

THE IDS 160 ROLL TAPE PRINTER

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1.0 INSTALLATION

Installation begins with unpacking the IDS 160. Save packing materials if the printer is to be re-shipped. Next, the IDS 160 needs to be made ready to print. Examine the options available in the IDS 160 to determine the best setup for your application.

1.1 UNPACKING THE IDS 160 PRINTER.

Remove the printer from the shipping container and verify all items listed below are included.

Install printer ribbon.

PACKING LIST CHECK OFF

IDS 160 PRINTER	_____
PRINTER MANUAL	_____
POWER LINE CORD	_____
MATING CONNECTOR/CABLE	_____

1.2 COVER INSTALLATION FOR DUSTY ENVIRONMENTS.

The cover over the print mechanism can be set in two positions. It is set at the factory for paper to exit out of the top. For dusty environments the access hole can be covered. Remove the two screws which secure the hinged cover and reposition the cover forward. Use the take up reel to take up the paper roll inside the cover.

1.3 MAKING THE IDS 160 READY TO PRINT.

1. Set the serial communications parameters (baud rate, data bits, etc.) See Section 3 for directions.

2. Connect the IDS 160 to the 'host' device via the 25 pin 'D' connector at the back of the printer.
See Appendix I for communication port wiring information.

3. Connect the IDS 160 to AC power.

CAUTION: To avoid contact with moving parts which could cause injury, do not open printer cover while unit is in operation.

4. Turn power on. The print head should cycle 1 time.

5. Activate the TEST mode and print the configuration parameters (Section 6).

6. Reset the printer to normal by turning power off and then back on. Send data from the 'host' device to the IDS 160.

The **IDS 160** is pre-configured at the factory for use as a BASIC 'Slave' printer. The IDS 160 has a wide range of features that can be activated as needed. If your application requires something beyond the capabilities of a BASIC printer then read Section 2. Choose the functions that you need and then use Section 3 for directions on activating the functions.

2. DESCRIPTION OF THE IDS 160 FUNCTIONS AND CAPABILITIES

This section is divided into 5 parts:

2.1 THE IDS 160 CONNECTORS, SWITCHES AND LEDS.

The physical characteristics of the IDS 160.

2.2 PRINT FEATURES.

Ticket formatting features.

2.3 BATTERY BACKUP FEATURES.

Ticket numbering and the clock functions.

2.4 THE BASIC PRINTER MODE.

General purpose ticket printer mode.

2.5 THE SPECIAL APPLICATION MODES.

Weighing applications.

2.1 THE IDS 160 CONNECTORS, SWITCHES AND LEDS.

The front of the printer has 3 switches (**PRINT**, **AUX** and **PAPER FEED**) and 2 light emitting diodes (**READY** and **PAPER**).

The **PRINT** switch activates a Print Request signal that can be sent to the host device. Also an inquire character (**ASCII 05**) is transmitted when the **PRINT** switch is activated.

The **AUX** switch is used in some of the special application modes.

The **PAPER FEED** switch advances the paper. Holding the switch in advances the paper continuously.

The functions of the **PRINT** and **AUX** switches will change if any of the Special Application modes are selected.

The **READY** light indicates that the printer is ready for receiving print commands. It turns off when the printer is busy. It **FLASHES** on and off when the printer is in the test mode or if an error is detected.

The **PAPER** light indicates that there is no paper in the printer. It turns **OFF** when paper is properly in place.

On the rear of the printer is the Line connector, the **DATA I/O** connector, and the Power Switch.

Behind the access panel are a thumbwheel switch, a push button switch (**ENTER SWITCH**), and an **LED (ENTER LIGHT)**. The switches are used to select print features and the printer's mode of operation.

2.2 PRINT FEATURES.

The Print Features are used to customize the print format of the IDS 160 and to match the requirements of the 'host' device.

1. AUTOMATIC LINE-FEED AFTER CARRIAGE RETURN (Default = ON)

The printer inserts a line feed command whenever it receives a carriage return command. Turn this feature on if your 'host' device does not send a line feed after a carriage return.

2. AUTOMATIC FORM FEED (Default = ON)

Used by the Special Application modes. A bottom margin command is issued after each print if auto form feed is on.

3. AUTOMATIC PRINT WRAP (Default = ON)

If more than 26 characters (13 char Enhanced) are printed a line feed is performed, the overflow data is automatically printed on the next line. If automatic print wrap is turned off, the overflow data is lost.

4. BOTTOM MARGIN. (Default = 0)

The bottom margin is used to advance the paper from 2 to 18 line feeds after printing.

5. PRINT SIZES. (Normal, Enhanced, Mixed). (Default = Norm)

The Normal is 12 char/in (typewriter size). The Enhanced print is 6 char/in (double width). The Mixed size prints text in normal size and numbers in enhanced size.

6. STATION NUMBER (Default = OFF)

The station number is used print a station ID on each ticket. Station numbers range from 1 to 9.

7. HEADER LABEL. (Default = OFF)

The header label is used to print the company name or other information on each ticket. The header label is up to 30 characters long.

