4.9 101 MONITOR PREPARATION

Each operator should review this section of the manual at the start of each season and periodically during the season as required to remain familiar with monitor operation. Review the applicable

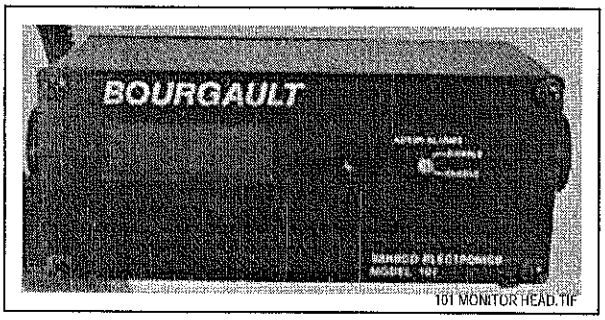


Figure 4.24 Model 101 Monitor

section when using the monitor and Air Seeder.

The operator has the ability to set certain user limits of the monitor's operation. The limits that can be set are:

- Pulses per revolution, low alarm point, high alarm point for either fan.

The acreage meter will also monitor the:

- Pulses per revolution for each auger shaft;
- Level of product in each tank;
- Case drain pressure alarms.

These user limits (parameters) are stored in nonvolatile memory. This means that the information will be retained when the monitor is shut off.

Refer to *Figures 4.4 & 4.5.* When the monitor is turned ON, it will display the "FAn" setting.

4.9.1 FAN R.P.M.

Fan rpm is continuously displayed. Fan rpm is displayed from 1,000 to 6,500 rpm in 10 rpm increments. When fan rpm drops below 1,900 rpm, the monitor will beep twice and display "FAn" on the display;

The display will return to the fan speed, but will flash the "FAn" warning every 15 seconds. The alarm will cancel after fan rpm is 2,150 or more.

4.9.2 BIN LEVEL SENSOR

When the product drops below the bin level sensor the monitor will sound a series of beeps and display "Fbin" to warn that the front tank is low;

or "rbin" to warn that the rear bin is low.

The display will return to the fan speed, and flash the bin level warning every 15 seconds until product is added to the bin.

4.9 101 MONITOR PREPARATION (CONT'D)

4.9.2 SHAFT SENSOR ALARM

The shaft alarm is enabled or disabled with a screwdriver switch on the front panel of the monitor.

When the auger shaft has stopped for 12 seconds, the monitor will beep twice and display "FAuG" signifying the front metering auger has stopped;

or "rAuG" if the rear metering auger has stopped.

The display will return to the fan speed, flashing the metering auger warning every 15 seconds until the auger shafts start turning or the alarm is turned off.

4.9.4 CASE DRAIN PRESSURE ALARM

The case drain hydraulic line is equipped with a pressure sensitive switch. The switch is designed to trigger the Fan Speed Alarm when pressure in the case drain line reaches or exceeds 50 psi. Case drain pressure can be as high as 50 psi on cold days, but may reach as high as 200 psi when the case drain line is not properly connected.

In the event of a build up of pressure in the case drain line that would set off the alarm, the monitor will beep twice and display "FAn" on the display;

The motor must be disengaged immediately. The pressure in the lines will drop, but may take several minutes. **The motor must not be started until the case drain line pressure is relieved.**

4.8 INSTALLING SWITCHES AND MONITOR (CONT'D)

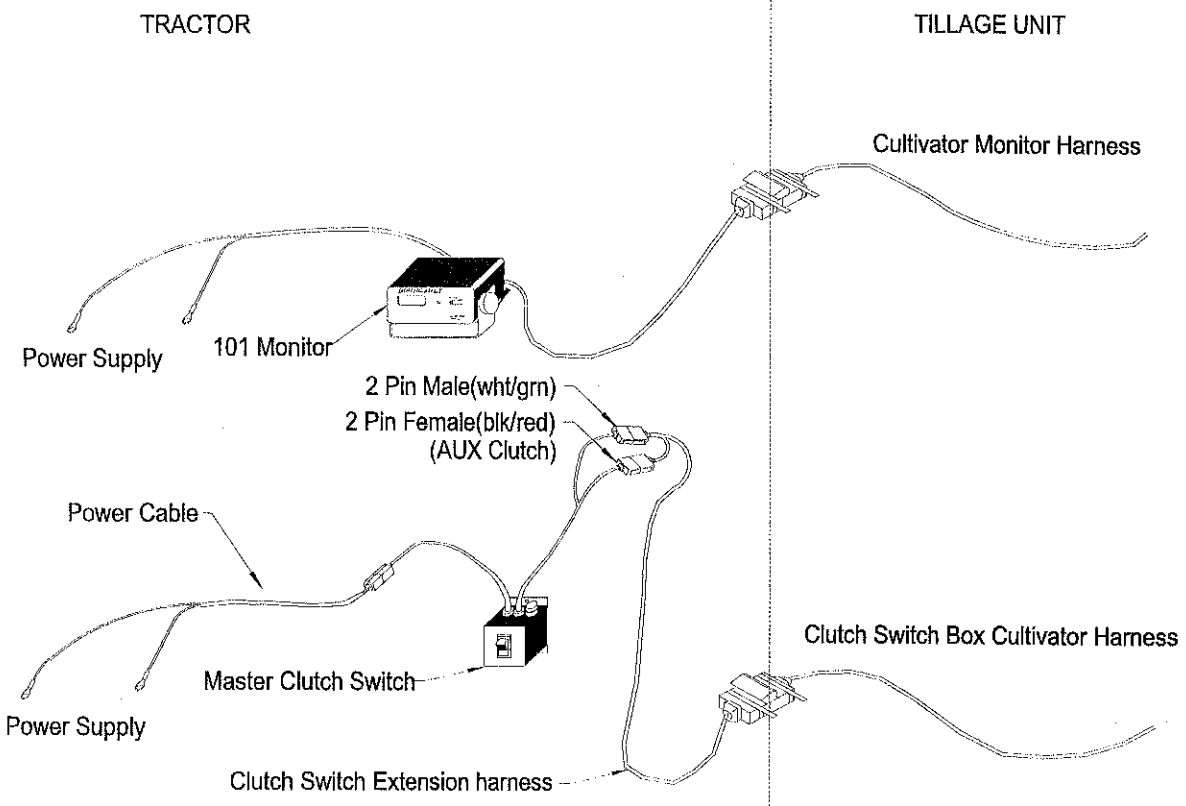


Figure 4.17 101 Monitor Wiring Diagram

2135101MON.CAD

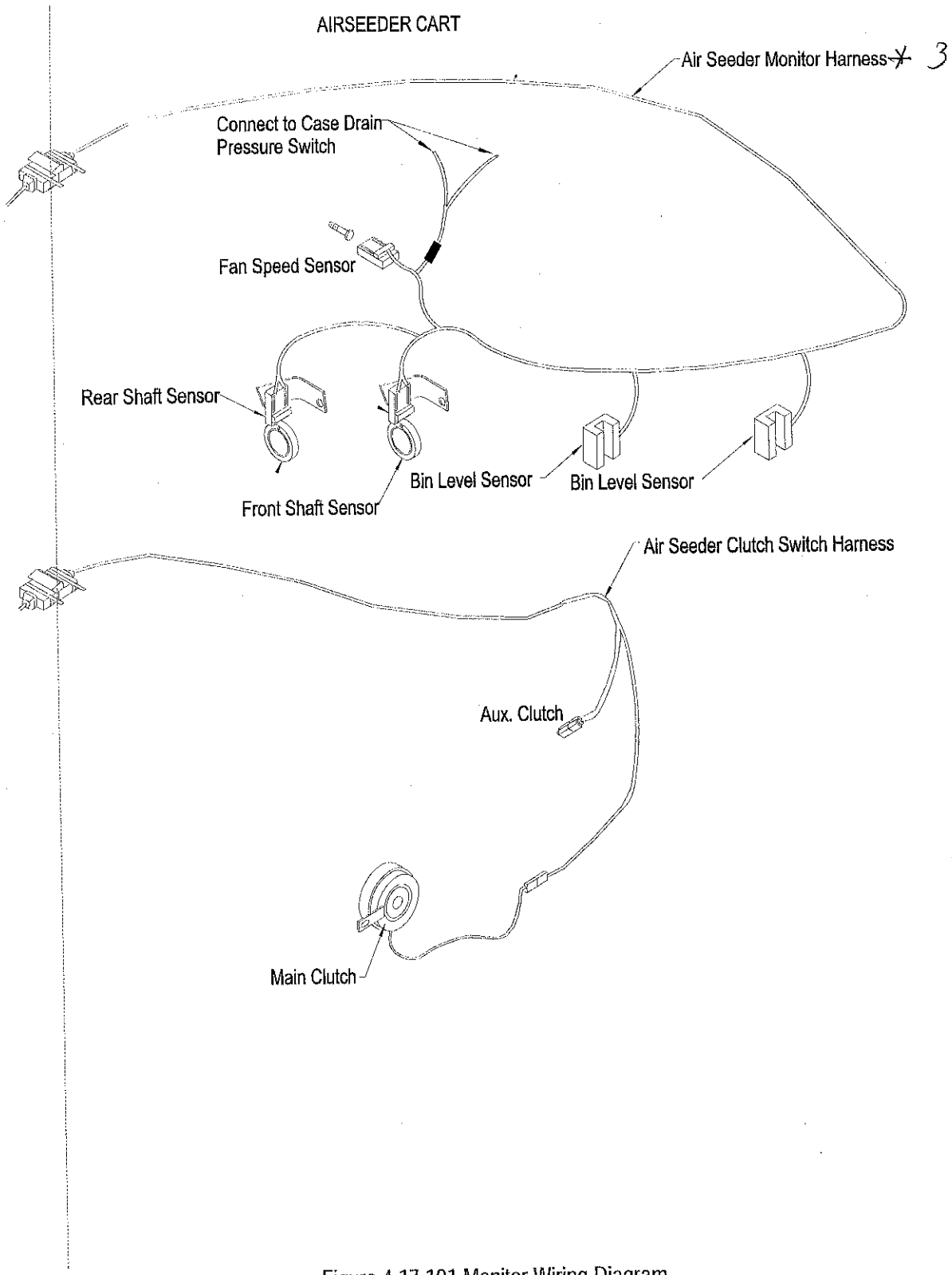


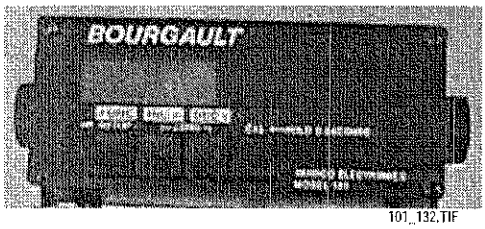
Figure 4.17 101 Monitor Wiring Diagram

2135101MONP2.CAD

4.10 132/198 ACREAGE METER PREPARATION

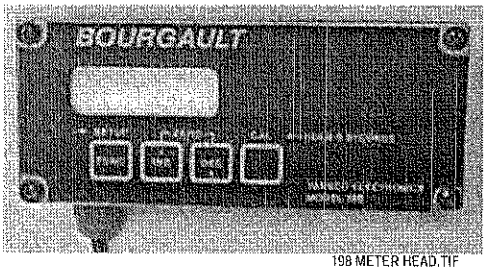
Each operator should review this section of the manual at the start of each season and periodically during the season as required to remain familiar with monitor operation. Review the applicable section when using the monitor and Air Seeder.

MODEL 132 ACREAGE METER



101_132.TIF

MODEL 198 ACREAGE METER



198 METER HEAD.TIF

Figure 4.25 132/198 Acreage Meters

4.10.1 132/198 ACREAGE METER START-UP

The operator has the ability to set certain user limits of the monitor's operation. The limits that can be set are:

- Pulses per mile of ground speed sensor;
- The width of the cultivator.

The 132 Acreage Meter will also monitor:

- Ground speed.

These user limits (parameters), as well as the accumulated and field area, are stored in nonvolatile memory. This means that the information will be retained when the monitor is shut off.

4.10.1.1 SETTING MONITOR PARAMETERS

1. Disengage the electric clutch before pressing the "FUNC" button to switch on the Electronic Acreage Meter. The meter requires implement width in feet and sensor pulses per mile to be input.
2. **Cultivator Width** - To enter implement width, press the SETUP button for 5 seconds until "L"

appears on the left hand side of the display;

Then using INC and DEC buttons enter implement width in feet.

3. **Pulses per Mile** - To enter sensor pulses per mile press the SETUP button until "P" appears on the left hand side of the display;

Use the INC and DEC buttons enter pulses per mile.

TIRE STYLE	PULSES PER MILE
12.5 x 16 Rib Implement (Goodyear)	2081
12.4 x 16 AWT (Goodyear)	1928
16.5L x 16.1 Softrac (Goodyear)	1760
16.5L x 16.1 Traction Lug (Goodyear)	1700

4. Press the SETUP button to lock the implement width and pulses per mile into memory.

4.10 132/198 ACREAGE METER PREPARATION (CONT'D)

4.10.1.2 OPERATION

1. Turn on the Model 132 Monitor by the ON/OFF switch at the back of the monitor. Turn on the Model 198 Monitor by pressing the FUNC button.

IMPORTANT

THE ACREAGE METER'S DISPLAY MAY NOT ACTIVATE IF THE ELECTRIC CLUTCH IS ENGAGED.

2. **Field and Total Acres (Model 198 & Model 132)** - Short presses of the FUNC button will display field acres "F";

and total acres "t";

3. Both field acres "F" and total acres "t" can be zeroed.
   a. To zero either field acres or total acres, tap the FUNC button until desired item is displayed. Press both INC and DEC buttons at the same time and hold for 5 seconds until display shows zero.
4. **Ground Speed (Model 132 Only)** - Scroll through the meter functions by pressing the FUNC button until "S" is displayed.

The display will show the present ground speed when in this setting.

4.8 INSTALLING SWITCHES AND MONITOR (CONT'D)

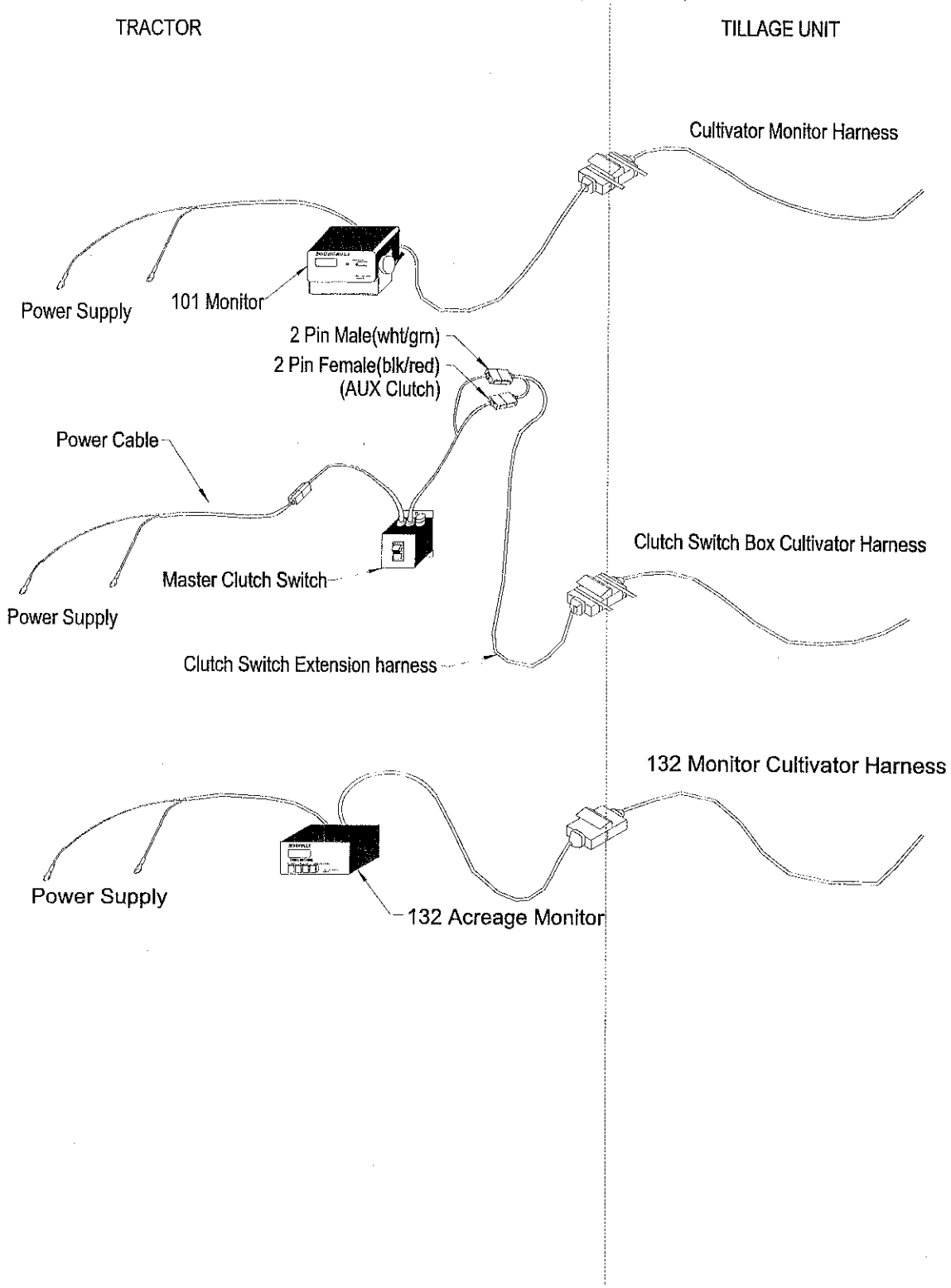


Figure 4.18 101 Monitor with 132 Acremeter Wiring Diagram

2135101MONWTH132.CAD

4.8 INSTALLING SWITCHES AND MONITOR (CONT'D)

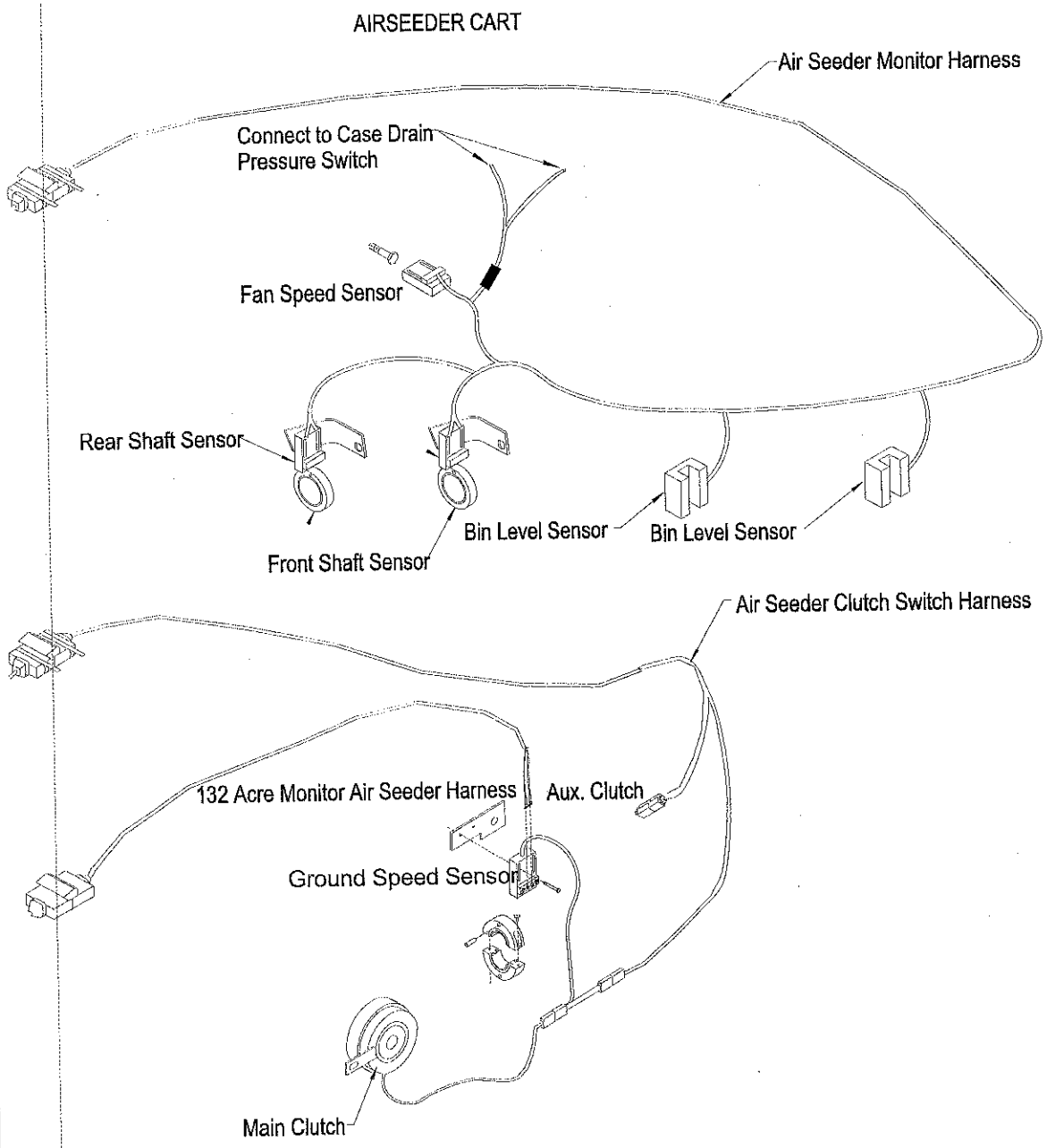


Figure 4.18 101 Monitor with 132 Acremeter Wiring Diagram

2135101MONWTH132.CAD

4.8 INSTALLING SWITCHES AND MONITOR (CONT'D)

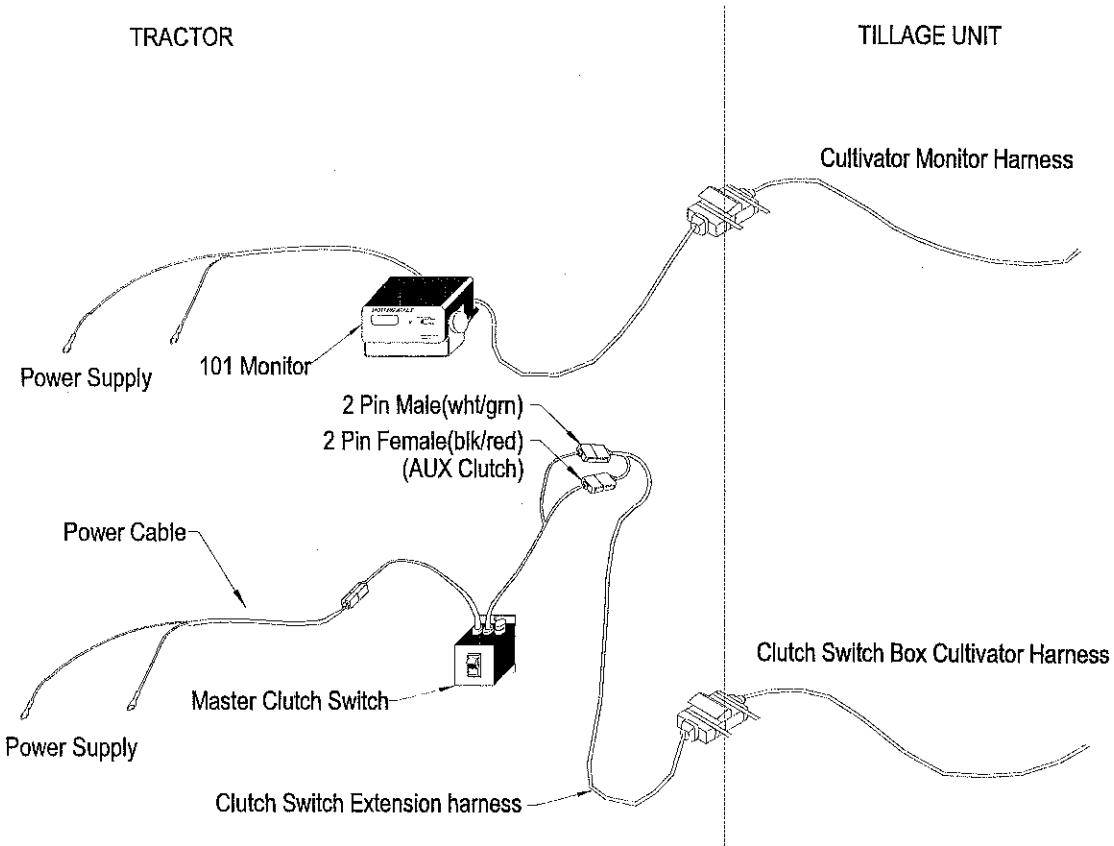


Figure 4.19 101 Monitor with 198 Acremeter Wiring Diagram

2135101MONWTH198.CAD

4.8 INSTALLING SWITCHES AND MONITOR (CONT'D)

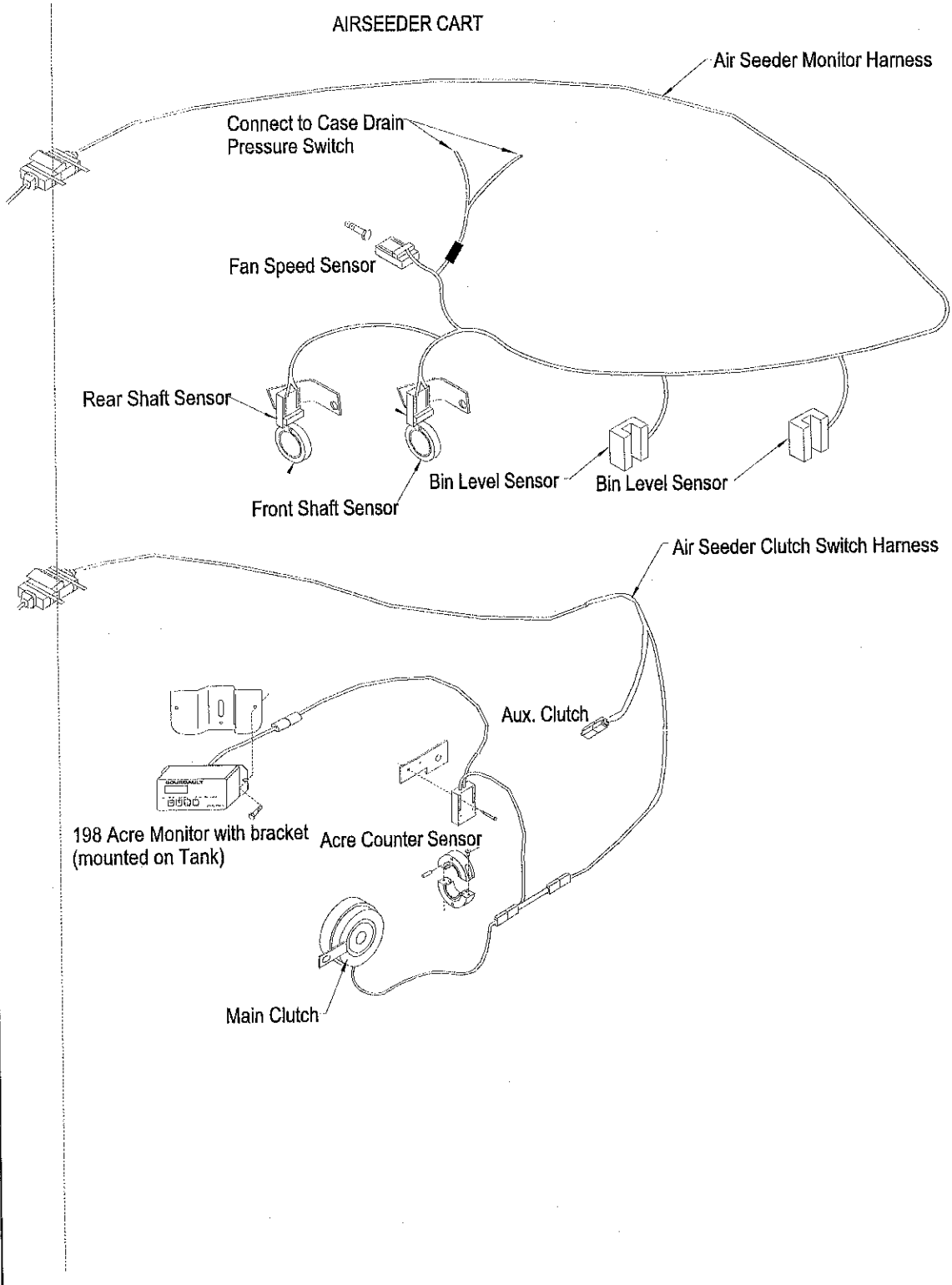


Figure 4.19 101 Monitor with 198 Acremeter Wiring Diagram

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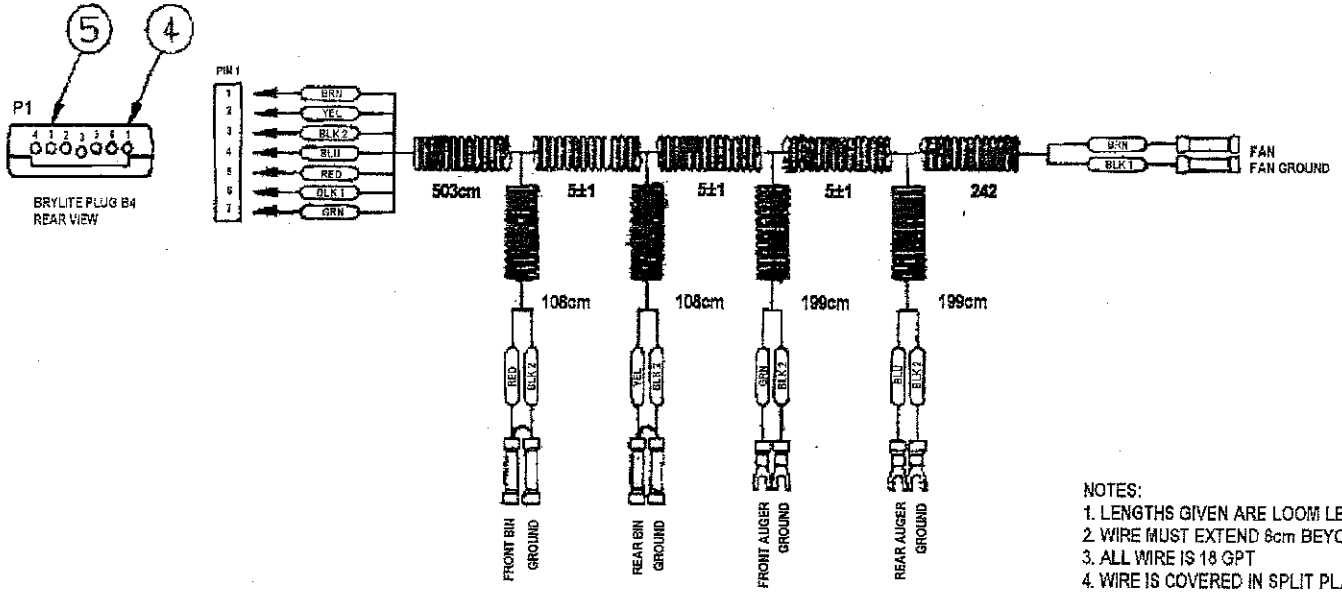
ISS	ECN	BY	CHK	DATE
A				
B	3031	ELT	ELT	91/01/24



NOTES:
1. LENGTHS GIVEN ARE LOOM LENGTHS.
2. WIRE MUST EXTEND 8cm BEYOND LOOM, EXCEPT AS NOTED.
3. ALL WIRE IS 18 GPT
4. WIRE IS COVERED IN SPLIT PLASTIC LOOM.
COMPLETELY ENCAPSULATE INSIDE OF SHELL OF P1 WITH DRAFT STOP.

BOURGAULT PART # AS07891

05	409	KP	DWG	91/11/21
04	287	DWG	KP	89/10/30
03	0226	MK	KP	88/12/01
02	0214	KP	KP	88/10/28
01	0198	MK	KP	88/02/04
00	---	---	KP	87/10/23
REV	ECN	BY	CHK	DATE

UNITS: METRIC
SCALE: 1X
TOLERANCE UNLESS NOTED: ±0.1 cm

VANSCO ELECTRONICS LTD.

MODEL 101
AIR SEEDER HARNESS

ENG	KEP	DATE	87/07/30
DWN	MK	DATE	87/10/13

ANVIL1000W2.0 FILE: 101701.DRW

101701

REV: 05 ISS: B SHEET 1 OF 1

4.6 CONTROLS

It is recommended that all operators review this section of the manual to familiarize themselves with the location and function of all machine controls before starting.

4.6.1 METERING SYSTEM CLUTCH (PROGRESSIVE)

The dual rocker switch control box (Model 167000) will operate one or two clutches. Refer to Figure 4.17, 4.19 or 4.21 for the wiring schematics.

The clutch switch has two lights, one orange and one green. When the switch is in the centre position (Main Clutch only), only the green light on the switch is lit. When the switch is in the top position (Main and Aux Clutch), the green and orange lights should be on. When the switch is in the bottom position, both lights are out and neither clutch is engaged. This option is particularly useful for spot application of granular chemicals with the Dual Shoot Granular Herbicide Attachment, and for spot application of fertilizer.

In the single clutch configuration, the switch will engage the main clutch when in either of the "ON" positions. The clutch will be disengaged when the switch is in the "OFF" position.

