



Nordson Corporation

# OPERATOR'S CARD

P/N 229818A

## CS-2T Timer

### Safety

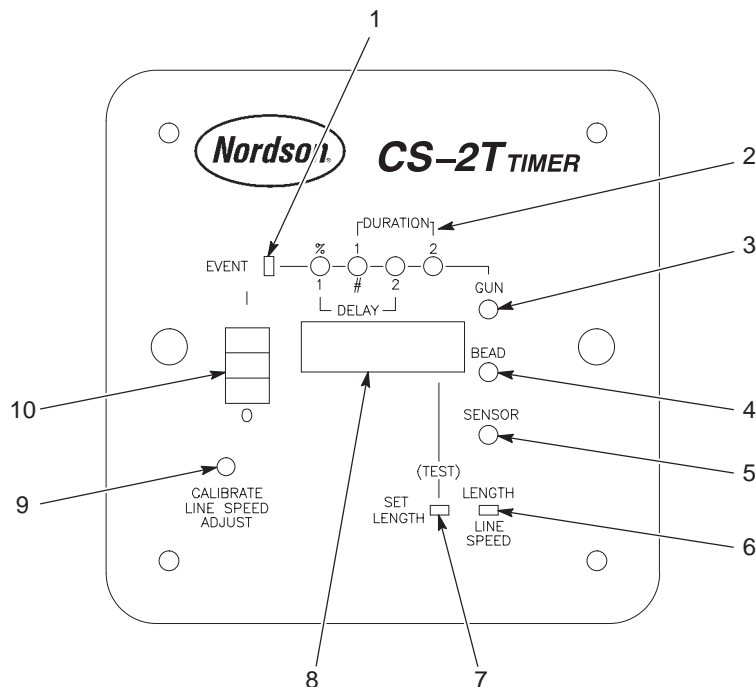


**WARNING:** Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all other related documentation.

To use this equipment safely, follow the instructions in this operator's card and the referenced manuals.

### Controls and Indicators

See Figure 1. CS-2T timer controls and indicators are described on page 2.



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Figure 1 CS-2T Timer Controls and Indicators

## Controls and Indicators *(contd)*

**NOTE:** The item numbers in the following table correspond to the callouts used in [Figure 1](#).

Item	Description	Function
1	EVENT selector switch (Green)	Selects each event (Delay 1, Duration 1) being programmed. This toggle switch also accesses Test mode for gun or bead alert output.
2	Event type LEDs (Green)	One of these four green LEDs illuminates when an event is selected for programming. DELAY and DURATION events are programmed in length using the EVENT selector switch and SET LENGTH switch.
3	GUN group output program LED (Yellow)	Displays the output program presently accessed for setting, viewing, and testing.
4	BEAD output LED (Yellow)	Illuminates when testing the bead alert output.
5	SENSOR input LED (Green)	Illuminates with each input for the channel shown.
6	LENGTH/LINE SPEED display switch	Holding the switch up displays the length of the current event. Holding the switch down displays the line speed rate from the tach generator.
7	SET LENGTH/TEST switch	Toggles up to increase the number displayed or down to decrease the number displayed. Holding the switch up or down causes the number display to scroll rapidly. The SET LENGTH/TEST switch is also used as the output test firing switch.
8	Event duration display window	Four numeric LED displays show the: <ul style="list-style-type: none"><li>length selected for a specific event for gun output. Length is displayed in millimeters (0.0-253.975 mm or 0.0-9.999 in.).</li><li>percentage of beads missed from the last 1,000 attempts or the number of beads missed.</li></ul>
9	CALIBRATE LINE SPEED ADJUST screw	Calibrates the CS-2T line speed.
10	Power switch	Switches the main power to the CS-2T and output relays.

