

NEW HOLLAND

9184 9384
9484 9684
9884

REPAIR MANUAL

NEW HOLLAND

SERVICE

Reprinted

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Negative Plates

If the negative plates have a white discoloration, it is probably due to an accumulation of lead sulfate. The sulfate could result from a low electrolyte level, or being in a slow state of charge for a considerable length of time.

The battery becomes increasingly overcharged as the negative plates start to fail. The positive plates may eventually be destroyed by overcharging, although, the prime reason for the battery failure could have been the negative plates.

Sulfation

Whenever a battery is left idle in a discharged state, or when a battery has been operated continually in a partially discharged state, the sulfur in the electrolyte moves out to the battery plates. This is called "battery sulfation". The longer the battery is discharged, the harder the sulfation becomes. Finally, the battery will no longer take a charge.

Because a sulfated battery won't take a charge, a special procedure, called "slow charging", is needed to recharge the battery. Slow charging is covered in the "Battery Charging" Section of this manual.

NOTE: As a battery discharges, some degree of sulfation takes place. However, when sulfation occurs over a few months, as with idle equipment, it is much more severe than the sulfation that might occur when a battery discharges over a few days (for example, from a light left on).

When sulfation occurs, the remaining electrolyte solution is almost all water. This means freezing can occur in cold temperatures, which will crack the battery case and cause leaks.

TROUBLESHOOTING SUMMARY

When determining the cause of battery failure, keep in mind there are two general types of failure.

1. Battery is completely dead; inactive (won't take a charge). This type of failure is generally caused by plates becoming totally sulfated from extended storage. Although it is less likely, failure could also be caused by broken intercell, or post connector welds.
2. Battery is operating at reduced capacity. This type of failure is typical of plate deterioration because of low electrolyte levels. Failure could also be caused by broken plate-to-connector strap welds, or normal battery aging, which causes shedding of plate material.

TESTING THE BATTERIES

General

Tests are made to a battery to determine the state of charge and its ability, or capacity, to crank the engine. The 84 Series tractor uses three group 31 batteries in parallel. Each battery has 625 (9184/9384/9484) or 950 (9684/9884) cold cranking amps and 160 minutes of reserve capacity. With the batteries connected in parallel, the cold cranking amps and reserve capacity are added to provide a sufficient amount of current to rotate the engine for starting. The ultimate result of testing is to determine if the battery is good, needs recharging, or must be replaced. The batteries on the 84 Series tractor must be isolated from each other prior to battery testing. Disconnect the battery cables from the batteries.



CAUTION: HYDROGEN AND OXYGEN GASES ARE PRODUCED DURING NORMAL BATTERY OPERATION. THIS GAS MIXTURE CAN EXPLODE, IF FLAMES, SPARKS, OR LIGHTED TOBACCO ARE BROUGHT NEAR THE BATTERY. WHEN CHARGING, OR USING A BATTERY IN AN ENCLOSED SPACE, ALWAYS PROVIDE VENTILATION, AND SHIELD YOUR EYES.



CAUTION: BATTERIES CAN RELEASE A VERY HIGH ELECTRICAL ENERGY DISCHARGE. MAKE A HABIT OF ALWAYS DISCONNECTING THE BATTERY NEGATIVE CABLE BEFORE DOING ANY REPAIR WORK INVOLVING THE VEHICLE'S ELECTRICAL SYSTEM. DO NOT WEAR NECKLACES, BRACELETS, OR RINGS WHEN WORKING WITH A BATTERY. AN ACCIDENTAL SHORT CIRCUIT THROUGH METALLIC JEWELRY CAN CAUSE VERY SEVERE BURNS. A SHORT CIRCUIT CAN ALSO CAUSE HARNESS DAMAGE, AND POSSIBLY FIRE.

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Drive Shaft Troubleshooting

PROBLEM	POSSIBLE CAUSES	CORRECTION
Early or repeated universal joint failure	Incorrect phasing of shaft halves	Rephase shaft halves
	Defective or worn bearing cap seals	Replace universal joint
	Plugged relief hole in slip yoke soft plug	Make sure the hole is clear of debris
Broken yoke or universal joint cross	Yoke bore misalignment	Replace shaft half
	Seized slip joint	Clean and lubricate slip joint, replace if worn
	Plugged relief hole in slip yoke soft plug	Make sure the hole is clear of debris
End galling of universal joint cross trunnion	Contamination	Replace universal joint
	Lack of lubrication	Replace universal joint
Slip spline seizures	Contamination	Clean and lubricate
	Lack of lubrication	Clean and lubricate
Slip spline wear	Excessively loose fit of mated parts	Replace entire drive shaft
Slip spline shaft or tube broken in torsion pattern	Overload of shaft	Check drive shaft overload protection on implement
	Sudden shock load on drive shaft	Check modulation of clutch apply
Tube split in longitudinal seam weld	Worn or defective part	Replace defective part
Tube circle weld failure	Worn or defective part	Replace defective part
Yoke broken at ear	Defective casting	Replace defective part
Vibration of shaft	Worn universal joints	Replace universal joints
	Drive shaft bent or unbalanced	Check shaft for runout and ovality, replace as necessary
	Drive shaft tube damaged	Replace damaged parts
	Loose fit on slip spline	Replace worn parts
	Drive shaft yoke out of phase	Rephase shaft halves
	Transmission mounting loose	Check mounting bolt tightness
	Bearing strap retaining bolts not properly tightened	Replace universal joint hardware and torque to specs