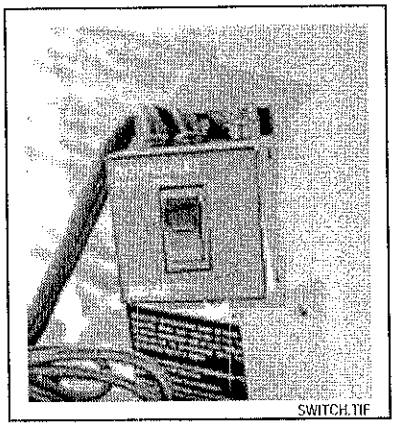


Figure 4.3 Main Drive Clutch Switch

4.6.2 MODEL 101 MONITOR WITH 198 TANK MOUNT ACREAGE METER

The Model 101 monitor is designed to monitor the following:

- Fan speed (rpm)
- Two shaft speeds - Metering Augers (rpm)
- Low products levels in two Air Seeder tanks
- Excessive pressure in Case Drain Line

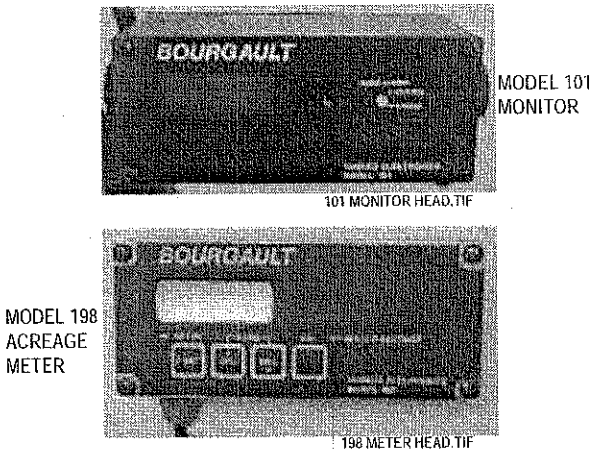


Figure 4.4 101 Monitor & 198 Acreage Meter

4.6 CONTROLS (CONT'D)

There is a knob on the front panel of the monitor that turns to "able" or "disable" the auger alarms.

The 198 Acreage Meter is mounted on the right side of the Air Seeder tank and is designed for calibrating application rates. Field acres and total acres are also calculated by the monitor. The acreage meter will automatically turn off after 60 seconds of non-use.

To turn the display on, disengage the electric clutch and press the "FUNC" button. To scroll through the functions to be set, depress the "FUNC" button. To "zero" out any information depress both the "INC" and "DEC" buttons at the same time.

4.6.3 MODEL 101 MONITOR WITH 132 CAB MOUNT ACREAGE METER

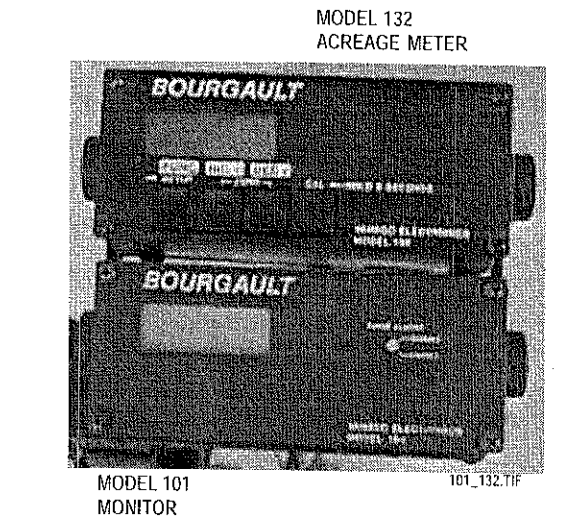
The Model 101 monitor is designed to monitor the following:

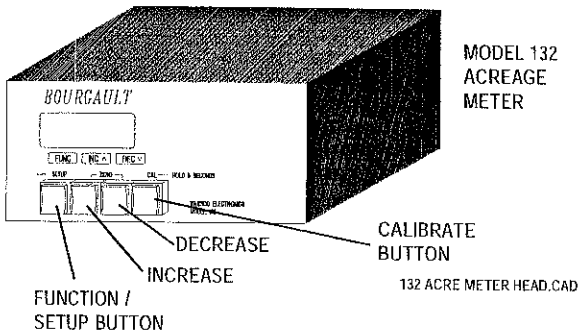
- Fan speed (rpm)
- Two shaft speeds - Metering Augers (rpm)
- Low products levels in two Air Seeder tanks
- Excessive pressure in Case Drain Line

There is a knob on the front panel of the monitor that turns to "able" or "disable" the auger alarms.

The Model 132 Acreage Meter is mounted in the tractor cab and is designed for calibrating application rates and for displaying ground speed. Field acres and total acres are also calculated by the monitor. The ON/OFF switch is located on the rear panel of the monitor.

To turn the display on, disengage the electric clutch and press the "FUNC" button. To scroll through the functions to be set, depress the "FUNC" button. To "zero" out any information depress both the "INC" and "DEC" buttons at the same time.





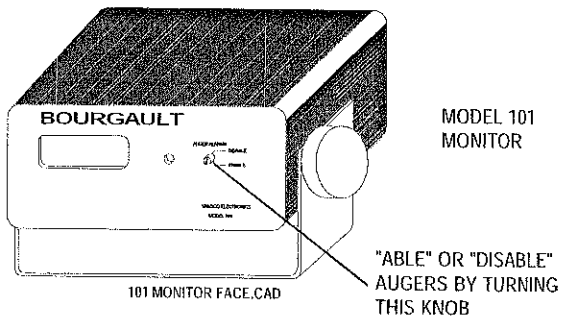


Figure 4.5 Model 101 Monitor & 132 Acreage Meter

6 CALIBRATION

The factory has spent a great deal of time and effort developing charts, graphs and tables that are used as a ***GUIDE*** in setting the machine. This information should be used as a ***GUIDE ONLY*** in setting the machine. A variety of factors such as temperature, humidity, moisture content, kernel size, kernel shape, seed inoculant to name a few can affect chart accuracy.

It is recommended that a calibration be done to verify that the machine is performing as desired. Inaccurate application rates can and will affect planting performance, germination and yields. Always calibrate to know exactly how your machine is performing.

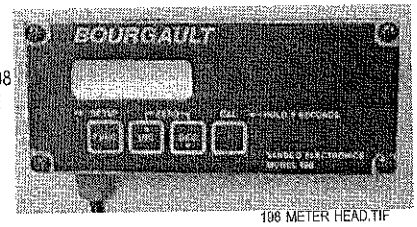
6.1 FIELD CALIBRATION - 132/198 ACREAGE METER

The meter rate mode (CALIBRATION RATE) is used to accurately calculate the application rate, which is obtained by dividing the weight of a sample of material by the area over which is was collected.

IMPORTANT

THE 132/198 ACREAGE METERS WILL ONLY DISPLAY *IMPERIAL UNITS.*

MODEL 198 ACREAGE METER



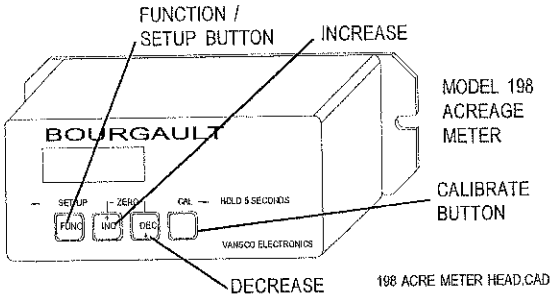


Figure 6.1 Model 198 Acreage Meter

1. **Preparation:**

a. Select and install the sprockets for the product and rate you desire.

b. Inspect metering augers, tanks and transfer lines for rust and obstructions. Clean if rusty and remove obstructions.

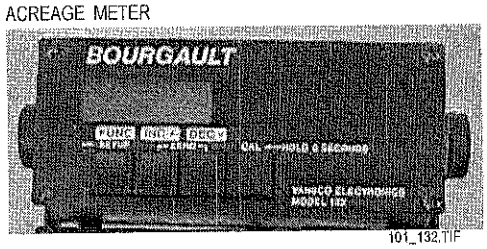
c. Load the tanks with clean, dry product.

   i. If moisture has condensed in the tanks, run sufficient dry product through each tank to absorb the water and dry the tank. When dry, add sufficient clean dry product for the calibration.

   ii. At the beginning of the season or when the machine is new, apply product for 5 to 10 acres (2 to 4 hectares) to remove any rust and polish all the surfaces to establish a uniform and consistent flow pattern. With uniform and consistent material flow patterns, an accurate calibration will be obtained.

d. Ensure that the metering auger chamber is full of product before beginning the calibration.

MODEL 132 ACREAGE METER



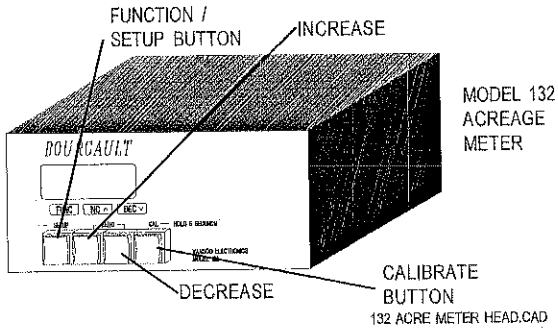


Figure 6.2 Model 132 Acreage Meter

6.1 FIELD CALIBRATION - 132/198 ACREAGE METER (CONT'D)

IMPORTANT

ALWAYS CALIBRATE - RATES DISPLAYED ON THE SPROCKET CHARTS ARE AVERAGE RATES ONLY. CALIBRATE FOR ACCURATE RESULTS.