2.3 THE BATTERY BACKUP FEATURES.

The battery is used for the following functions:

1. **TIME AND DATE CLOCK.** The battery keeps the clock running when power is turned off.
2. **TICKET NUMBERING.** Automatically prints a ticket number on each transaction. The battery keeps the number in memory when power is turned off.
3. **TOTALS.** The battery permits storage of the subtotal and total in memory when power is turned off.

Configure the **BATTERY BACKUP** option to ON if any of the battery backup functions are used.

2.4 THE BASIC PRINTER MODE (SLAVE PRINTER).

The basic printer mode is for general purpose applications. In this mode the printer prints what is sent. This permits the IDS 160 to be used with a wide range of devices, including most weigh-meters. The Basic Mode can be combined with the Print Features for applications that require more than your average basic printer. The print features are set with the thumbwheel switch (see section 3.2) or they can be set by sending control codes (see appendix III).

The Print switch is used to output a data request signal. This is used to activate data transmission from the 'host'.

2.5 THE SPECIAL APPLICATION MODES.

The special modes are used for weighing applications. They are used in those cases where the weigh-meter is not capable of producing the required print data.

The mode options are selected by setting the thumbwheel switch to the option number. The following is a list of the modes and their option numbers:

- 0 BASIC PRINTER MODE (Slave Printer).
- 1 PRINT WEIGHT ONLY.
- 2 PRINT WEIGHTS WITH GROSS, AND TARE LABELS.
- 3 GROSS, TARE, NET PRINTING.
- 4 PRINT AND TOTAL.
- 5 PRINT, SUBTOTAL, AND TOTAL.
- 6 PRINT AND TOTAL (AXLE WEIGH).
- 7 WEIGH-IN, WEIGH-OUT.
- 8 AUTOMATIC AXLE WEIGHING.

If you use one of the special modes be sure to configure the scale options:

- Section 3.4.1 SELECT SCALE METER TYPE
- Section 3.4.2 CONFIGURE SCALE UNITS.

If pulse input is being used then also configure:

- Section 3.4.3 DECIMAL POSITION.
- Section 3.4.4 COUNT/PULSE FACTOR.

2.5.1 PRINT WEIGHT.

Print the weight on the scale in the form:

WEIGHT 12345 LB

2.5.2 PRINT WEIGHTS WITH GROSS, AND TARE LABELS.

The Print Switch prints the weight on the scale in the form:

GROSS 12345 LB

The Aux Switch prints the weight on the scale in the form:

TARE 2000 LB

2.5.3 GROSS, TARE, NET PRINTING.

This feature provides gross, tare, and net printing in 2 weighments.

The Aux Switch instructs the printer store the weight on the scale into the tare register. The printer cycles to signal that tare weight is read.

The Print Switch causes the printer to print the **GROSS, TARE, and NET** weights.

2.5.4 PRINT AND TOTAL.

This feature provides a total register for summing weighments.

The Print Switch prints the weight on the scale. The printer adds the weight to the total register.

The Aux Switch prints the total.

Press the Aux Switch twice within 10 seconds to clear the total register. The print head will cycle at the end of 10 seconds to signal that the printer is ready for new commands.

2.5.5 PRINT, SUBTOTAL, AND TOTAL.

This feature provides a subtotal and a total register for summing weighments.

The Print Switch prints the weight on the scale. The printer adds the weight to the subtotal and total registers.

The Aux Switch prints the subtotal and clears the subtotal register.

Press the Aux Switch again to print the total.

Press the Aux Switch twice within 10 seconds to clear the total register.

2.5.6 PRINT AND TOTAL (AXLE WEIGH).

This feature is for printing a list of weights with the total at the end.

The Print Switch prints a sequence number and the weight on the scale.

The printer adds the weight to the total register.

The Aux Switch prints the total.

2.5.7 WEIGH-IN, WEIGH-OUT.

This feature allows a truck (container, etc) to weigh-in either empty or full, and then weigh-out after filling or unloading.

Pressing the PRINT switch stores the weigh-in weighment, and pressing AUX switch stores the weight-out weighment and causes the GROSS, TARE and NET weight to be calculated and printed.

2.5.8 AUTOMATIC AXLE WEIGHING.

Automatic axle weighing allows unattended weighing for short scale platforms. The program will activate TTL outputs for a red and green traffic light. The automatic axle program uses a combination of a weight trip level a timing delay to determine axles weights on the scale.

The trip level is the weight that each axle must exceed to be a valid axle. You can configure the trip level to be 500, 1000, 2000 or 5000 (default).

The Time out time the amount of time that needs to elapse before printing the total weight of the axles.

The Settle time is the amount of time that the scale needs for it to settle.

The TTL outputs for red and green traffic lights are as follows:

Pin 25 -> Green light -> (Open collector output)

Pin 18 -> Red light -> (Pulled up output)

Pin 6 -> -> (5 volt pull up)

This feature allows the operator to start weighing the axles by pressing the Print Switch. It provides a list of axle weights with the total at the end.

The Aux Switch allows the operator to force the operation to end and totalize the axles.

3. CONFIGURATION OF THE IDS 160

Remove the access panel located on the back of the printer. The 8 position 'dip' switch is used to configure the serial communications port. The thumbwheel switch and the push-button switches are used to configure everything else.

The ENTER light provides feedback for the entry process. If there is paper in the printer, the results of the data entry will be printed after it is entered.

All data entry functions begin with the ENTER light OFF.

REMEMBER: The printer's personality is determined by the position of the thumbwheel switch (ie. Dumb printer = mode 0 = thumbwheel switch at position 0). Return the thumbwheel switch to the correct mode position after configuration.

Topics Covered In Section 3:

- 3.1 CONFIGURE SERIAL COMMUNICATIONS PORT.
- 3.2 CONFIGURE PRINT FEATURES.
- 3.3 CONFIGURE BATTERY-BACKUP OPTIONS
- 3.4 CONFIGURATION OF WEIGHING APPLICATION OPTIONS.
- 3.5 INITIALIZE PRINTER TO FACTORY SETTINGS.

3.1 CONFIGURATION OF SERIAL COMMUNICATIONS PORT.

The baud rate and data format is set by the 8 position 'DIP' switch, located behind the access panel at the back of the printer.

Select the baud rate and data format from the table below.

Dip Switch 1:	on = RS232 Input	off = not selected
Dip Switch 2:	on = Current Loop Input	off = not selected
Dip Switch 3:	on = Even Parity	off = Odd Parity
Dip Switch 4:	on = Disable Parity	off = Enable Parity
Dip Switch 5:	on = 7 Data Bits	off = 8 Data Bits

Dip Switches 6,7,8: Baud Rate Select

Baud Rate	sw6	sw7	sw8	NOTE: Some dip switches use the following labels:
300	off	off	on	CLOSED = on
600	off	on	off	OPEN = off
1200	off	on	on	
2400	on	off	off	
4800	on	off	on	
9600	on	on	off	

3.2 CONFIGURE PRINT FEATURES.

The following list shows how the print features are set at the factory.

3.2.1	AUTO LINE-FEED AFTER CR	= ON
3.2.2	AUTO FORM FEED	= ON
3.2.3	AUTOMATIC PRINT WRAP	= ON
3.2.4	BOTTOM MARGIN	= 8
3.2.5	PRINT SIZE	= NORMAL
3.2.6	STATION NUMBER	= DISABLED
3.2.7	PRINT ONLY HEADING	= DISABLED

Use the following sections to change the settings.

3.2.1 CONFIGURATION: AUTOMATIC LINE FEED AFTER CARRIAGE RETURN.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 1.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 1.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:
0 for AUTO LF --- OFF
1 for AUTO LF --- ON
7. Press the ENTER switch. The ENTER light turns off.

----- SET AUTO LF AFTER CARRIAGE RETURN -----

	FLASH	ON	OFF	(Enter Light)
Auto lf OFF	1	1	0	(Thumbwheel Switch)
Auto lf ON	1	1	1	(Thumbwheel Switch)

3.2.2 CONFIGURATION: AUTOMATIC FORM FEED.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 1.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 2.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:
0 for AUTO FORM FEED --- OFF
1 for AUTO FORM FEED --- ON
7. Press the ENTER switch. The ENTER light turns off.

----- SET AUTO FORM FEED -----

	FLASH	ON	OFF	(Enter Light)
Auto Form Feed OFF	1	3	0	(Thumbwheel Switch)
Auto Form Feed ON	1	3	1	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration.

3.2.3 CONFIGURATION: PRINT WRAP.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 1.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 3.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:
 0 for PRINT WRAP --- OFF
 1 for PRINT WRAP --- ON
7. Press the ENTER switch. The ENTER light turns off.

----- SET PRINT WRAP -----

		FLASH	ON	OFF	(Enter Light)
Print Wrap	OFF	1	3	0	(Thumbwheel Switch)
Print Wrap	ON	1	3	1	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.2.4 CONFIGURATION: BOTTOM MARGIN.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 2.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 1.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:
 - 0 for BOTTOM MARGIN = 0 line feeds.
 - 1 for BOTTOM MARGIN = 2 line feeds.
 - 2 for BOTTOM MARGIN = 4 line feeds.
 - 3 for BOTTOM MARGIN = 6 line feeds.
 - .
 - .
 - .
 - 9 for BOTTOM MARGIN = 18 line feeds.
7. Press the ENTER switch. The ENTER light turns off.

NOTE: The factory setting of the bottom margin is 8 line feeds. This setting feeds the paper 1 space past the tear bar.

