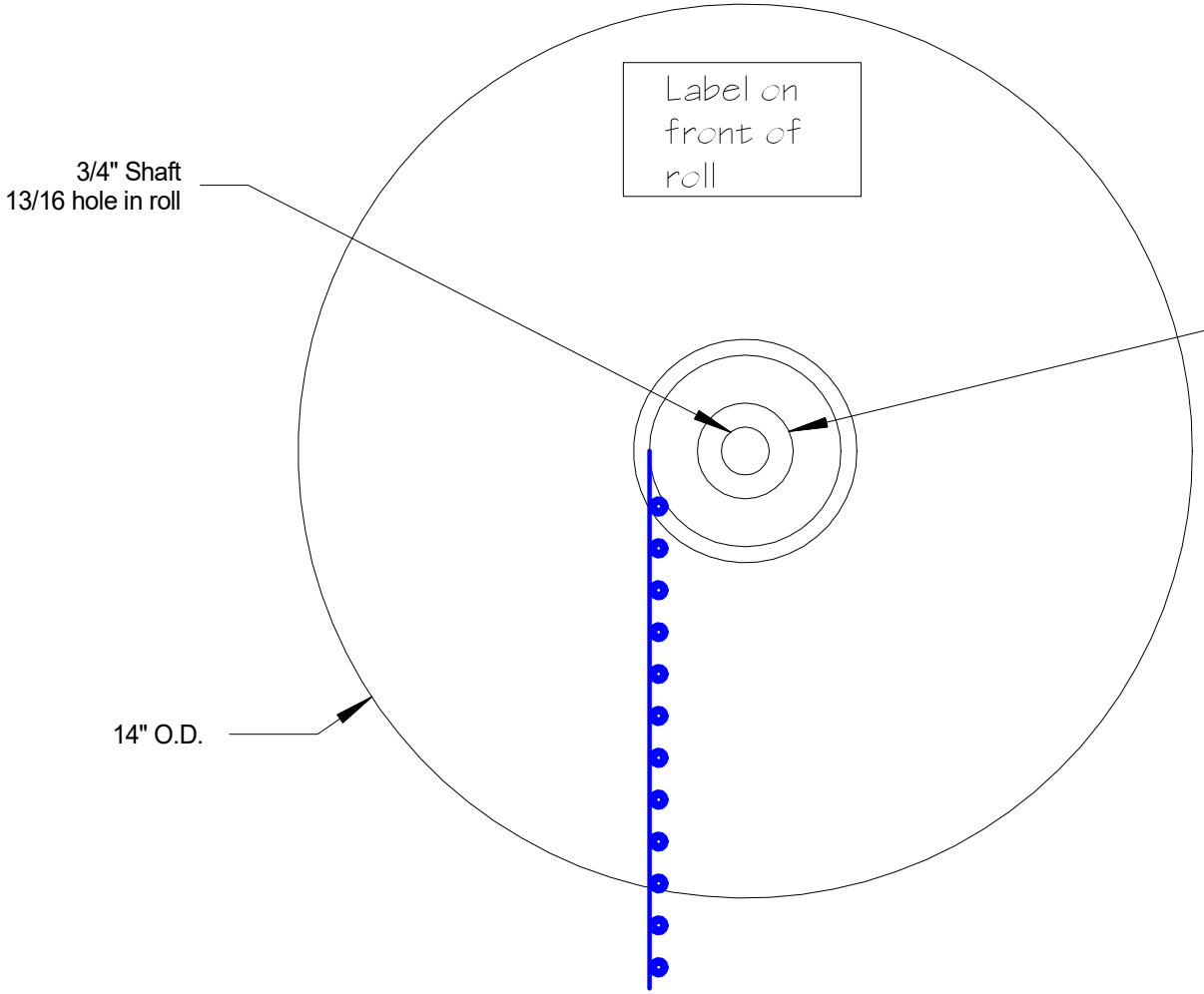
INPUTS		OUTPUTS	
X0	Load/Run	Y0	Crimp cylinder
X1	Manual	Y1	Up/down cylinder
X2	Index	Y2	Index cylinder
X3	Foot pedal	Y3	Auto light
X4	Up/down cylinder forward sensor	Y5	Alarm light
X5	Up/down cylinder retracted sensor	Y6	Buzzer
X6	Crimp cylinder retracted sensor	Y7	Counter
X7	Crimp cylinder forward sensor		
X10	Reset		
X11	Hold Cylinder up/down		
X12	Index 1 or 2		
X13			

Pull-out Specs: Strength Requirements (For reference only)

Wire Size	Per MIL-T-7028	Per UL 486
(AWG)	(LBS)	(LBS)
26	7	-
24	10	-
22	15	8
20	19	13
18	38	20
16	50	30
14	70	50
12	110	70
10	150	80

Parts for Hillsdale Terminal Crimp Machine MTCM-101

HTT Part #	Qty	Description
MTCM-109	1 set (4 pcs)	Crimp dies for 22-18 Terminals
MTCM-110	1 set (4 pcs)	Crimp dies for 16-14 Terminals
MTCM-111	1 set (4pcs)	Crimp dies for 12-10 Terminals
MTCM-120	1 pc	Air valve for index cylinder & rapid ram cylinder
MTCM-121	1 pc	Air valve for Crimp cylinder
MTCM-122	1 pc	Chelic JD 100-45-S Large Crimp Cylinder
MTCM-130	1 pc	PLC Vigor PLC Vigor VH-20MR
MTCM-201	1 pc upper 1 pc lower	Roller bearing for crimp cam 1 upper 1 lower 35mm OD x 15mm ID x 16mm thick
MTCM-301	1 pc per machine	Main Relay 8 pin 120 Volt Coil
MTCM-401	1 pc per machine	Guard for front of machine
Crimp die set include upper-lower die and upper-lower insulation crimp.		
		Air valves include 120 Volt AC coils
Other parts are available. Call for help.		



NOTES

1. DO NOT SCALE PRINT.
2. BREAK ALL NON-CUTTING EDGES.
3. STAMP OR ETCH HTT, DET NO., MAT'L, & HEAT TREAT
4. GRIND AS SHOWN.
5. CRITICAL DIMENSION VERIFICATION TO BE COMPLETED BY VENDOR

DET NO.	QTY	DESCRIPTION	MATERIAL	HEAT TREATMENT	ROUGH STOCK SIZE

TOLERANCES
UNLESS OTHERWISE SPECIFIED
.XXXX +/- .0005
.XXX +/- .005
.XX +/- .010
.X +/- .015
FRACTIONS +/- 1/32
ANGLES +/- 0°30'

Hillsdale Terminal
250 Industrial Drive
2222 W. Moore Rd.
Hillsdale, Michigan 49242

Title: Mylar Tape Roll Spec

DRAWN BY: J. Condon
DATE:
DIE NUMBER:
CHECKED BY:
SCALE:
SHEET SIZE: A
MATERIAL:
CAD DRAWING #: