



Design and Manufacture of Video Pipeline Inspection Systems
A Full Service Company
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DD LITE 2

Model 40-3510

OPERATIONS MANUAL



Made in the USA

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Introduction

The DD Lite Cog-4 version is a simple text overlay device that can count distances from a reel, display pages, and observation data on screen. This device is menu driven and has help menus to guide users through setup screens. The DD Lite allows for five title screens to be stored and displayed, twenty six observation codes, one always on line for manhole information, and a comment line that can be configured to be on or off. The following manual will explain in detail the usage and configuration of the DD Lite Cog-4.

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Figure 1: DD Lite

Help Menu

```
F2 Pointer On/Off
F3 Comment Mode On/Off
F4 Clear Comment Text
F5 Overlay On/Off
F6 Toggle Distance Mode
      (Primary/Alternate)
F7 Display Title Screens
ALT+P Preset Distance
ALT+Z Zero Distance
F12 Setup Menu

ENTER More
ESC Return To Overlay
```

Figure 2: F1 Help Menu

Pressing the F1 key will open the help menu. The help menu describes each function key used by the DD Lite. To exit the Help menu press the ESC (escape) key.

Function Keys

The function keys allow the user to quickly setup and run the main functions of the DD Lite.

F2 Pointer On/Off

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Figure 3: F2 Pointer On / Off

Pressing F2 will display a triangle pointer on screen. To move the cursor press the up/down/left/right arrow keys on the keyboard. To turn the cursor off, press F2 again.

F3 Comment Mode On/Off

This is a test
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Figure 4: F3 Comment Mode On/Off

Pressing F3 will turn on the line one comments on. On this line any alphanumeric text can be typed in. To clear the line the back space key may be used or the user can press F4 (Clear Comment Text). To turn the comment line off, press F3 again.

F5 Overlay On/Off

Pressing F5 will clear the entire text overlay screen. Press F5 again to turn the text back on.

F6 Toggle Distance Mode

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Figure 5: Toggle Distance Mode

To change the distance mode from Feet to Meters press F6. This should only be used if the user wishes to count in meters when the reel is configured for feet. If your reel is configured for meters use the Encoder Option setup from the Setup menu to change the distance label.

F7 Display Title Screens

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Figure 6: Display Title Screens

To display configured title screens press F7. Each screen will appear for the configured time. The keyboard will be locked while displaying pages. Once the pages have displayed the user will be able to add observations and change settings.

F12 Setup Menu

Setup Options

F1 Set Time/Date
F2 Set Display Options
F3 Set Motor Speeds
F4 Set Encoder Options
F5 Set Title Screens
F6 Set Observation Codes
F7 Set Header Line

ESC Return To Overlay

Figure 7: F12 Setup Menu

Pressing F12 will open the setup menu. Refer to the Setup Menu section of this manual for information about each setup option. To close the setup menu press ESC.

Setup Menu

Setup Options

F1 Set Time/Date
F2 Set Display Options
F3 Set Motor Speeds
F4 Set Encoder Options
F5 Set Title Screens
F6 Set Observation Codes
F7 Set Header Line

ESC Return To Overlay

Figure 8: Setup Menu

The Setup Menu will allow the user to configure the DD Lite's Display options, title pages, encoder options, and observation codes.

F1 Set Time/Date

Set Time and Date

```
Hour    <11 AM>  
Minute  <40>  
Date    <03>  
Month   <Aug>  
Year    <04>
```

```
ENTER - Save changes and exit.  
ESC   - Discard changes and exit.  
TAB   - Change field.  
ARROW UP/DOWN - Change value.
```

Figure 9: Set Time and Date

To Set the Date and Time use the up and down arrow keys to change values and the tab key to move between the Hour, Minute, Date, Month and year fields. To save the changes and exit, press Enter. To cancel changes and exit, press ESC.

F2 Set Display Options

Setup Data Display

```
Show Time      <Yes>
Show Date      <Yes>
Show Pan/Tilt  <No  >
Show ID        <No  >
ID Text        <--RST-->
Show Encoder   <Yes>
```

```
ENTER - Save changes and exit.
ESC   - Discard changes and exit.
TAB   - Change field.
ARROW UP/DOWN - Change value.
```

Figure 10: Set Display Options

The display option menu allows the user to configure what items will be on screen at all times. Use the up and down arrow keys to change values and the tab key to move between fields. In this example The Time, Date, and Encoder are enabled. The result would look as follows:

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```

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```

Figure 11: Display Options

To change where the Time, Date and distance options show on screen use the up, down, left and right arrow keys on the keyboard while in the main screen of the DD Lite.