----- SET BOTTOM MARGIN -----

	FLASH	ON	OFF	(Enter Light)
Bottom Margin: OFF	2	1	0	(Thumbwheel Switch)
Bottom Margin: Clear	2	1	4	(Thumbwheel Switch)
Tear Bar (8 line feeds)				

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.2.5 CONFIGURATION: PRINT SIZE.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 2.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 3.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:
 - 0 for Host Control of Print Size.
 - 1 for NORMAL SIZE PRINT.
 - 2 for ENHANCED SIZE PRINT (double width).
 - 3 for MIXED SIZE PRINT (numbers large, letters small).
7. Press the ENTER switch. The ENTER light turns off.

----- PRINT SIZE -----

	FLASH	ON	OFF	(Enter Light)
Host Control of Size	2	3	0	(Thumbwheel Switch)
Normal Size Print	2	3	1	(Thumbwheel Switch)
Enhanced Size Print	2	3	2	(Thumbwheel Switch)
Mixed Size Print	2	3	3	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.2.6 CONFIGURATION: STATION NUMBER.

The station number is enabled when it is set. Setting the station number to 0 disables it.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 2.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 4.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:
 - 0 for STATION NUMBER = DISABLED.
 - 1 for STATION NUMBER = 1.
 - .
 - .
 - .
 - 9 for STATION NUMBER = 9.
7. Press the ENTER switch. The ENTER light turns off.

----- SET STATION NUMBER -----

	FLASH	ON	OFF	(Enter Light)
Disable Station No.	2	4	0	(Thumbwheel Switch)
Set Station No. = 1	2	4	1	(Thumbwheel Switch)
	.	.		
	.	.		
Set Station No. = 9	2	4	9	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.2.7 CONFIGURATION: HEADER LABEL.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 6.
3. Press the ENTER switch. The ENTER light flashes.
4. Enter the decimal-ASCII code for the label, 2 digits/character. The maximum number of characters is 30.

The ENTER light flashes before the 1st digit.

The ENTER light is ON before the 2nd digit.

5. Enter two zeros (0, 0) to end the data entry.
6. The ENTER light turns off.

```
----- ENTER HEADER LABEL -----  
  
                                FLASH  ON  FLASH  (Enter Light)  
  
Begin Header Entry      6                                (Thumbwheel Switch)  
  
CHAR 1                   X    X  
CHAR 2                   X    X  
                           .  
                           .  
CHAR N                   0    0    END OF HEADER ENTRY
```

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.3 CONFIGURATION OF BATTERY-BACKUP OPTIONS

The Battery-Backup options rely on the battery for proper operation. Configure BATTERY ENABLE = ON if any of the following options are used:

TIME and/or DATE
TICKET NUMBER
BATTERY BACKED UP TOTALS (Special Applications)

If BATTERY ENABLE = ON the IDS 160 will test memory for a battery failure on power up.

- 3.3.1 BATTERY ENABLE.
- 3.3.2 SET TIME.
- 3.3.3 SET DATE.
- 3.3.4 SET TIME AND DATE PRINT FORMAT.
- 3.3.5 TICKET NUMBER.

3.3.1 CONFIGURATION: BATTERY ENABLE.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 2.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 5.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:
 - 0 for BATTERY ENABLE --- OFF
 - 1 for BATTERY ENABLE --- ON
7. Press the ENTER switch. The ENTER light turns off.

----- SET BATTERY BACKUP -----

	FLASH	ON	OFF	(Enter Light)
Battery Enable OFF	2	5	0	(Thumbwheel Switch)
Battery Enable ON	2	5	1	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.3.2 CONFIGURATION: SET TIME

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 3.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to the first digit of time.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to the second digit of time.
7. Press the ENTER switch.
8. Turn the thumbwheel switch to the third digit of time.
9. Press the ENTER switch.
10. Turn the thumbwheel switch to the fourth digit of time.
11. Press the ENTER switch.
12. Turn the thumbwheel switch to position:
 - 0 for AM
 - 1 for PM
 - 2 for 24hr time

13. Press the ENTER switch. The ENTER light turns off.

----- SET TIME -----

	FLASH	ON	ON	ON	ON	OFF	(Enter Light)
Set	3	hr	hr	min	min	0 = AM	(Thumbwheel Switch)
TIME						1 = PM	
						2 = 24 hr time	

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.3.3 CONFIGURATION: SET DATE

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 4.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel to the first digit of the month.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel to the second digit of the month.
7. Press the ENTER switch.
8. Turn the thumbwheel to the first digit of the day of month.
9. Press the ENTER switch.
10. Turn the thumbwheel to the second digit of the day of month.
11. Press the ENTER switch.
12. Turn the thumbwheel to the first digit of the year.
13. Press the ENTER switch.
14. Turn the thumbwheel to the second digit of the year.
15. Press the ENTER switch.
16. Press the ENTER switch. The ENTER light turns off.

----- SET DATE -----

Set	FLASH	ON	ON	ON	ON	ON	OFF	(Enter Light)
DATE	4	mo	mo	day	day	year	year	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.3.4 CONFIGURATION: SET TIME AND DATE PRINT FORMAT.

The clock data can be printed in 6 different formats and at 3 different positions. Use the following lists to configure the time/date print to fit your application.