2. Remove the cleanout covers from the bottom of the augers.

3. **Calibration boxes:**

   a. Remove the calibration boxes from their storage position at the back of the frame.

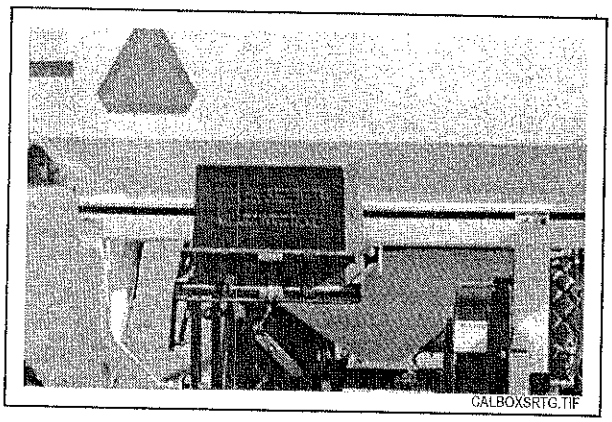


Figure 6.3 Calibration Boxes

   b. Attach the weigh scale to the anchor hook.

   c. Hang a calibration box from the weigh scale and zero the scale. By zeroing the weigh scale, the scale reading will be the product weight. Ensure boxes are the same weight.

   d. Use the straps and buckles to attach the calibration boxes directly under the auger cleanout ports. Secure straps over transfer line on each side of cleanout port.

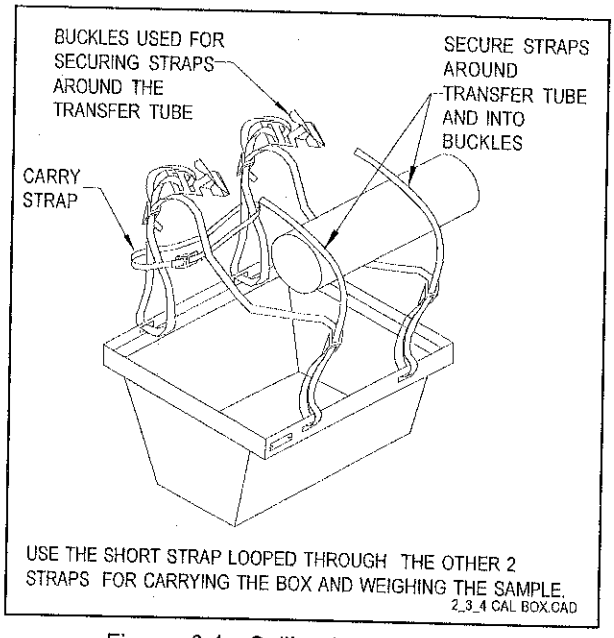


Figure 6.4 Calibration Box Mount

4. Check that the main drive clutch is off. The display on the calibration acre meter can not be activated when the drive clutch is on.

5. Ensure that the implement width and pulses per mile have been entered this season. Refer to Section 4.10.1.1 for procedure.

6. Press the CAL button for 5 seconds until "C00.00" is displayed;

Run a test until there is approximately 20 to 35 lbs (9 to 14 kgs) of product in the calibration boxes.

6.1 FIELD CALIBRATION - 132/198 ACREAGE METER (CONT'D)

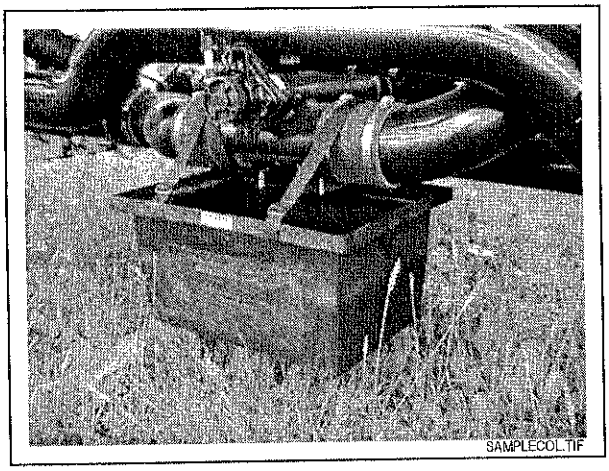


Figure 6.5 Sample Collection

7. Weigh the sample. Press the CAL button again to get "10n00" on the display;

and enter the sample in pounds. One Hundredth of a pound goes up in increments of .05 lbs by pressing INC and DEC buttons until the desired number is achieved.

Example: 1st increment .05, next .10, next .15, etc.

8. Press the CAL button. The display will show "r" on the left side and the rate;

9. To enter the second sample, press the CAL button, enter the weight of the second sample, and press the CAL button to obtain the application rate.

10. Return the meter to normal operation by pressing and holding the CAL button for 5 seconds. The calibration acre meter will not record field acres when in calibration mode.

IMPORTANT

MODEL 198 - THE ACREAGE METER WILL TURN OFF AUTOMATICALLY AFTER 60 SECONDS.

Figure 6.6 Weighing

6.3 STATIONARY CALIBRATION - 132/198 ACREAGE METER (CONT'D)

17. Refer to Figure 6.20. After Stationary Calibration is complete **engage** the manual clutch collar by turning the calibration crank until the manual clutch collar is firmly seated over the milled 1¼" (32 mm) bore sprocket.

18. Remove the calibration crank and secure it in the holder provided.

IMPORTANT

DO NOT LEAVE THE CALIBRATION CRANK ON THE CALIBRATION SHAFT OR THE MANUAL CLUTCH COLLAR DISENGAGED DURING OPERATION! DAMAGE TO THE UNIT WILL RESULT!

19. Return calibration boxes to their storage place on the back of the frame and secure.

20. Install and secure all the metering auger cleanout covers.

21. Activate drive clutch(es) to place system in its normal operating mode.

22. It is recommended that a field (rolling) calibration be done to verify the results from the static calibration.

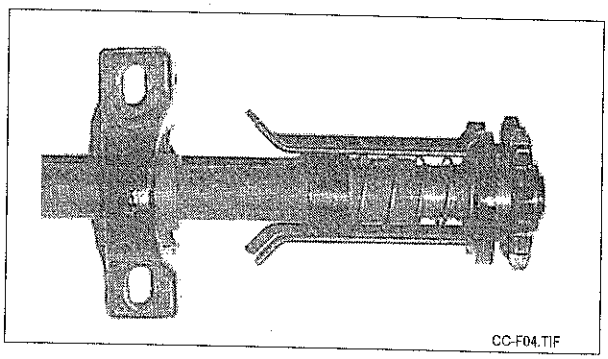
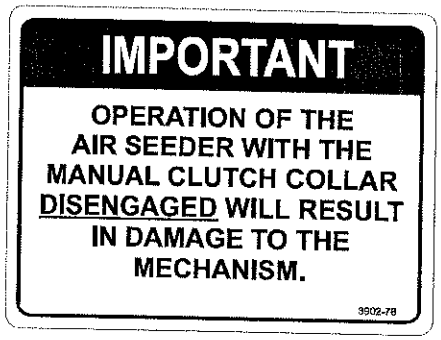


Figure 6.20 Clutch Engaged



6.3 STATIONARY CALIBRATION - 132/198 ACREAGE METER (CONT'D)

7. Turn the crank **Counter Clockwise** one (1) revolution per second. It is very important to turn the Stationary Calibration Crank at a constant speed, to simulate field travel.

8. Press the CAL button for 5 seconds until "C00.00" is displayed;

9. Turn the crank **Counter Clockwise** one (1) revolution per second. It is very important to turn the Stationary Calibration Crank at a constant speed, to simulate field travel.

NOTE

SMALL AMOUNTS OF PRODUCT DO NOT PROVIDE THE ACCURACY OF LARGER AMOUNTS WHEN CALIBRATING. WHEN CALIBRATING LOW RATE PRODUCTS, IT WILL BE NECESSARY TO TURN THE CRANK MORE TO METER OUT 20 TO 30 LBS. (9 TO 14 KGS) OF PRODUCT FOR THE CALIBRATION.

10. Stop when the auger with the highest application rate has metered out 20 to 30 lbs. (9 to 14 kgs) of product into its calibration box. Proceed to Step 13.

11. Close the cleanout cover to the completed metering auger.

12. Turn the crank again until 20 to 30 lbs. (9 to 14 kgs) of product has been metered into the next calibration box. Close the cleanout cover to the completed metering auger.

13. Weigh the sample. Press the CAL button again to get "10n00" on the display;

and enter the sample in pounds. One Hundredth of a pound goes up in increments of .05 lbs by pressing INC and DEC buttons until the desired number is achieved.

Example: 1st increment .05, next .10, next .15, etc.