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3. Disconnect the seat wiring harness, 1, from the rear of the seat.
4. Remove the four bolts, 2, that secure the seat to the seat pedestal.
5. Slide the seat from the cab and lower it to the floor using a lifting device.

   NOTE: The seat weighs 64 Kg (140 lbs). A lifting device should be used to lift and lower the seat.

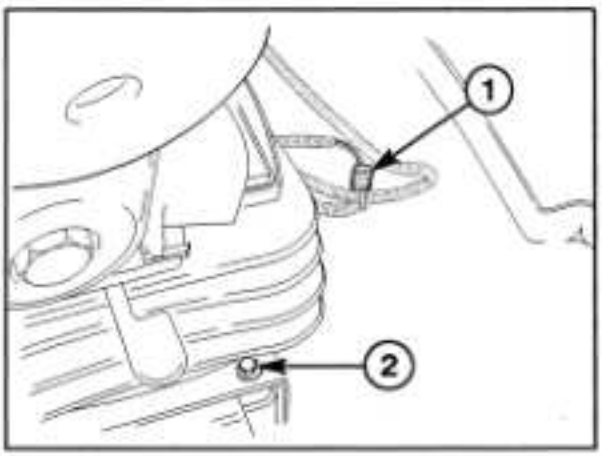


Figure 11-166

Disassembly

The seat is made up of three distinct operating components as follows:

a. Seat back and cushion
b. Seat adjustment rails (includes lateral isolator assembly)
c. Seat suspension

Disassembly, inspection and reassembly of the complete seat will consist of first disassembling the seat into the three components, then disassembling, inspecting and reassembling each of the three. The three components will then be reassembled to each other.

Separating the Seat Into Three Components

1. Separate the seat back and cushion, 1, from the adjustment rails and lateral isolator, 2, by removing the four bolts, 3, from the base of the cushion.

   The seat back and cushion will remain connected to the suspension by the wire harness. It will be disconnected later in this procedure.