FORMAT LIST

- 0 = Disable Time & Date
- 1 = Print Time & Date With Labels
- 2 = Print Time With Label
- 3 = Print Date With Label
- 4 = Print Time & Date
- 5 = Print Time
- 6 = Print Date

POSITION LIST

- 1 = Print Clock Data as Last Line
- 2 = Print Clock Data at Beginning of the 1st Line
- 3 = Print Clock Data at End of the 1st Line
- 4 = Print Clock Data before 1st line

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 5.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to one of the above format numbers.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to one of the above position numbers.
7. Press the ENTER switch. The ENTER light turns off.

----- SET TIME/DATE FORMAT -----

	FLASH	ON	OFF	(Enter Light)
SET				
TIME FORMAT	5	Format no.	Position no.	(Thumbwheel Switch)
Time	5	5	1	
On Last Line				

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.3.5 CONFIGURATION: SEQUENCE NUMBER.

The sequence number is enabled when it is set. Setting the sequence number to 00000 disables sequence numbering.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 2.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 6.
5. Press the ENTER switch. The ENTER light turns on.
6. Enter a 5 digit number by selecting numbers on the thumbwheel and pressing the ENTER switch.
7. The ENTER light turns off.

```
----- SET SEQUENCE NUMBER -----  
          FLASH      ON      ON ON ON ON OFF  (Enter Light)  
Sequence  2         6       X  X  X  X  X    (Thumbwheel Switch)  
Number                               (XXXXX is a 5 digit ticket number)
```

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.4 CONFIGURATION OF WEIGHING APPLICATION OPTIONS.

If you are using one of the weighing 'SPECIAL APPLICATION' modes then the following must be configured:

Section 3.4.1 SELECT SCALE METER TYPE.
Section 3.4.2 CONFIGURE SCALE UNITS.

If pulse input is being used then also configure:

Section 3.4.3 DECIMAL POSITION.
Section 3.4.4 COUNT/PULSE FACTOR.

If you want to use the AUTO AXLE WEIGH(Mode 8) then you must configure the following to fit your particular application:

Section 3.4.5 TRIP LEVEL
Section 3.4.6 TIMEOUT TIME
Section 3.4.7 SETTLE TIME

REMEMBER:

Return the thumbwheel switch to the correct mode position after configuration.

The 'SPECIAL APPLICATION' modes are selected by IDS 160 by reading the thumbwheel switch on power up.

THUM. POS.	APPLICATION MODE
0	BASIC PRINTER MODE.
1	PRINT WEIGHT ONLY.
2	PRINT WEIGHTS WITH GROSS, AND TARE LABELS.
3	GROSS, TARE, NET PRINTING.
4	PRINT AND TOTAL.
5	PRINT, SUBTOTAL, AND TOTAL.
6	PRINT AND TOTAL (AXLE WEIGH).
7	WEIGH-IN, WEIGH-OUT.
8	AUTO AXLE WEIGH.

If position 0 (BASIC MODE) is used then ignore section 3.4. The section 3.4 configurations have no effect in BASIC MODE.

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.4.1 CONFIGURATION: SCALE METER TYPE.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 7.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 1.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:
 - 1 - AN5316, continuous output mode.
 - 2 - Condec, Accuweigh, Applied Forces, MSI Transweigh, Streeter Q9000.
 - 3 - A&D 4316, 4321, GENERAL 521.
 - 4 - CARDINAL 738.
 - 5 - Toledo 8132, 8142 high speed mode.
 - 6 - Weigh-Tronix WI110, WI120.
 - 7 - DR 10K.
 - 8 - SSD800.
 - 9 - Pulse Input.
7. Press the ENTER switch. The ENTER light turns off.

----- SET SCALE METER TYPE -----

	FLASH	ON	OFF	(Enter Light)
Set AN5316	7	1	1	(Thumbwheel Switch)
Set Condec	7	1	2	(Thumbwheel Switch)
Set A&D / Gen.	7	1	3	(Thumbwheel Switch)
Set Cardinal 738	7	1	4	(Thumbwheel Switch)
Set Toledo 32/42	7	1	5	(Thumbwheel Switch)
Set WI 110	7	1	6	(Thumbwheel Switch)
Set DR 10K	7	1	7	(Thumbwheel Switch)
Set SSD800	7	1	8	(Thumbwheel Switch)
Set Pulse Input	7	1	9	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.4.2 CONFIGURATION: SCALE UNITS.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 7.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 2.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:
 - 0 for undefined
 - 1 for LB
 - 2 for kg
 - 3 for TON
 - 4 for TNE
 - 5 for GRAM
 - 6 for OZ
 - 7 for t
7. Press the ENTER switch. The ENTER light turns off.

----- SET SCALE UNITS -----

	FLASH	ON	OFF	(Enter Light)
Set LB	7	2	1	(Thumbwheel Switch)
Set kg	7	2	2	(Thumbwheel Switch)
Set TON	7	2	3	(Thumbwheel Switch)
Set TNE	7	2	4	(Thumbwheel Switch)
Set GRAM	7	2	5	(Thumbwheel Switch)
Set OZ	7	2	6	(Thumbwheel Switch)
Set t	7	2	7	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.4.3 CONFIGURATION: MULTIPLIER.