14. Press the CAL button. The display will show "r" on the left side and the rate;

15. To enter the second sample, press the CAL button, enter the weight of the second sample, and press the CAL button to obtain the application rate.

16. Return the meter to normal operation by pressing and holding the CAL button for 5 seconds. The calibration acre meter will not record field acres when in calibration mode.

Model 198 - The acreage meter will turn off automatically after 60 seconds.

6.3 STATIONARY CALIBRATION - 132/198 ACREAGE METER (CONT'D)

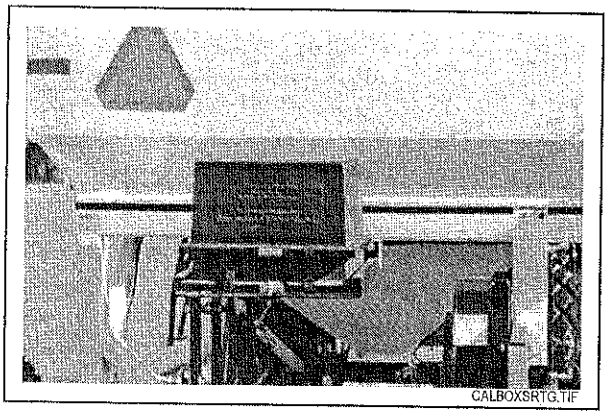


Figure 6.16 Calibration Boxes

3. **Calibration boxes:**

   a. Remove the calibration boxes from their storage position at the back of the frame.

   b. Attach the weigh scale to the anchor hook.

   c. Hang a calibration box from the weigh scale and zero the scale. By zeroing the weigh scale, the scale reading will be the product weight.

   d. Use the straps and buckles to attach the calibration boxes directly under the auger cleanout ports. Secure straps over transfer line on each side of cleanout port.

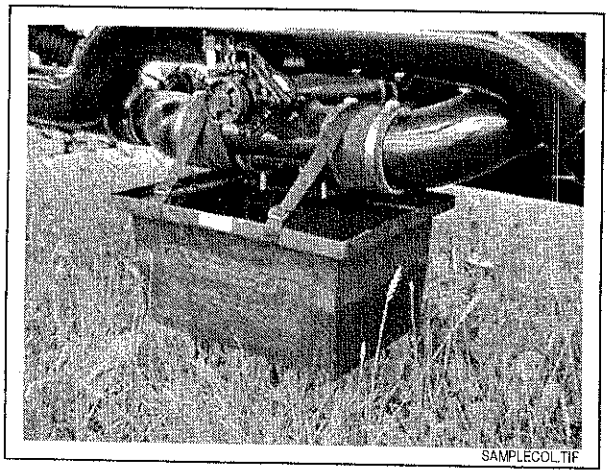


Figure 6.17 Sample Collection

4. Review monitor operation and be sure that implement width and pulses per mile have been properly entered. Refer to Section 4.10.1.1.

5. Refer to Figure 6.18. **Disengage** the manual clutch collar at the drive wheel by pulling the manual clutch collar back about 1" (2.5cm) and turning it a quarter turn. Ensure that the manual clutch collar is firmly seated on the shoulder of the air seeder drive shaft, not the milled 1¼" (3.2cm) bore sprocket.

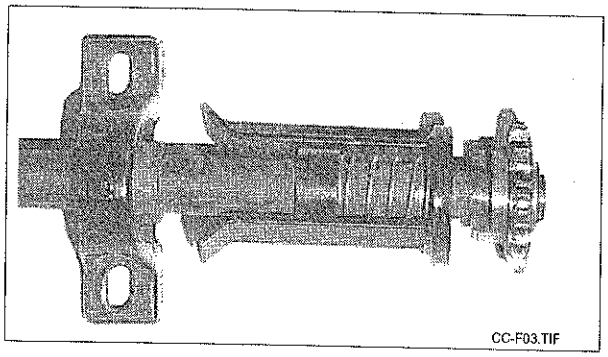


Figure 6.18 Clutch Disengaged

6. Install the Stationary Calibration Crank onto the calibration crank shaft and secure with a 3/8" x 1½" (9.5 mm x 38 mm) PTO pin.

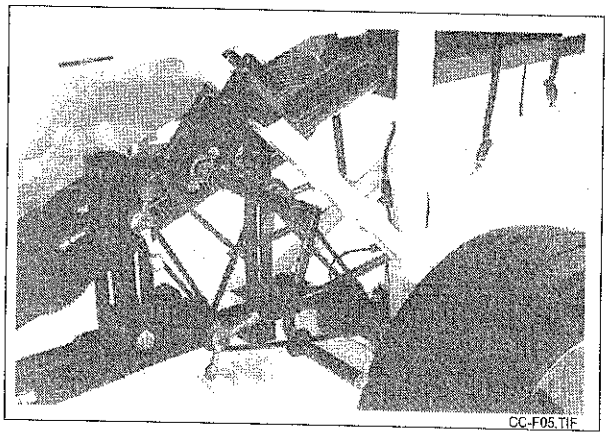


Figure 6.19 Calibration Crank

6.3 STATIONARY CALIBRATION - 132/198 ACREAGE METER

The optional Stationary Calibration Crank Kit is available for all 2135 Series Air Seeders. The kit allows the operator to perform a stationary or static calibration of the Air Seeder before performing a field calibration or rolling check.

The kit is easily assembled in the field. The existing main wheel drive shaft is removed and replaced with a new shaft and a manual clutch collar to engage and disengage the Stationary Calibration Crank.

1. **Preparation:**

a. Select and install the sprockets for the product and rate you desire.

b. Inspect metering augers, tanks and transfer lines for rust and obstructions. Clean if rusty and remove obstructions.

c. Load the tanks with clean, dry product.

   i. If moisture has condensed in the tanks, run sufficient dry product through each tank to absorb the water and dry the tank. When dry, add sufficient clean dry product for the calibration.

   ii. At the beginning of the season or when the machine is new, apply product for 5 to 10 acres (2 to 4 hectares) to remove any rust and polish all the surfaces to establish a uniform and consistent flow pattern. With uniform and consistent material flow patterns, an accurate calibration will be obtained.

d. Ensure that the metering auger chamber is full of product before beginning the calibration.

IMPORTANT

ALWAYS CALIBRATE - RATES DISPLAYED ON THE SPROCKET CHARTS ARE AVERAGE RATES ONLY. CALIBRATE FOR ACCURATE RESULTS.

2. Remove the cleanout covers from the bottom of the augers.

10.3 MONITOR & CLUTCH CABLE LAYOUTS

The layouts for the electronic cables are shown for the 101, 149 and 277 monitors and for the 132 and 198 acreage meters. The schematics represent the layouts required for both base clutch control and optional clutch control.