## Display Modes

Display Mode	Description	How to Enter the Mode
LENGTH	Displays event length information and allows programming of event lengths for the gun output  A test sequence can be fired or run on the output in this mode	This mode is normally displayed when powering up. To re-enter the LENGTH mode from the LINE SPEED mode, toggle the LENGTH/LINE SPEED display switch (6) up.
LINE SPEED	Displays the current line speed according to the input from the tach generator  All four LED displays (8) illuminate with no decimal point	Enter the LINE SPEED mode by toggling the LENGTH/LINE SPEED display switch (6) down and calibrating the CS-2T to the line speed with the rate calibration screw (9). The displayed number is feet per minute (fpm). Convert the line speed, cans per minute (cpm), to fpm and enter that result.  <b>NOTE:</b> Always set resolution before calibrating. Refer to <i>Setting Resolution</i> on page 5.
Program Lock/Unlock	Allow set values to be viewed but not altered.	Refer to <i>Operation</i> on page 5 for a procedure for switching between lock and unlock modes.

# Setup

See [Figure 1](#). Perform the following procedures to set up the CS-2T Timer for operation with the CanNeck Lubrication System.

## Clearing Memory

1. Hold the EVENT selector switch (1) to the left.
2. Turn on the power switch (10). This clears all length and head compensation values, sets resolution to 0.01 in. and dropout line speed to 10 ft per minute.

**NOTE:** Shutting the timer off while the line is running or clearing memory disables the applicator.

## Setting Resolution

1. Hold down the LENGTH/LINE SPEED display switch (6).
2. While holding the LENGTH/LINE SPEED display switch (6), turn on the power switch (10).
3. While holding the LENGTH/LINE SPEED display switch (6), toggle the SET LENGTH switch (7) up or down to select resolution. Setting options are shown in the following table. The default setting is 0.01 in.

Resolution mm (in.)	Maximum Line Speed m/min (ft/min)
0.5 (0.01)	270 (450)
1.0 (0.02)	540 (900)
2.0 (0.05)	810 (1500)
3.0 (0.10)	1080 (3000)

**NOTE:** If 0.0 mm is selected, all timer functions will be displayed in metric units. If 0.00 inches is selected, then all timer functions will be displayed in inches or feet.

4. Release the LENGTH/LINE SPEED display switch (6) to set the resolution.
5. Recalibrate the LINE SPEED after changing the resolution.

**NOTE:** The resolution setting controls the placement of wax on each can or substrate within that specified number.

## Setting Line Speed

1. Toggle the LENGTH/LINE SPEED display switch (6) down.
2. Turn the rate calibration screw (9) counterclockwise until the display (8) reads 0.
3. Turn the rate calibration screw (9) clockwise until the line speed on the display (8) matches the actual maximum line speed.
4. To exit this mode, toggle the LENGTH/LINE SPEED display switch (6) up.

**NOTE:** To adjust the line speed, the production line must be running at the speed being set on the display.

## Setting Trigger Type

1. Hold the SET LENGTH switch (7) up for one-shot operation.
2. Turn on the power switch (10).

## Setting Delay and Duration Length

1. Toggle the EVENT selector switch (1) to the left or right to select the event to program.
2. Toggle the SET LENGTH switch (7) up or down to select the value for the event.

The following table describes each event and provides recommended settings.

**NOTE:** Readjust values as required to improve the application.

Event	Description	Settings
DELAY 1	Length of first delay	Set the initial distance value. This is the length between the sensor and nozzle center lines.
DURATION 1	Length of bead pattern	Set from .12 to .22 in., typical. <b>NOTE:</b> Do not set below .12 in.
DELAY 2	Length of second delay	Not used. Set to 0 (Default).
DURATION 2	Length of second bead pattern	Not used. Set to 0 (Default).

## Setup *(contd)*

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### Setting Gun Compensation

**NOTE:** Refer to *Speed Compensation* in the *CS-2T Timer* manual for more information about setting compensation times.

1. Hold down the SET LENGTH (7) and LENGTH/LINE SPEED display (6) switches.
2. Turn on the power switch (10).
3. After the GUN group 1 (3) and DELAY 1 (2) LEDs illuminate, release both switches.
4. Set the off compensate time by toggling the SET LENGTH switch (7) up or down to the desired setting. Typical setting is 0-2 ms.
5. Toggle the EVENT selector switch (1) to the right until the DURATION 1 LED illuminates.
6. Set the on compensation time by toggling the SET LENGTH switch (7) up or down to the desired setting. Typical setting is 4-5 ms.
7. Exit this mode by either toggling the LENGTH/LINE SPEED display switch (6) up or turning the power switch (10) off and then on.