NOTE: Used with pulse input only. Each pulse in is multiplied by the multiplier factor.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 7.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 3.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:

1 for .1
2 for .01
3 for .001
4 for 1
5 for 10
6 for 100

7. Press the ENTER switch. The ENTER light turns off.

----- DECIMAL POINT -----

	FLASH	ON	OFF	(Enter Light)
Set .1	7	3	1	(Thumbwheel Switch)
Set .01	7	3	2	(Thumbwheel Switch)
Set .001	7	3	3	(Thumbwheel Switch)
Set 1	7	3	4	(Thumbwheel Switch)
Set 10	7	3	5	(Thumbwheel Switch)
Set 100	7	3	6	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.4.4 CONFIGURATION: COUNT/PULSE.

NOTE: Used with pulse input only. Each pulse in is multiplied by the count/pulse factor.

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 7.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 4.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:
 - 1 for 1
 - 2 for 2
 - 5 for 5
7. Press the ENTER switch. The ENTER light turns off.

----- COUNT/PULSE -----

	FLASH	ON	OFF	(Enter Light)
Set 1x	7	4	1	(Thumbwheel Switch)
Set 2x	7	4	2	(Thumbwheel Switch)
Set 5x	7	4	5	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.4.5 CONFIGURATION: TRIP LEVEL.

The default setting for the trip level is 5000. To set the trip level to another weight do the following:

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 7.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 5.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel switch to position:
 - 0 for 500
 - 1 for 1000
 - 2 for 2000
 - 3 for 5000 (default)
7. Press the ENTER switch. The ENTER light turns off.

----- TRIP LEVEL -----

TRIP LEVEL	FLASH	ON	OFF	(Enter Light)
Set 500	7	5	0	(Thumbwheel Switch)
Set 1000	7	5	1	(Thumbwheel Switch)
Set 2000	7	5	2	(Thumbwheel Switch)
Set 5000	7	5	3	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.4.6 CONFIGURE : TIMEOUT TIME

The default setting for the timeout time is 15 seconds.
To set the timeout time to another time do the following:

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 7.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 6.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel to the first digit.
7. Press the ENTER switch. The ENTER light is still on.
8. Turn the thumbwheel to the second digit.
9. Press the ENTER switch. The ENTER light turns off.

```
----- SET TIMEOUT TIME -----  
FLASH   ON    ON    OFF  (Enter Light)  
   7     6    X    X   (Thumbwheel Switch)  
                        (XX is a 2 digit timeout time)
```

Note: You must enter two digits even if you only want a one digit number. Ex. you want 5 seconds, you must enter 05.

3.4.7 CONFIGURE : SETTLE TIME

The default setting for the settle time is 05 seconds.
To set the settle time to another time do the following:

1. Begin with the ENTER light OFF.
2. Turn the thumbwheel switch to position 7.
3. Press the ENTER switch. The ENTER light begins flashing.
4. Turn the thumbwheel switch to position 7.
5. Press the ENTER switch. The ENTER light turns on.
6. Turn the thumbwheel to the first digit.
7. Press the ENTER switch. The ENTER light is still on.
8. Turn the thumbwheel to the second digit.
9. Press the ENTER switch. The ENTER light turns off.

```
----- SET SETTLE TIME -----  
FLASH   ON    ON    OFF  (Enter Light)  
   7     7    X    X   (Thumbwheel Switch)  
                        (XX is a 2 digit settle time)
```

Note: You must enter two digits even if you only want a one digit number. Ex. you want 5 seconds, you must enter 05.

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

3.5 INITIALIZE SYSTEM TO FACTORY SETTINGS

The printer can be reset to its original settings by the INITIALIZE function.

1. Begin with ENTER light OFF
2. Turn the thumbwheel switch to position 8.
3. Press the ENTER switch. The ENTER light flashes.
4. Press the ENTER switch. The ENTER light turns on.
5. Press the ENTER switch one more time
6. The ENTER light turns off.

----- INITIALIZE SYSTEM -----

FLASH	ON	ON	OFF	(ENTER LIGHT)
8	8	8	8	(Thumbwheel Switch)

REMEMBER: Return the thumbwheel switch to the correct mode position after configuration

4. MAINTENANCE

The maintenance requirements are minimal on the IDS 160.

4.1 REMOVAL OF DIRT AND STAINS.

When removing dirt and stains use only alcohol or benzene. Never use thinner, trichloroethylene, or ketone-based solvents. Use a vacuum cleaner to remove paper particles, dust, and nap from the internal mechanism. After cleaning, check the lubricating points and lubricate if needed.

4.2 LUBRICATION.

Clean all points needing lubrication before applying lubricant. Use Dupont Tri-Plon or equivalent on all sliding parts. Use GC Electronics Lubriplate or equivalent on all rotating parts.