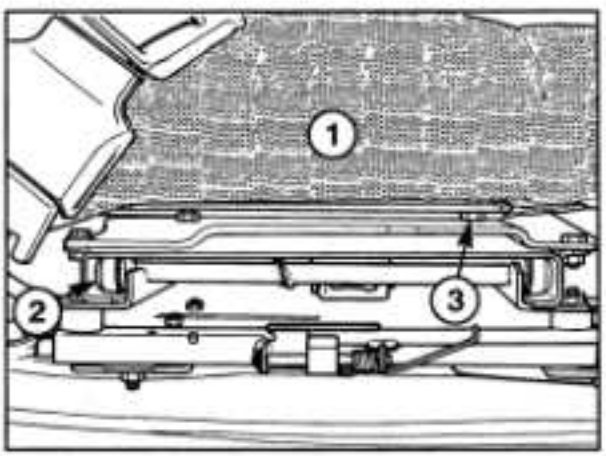


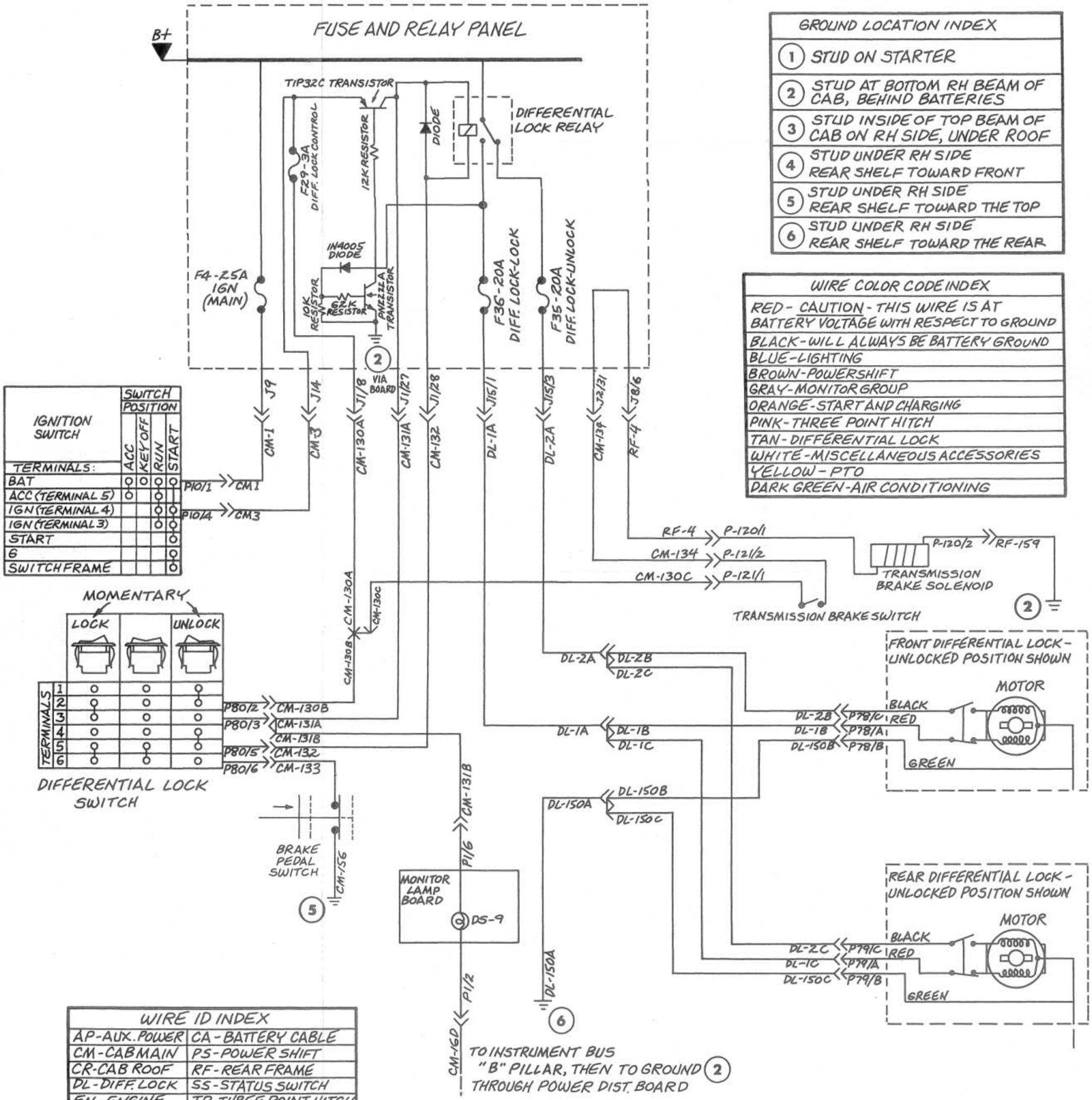
Figure 11-167

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DIFFERENTIAL LOCK/TRANSMISSION BRAKE (20003890)

GROUND LOCATION INDEX
(1) STUD ON STARTER
(2) STUD AT BOTTOM RH BEAM OF CAB, BEHIND BATTERIES
(3) STUD INSIDE OF TOP BEAM OF CAB ON RH SIDE, UNDER ROOF
(4) STUD UNDER RH SIDE REAR SHELF TOWARD FRONT
(5) STUD UNDER RH SIDE REAR SHELF TOWARD THE TOP
(6) STUD UNDER RH SIDE REAR SHELF TOWARD THE REAR

WIRE COLOR CODE INDEX
RED - CAUTION - THIS WIRE IS AT BATTERY VOLTAGE WITH RESPECT TO GROUND
BLACK - WILL ALWAYS BE BATTERY GROUND
BLUE - LIGHTING
BROWN - POWERSHIFT
GRAY - MONITOR GROUP
ORANGE - START AND CHARGING
PINK - THREE POINT HITCH
TAN - DIFFERENTIAL LOCK
WHITE - MISCELLANEOUS ACCESSORIES
YELLOW - PTO
DARK GREEN - AIR CONDITIONING



WIRE ID INDEX	
AP - AUX. POWER	CA - BATTERY CABLE
CM - CAB MAIN	PS - POWER SHIFT
CR - CAB ROOF	RF - REAR FRAME
DL - DIFF. LOCK	SS - STATUS SWITCH
EN - ENGINE	TP - THREE POINT HITCH

Figure 3-23

DIFFERENTIAL LOCK/TRANSMISSION BRAKE (REV. 3)

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