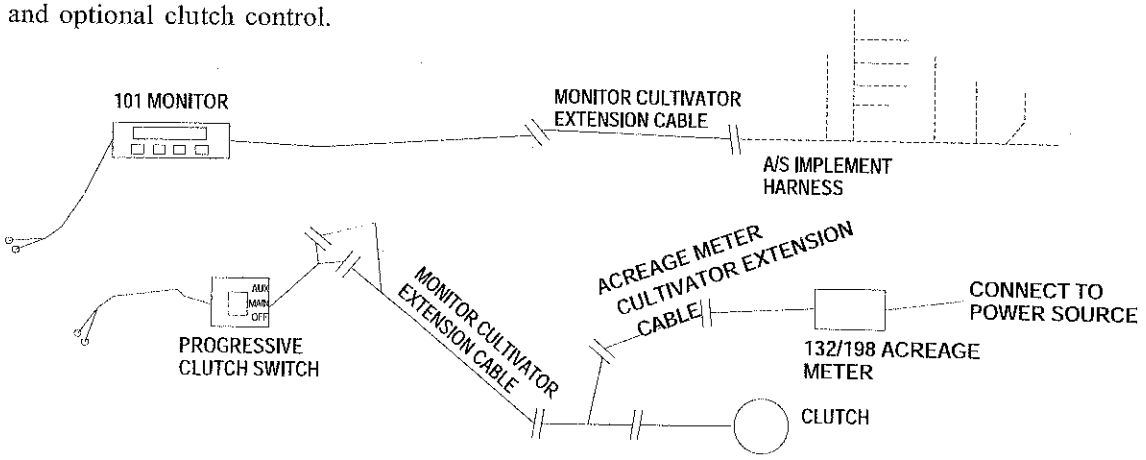


Figure 10.18 101 Monitor & 132/198 Acreage Meter Cables

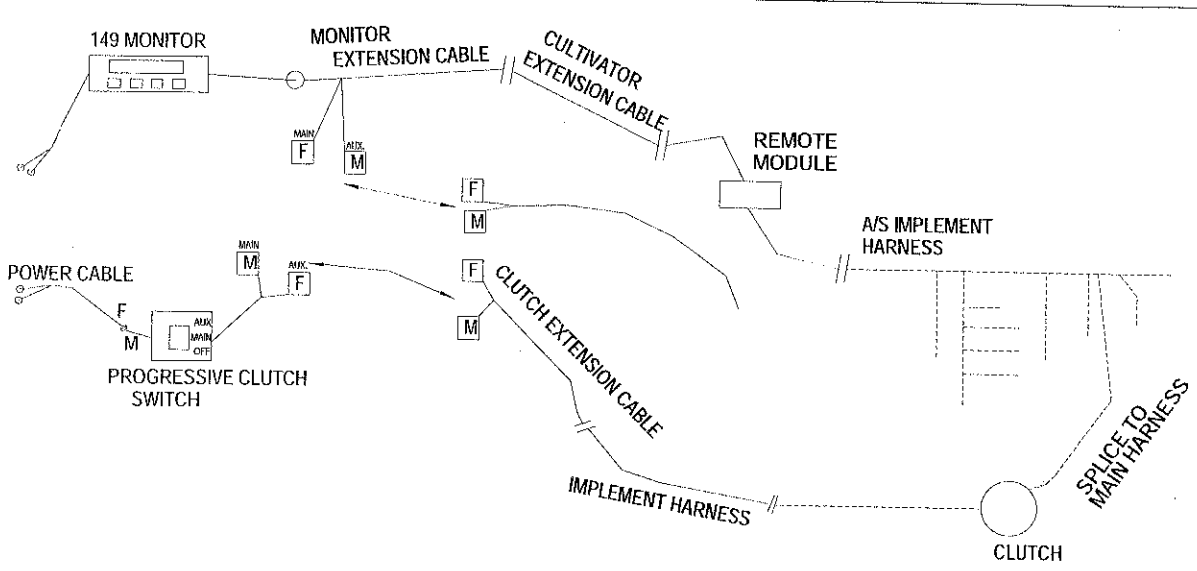


Figure 10.19 149 Monitor Cables

MONITOR SCHEM.CAD

10.3 MONITOR & CLUTCH CABLE LAYOUTS (CONT'D)

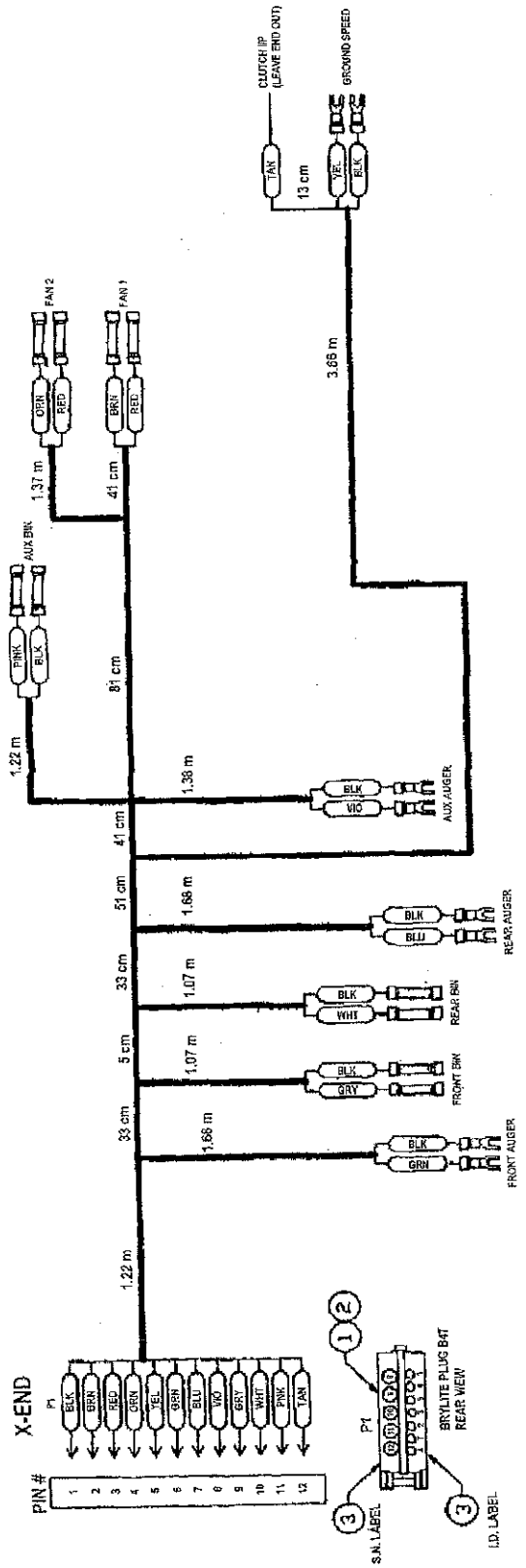


Figure 10.32 Switch Progressive Clutch

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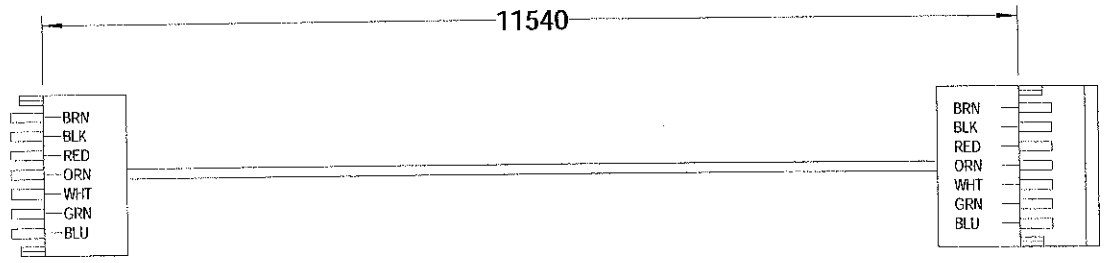
10.3 MONITOR & CLUTCH CABLE LAYOUTS (CONT'D)



7 PIN MALE
BRYLITE CONNECTOR
FROM MONITOR EXT. CABLE

7 PIN FEMALE
BRYLITE CONNECTOR
TO A/S HARNESS

Figure 10.20 101 Monitor Cultivator Extension Cable

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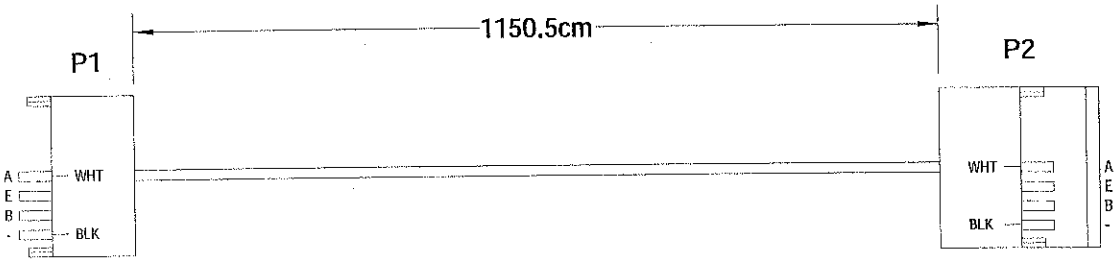

4 PIN MALE BRYLITE
CONNECTOR FROM
ACREAGE METER CABLE

4 PIN FEMALE BRYLITE
CONNECTOR TO
A/S METER HARNESS

Figure 10.21 132/198 Acreage Meter Cultivator Extension Cable

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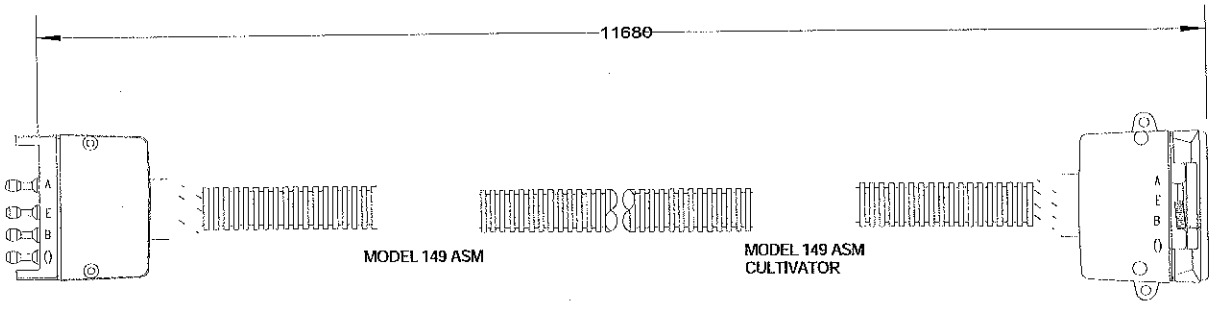

Figure 10.22 149 Monitor Extension Cable

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