4.3 PRINT RIBBON REPLACEMENT.

1. Remove the four screws that secure the dark brown enclosure to the base of the unit. Set the ribbon along the ribbon setting course shown in FIG. 1.
2. Verify the ribbon spools are seated all the way down on the spool shafts.
3. Give two or three turns to the spool gears to verify proper setting of ribbon.

5. TESTING AND TROUBLESHOOTING.

IDS 160 TEST PROGRAMS.

1. POWER ON SELF TEST.

The IDS 160 performs a self test on power up. If a fault is detected the READY led will flash and an audible alarm will sound. Press the Print switch to print the results of the test. Press the Aux switch to ignore the test results.

2. PRINTER CONFIGURATION AND TEST REPORTS.

Begin with power OFF. Hold the PRINT switch on and turn power on. The READY light will flash. Release the PRINT switch. NOTE: The print head does NOT cycle on power-up. Press the PRINT switch to print configuration data.

Press the Aux switch to print test results.

Turn the printer OFF and then ON to begin normal printing.

3. HEX-ASCII PRINTING.

Begin with power OFF. Hold the AUX switch on and turn power on. The READY light will flash. Release the AUX switch. Information received by the IDS 160 will be printed in the hexadecimal form of the characters received. Press the PRINT switch to activate the print request signal.

Press the AUX switch to print the contents of the data receive buffer.

See appendix IV for ASCII to HEX translation.

TROUBLESHOOTING.

1. THE PRINTER IS NOT PRINTING DATA FROM HOST.

1. Check the PAPER light. It is OFF when paper is properly inserted in the printer.

Activate the test function described in step 2. Send data to the IDS 160 from the host device. Print the test report (press the AUX switch). Print the Configuration data (press the PRINT switch).

2. Check the Received Characters count. If the count is 0 then check the following: The RS232/Current Loop switches in the IDS 160. The cable connections between the IDS 160 and HOST.

3. Check the FRAMING ERRORS and PARITY ERRORS count. If they are NOT 0 then the baud rate or data format is incorrect. Verify that the Serial Port Configuration printed in the Configuration report is the same as the HOST's configuration.

4. Verify that the mode is correct. The mode that is printed should be "Mode 0 - Slave Printer" unless you are using a SPECIAL APPLICATION mode. If you are using a special mode then the meter type will be printed after the mode. Verify that the correct meter type is selected.

2. MISSING DOT TROUBLESHOOTING.

Missing dots are caused by 1 or more of the following:

1. Broken needle.
2. Blown transistor.
3. Blown drive diode.
4. Blown fuse.

The table below lists the dot driver components in order of dot position. If a dot is missing, check ALL of the dot driver components for the missing dot.

DOT POSITION top of page)	FUSE	TRANS- ISTER	DRIVE DIODE	SNUBBER DIODE
. 7	F7	Q7	CR17	CR28
. 6	F6	Q6	CR16	CR27
. 5	F5	Q5	CR15	CR26
. 4	F4	Q4	CR14	CR25
. 3	F3	Q3	CR13	CR24
. 2	F2	Q2	CR12	CR23
. 1	F1	Q1	CR11	CR22

APPENDIX I. SERIAL COMMUNICATIONS PORT. (25 PIN 'D' CONNECTOR)

LIST BY PIN NUMBER

LIST BY SIGNAL NAME

PIN	SIGNAL	SIGNAL	PIN #
1	CHASSIS GND	RS232 RXD	3
2	RS232 TXD	RS232 TXD	2
3	RS232 RXD	RS232 CTS	5
4	RS232 RTS (Print Request)	RS232 RTS	4
5	RS232 CTS (Busy)	CUR LOOP IN +	8
6	+5 R	CUR LOOP IN -	22
7	GND	CUR LOOP OUT	24
8	CUR LOOP IN +	TTL RTS OUT	25
9	#2 RS232 RXD		
10	#2 RS232 TXD		
11	RS485 +	#2 RS232 RXD	9
12	RS485 -	#2 RS232 TXD	10
13	GND	RS485 +	11
14		RS485 -	12
15	PULSE INPUT +		
16	TTL INPUT (Remote Print Switch)	RTS (+5R)	6
17	TTL INPUT (Remote Aux Switch)	DTR (+8R)	20
18	TTL OUTPUT (Print Request +)		
19			
20	DTR (+8V)		
21	TTL OUTPUT	+5V	23
22	CUR LOOP IN - / PULSE IN -	GND	7,13
23	+5 V	TTL INPUTS	16,17
24		TTL OUTPUTS	18,21,25
25	TTL OUTPUT (open collector)	PULSE INPUT+	15
	(Print Request -)	PULSE INPUT-	22

NOTE: When using RS232 set dip switch 1 on, 2 off.
When using current loop set switch 2 off, 1 on.

Use pin 4 (RTS) for RS232 print request signal.
Use pin 18 for ttl positive true print request.
Use pin 25 for ttl negative true print request.