### Running Samples

1. Run samples at low and maximum line speeds.
2. Check the position and length of the bead pattern with a strobe light. Readjust if necessary.

**NOTE:** The bead should start approximately at the 10 O'Clock position and stop before the 12 O'Clock position.

3. If the bead at maximum line speed shifts back, increase the on compensation time.
4. If the bead at maximum line speed shifts forward, decrease the on compensation time.

### Setting Can Skip Count

The CS-2T timer can be set to apply lubricant to every can or every other can up to skipping the ninth can.

1. Hold the EVENT selector switch (1) to the right and the LENGTH/LINE SPEED display (6) switch up.
2. Turn on the power switch (10).
3. Release both switches.
4. Toggle the SET LENGTH switch (7) up or down to set cans to be skipped.
  - 0 is the default for no cans skipped.
  - Select 1 to skip one can or up to 9 to skip nine cans.
5. Exit this mode by turning the power switch (10) off and then on.

### Skip Settings for Turret Pockets

Can necker turret pockets vary in number.

The following table shows which can skip settings to use to assure a lubricated can passes through each set of die neck tooling.

**NOTE:** If the number of turret pockets for a necker-flanger is not listed, contact Nordson for usable can skip settings.

Number of Turret Pockets	Usable Can Skip Settings
7	1, 2, 3, 5 and 7
8	2, 4, 6 and 8
9	1, 3, 4, 6, 7 and 9
10	2, 6 and 8
11	1, 2, 3, 4, 5, 6, 7, 8 and 9
12	4, 5 and 6
13	1, 2, 3, 4, 5, 6, 7, 8 and 9
14	2, 4 and 8
15	1, 3, 4, 6 and 7
16	2, 4, 6 and 8
17	1, 2, 3, 4, 5, 6, 7, 8 and 9

## Setup *(contd)*

### Programming Dropout Line Speed

Never program the dropout line speed below 2 mpm (5 fpm). The default dropout low line speed value is 4 mpm (10 fpm). (The default setting is recommended.) If the application requires a higher or lower value, perform this procedure:

1. Hold the LENGTH/LINE SPEED display switch (6) up.
2. Turn on the power switch (10).
3. Release the switch.
4. Toggle the SET LENGTH switch (7) up or down to set the desired dropout line speed. Set speed between 2-99 mpm (5-248 fpm).
5. Exit this mode by toggling the LENGTH/LINE SPEED display switch (6) up or down. A self test follows.

## Operation

See [Figure 1](#).

Task	Procedure
<b>Startup</b>	<ol style="list-style-type: none"><li>1. Turn on the power switch (10). A self test follows. <b>NOTE:</b> The CS-2T displays the length previously set for GUN group DELAY 1. Only GUN and DELAY 1 LEDs are illuminated.</li><li>2. Toggle the EVENT selector switch (1) to the left or right to select the event.</li><li>3. Toggle the SET LENGTH switch (7) up or down to enter the desired length values.</li></ol>
<b>Reading Line Speed</b>	<p>Toggle the LENGTH/LINE SPEED display switch (6) down.</p> <p>Toggle the LENGTH/LINE SPEED display switch (6) up to return to normal operation.</p>
<b>Locking/Unlocking the CS-2T Timer</b>	<ol style="list-style-type: none"><li>1. Hold the EVENT selector switch (1) to the left, with the power on.</li><li>2. Hold down the SET LENGTH (7) switch.</li><li>3. Release the EVENT selector switch (1).</li><li>4. Repeat steps 1-3 to toggle between lock and unlocked modes.</li></ol>
<b>Test Firing a Head Group</b>	<ol style="list-style-type: none"><li>1. Toggle the EVENT selector switch (1) until only the GUN or BEAD LED illuminates and the event duration display window is blank.</li><li>2. Hold the SET LENGTH switch (7) up to test fire in a continuous fashion.</li><li>3. Hold the SET LENGTH switch (7) down to test fire in a programmed sequence.</li><li>4. Toggle the LENGTH/LINE SPEED display switch (6) up to return to normal operation.</li></ol>

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## Your notes