F4 Set Encoder Options

Set Encoder Primary Mode

```
Counting Sense    <Up>
Decimal Places    <1>
Units Label       <f>
Preset Value      <5.500>
Scale Factor      <0.1000000>
                  (units per count)
ENTER - Save changes and proceed to
       alternate mode setup.
ESC - Discard changes and exit.
TAB - Change field.
ARROW UP/DOWN - Change value.
F9 - Calibrate encoder
```

Figure 12: Set Encoder Options

The Encoder Options menu allows the Counting Sense, Decimal Place, Units Label, Distance Pre-Set, Scale Factor, and Calibration to be set. Use the up and down arrow keys to change values and the tab key to move between fields.

Set the counting Sense to Up to have the counter count up as the cable is pulled out. Set the counting sense to down to have the counter count down as the counter is pulled out.

If more (or less) than one decimal place of precision is needed the decimal places option may be changed to 0, 1, 2, or 3 decimal places.

The units label may be changed to f or m for feet or meters.

The preset value allows the user to set a preset distance into the encoder. This distance will vary from camera to camera. It also depends if the user measures from the center of the manhole or start of the pipe.

Scale factor allows the user to manually set how many units per count will be used. On a 10 count counter, the unit will count .1 units per count. On a 20 count counter the system will count .05 units per count. The scale factor can also be found by calibrating the encoder. Press F9 to calibrate the encoder.

Calibrate Encoder

Press Enter to zero encoder count

Or press ESC to abort

Figure 13: Calibrate Encoder - Zero Count

To begin press enter to zero the encoder.

Calibrate Encoder

```
Enter calibration distance
  then press Enter
Calibration Distance····<10.000>

Or press ESC to abort
```

Figure 14: Calibrate Encoder -Enter Distance to Calibrate Over

Enter the distance of cable to calibrate the system with. Ten feet (or meters) is enough to provide an accurate count, but longer distances can be used to create an even more accurate count.

Calibrate Encoder

```
Run calibration distance through
encoder then press Enter

Or press ESC to abort
```

Figure 15: Calibrate Encoder - Pull Cable

Pull the cable off of the reel for the set distance entered. Make sure that the cable has been measured accurately or it will through the whole calibration off. Once the cable has been pulled press enter to close the calibration window.

Once all of the Encoder options have been set, Press enter to save and close. To cancel and close, press ESC.

F5 Set Title Screens

Edit Title Screens

```
Number of screens    <2>
Seconds to display  <07>
Edit screen number  <1>
```

```
ENTER - Save changes and exit.
ESC   - Discard changes and exit.
TAB   - Change field.
ARROW UP/DOWN - Change value.
F1    - Edit selected screen.
ESC   when done.
F4    to clear.
```

Figure 16: Edit Title Screen

The title screen editor allows the number of screens to be set, how long the screens will be displayed, and what will be displayed on each screen. Use the up and down arrow keys to change values and the tab key to move between fields. The number of screens may be set to 0, 1, 2, 3, 4, or 5. The number of seconds to display a page may be set from 0 to 30. To edit a screen tab down to edit screen number and press the up or down key to select the page to be edited. Press F1 to open the page edit for the selected page or press F4 to clear the page from memory.

```
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Petaluma, CA 94954
707-778-1974
www.rstechserv.com
Contact: Bob█
```

Figure 17: Edit Selected Page

When in page editing mode, a cursor will blink black and white. The cursor can be moved by pressing the up, down, left or right arrow keys. Type in the desired information to be displayed then press ESC when finished to close the selected page editor.

Once all page editing has been completed press Enter to save and close the settings, or press ESC to cancel and close.

F6 Set Observation Codes

Edit Observation Codes

```
Seconds to display <05>  
Display on line   <15>  
Edit code ALT +   <A>
```

Lateral Left

```
ENTER - Save changes and exit.  
ESC   - Discard changes and exit.  
TAB   - Change field.  
ARROW UP/DOWN - Change value.
```

Figure 18: Set Observations Codes

Set observation codes allows the user to set the number of seconds observations are displayed, which line the observation will show on, which code to edit, and the code itself. Use the up and down arrow keys to change values and the tab key to move between fields. To set a Code move the cursor to Edit Code field and use the up and down arrows to the letter of the field to be changed. In this case the letter A will be changed to Lateral Left. Repeat this procedure for all of the codes to be setup and press enter to save and close the settings, or press esc to cancel and close.

Zeroing and Presetting Distance

When starting a run the distance counter can be either set to zero or to the predefined distance set in the Encoder options. To set the distance counter to zero, press Alt-Z. To set the distance counter to the predefined distance, press Alt-P.

Adding Observations

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Lateral Left

Figure 20: Adding observations

To add observations the observation codes must first be setup. Refer to the F6 Set Observation Codes section of the setup menu for more information on how to setup observation codes. To put observation text on screen press CTRL plus a letter on the keyboard. In the example above Lateral Left was displayed by pressing CTRL-A on the keyboard.