----- RS232 INPUT CONNECTIONS -----

signal name	direction	pin number
RXD	INPUT to IDS 160	3
RTS	OUTPUT from IDS 160	4
GND		7

----- CURRENT LOOP INTERFACE -----

INPUT	Clt +	8
	Clt -	22

Note: Pulse input uses pins 15(+) and 22(return). The pulse signal voltage should be 24V. Consult the factory for other voltage ranges.

APPENDIX II. CONFIGURATION OPTIONS REFERENCE LIST

	FLASH	ON	OFF	(Enter Light)
Auto lf OFF	1	1	0	(Thumbwheel Switch)
Auto lf ON	1	1	1	
Auto FF OFF	1	2	0	
Auto FF ON	1	2	1	
Print Wrap OFF	1	3	0	
Print Wrap ON	1	3	1	
Set Bottom Margin	2	1	x	(x = 0-9, result = X2)
Set Left Margin	2	2	x	(x = 0-9)
Print Normal Size	2	3	1	
Print Enhanced	2	3	2	
Print Mixed Sizes	2	3	3	
Set Station Number	2	4	x	(x = 0-9, 0 = disable)
Battery Backup OFF	2	5	0	
Battery Backup ON	2	5	1	
Set Sequence Number	2	6	xxxxx	(5 digit ticket #)
Set TIME	3	HHMMX		0-AM H=hr, M=min, X=1-PM 2-24hr
Set DATE	4	MMDDYY		M=mo, D=day, Y=year
Time & Date Format	5	F	P	F=format, P=position
Meter Type	7	1	x	x=Meter Type
Weight Units	7	2	x	x=Weight Units

APPENDIX III. ASCII CONTROL CODES

Description	code (HEX)	code (DEC)
PRINT BUFFER AND LINE FEED	0A	10
PRINT BUFFER AND FORM FEED	0C	12
PRINT BUFFER AND FORM FEED	03	03
PRINT BUFFER. IF AUTO LF AFTER CR THEN LINE FEED ALSO.	0D	13
START ENHANCE PRINT.	0E	14
START SMALL PRINT.	0F	15
PRINT TIME	1A	27
PRINT DATE	1B	28
PRINT TIME AND DATE	1E	30

The XON/XOFF protocol is supported when in mode 0 (Slave printer).
The size of the input buffer is 2048 bytes.

APPENDIX IV. ASCII CHART

ASCII DEC HEX ASCII DEC HEX ASCII DEC HEX ASCII DEC
HEX

NUL	00	00h	<SPACE>	32	20h	@	64	40h	`	96	60h
SOH	01	01h	!	33	21h	A	65	41h	a	97	61h
STX	02	02h	"	34	22h	B	66	42h	b	98	62h
ETX	03	03h	#	35	23h	C	67	43h	c	99	63h
EOT	04	04h	\$	36	24h	D	68	44h	d	100	64h
ENQ	05	05h	%	37	25h	E	69	45h	e	101	65h
ACK	06	06h	&	38	26h	F	70	46h	f	102	66h
BEL	07	07h	'	39	27h	G	71	47h	g	103	67h
BS	08	08h	(	40	28h	H	72	48h	h	104	68h
HT	09	09h	)	41	29h	I	73	49h	i	105	69h
LF	10	0Ah	*	42	2Ah	J	74	4Ah	j	106	6Ah
VT	11	0Bh	+	43	2Bh	K	75	4Bh	k	107	6Bh
FF	12	0Ch	,	44	2Ch	L	76	4Ch	l	108	6Ch
CR	13	0Dh	-	45	2Dh	M	77	4Dh	m	109	6Dh
SO	14	0Eh	.	46	2Eh	N	78	4Eh	n	100	6Eh
SI	15	0Fh	/	47	2Fh	O	79	4Fh	o	101	6Fh
DLE	16	10h	0	48	30h	P	80	50h	p	102	70h
X-ON	17	11h	1	49	31h	Q	81	51h	q	103	71h
TAPE	18	12h	2	50	32h	R	82	52h	r	104	72h
X-OFF	19	13h	3	51	33h	S	83	53h	s	105	73h
DC4	20	14h	4	52	34h	T	84	54h	t	106	74h
NAK	21	15h	5	53	35h	U	85	55h	u	107	75h
SYN	22	16h	6	54	36h	V	86	56h	v	108	76h
ETB	23	17h	7	55	37h	W	87	57h	w	109	77h
CAN	24	18h	8	56	38h	X	88	58h	x	100	78h
EM	25	19h	9	57	39h	Y	89	59h	y	101	79h
SUB	26	1Ah	:	58	3Ah	Z	90	5Ah	z	102	7Ah
ESC	27	1Bh	;	59	3Bh	[	91	5Bh	{	103	7Bh
FS	28	1Ch	<	60	3Ch	\	92	5Ch	|	104	7Ch
GS	29	1Dh	=	61	3Dh	]	93	5Dh	}	105	7Dh
RS	30	1Eh	>	62	3Eh	^	94	5Eh	~	106	7Eh
US	31	1Fh	?	63	3Fh	`	95	5Fh	DEL	107	7Fh